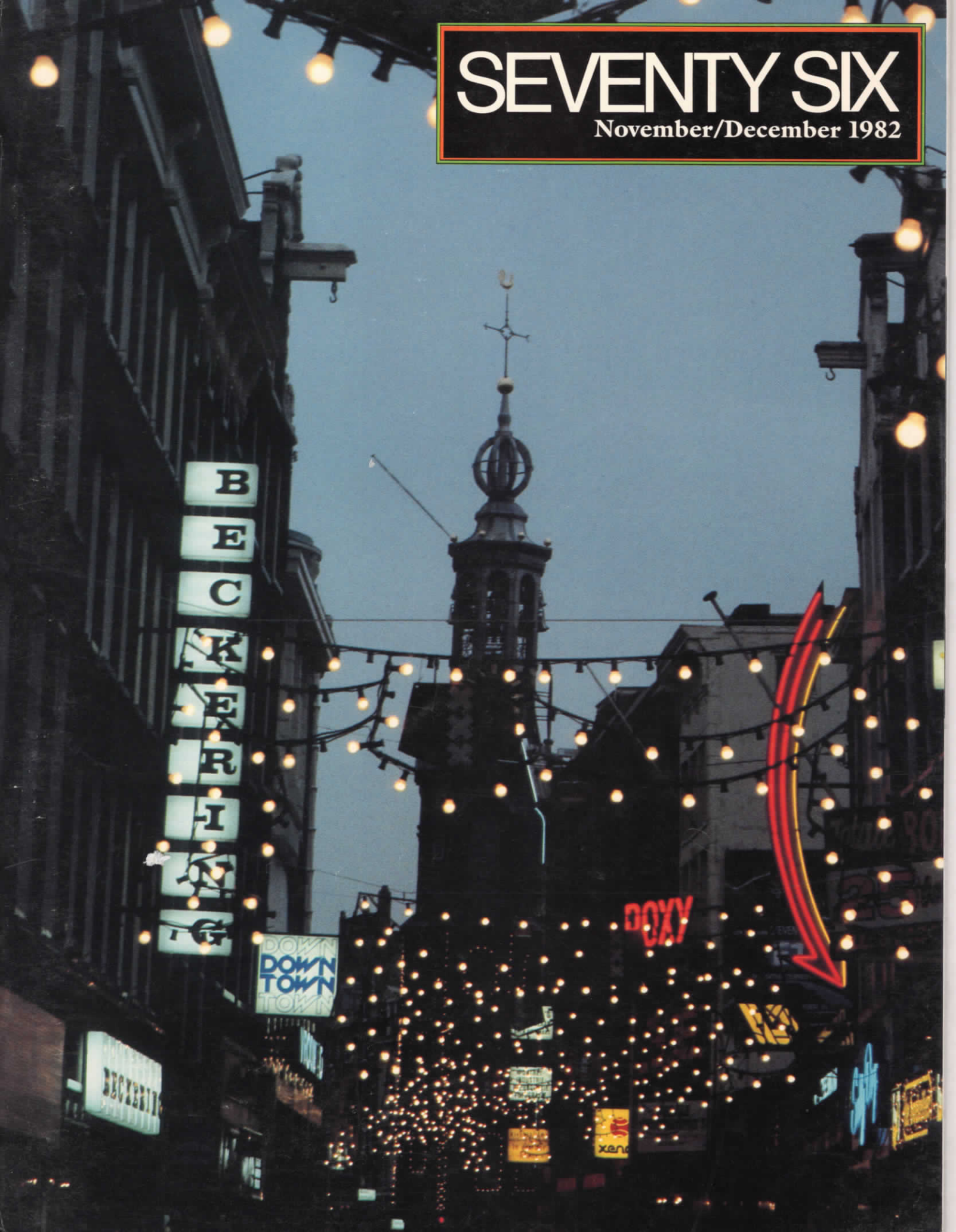
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November/December 1982
BECKERING
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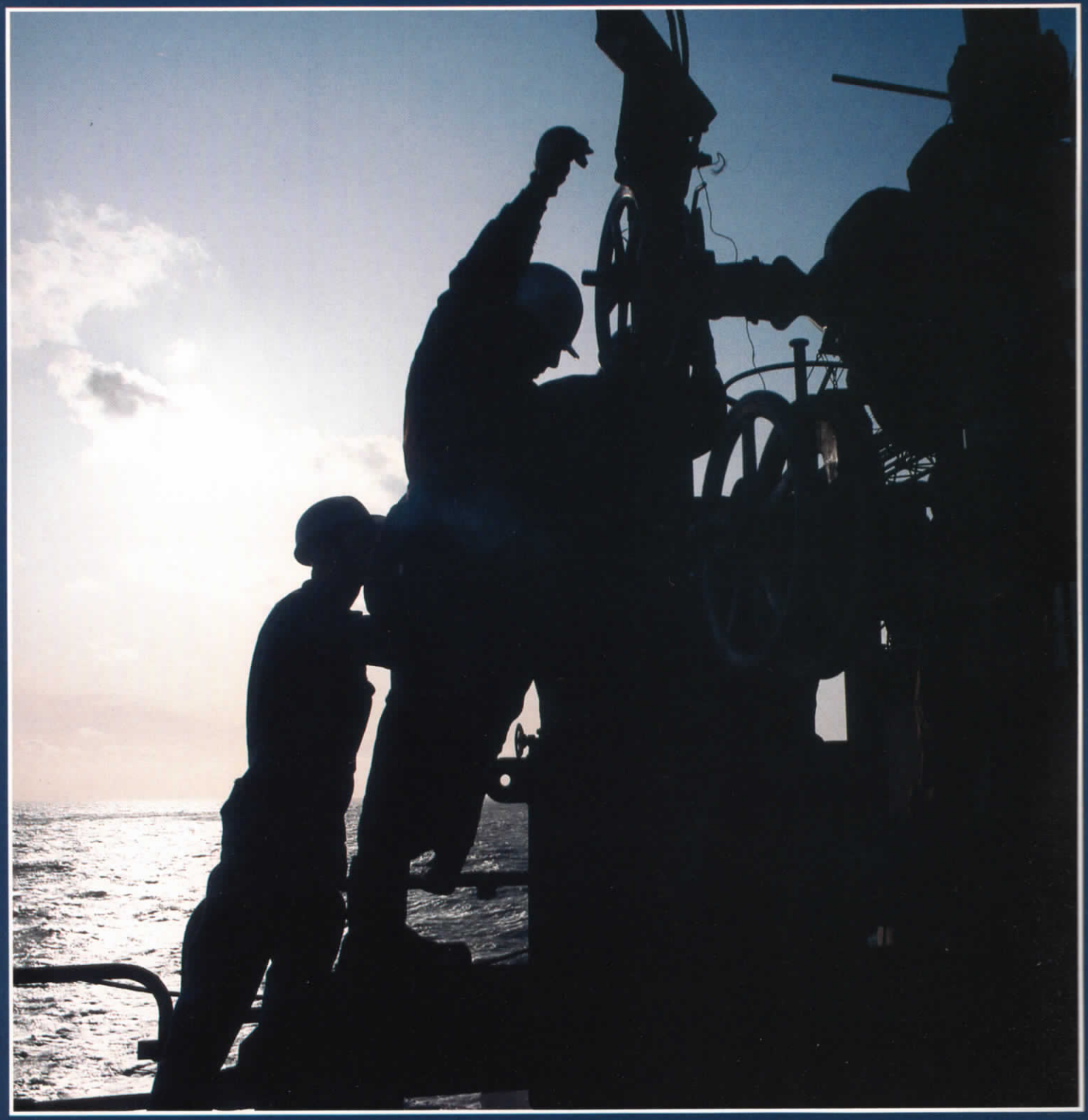
Photos by Tim Page



Workers at Union Oil's Helder platform off the Dutch coast work on the new structure's pipeline system (facing page). *During the dedication ceremonies of the first commercial offshore production from that section of the North Sea, Fred L. Hartley, chairman and president of Union Oil and his wife Peggy Hartley, greet Her Royal Highness, Queen Beatrix of the Netherlands.*

DUTCH EXPLORATION PAYS OFF

On a winter afternoon last November at the new pipeline terminus in the Amerikahaven near Amsterdam, Her Majesty the Queen of the Netherlands, and Fred L. Hartley, chairman and president of Union Oil Company, inaugurated production from the first commercial oil fields to be developed in the Dutch sector of the North Sea.

Before 500 guests and dignitaries, Queen Beatrix pushed a lever causing crude oil loading arms to be withdrawn from a barge carrying the first official cargo of Dutch offshore oil from Amsterdam to a refinery in Rotterdam.

The history-making cargo was produced at the Helm and Helder fields, approximately 25 miles west of Den Helder, by Union Oil Company of the Netherlands, a wholly owned subsidiary of Union Oil Company of California, and Nedlloyd Energy B.V., part of the Royal Nedlloyd Group. Actual production began late last September from platforms standing in 75 feet of water.

In his speech at the festive dedication ceremonies, Hartley described the occasion as, "This (the dedication ceremonies) represents for Union Oil and Nedlloyd, the culmination of more than a decade of investment, exploration and development."

Hartley went on to add that, "Union is proud of its role in making the initial discoveries and the development of the fields."

He also noted that 1982 marks the 200th year of uninterrupted diplomatic and trade relations between the United States and the Netherlands. Of course, Dutch relations with pre-revolutionary America go back even further—to the days when Peter Stuyvesant was the governor of a small Dutch outpost in the New World, then known as New Amsterdam and today as New York City.

In his address to the Queen and the guests, Hartley noted that once production from the offshore fields reaches its peak sometime in 1984, the Netherlands' domestic crude oil production of a current 25,000 barrels per day will "just about" double.

In addition to the Helm and Helder fields, a third field, called Hoorn, is being developed by Union Oil and will commence production in the latter part of next year.

The history of the newly-developed fields dates back to 1968, when Union began conducting an active exploratory program in these waters. The initial discovery, in the Helm field, was made in 1979. Following that discovery, the government of the Netherlands granted the company the necessary production licenses, allowing both Union and Nedlloyd to begin development of the fields.

Currently, Union Oil—the operator of the project—has set two platforms in each of the two producing fields. One of these offshore structures is used to conduct development drilling while the other handles all production facilities.

Union has also announced that it will drill up to 12 wells in the Helder field and up to five wells in the Helm. Tentative plans call for up to five wells in the Hoorn field.

The program is the result of close cooperation between the government of the Netherlands, Nedlloyd—a subsidiary of one of that country's leading shipping companies—and Union Oil, which has an outstanding reputation and worldwide experience in energy development.

Among the many successful international ventures Union has undertaken in producing energy are its fields in Indonesia and the British sector of the North Sea, the production of geothermal energy in the Philippines and in the United States and vast oil and gas operations in the Gulf of Mexico.

With production now a reality in the Dutch North Sea sector, it marks the first time ever that commercial oil fields have been developed and brought on stream in that part of Europe.

Ray A. Burke, senior vice president and director of Union Oil, describes the successful Dutch offshore program as "another important milestone for Union Oil and for the entire country of the Netherlands."

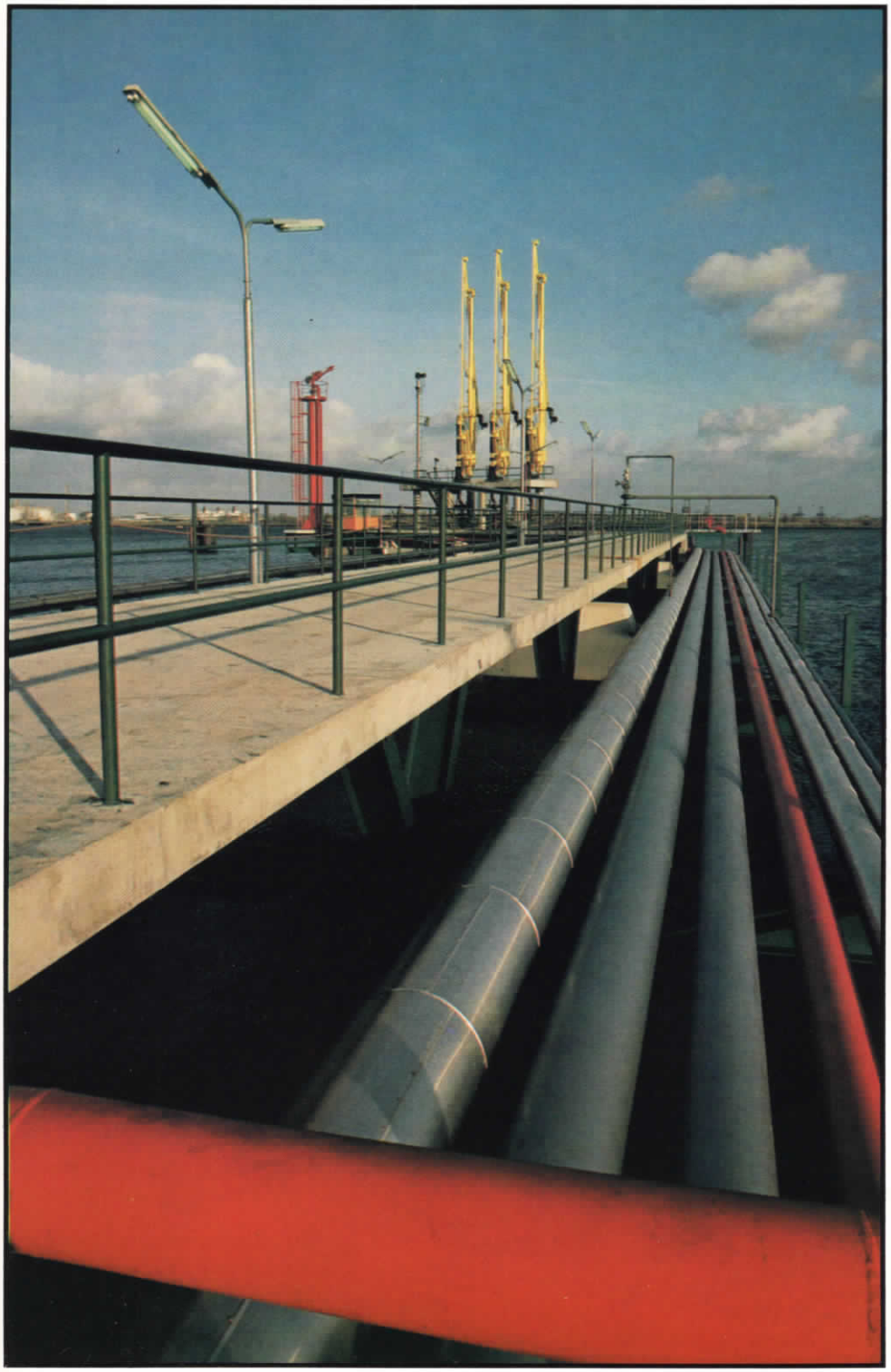
Hartley, in his address during the ceremonies, said that "The pipeline that now links the oil fields and this terminal (at the Amerikahaven) will make it feasible for others to develop nearby fields as well. That holds out the prospect for further increasing the oil producton of the Netherlands."

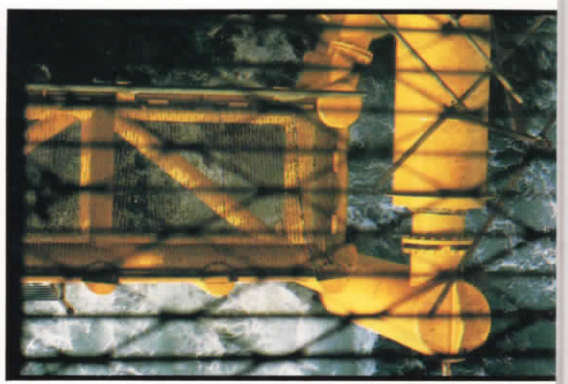
The Dutch project moved from discovery to production in near record time. One big factor speeding the progress was the approval and construction of the pipeline in about two years.

Comparable facilities elsewhere have often taken several years to complete, Hartley pointed out. Praising the efficiency and speed with which the Dutch government issued its pipeline permits he added that once exploratory wells were successfully drilled, field development plans also won official approval in short order.

"Further," Hartley added, "we were able to choose our contractors through a competitive bidding process. I am pleased to note that more than 80 percent of all the contracts for materials and services readily available from Dutch companies actually was provided by Dutch firms."

Visiting guests and dignitaries enjoy a post-dedication ceremonies banquet (far left). *Ray A. Burke, director and senior vice president of energy resources, presents Queen Beatrix with a Los Angeles Dodgers cap and baseball while Fred L. Hartley watches. This presentation was made immediately after Queen Beatrix had turned a lever withdrawing loading arms from a barge carrying the first production. Below are views of the Helder platform, and the Amerikahaven terminal from where oil is taken to refineries in Rotterdam.*






SMIT-LLOYD 11

Dutch technology and expertise was used in the fabrication and installation of the offshore facilities, including the drilling and production platforms, the production facilities and quarter decks, and in the offshore and onshore portions of the pipeline.

The 20-inch, 48-mile long pipeline transports the crude oil from the fields to the Amerikahaven terminal. Here, the oil is stored in tanks before being transported by barges to Dutch refineries near Rotterdam.

During the ceremonies both American and Dutch officials stressed that the project was being dedicated in a spirit of mutual cooperation and with a commitment to energy development. All parties recognize the ever-present need to search for and produce energy resources as a means to insure economic growth and to increase the oil security of the Netherlands.

Hartley emphasized that Union Oil's perseverance offshore the Netherlands is not an isolated story. "The patient application of advanced technology and careful planning is one of Union's strong suits," he said. "This is particularly true when it comes to strategically important and ultimately essential energy resources.

"Abundant and easily developed energy sources are a thing of the past," he argued. "More difficult and more costly projects—both conventional and alternative—are what is in store for us."

The Netherlands new offshore oil supply suggests that a page has been turned in the story of European energy. The practical and constructive attitude of the Dutch government made this ambitious undertaking much easier than it might have been. And Union Oil's perseverance and expertise did the rest. (76)

Some of the rugged weather conditions of the North Sea are evident on the facing page. Above are different views of the Amerikahaven terminal where Union Oil's production arrives via pipeline from the two platforms in the Helder and Helm fields.

Holland: Land of Color and Contrast

Story by Sergio Ortiz

Starlene Frontino—West Light

The Netherlands is a land of gentle contrasts and bright colors. In many ways, the small kingdom—*Koninkrijk der Nederlanden*, or the Kingdom of the Lowlands, as it is officially called—is an anachronism where ancient windmills whirl slowly in the breezes that come from the bitterly cold currents of the North Sea. The anachronism is never more apparent than during a drive from one of the Kingdom's modern cities to the countryside where in a matter of minutes one is transported from the late 20th century to a quiet, pastoral world of bygone years.

The gentleness and the kaleidoscopic colors of a Dutch spring have no rivals on earth. Each of its 11 provinces and two polders has a unique character of its own and the country itself differs sharply from the rest of its northern European neighbors.

The small nation (15,963 square-miles) is also popularly known as Holland. Amsterdam is its constitutional capital and The Hague its seat of government. Both cities are as rich in history as they are in their unique "Dutchness."

Geographically Holland is one of the Low Countries, but it did not have a unified history of its own until the late 16th century. Prior to that time, the region west of the Rhine formed part of the Roman province of Lower Germany and was inhabited by the Batavi. To the east of the Rhine were the Frisians. During the fourth and eighth centuries, the entire country we know today as Holland was overrun by the Franks. With the breaking up of the Carolingian Empire, most of the area was annexed to the East Frankish (German) kingdom and thus the Holy Roman Empire.

Thanks mostly to the fierce independent spirit of the Dutch and to strong nationalistic feelings, the counts of Holland soon emerged as the most powerful medieval lords in the region.

In the 14th and 15th centuries Flanders, Holland, Zeeland, Gelederland and Brabant passed to the powerful dukes of Burgundy who thus controlled all of the Low Countries. It was then that The Netherlands began to emerge as a serious world power. Although the Dutch cities and ports were slower in their economic development than Flanders and Brabant, they began to rival the inland cities during that period.

In 1477, Mary of Burgundy, authorized by the Great Previlege, restored all the liberties her predecessors had taken from the provincial states of the Low Countries. When she married Archduke Maximilian (later Emperor Maximilian), she brought the Low Countries into the House of Hapsburg. After Mary's death, the powerful Spanish monarch Charles V gave them as a present to his son Philip II. By that time the Northern Provinces (most of what is now Holland), had achieved unprecedented economic success.

The inroads of Calvinism caused a strenuous schism between Protestant Holland and Catholic Spain. Philip's attempt to introduce the Inquisition and to reduce the Low Countries to a Spanish province met determined opposition from the population, both Protestants and Catholics alike.

That is when the struggle for independence of the Low Countries blossomed.

The Northern Provinces, under the leadership of William the Silent, prince of Orange, succeeded in expelling the Spanish garrisons there and, subsequently, the Low Countries united under William. The southern part of the country remained under Spanish rule and was gradually reconverted to Catholicism while the Spanish armies attempted to regain the north. Although superior in numbers and armaments, the Spaniards were defeated by their failure to overcome the river canals and barriers that separate the Northern Provinces from the rest of the country.

To this day, the entire country is crisscrossed by drainage canals. Even its main rivers, the Scheldt, Maas (Meuse), Ijssel, Waal and the Lower Rhine, are canalized and connected by man-made waterways all linked with the river and canal system of Belgium and West Germany. These canals are not only clean, efficient and practical, but also give the country an awesome natural defense against invading armies, as those of Philip and later Hitler could testify.

Perhaps what separates Holland from other countries is the resilience of its people. Dutch tenaciousness has allowed the populace to live for centuries in a country that has 40 percent of its acreage below sea level. A great part of its territory (mostly in the west) is composed of land reclaimed from the sea (polders) and protected from floods by dikes.

The Maritime Provinces of Holland include the country's most famous cities: Amsterdam, Rotterdam (the chief ports) and The Hague, Leiden, Delft and Vlissingen (Flushing). Alkmaar and Edam have gained worldwide notoriety as cheese-producing cities and Haarlem is the center of the famous and lovely Dutch flower-raising district.

The population density of The Netherlands is one of the highest in the world (the geographically small nation has about 13 million people) and great skill is necessary to maintain the high standard of living the country enjoys. Holland, despite the immediate visions of rural, windmill scenes

Starlene Frontino—West Light

Craig Aurness—West Light

D & J Heaton—After Image

the name conveys, is highly industrialized. Industry contributes some 40 percent to the national income, one of the highest among Europe.

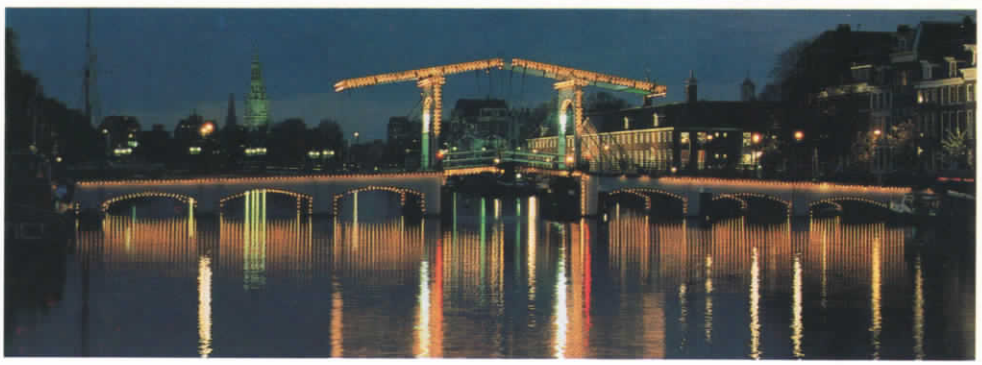
The chief manufactured products are textiles, machinery, electrical equipment, iron and steel, refined petroleums, shipbuilding, plastic and chemicals. The country's few natural resources include coal, natural gas and petroleum. Union Oil recently inaugurated production from the first commercial oil fields developed in the Dutch sector of the North Sea. (See preceding story.)

All in all, Holland enjoys a bright future and a rich past that originated when the awesome merchantmen of the Dutch East India Company established trading relationships that led to the domination of East India trade by the Dutch. The days when Dutch sailing ships plied the Seven Seas are over. So are the days when the country became a haven of religious freedom for displaced Portugese and Spanish Jews, and French Huguenots, yet Holland remains unique.

This uniqueness lies not only in the efficiency and determination of its people, but also in the beauty contributed by the Dutch during the Kingdom's Golden Age. And what a Golden Age it was. Rembrandt van Rijn, Vermeer, Jacob van Ruisdael, Frans Hals and others carried Dutch art to new heights. Descartes and Spinoza took philosophy to its outer limits...and that was only the beginning. (76)

Amsterdam's parks offer a marvelous display of flowers during the unmatched Dutch spring (facing page). *The city's canals* (below left) *are part of the waterways that criss-cross the country. The Binnen Amstel canal is brilliantly lit during an Amsterdam evening* (below), *while dairy workers in Edam prepare to crate that city's famous cheeses* (bottom). *Sabots, Holland's famous wooden shoes, provide a colorful symmetry in a store window.*

Craig Aurness—West Light



D & J Heaton—After Image

D & J Heaton—After Image

Starlene Frontino—West Light

Review Teams Assure Environmental and Health Compliance

For one week out of every month an unusual team can be found at one of Union Oil's many operating facilities. Although traditionally the company has an exemplary record for safety and environmental procedures, this team reviews, inspects and scrutinizes the facilities to ensure that the ever increasing environmental and health related regulations applicable to that facility are being met. The suggestions made by this team aid the various facilities in determining the way to comply with the guidelines and regulations that govern the different company operations.

The visiting teams (five to seven people) are part of Union's Environmental and Health Compliance Review Program. Their responsibility: to review the numerous governmental regulations relating to the facilities and to determine if the complexes are operating in compliance with those regulations.

Keeping track of this maze of red tape is not an easy job. And adding to the complications, the federal state and local laws not only vary according to the type of facility and its location, but the laws are continually changing. That is why, in early December 1980, the company's executive committee created the Environmental and Health Compliance Program. Named as its manager was Allan W. Percy, who previously served as Unoin Oil's manager of operations for Western Region Marketing.

"The environmental guidelines that regulate some facilities are extremely complex. In some cases, there may be up to three thick volumes of regulations that dictate how one facility should function," explains Percy. "So it's very difficult for everyone to be on

top of all of them. The responsibility for adhering to environmental laws lies with many levels of management."

Percy works closely with the Environmental and Health Compliance Review Management Committee, a board comprised of representatives from each of the company's seven operating divisions, Molycorp (a wholly owned Union Oil subsidiary) and the corporation's environmental sciences, industrial relations, legal and medical departments.

The Environmental and Health Compliance Program is executed in two phases. First, the operating facility submits an annual report on environmental and health compliance. Committee members then review all the relevant reports from facilities that fall under their respective divisions and follow up to correct any possible questions of compliance. The reports are also used in preparing a company-wide report, outlining Union's environmental liabilities and projected costs of compliance, required by the Securities and Exchange Commission.

Facility managers are provided with customized annual compliance forms. "I try to make the questionnaires as specific to the particular facility as possible. For example, people from the rare earths operation in Mountain Pass, California, don't have to include water discharge data requirements in their report because they evaporate their spent water," Percy says.

The program's second phase takes the form of an on-site review. The multi-member teams visit approximately 12 operating facilities each year.

"We conduct one review per month, and meet with the committee quarterly to bring them up to date on our progress," says Marilyn Forrest, environmental systems analyst, who assists

Percy in the program. "We look to the committee for guidance in selecting the facilities that ought to be reviewed."

Adds Percy: "Each quarter we visit a facility from both the 76 Division and the Chemicals Division, recognizing that they have more exposure and come under more regulations." His teams also visit many of the company's smaller facilities that do not require a week-long review.

A new team is selected by the committee for each monthly review. The new teams always include someone from the Science and Technology Division to provide technical information. They also regularly include representatives from the environmental sciences department, Union 76 Division, Chemicals Division and one from some other division.

When the team is reviewing a complex facility such as a refinery, a refiner is included as well. An industrial hygienist and a doctor from the medical department also accompany the team to make a medical and health review of the site.

A book, outlining the general areas of regulatory concern for each facility, is prepared in advance to help the person designated as team leader to conduct the review. Most regulations that must be observed come out of the Environmental Protection Agency (EPA), the Coast Guard and local air and water districts. The health regulations are set by the Occupational Safety and Health Administration (OSHA).

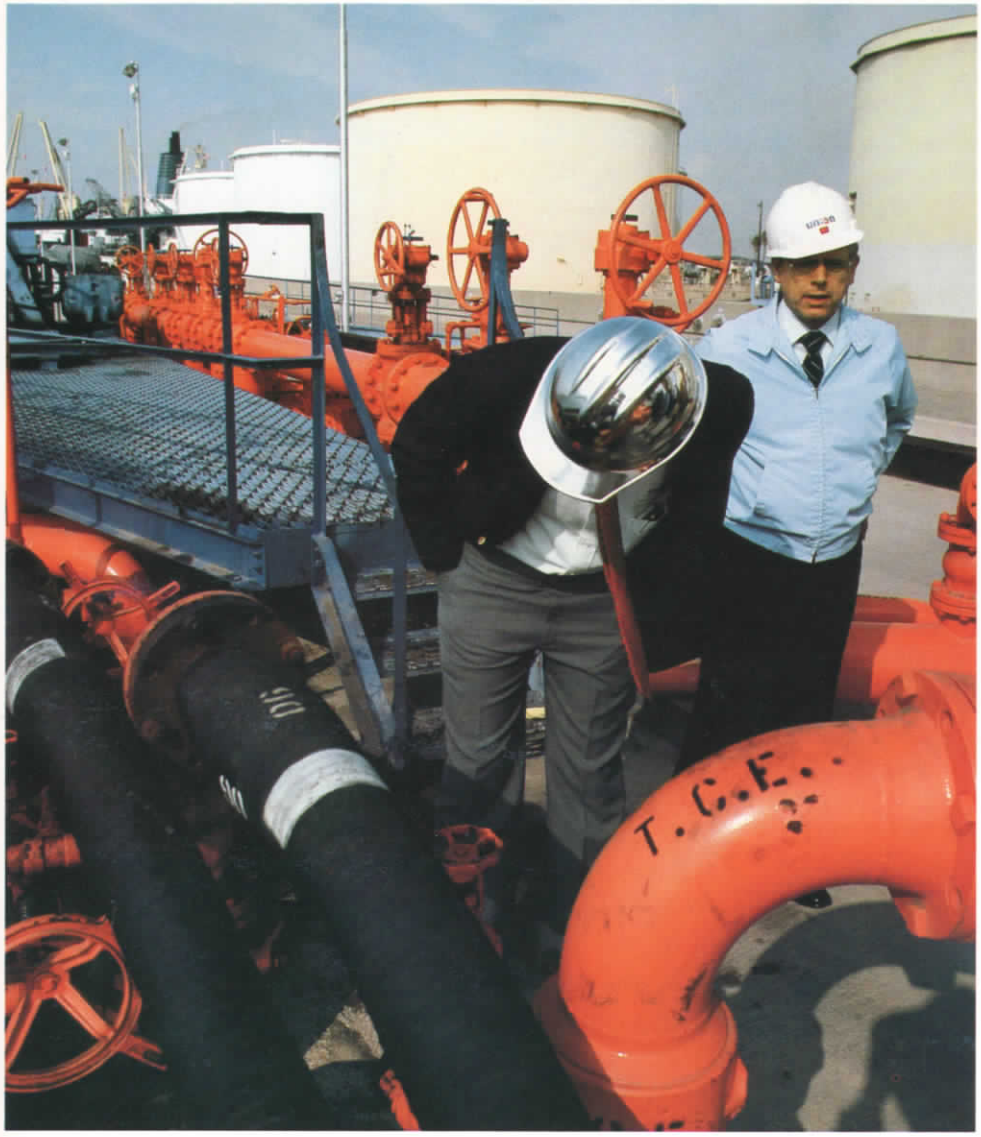
The team begins its review by meeting with the manager and touring the facility. During the rest of the week, members pore over permits, reports to regulatory bodies, previous review reports and any other documents shedding light on the environmental and health compliance status of the facility.

"The review team members have to put in quite an effort to quickly familiarize themselves with the applicable regulations and facility systems," says Forrest. "For instance, they might be assigned an unfamiliar topic such as hazardous waste disposal. In such cases, they rely on the regulation guidelines provided, on the host people who serve as resources and also on the expertise of other team members. The team members have been very successful in performing their assignments."

A report is prepared by the team and presented to the facility manager, and whoever else he wishes to be present, at the end of the week.

The report is left with the facility manager for 45 days, allowing enough time to respond and to correct any problems noted in the report. Both the report and the response are then given to the facility's first vice-president after the 45-day interim.

"It's an educational process for everyone involved," says Percy. "It shows that someone is really looking and makes everyone aware of what environmental regulations are all about."



Edward F. Langevin, (below, right) *supervisor of environmental affairs at Union Oil's Los Angeles Refinery, leads a tour for an environmental and health compliance team through that facility. Pictured on these pages are members of that team as they conduct their review of the refinery.*


UNION
76

4-H CLUB: BUILDER OF CHARACTER

Visiting 4H public speaking winners from the 50 states enter the Union Oil Eastern Region offices in Schaumburg, Illinois during the club's annual congress (above). *Mary E. Moore is flanked by Robert F. Nootbaar, senior vice president, Eastern Region, and William M. Redding, regional manager of public relations, after the Union Oil-sponsored banquet for 4Hers* (left).

In 1951, when Rawleigh Warner, Chairman of the Board and Chief Executive Officer of the Pure Oil Company, signed the first "memorandum of understanding" with the National 4-H Council, pledging Pure's sponsorship for its public speaking program, he launched an endeavor which, in time, would benefit more than four million youths. After Union Oil and Pure merged, Union continued to sponsor the program.

Just what is 4-H? Those not familiar with the organization may conjure visions of tractors, farm kids, livestock contests and homemaking projects.

But those active in 4-H realize the program is much more than that. The club is America's largest out-of-school educational program for both rural and urban youths. It is comprised of five million members from nine through 19 and has more than 600,000 volunteer adult leaders. Its goal is to enhance formal education and prepare its members for achievement and career training. It is unique among youth programs because of its direct link, through the U.S. Department of Agriculture, to the educational research and technology base of the Land-Grant Universities.

Although Pure Oil became involved with 4-H in 1951, the youth program was started in the early 1900s. With its inception as a grass roots organization in 1914, some 400,000 youngsters launched an organization which would see greater growth and advancement in the years to come than any other youth association.

Today, there are over five million 4-H members. Its members are found throughout the nation and abroad and there are more than 40 million alumni of 4-H.

Despite this startling growth, 4-H still remains a grass roots program. Its base is found within the nearly 140,000 individual 4-H clubs throughout the nation, each guided by a volunteer adult leader.

A youngster begins his 4-H career by joining a local 4-H club. During the first meeting, the leader presents the vast array of project areas available to the new member. The 4-H'er may participate in any area of interest. Sewing, safety, conservation, electric energy, veterinary science, photography, health, dog care and public speaking are among the 70 fields offered.

By obtaining exposure and experience in the project areas, 4-H members can appreciate the mission of 4-H. But the building of character, leadership and citizenship development remain as 4-H's central theme.

After several years of project exposure, a 4-H'er may decide to concentrate in one or two specific areas. From then on, the member's efforts will focus on developing special skills in the chosen field, and competing, if he chooses, with others in the same field.

The first step in the 4-H competition structure begins at the county level. Here, members compete against

other 4-H'ers in a given category such as public speaking. The county winner then qualifies to enter the state-wide competition. Winners continue on to the elite national competition and the 4-H Congress. Judging the state and national entries is based on the member's final project and the "Record Book"—a 50-page written account recapping the entrant's 4-H career. This book lists all the 4-H'er's projects, awards and activities and two written essays.

The national 4-H Congress, a week long event for all the state winners in every 4-H program area, is held annually in Chicago. Its purpose is to provide the state winners with educational and cultural experiences.

Last November 1,700 4-H members, all state winners from the various 4-H programs, arrived at the 61st Annual 4-H Congress to begin an event-packed week.

"Pathways to the future" was the theme of this year's Congress. It reflected the 4-H goal of assisting its members to prepare for careers.

Stamina was probably the most important, if not the most useful, prerequisite that 4-H'ers brought to the Congress. From an opening assembly on a late November Sunday afternoon through a farewell dance the next Thursday evening, delegates to the 4-H Congress participated in events from the early hours of the morning until midnight.

During the day educational workshops dealt with subjects such as "Who Am I?" and "What Am I Worth To Me?" Between sessions delegates boarded buses to explore the treasures housed at Chicago's Art Institute, the beauty of the "Tiffany Exhibit" at the Museum of Science and Industry, the breathtaking view of metropolitan Chicago from a Skydeck atop the

William M. Redding (above) *greets visiting 4H members before the banquet while Ernest B. Wheeler, state winner from Clover, South Carolina* (far right), *greets company guests.*

world's tallest building, the thousands of marine species on display at the Shedd Aquarium and the history of man depicted at the Field Museum.

A lavish "Fashion Review," lunch with Miss America, numerous bands, dances, concerts, and parties were also squeezed into an already hectic schedule.

In addition to all these 4-H Congress events, the 50 state Public Speaking winners of 1982 were treated to a variety of Union Oil-sponsored outings.

Union's activities began with a Sunday night get-acquainted party.

"We try to provide the kids with a good look at Union Oil—what we are, who we are, and what we do," explained William Redding, Union Oil's regional manager of public relations and coordinator of the 4-H program.

"The kids arrived on Sunday night somewhat in awe of Union. During their entire 4-H career, they have been aware that the company has provided the materials, brochures, slide shows, county awards and all of the resources involved with public speaking projects. In fact, over the past ten years Union has provided 4-H the resources that have given two million youngsters a program aimed at improving communication skills. The first hour of our party is usually spent listening to thank-yous," Redding explains.

Various Union Oil employees assisted Redding by serving as hosts at the Sunday event. One enthusiastic Union employee who never misses this function is Gail Bordy, the 1976 Illinois National Public Speaking winner and now a retail representative at the Chicago sales division. "Every year, the 4-H Congress is like going home for me," he says. "It brings back all of the great memories and I especially enjoy getting to meet the new kids each year."

During the get-acquainted party, the youngsters watched Union's movie, "Project North Sea." A vigorous discussion followed, with Redding fielding questions about exploration, production, marketing, research and refining.

After the movie and a tasty buffet supper, the winners were presented with a Union Oil tote bag stuffed with Union souvenirs that included an atlas, key chain, pen, mirror, sewing kit, frisbee and even a first-aid kit.

On Monday afternoon, after a morning of workshops and tours, the 50-member public speaking delegation boarded buses to tour Union's Schaumburg offices and training center. Several managers began the program at the Eastern Region headquarters by giving short talks and answering questions about careers at Union Oil.

Mack Arrington, manager of training, shows visiting 4H members the equipment Union Oil uses to train dealers in the Eastern Region (above). *Arlene Leuze, customer service representative, demonstrates to 4Hers how her department handles orders from customers* (left).

Among the highlights of the tour were visits to the computer room, the communications center, and the impressive boardroom. At the training center, Mack Arrington, manager of training, and Larry Glines, dealer instructor, explained how the dealer development program is implemented and demonstrated the sophisticated video equipment used in service station island training.

On Tuesday evening, after another busy day of tours and workshops, the public speaking delegation again headed for Schaumburg, this time to attend the Annual Awards Recognition Banquet held in their honor. The 120 delegates, guests, Union employees and media were treated to a reception, dinner and program at the Hyatt Regency Woodfield Hotel.

At this time each state winner was presented with a medal of honor and the six national winners were awarded $1,000 scholarships by Robert F. Nootbaar, senior vice president of the Eastern Region.

Jodie Slatton, the National winner from Pennsylvania, told Nootbaar and the audience, "When I gave my first 4-H speech, I thought I never would complete it. But I did, and the effects were devastating. My friends and family haven't been able to shut me up since."

The 19-year old 4-H'er continued: "Those early days of training in speaking in front of people had a strong influence on my life. When I think back to how I dreaded that first speech, I think it's pretty humorous. The only thing I dread now is that I won't get to perform."

As a part of the program, Lori Bunn, National Scholarship winner from Georgia, delighted the group by delivering her winning speech. A University of Georgia freshman, Bunn exhibited the poise and confidence that come with having delivered 320 speeches and appearances on five radio programs.

The final two days of the Congress for the public speaking winners were filled with more workshops, tours, dances and frequent visits to the Union Oil suite at the Conrad Hilton. Here, rap sessions were conducted all day by Redding and various Union Oil personnel. Everything from careeers, to law, to politics to public relations was discussed.

A frequent visitor to the various Union Oil 4-H events was Thomas A. Matthews, vice president of marketing for the Eastern Region. Ironically, in 1951, the year in which Rawleigh Warner launched Pure Oil's sponsorship of the public speaking program, Matthews was moving through 4-H competition to become the first National Public Speaking Award winner.

Lou Weber, communications manager, Eastern Region, shows visiting club members the intricate company microwave communication system (above, right). *After the tour, 4H members gather at a reception before the banquet.*

"I can't think of a better way to insure our future than through the support of this program and these kids. They are definitely tomorrow's leaders and problem solvers," Matthews said.

The thank-yous and accolades to Union Oil didn't end on the final night of the Congress. For weeks after the event, letters of thanks poured into Redding's office. "It was the experience of a lifetime that I'll always remember. Without Union Oil, that experience would still be just a dream. You turned a dream into a reality..." said Lori Bond, West Virginia state winner.

And from Doug Ashworth, 1981 Georgia national winner: "In his closing remarks at the Public Speaking Awards Banquet, Mr. Nootbaar challenged the 4-H'ers 'The world needs your talents. Don't let us down.' The part Union Oil played in National 4-H Congress gave me just the motivation and desire to attempt to meet this challenge. Thank you for that..."

But possibly summing it best for the 4-H'ers was a letter from Boyd Huppert, 1981 Wisconsin state winner. "Since my return to the real world I've had a chance to reflect on what 4-H Congress meant to me. One week I boarded a bus with high expectations —expectations which I was taken far beyond. What I remember most fondly is the people, undoubtedly the friendliest and warmest group of which I've ever been a part. In one hectic week, 4-H members from across my state and country became like a family to me. There are a few special people whom I will never forget. These individuals include the people at Union Oil. The awards banquet, the Schaumburg tour, and especially the time which you spent talking with me, were special and rewarding. I never imagined I could learn so much in a week."

Kathleen S. Ellsworth, national public speaking winner from Nixa, Missouri, leads other state winners in the 4H pledge before the banquet (above). *Members of the national club tour the company's mail room during the annual Union Oil-sponsored event.*

Energy Outlook for the Next Two Decades

To the layman, energy developments during the past decade have often seemed as mysterious as the mechanics of his automobile engine, as recurrently disturbing as a ping or knock under the hood.

Pump prices suddenly roared, leveled off, then soared and stabilized once again. On the evening news, tales of oil "glut" followed stories of oil "scarcity" like the swift and irritating succession of so many 30-second commercials.

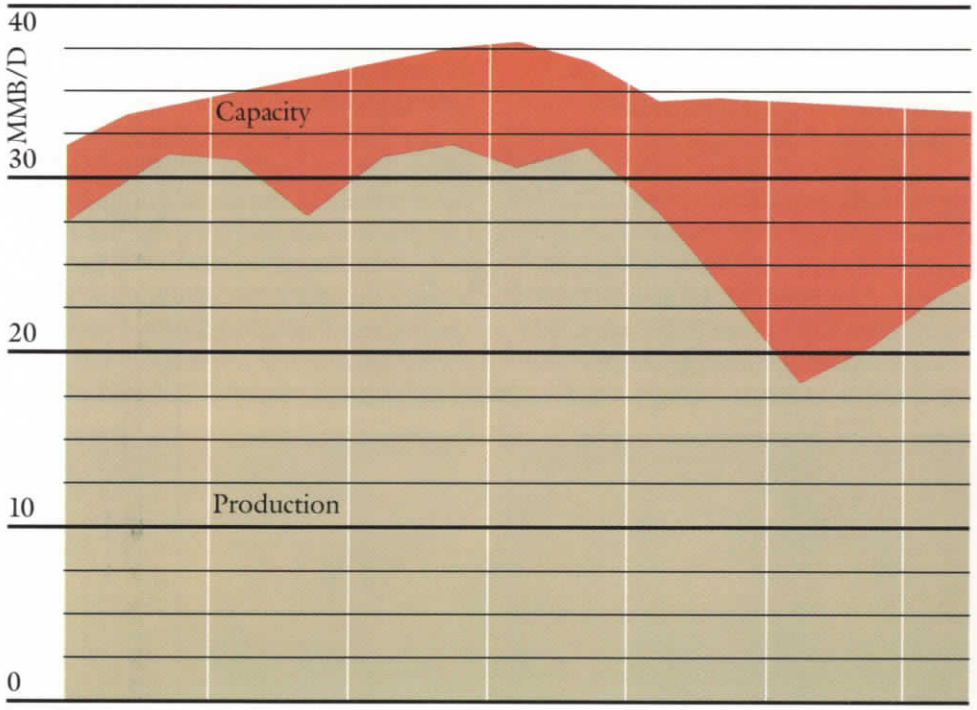
Actually, these developments of the recent past were anything but haphazard. They were all part of a traceable pattern, one which can also be projected into the future.

What happened during the '70s and why? Even more important, what is the world energy outlook for the rest of the '80s and into the '90s?

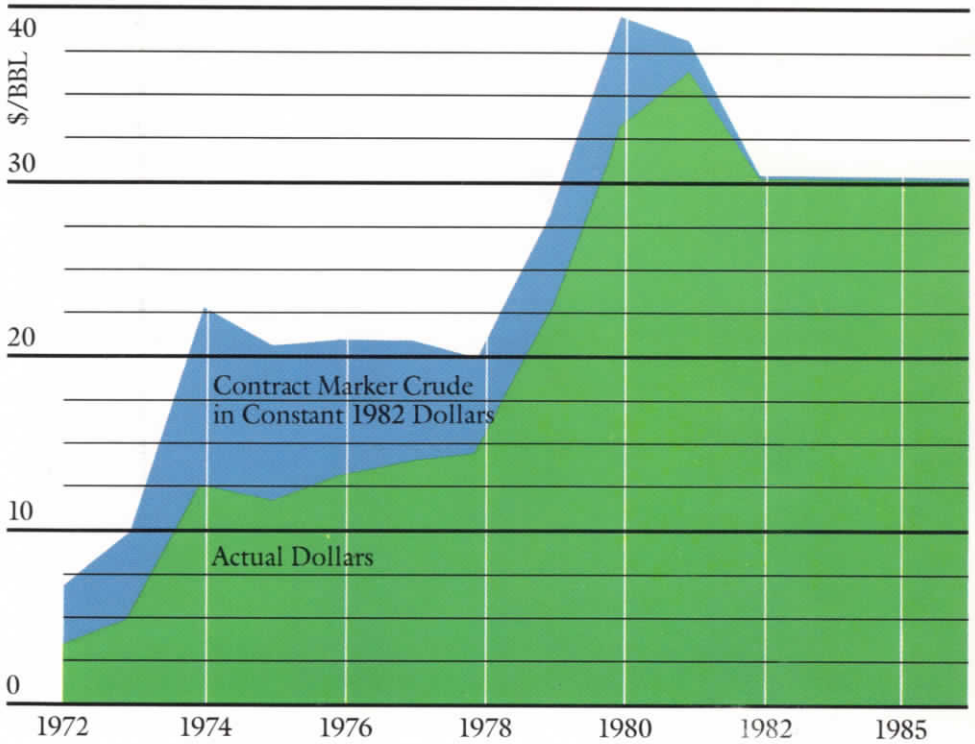
Seventy Six Magazine recently asked the economists in Union's Corporate Economics and Budgets Department to reduce their voluminous studies and complex analyses to thumbnail sketch proportions. This article summarizes their views.

Opec Production & Capacity (million barrels/day)

Chart One

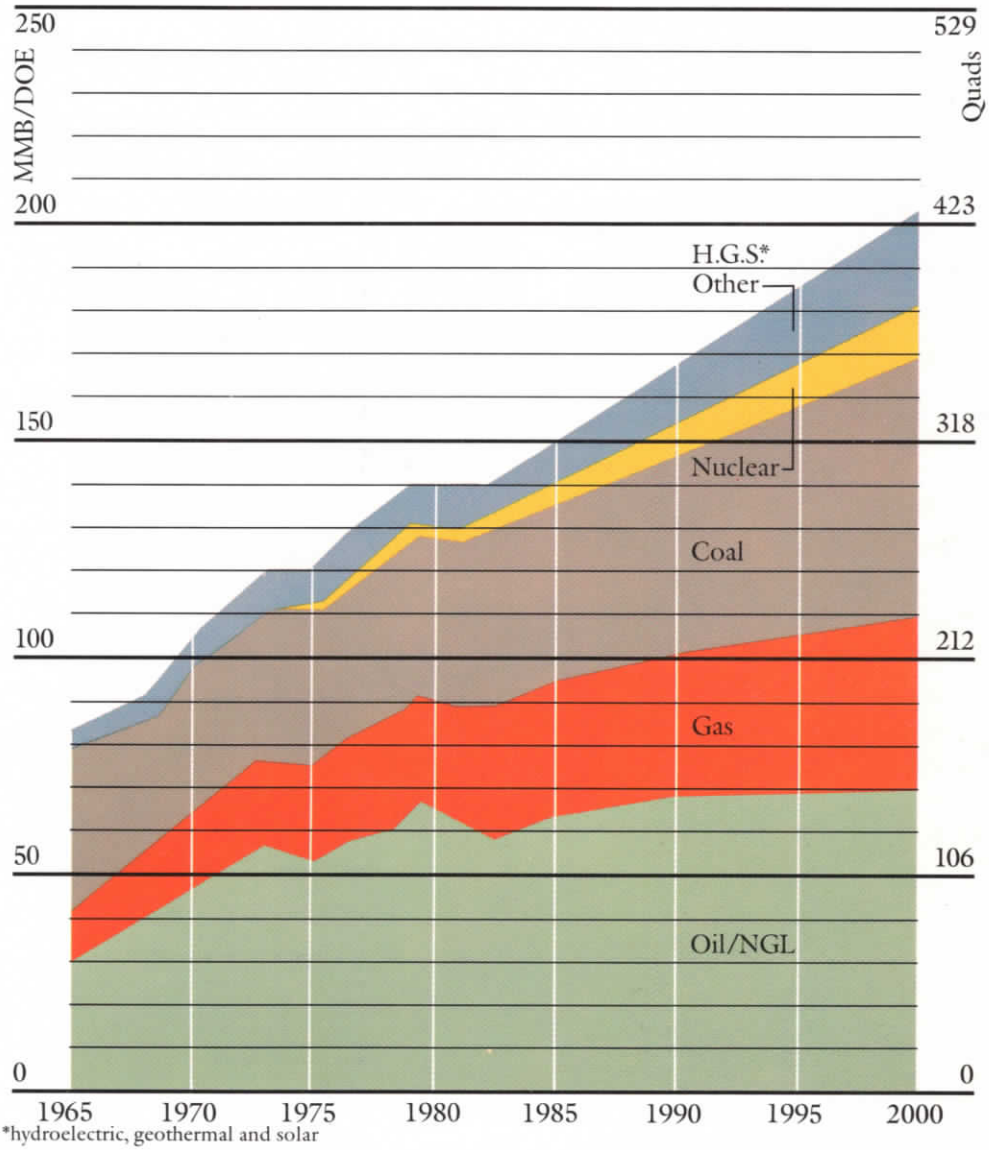


Price of Crude Oil (dollars/barrel)



World Energy Supply (million barrels/day oil equivalent)

Chart Two



*hydroelectric, geothermal and solar

In any discussion of the energy outlook for the United States, it is important to keep certain basic points in mind.

1. The United States is the world's largest user of energy. The U.S. is also the world's largest producer of goods and services. Energy and production go together, and are very important to living standards throughout the world.

2. For more than 100 years, the United States economy benefited greatly from access to cheap and readily available sources of energy and raw materials. But in the early part of the 1970s, the era of cheap energy came to an end.

3. Energy is no longer "cheap," but it is still inexpensive relative to everything else we buy. The transition from cheap energy to inexpensive energy has been painful, but the United States is now in a good position to resume strong economic growth and to free itself from the threat of future energy disruption.

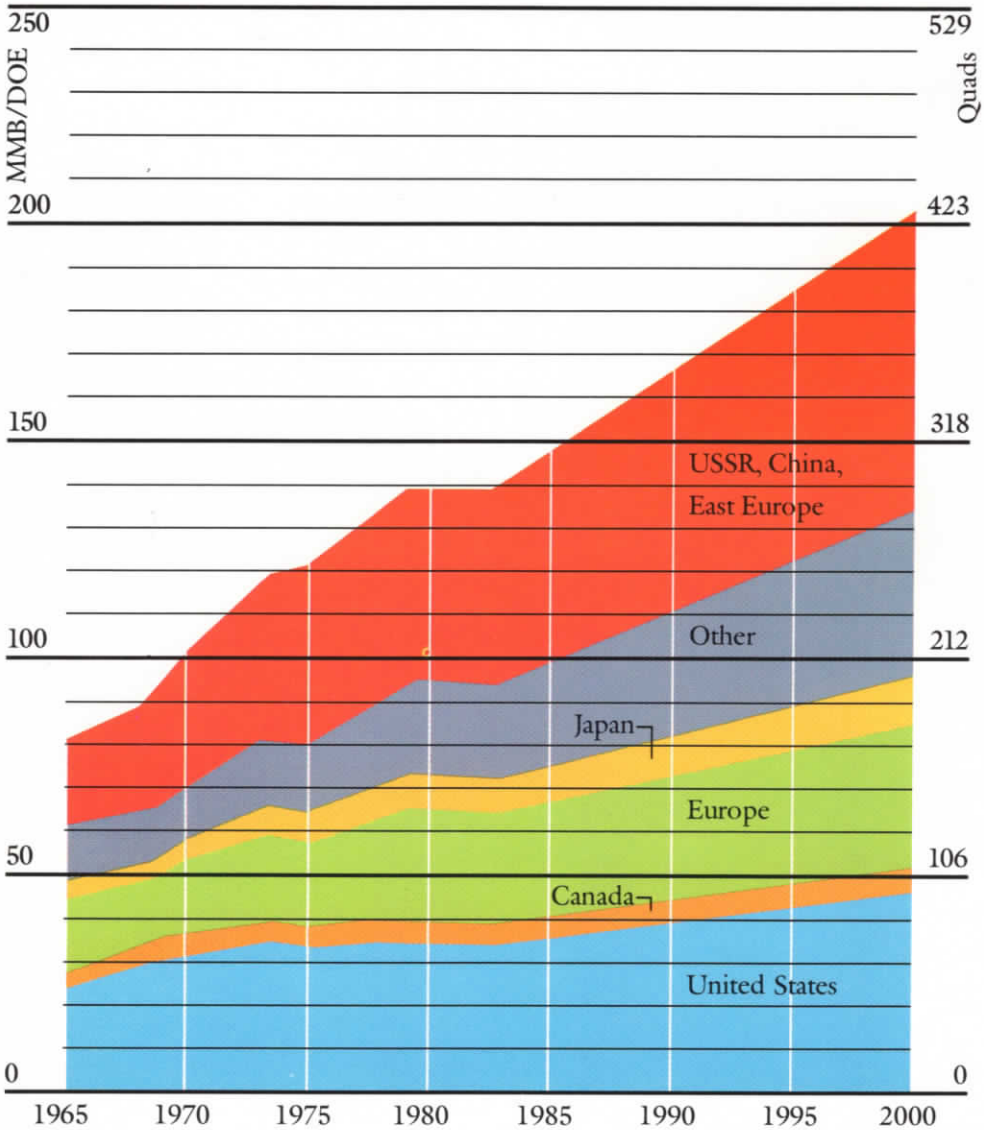
Now let's look at the historical events which have brought us to this present energy perspective.

In 1973, war broke out again in the perennially volatile Middle East. The event itself was all too familiar. But some of the results were not. For reasons having nothing directly to do with the Arab-Israeli conflict, world oil demand at that time was just beginning to push against the limits of available world oil supply. Oil prices would have risen in this situation even without the Organization of Petroleum Exporting Countries (OPEC) efforts. Members of OPEC were, however, able to further capitalize on this situation, and on the strong upward trend in world consumption of oil. In the wake of the war, they cut back production and seized control of world oil pricing.

Saudi Arabia, the key member of OPEC, owned the incremental supply. The Kingdom was in a position to command a high price for each additional barrel of oil as production from other sources strained against the limits of capacity. In 1979, Saudi Arabia again found itself in the catbird seat thanks to a severe cutback of oil production in revolutionary Iran. Not long after, Iraq, too, lost production when it went to war with Iran.

World Primary Energy Consumption (million barrels/day oil equivalent)

Chart Three



Clearly, instability in the Middle East is a major source of upward pressure on long-term oil prices. Iran and Iraq were the second and third largest OPEC producers prior to that sequence of revolution and war. Only disruption in Saudi Arabia itself could have caused greater decline in the OPEC's energy production.

The rapid price increases which occurred in response to these events of 1973 and 1979 are shown in Chart One (Price of Crude Oil, and OPEC Production and Capacity). The price of oil was approximately two dollars per barrel in early 1972. By 1980, that was the stuff of nostalgia. The price had increased to nearly $34 per barrel in 1980, an eight-fold increase in inflation-adjusted terms.

OPEC's ability to raise prices so dramatically stemmed from its power to disrupt the flow of oil by shutting in its production. But recently the cartel has become a victim of its own success.

Prior to the 1973 price hikes, world oil consumption was doubling every ten to 12 years. Consumption of other energy sources was also rising rapidly. But OPEC's skyrocketing price postings led to a sharp and predictable slowdown in oil and energy consumption. Frequent disruptions and price hikes also resulted in the stockpiling of crude oil.

(Recently, however, the incentives to hold oil inventories have gone down. Oil appears to be readily available and high interest rates make it costly to hold excess stocks, although governmental stockpiling continues).

There are strong similarities between the period following the first OPEC price reduction (1975–1978) and the present period (1981–1984). Both are periods of adjustment to previous price increases when consumers tightened their energy belts.

Today it takes less energy to increase our Gross National Product (GNP) than it did in the past. For example, before 1970 each one percent increase in the GNP required a one percent increase in energy consumption. In contrast, present estimates hold that it will take only a one-half percent increase in energy use to achieve a one percent growth in the GNP.

Consumers demand more energy-efficient products these days. Automobiles, engines, household appliances and other energy-consuming items are now being manufactured with an eye to energy economy. Capital and tech-

nological improvement are increasingly substituted for raw energy in manufacturing processes, transportation, electric generation, and commercial uses.

The steeper world oil prices have also stimulated United States and Free World energy production. From the North Slope of Alaska to Mexico and the North Sea, rapid development of production to reduce dependence on OPEC petroleum is underway at a rapid pace. And the energy companies are not just searching for sources of crude outside OPEC. They are also actively conducting research and development in other forms of energy to lessen dependence on oil.

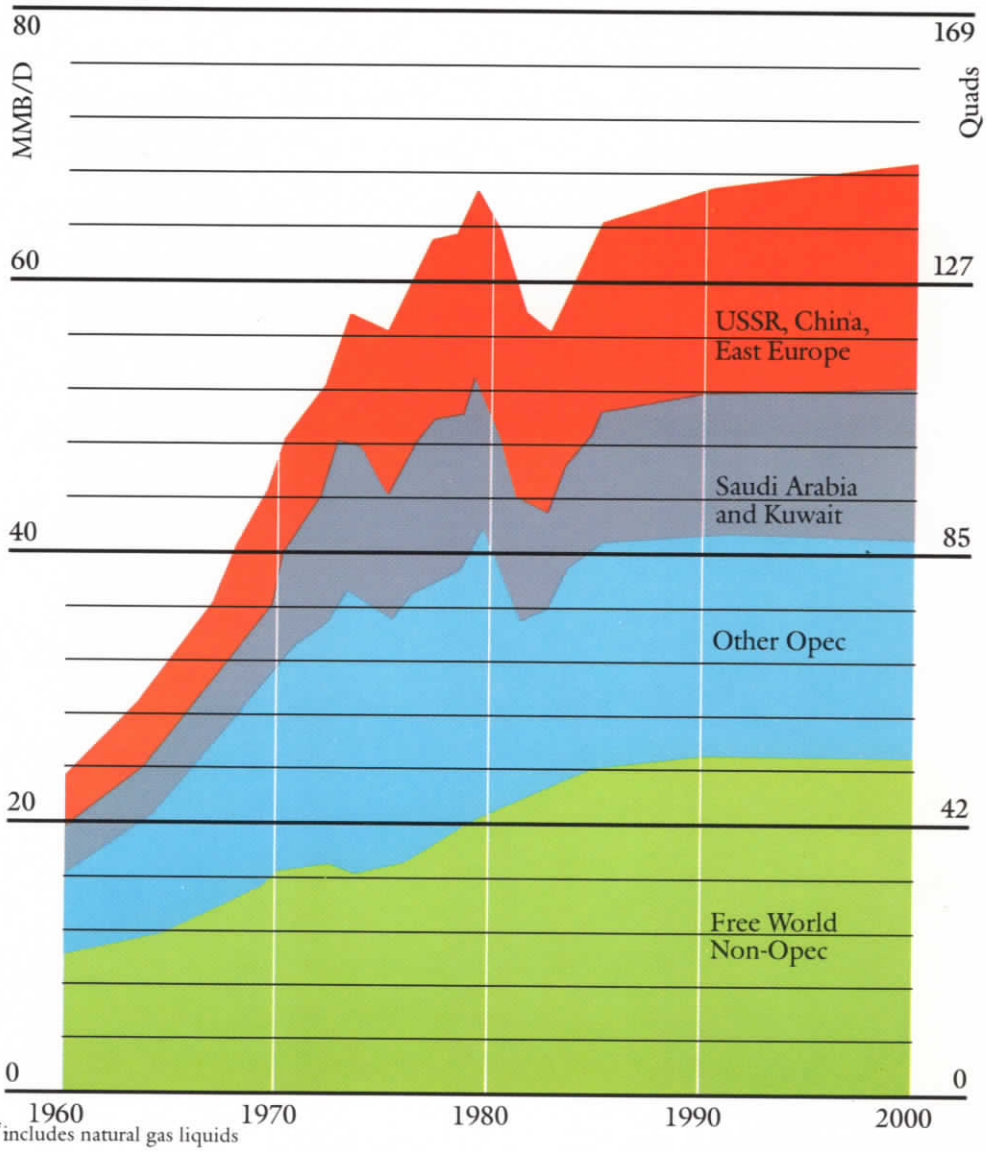
The worldwide economic recession has also reduced the demand for OPEC oil. Crude oil prices and OPEC production have come under downward pressure in 1982. In order to stabilize prices, two of the world's largest producers of crude, Saudi Arabia and Kuwait, have cut their production substantially.

The long term question is whether or not Saudi Arabia will be able to maintain control through alternative restriction and expansion of the quantity of oil it supplies to world markets. The Saudis have a difficult job in the face of increased non-OPEC oil production, reduced world oil demand and attempts by other OPEC members to increase their production in order to maintain economic development.

Most of the OPEC countries have been attempting to stay below the cartel's production ceilings. But some OPEC countries will continue to sell oil at discounts below the official prices. And others, notably Iran and Libya have been openly defiant of OPEC production ceilings.

World Oil Supply (million barrels/day)*

Chart Four



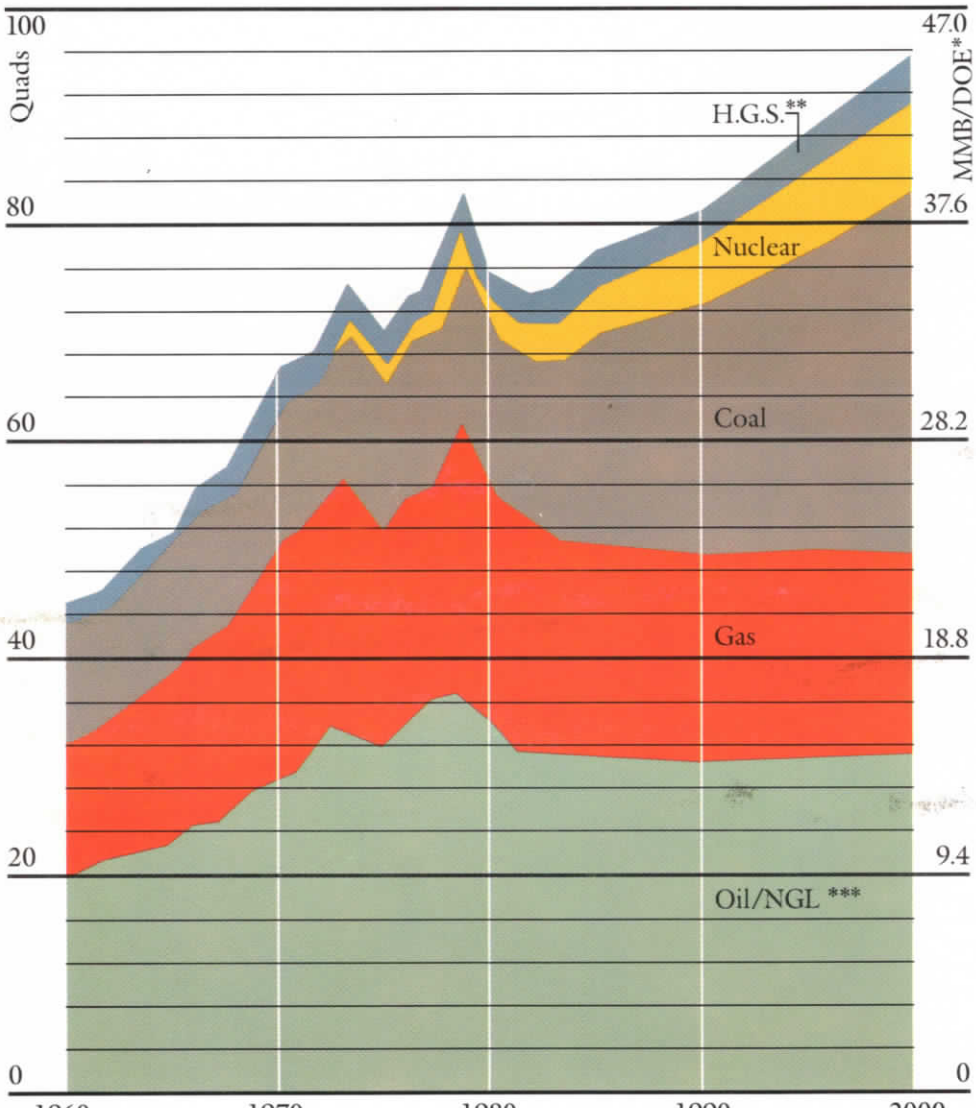
*includes natural gas liquids

Saudi Arabia has the power to increase production and force prices down further if other OPEC members don't help maintain minimum prices. But it is not clear that this type of disciplinary action will be realistic, necessary, or even effective.

OPEC would also like to persuade the energy companies that their investments for large scale production of oil substitutes and synthetic fuels will be uneconomic. Furthermore, it is in OPEC's interest to reduce energy consumers' fears about higher future oil prices so they will slow their efforts to conserve. Much will depend on world oil demands. And much will depend on the political situation in the Persian Gulf region.

United States Total Energy Consumption (quadrillion BTU/year)

Chart Five



*million barrels per day of oil equivalent **hydroelectric, geothermal and solar ***includes natural gas liquids

Following the curtailment of Iran-Iraq oil production, crude oil prices rose too high to maintain a long-run demand for OPEC oil at 25 million barrels per day (MMBD) or more, which would be a desirable level from OPEC's point of view because of its members' desired levels of revenue to support internal development. With the business cycle downturn and price-induced conservation, OPEC volume has temporarily fallen below 18 MMBD.

The Saudis are attempting to grope back toward equilibrium prices while disciplining fellow members and maintaining OPEC leadership. But this is no easy task. There is a large margin for error, and it is necessary to make continuing, long-term forecasts about crude prices. Innumerable variables and uncertainties are involved. Many alternative energy projects will continue, if only as a hedge.

Union Oil constantly revises its oil price forecasts in the light of new information and changing circumstances. The same can be said about forecasts and predictions concerning the production and consumption of crude and other energy sources. Chart Two is Union's projection of world energy supplies. It shows that the fall-off in total energy production during the current recession compares with the 1973–75 experience. The production of oil, the most widely imported and most expensive fuel, has declined, while production of other fuels has continued to increase. Chart Three shows our projections for growth in energy consumption in different regions of the world.

From 1980 to 1982, non-OPEC production increased about a million barrels a day (Chart Four, World Oil Supply), with additional barrels coming primarily from Mexico and the North Sea. OPEC production, meanwhile, dropped to an average of just under 20 million barrels per day (MMBD) in 1982, down from 23.5 MMBD in 1981 and 30 MMBD in 1979 and 1980.

Current OPEC production is 18 MMBD, but is expected to turn up soon because of increased demands during the winter season, the beginnings of global economic recovery and the ending of the drawdown in world oil inventories.

Slowly increasing demand for oil, coupled with the end of the drawdown in inventories, should tend to stabilize world crude oil markets. The Saudi campaign on behalf of its $34 benchmark price for a barrel of Arab light crude also points toward stabilization. The gap, however, between current OPEC production (18 MMBD) and its desired production (25 MMBD) and its physical limit of capacity (31–32 MMBD) will take a few years to disappear, and there should be little upward price pressure during this time period. In the absence of wider war in the Middle East, oil and gasoline prices are expected to remain stable at least through 1983. Other factors, including continued efforts to conserve and substitute for foreign oil, point to only very moderate price increases for crude and gasoline during the 1980s.

What about world oil demand?

It is expected to return to 1980 levels, but probably not until 1984 or 1985. United States energy consumption will increase as well, but our consumption of oil and natural gas as a percent of total energy consumed will decrease (as shown in Chart Five, United States Total Energy Consumption).

United States Liquid Fuels Demand (million barrels/day)

Chart Six

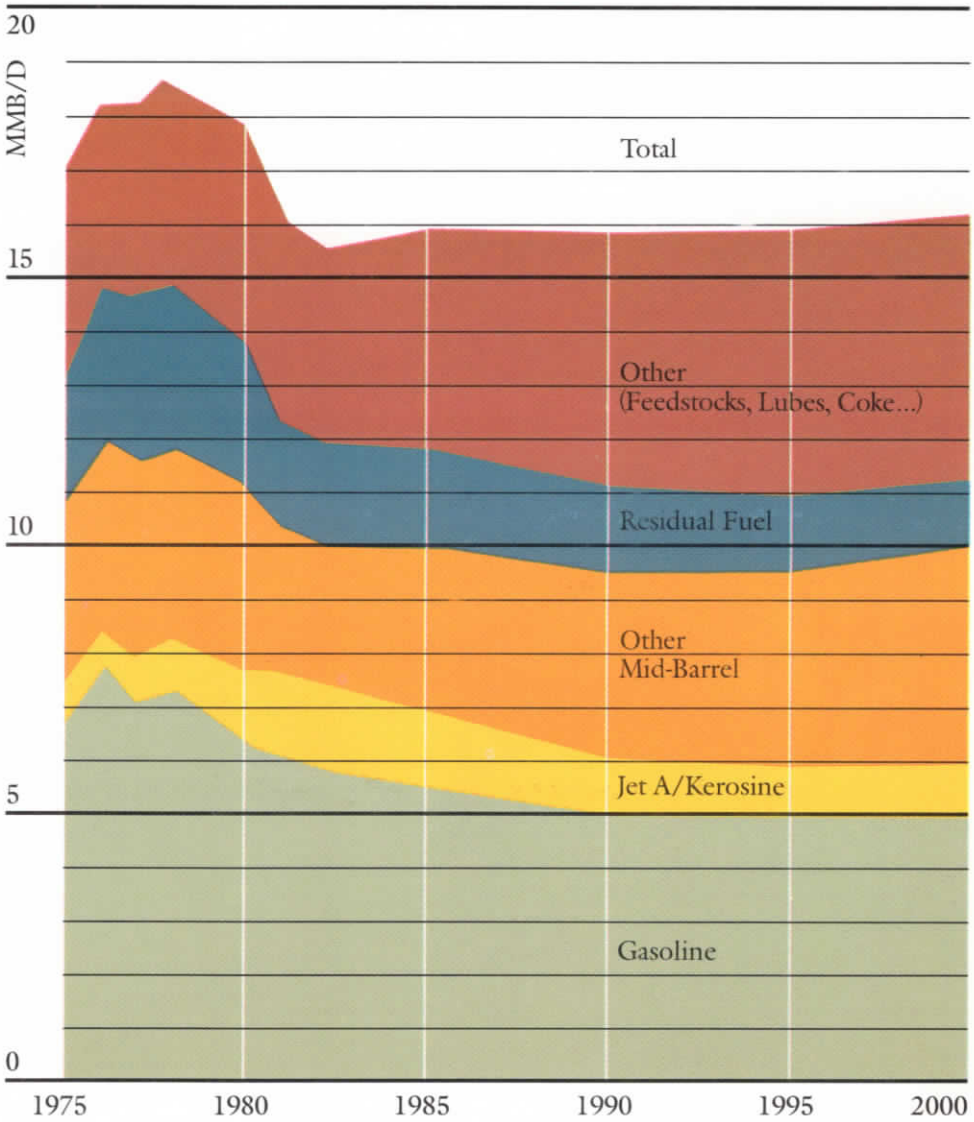


Chart Six, shows expected United States liquid fuels consumption. Transportation demands for mid-barrel (diesel and jet fuel) products will remain strong. But demand for gasoline and residual fuels will be flat, or slightly less than the 1982 levels, through the next two decades.

Finally, we can be sure that technology will continue to improve and that the search for alternative sources of energy will continue to grow through the turn of the century which will, in turn, reduce our dependence on foreign crude oil. (76)

NEW TANKERS MODERNIZE UNION'S FLEET

Story by Linda Gleason

It was with a certain amount of sadness that crew members bade farewell to Union Oil's *S.S. Pure Oil* and *Santa Paula*. During their many years of faithful service, the veteran tankers had been home to many a seaman and the origin of a colorful sea tale or two. Life will be different for those serving on the three new, state-of-the-art tankers recently added to Union's fleet to replace these and other recently retired vessels. The new ships will also accommodate need for a larger fleet.

The new tankers are the *Sierra Madre*, *Coast Range* and *Blue Ridge*. Sister ships designed to identical specifications, they were built by the National Steel Shipbuilding Company in San Diego, California.

First to join Union's fleet, in July 1981, was the *Blue Ridge*, now plying the Gulf of Mexico and Atlantic. She replaced the *Pure Oil*, which was retired in 1981 after 36 years of service, and boasts twice the tank capacity of the older ship. The *Pure Oil* first sailed in 1945 under charter for the War Shipping Administration. The *Blue Ridge*, sailing under the Union 76 Division, marine department, has been a Union Oil ship all the way. Her homeport is Port Arthur, Texas.

West Coast Shipping, a wholly owned subsidiary of Union Oil, operates the *Coast Range* and the *Sierra Madre*. They were delivered in the latter part of 1981 and sail from their homeport at Los Angeles Harbor. The two tankers not only replace the *Santa Paula*, which carried more than 100 million barrels of product during a decade of Union service, but also the *Santa Maria*, the *Avila* and the *Santa Clara*, all of which were retired from the West Coast Shipping fleet in recent years. Both of the new vessels sail the Pacific, either carrying unrefined products between the company's Los Angeles and San Francisco refineries or transporting refined products to distribution points in northern California, Oregon and Washington. Less frequently, the ships also visit Alaska and Hawaii.

The new tankers follow much the same routes as their predecessors' and carry similar products in their holds. But their capacity is greater and their modern design will make operations very different.

The loading and discharging of product via pump room systems and open gauge tanks was formerly a matter of hard physical labor executed by crewmen on deck. Now this has been moved to comfortable environs within the ships' bulkheads. Skilled officers handle the job from cargo control rooms.

"The ship is so automated now that it requires fewer people to run it," says Captain Virgil Valentine, regular relief master of the *Sierra Madre*. "Of course, it is very strenuous work," he adds, looking out over the ship's vast decks underneath a hazy sky in Los Angeles Harbor.

The new 658-foot tankers are fitted with numerous features to insure maximum safety, operating efficiency and environmental protection.

Because the tankers are petroleum-carrying vessels, they are equipped with inert gas systems to minimize the risks involved in handling such cargo. Capt. Valentine explains: "When we are discharging liquid, the unoccupied space is filled with inert gas, from a diesel burner, so that we never have an explosive atmosphere."

A sophisticated radar microwave device is used to measure the level of liquid in the ship's six sets of tanks. By timing and computing a microwave beam that bounces from the surface of the liquid back to the source, it is possible to determine how much liquid is in each tank. "This computerized system is a far cry from the old method," says Capt. Valentine. "On old ships we used a tape on a reel, and lowered it down inside the tank to measure the level."

While the S.S. Coast Range *undergoes her sea trials* (above), *Captain Virgil Valentine, skipper of the* S.S. Sierra Madre, *directs that vessel's unloading operations at Los Angeles Harbor.*

Ballast is no longer loaded into the cargo tanks. The new ships were constructed with double bottoms, keeping the ballast tanks separate from the cargo tanks.

On the bridge are several computerized navigational instruments which generate such data as the vessel's constant position and the depth of the water. There are also two separate radar tracking screens and a collision avoidance system.

Another computer is used to determine the stresses imposed on the ship by its cargo. "This is a very important piece of equipment to us," explains Capt. Valentine. "The ship is just like a big beam. At sea, it bends up and down. We have to be sure we load it properly so that we don't over stress the vessel. Prior to having this equipment we had to do all of these calculations by hand and, in some instances, it took several hours to do so."

Under normal conditions, the ship is steered from the bridge. But it is also equipped with an alternate, emergency system in the steering engine room. There is also a gyro-pilot for automatic steering.

While a sailor inspects a signaling device from the S.S. Sierra Madre's *crow's nest at L.A. Harbor* (facing page, bottom), *the ship takes on cargo at the company's dock* (facing page, top). *The* S.S. Blue Ridge *prepares to leave the San Diego dock where she was built* (above). *View of the tank farm at L.A. Harbor from the* Sierra Madre's *bridge* (bottom).

The new Union ships were all designed for self-sufficiency. Steam is used to generate the ships' electricity. They all have their own sewage treatment systems. Each tanker also has a machine shop where repairs can be made on virtually any equipment on board.

In addition to sophisticated equipment, the ships also provide the crew with the comforts of home. Fully-equipped galleys serve three hearty meals a day. When the crew members are off duty they can relax and watch television or the latest movies on video recorders.

Sailing on the *Sierra Madre* and her sister ships is clearly different from life aboard their predecessors. But years from now, when the time comes to retire even these extremely seaworthy marvels of modern technology, it will again be with a hint of sadness that crew members bid them farewell. ⑯

THE WORLD AROUND US

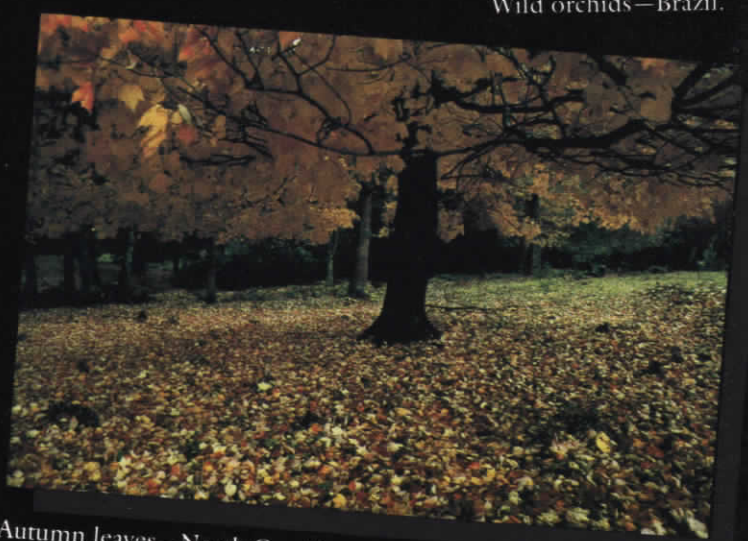
Third annual Seventy Six magazine photo contest

Dawn—Mississippi River, Arkansas.

Khmer refugees—Gulf of Siam.

Wild orchids—Brazil.

Rainbow—Los Angeles.



Autumn leaves—North Carolina.

Photos by Sergio Ortiz

The world around us affects everyone differently. Sometimes commonplace things can be viewed in different ways if one only stops to look and consider. A photograph is one of the best ways to actually see sometimes mundane things in a different light.

With that in mind, the third annual *Seventy Six Magazine* Photo Contest will have "The World Around Us" as a theme. Unlike other years, we will limit the contest to color photographs only. Last year, for our second annual contest, we were overwhelmed by the number of entries which depicted the theme of "Energy and its Uses."

This year we will select the best entries depicting the world we live in.

Employees and retirees of Union Oil (its subsidiaries and divisions), plus their spouses and children, are all eligible to win the grand prize of $400.

The seven highest award-winning photographs will be announced and published in the May/June issue of *Seventy Six.*

HOW TO ENTER:

Number of entries. There will be one category—color. You may submit up to three entries. For example, one color transparency and two color prints add up to three color entries.

Mounting and labeling. Full 8 x 10 prints can be submitted unmounted, 5 x 7 prints must be attached to 8 x 10 single-weight mounting boards. No framed prints will be accepted. For your protection, slides should be mailed in the boxes that come with developed film, glassine envelopes or plastic mounts. Fill out the entry form; then tape it to the back of each print. Do not write on the back of prints. Write your name and title of the entry on each slide mount. Each entry must be accompanied by a completed entry form or a facsimile of the form.

Mailing. Mail entries in Manila clasp envelopes, including your return address and entry forms. Include any cardboard necessary to protect photographs.

Liability. All entries are to be submitted with the understanding that neither Union Oil Company nor any of its employees will be responsible or liable for loss or damage. Entries may be held beyond the publication date of the contest, but we will attempt to return all entries.

Right to publish. Union Oil retains the right to publish or republish any photograph submitted in the contest. Entrants waive any claims for royalty payments or copyright infringement.

Model release. Contestants must be able to furnish a written "consent to use" statement upon request for recognizable people appearing in the photographs.

Judging. Three professional photographers from outside the company will judge the contest. Their decision will be final.

Deadline. All entries must be mailed by March 1, 1983.

Awards.

Grand Prize	$400
1st place	$200
2nd place	$100
3rd place	$ 50
Honorable Mention	$ 50
Honorable Mention	$ 50
Honorable Mention	$ 50

Entry Form

Send to: Editor, M-17
Union Oil Center
Los Angeles, CA 90051

Name:

Job Title/relationship to employee:

Division/Subsidiary:

Office Location:

Home Address: Zip Code:

Phone: (Network)

Title of Entry: Print Slide

I have read and agree to the official rules of the contest.
Signature: Date:

If under 18, signature of parent or guardian:

REFINERY AT WORK

In the long gone days of relatively simple oil refining and producing methods, Southern California underwent what in these more hectic and turbulent days would be known as an "oil boom."

After careful consideration, a small company, no more than 25 years old, decided to expand its refining capabilities and purchased a 200-acre site at the Los Angeles harbor.

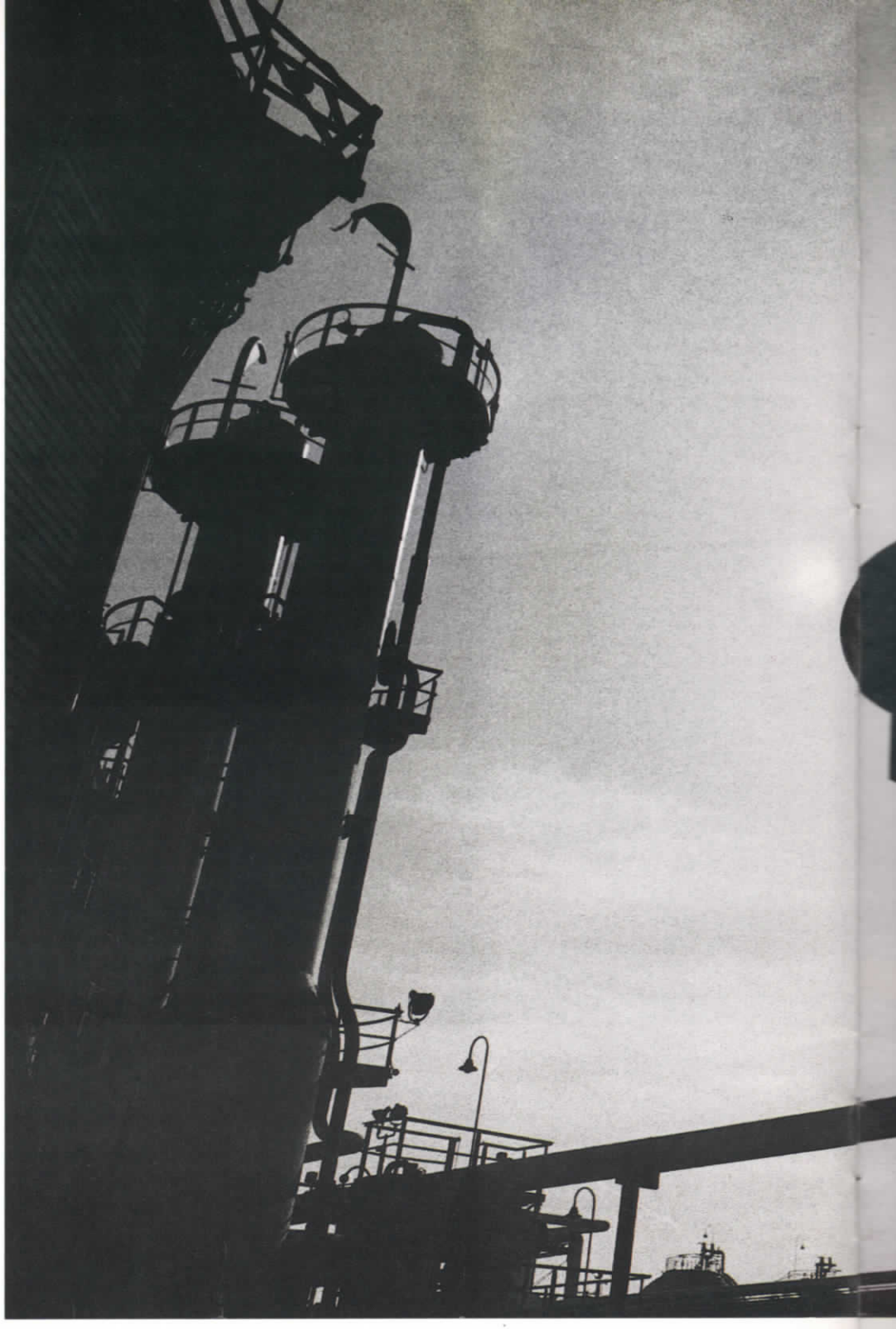
The board of directors of the fledgling energy firm—Union Oil Company—approved the sale of 50,000 shares of treasury stock to provide funds for the acquisition and development of the property.

Today, this complex is a long shot from the rather humble refinery which began construction in 1916. The Union Oil Los Angeles Refinery encompasses 424 acres and is capable of processing more than 100,000 barrels of crude oil every day.

The plant boasts some of the best equipment available in the industry, most of it developed by engineers and scientists at the company's Fred L. Hartley Research Center in Brea, California.

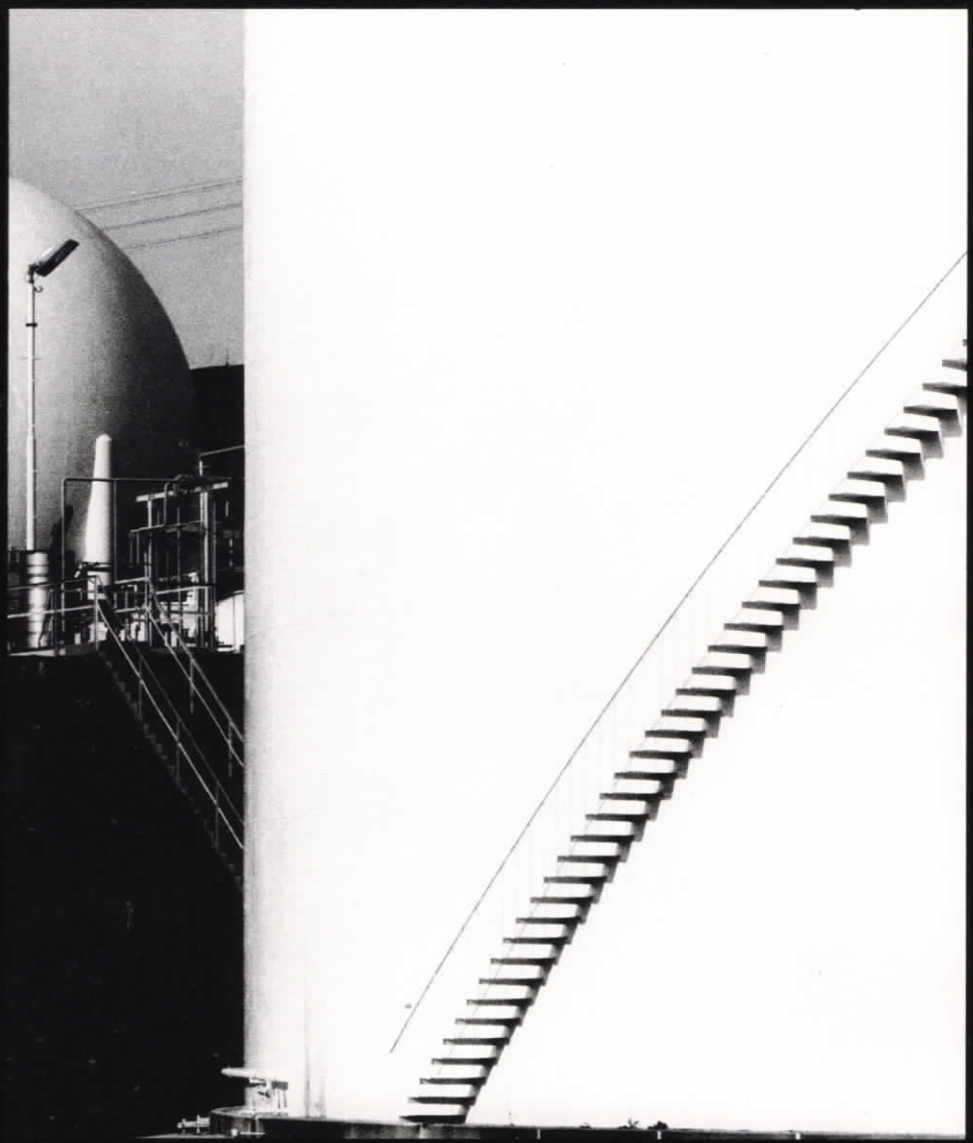
The Union Oil workers who inaugurated the refinery in 1919 might have a difficult time understanding today's super sophisticated refining techniques, but they would certainly comprehend the refinery's unchanging mission, that of producing high-quality products for the consumer.

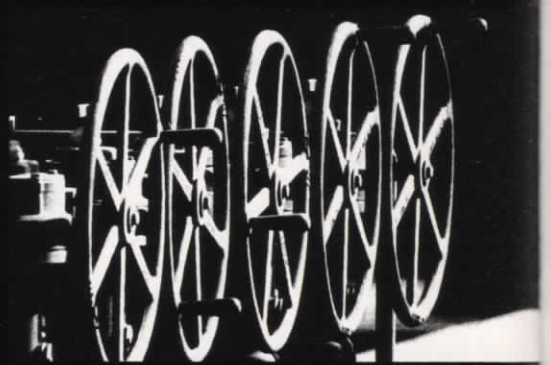
The following photos illustrate the unique and sometimes abstract visual patterns of a refinery while at the same time showing the delicate and highly technical role of an oil processing facility in today's complex energy world.



Photos by Ray Engle and Sergio Ortiz

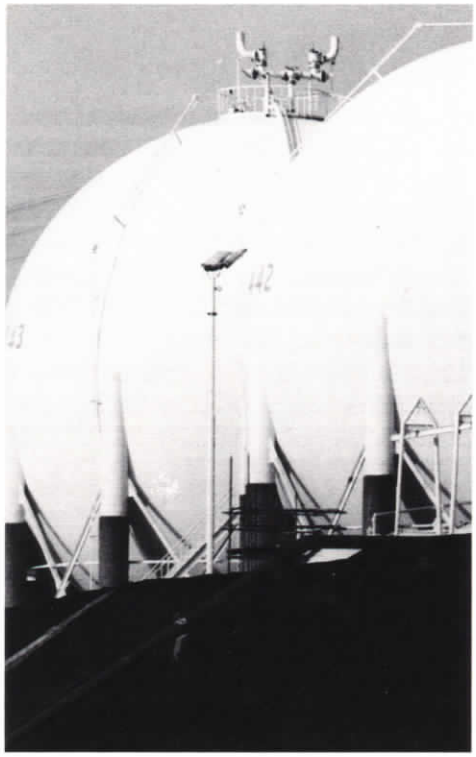
With the refinery towers in the background, the sun peaks over the south blowdown line that stretches over that part of the Union Oil Los Angeles Refinery, one of the company's busiest refining centers.

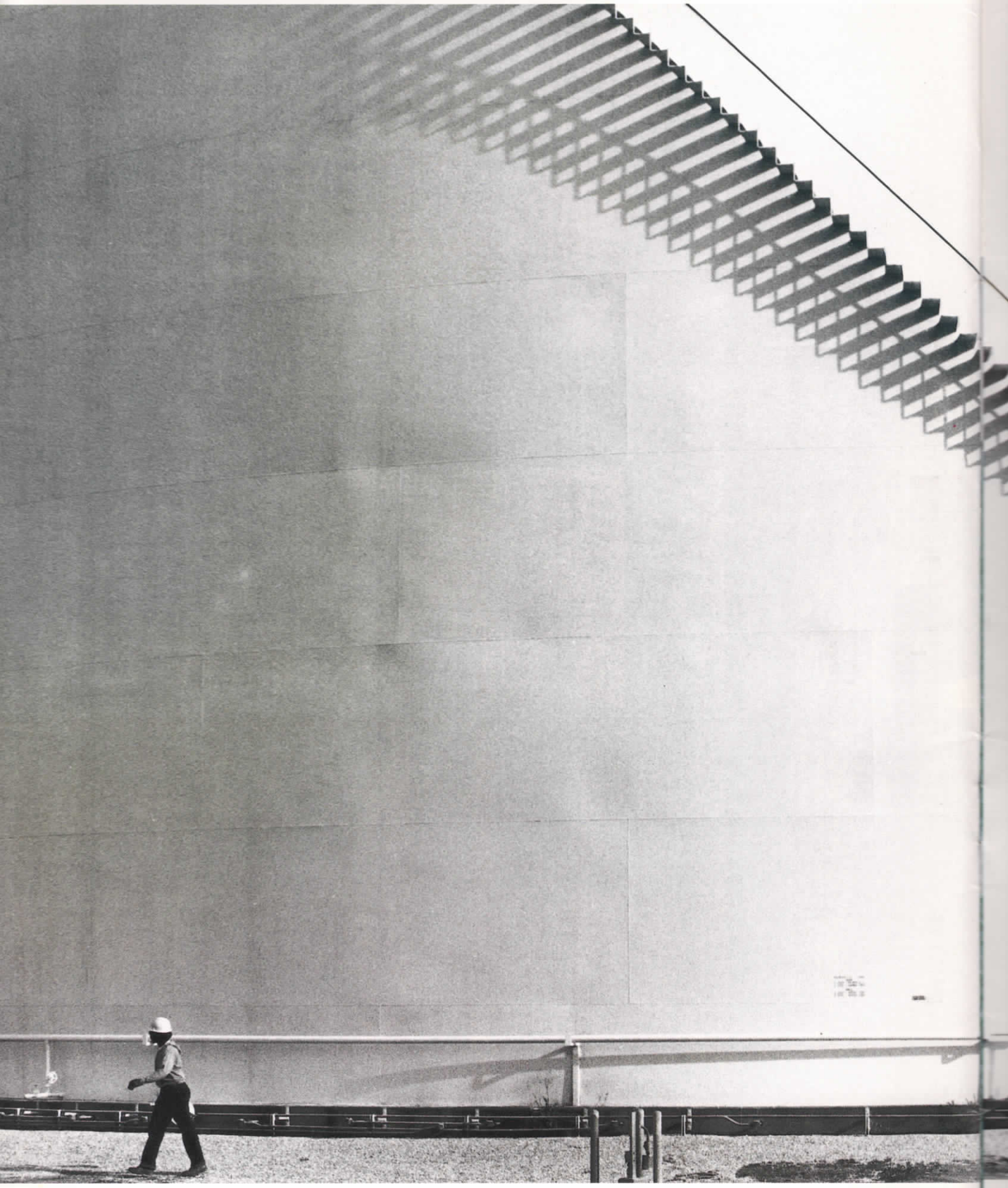




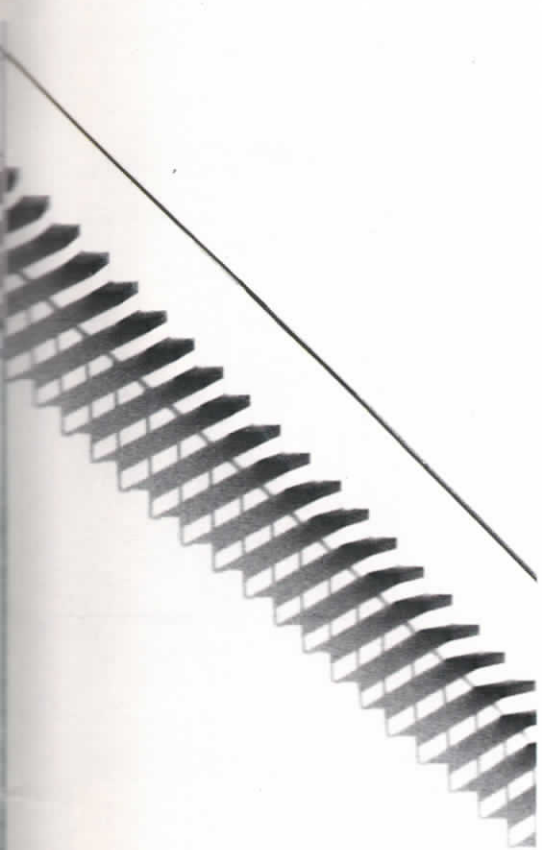
Photographed from a long distance, these towers at the Los Angeles Refinery play an important role in the refining process of the waterfront plant which has been in existence since the first part of the century.

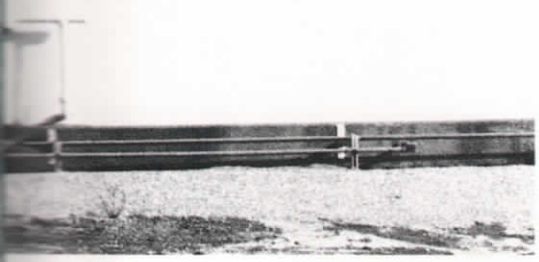
The tank farm on the west end of the refinery is an interesting study in patterns (left) *where storage tanks contrast sharply with cylindrical butane spheres. A manifold* (below) *sidelighted by the afternoon sunlight is essential in the transportation of many crude oils or refined products. The complexity of today's refining methods is reflected in the many lines and patterns of the L.A. Refinery towers made distorted by a long distance telephoto lens* (bottom).

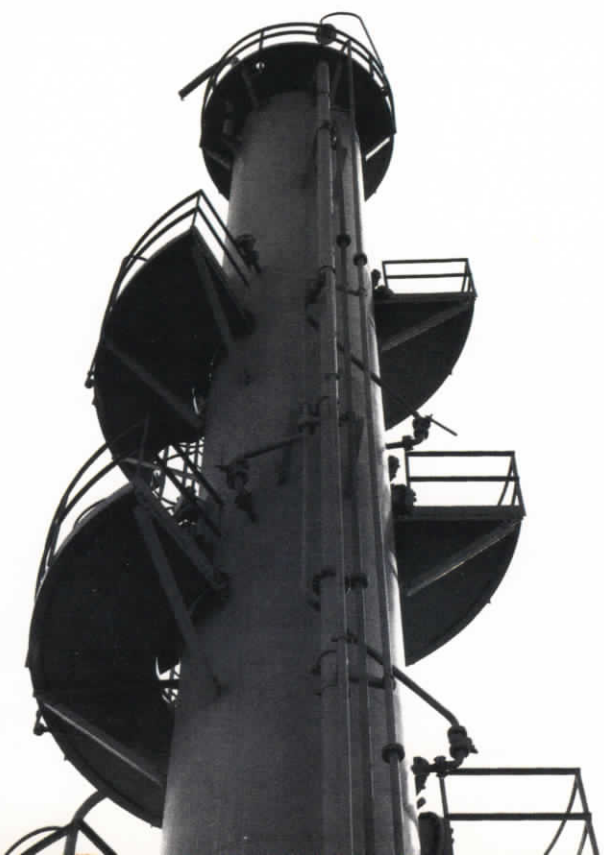




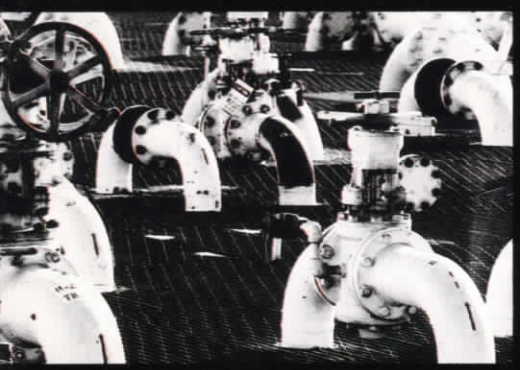
The Union Oil Los Angeles Refinery's tanks 275 and 276 frame the complex's U-100 unit in the background (below). *A worker* (left) *is dwarfed by a huge cryogenic tank that stores butane and a refining tower is contrasted against a late afternoon sky* (bottom).

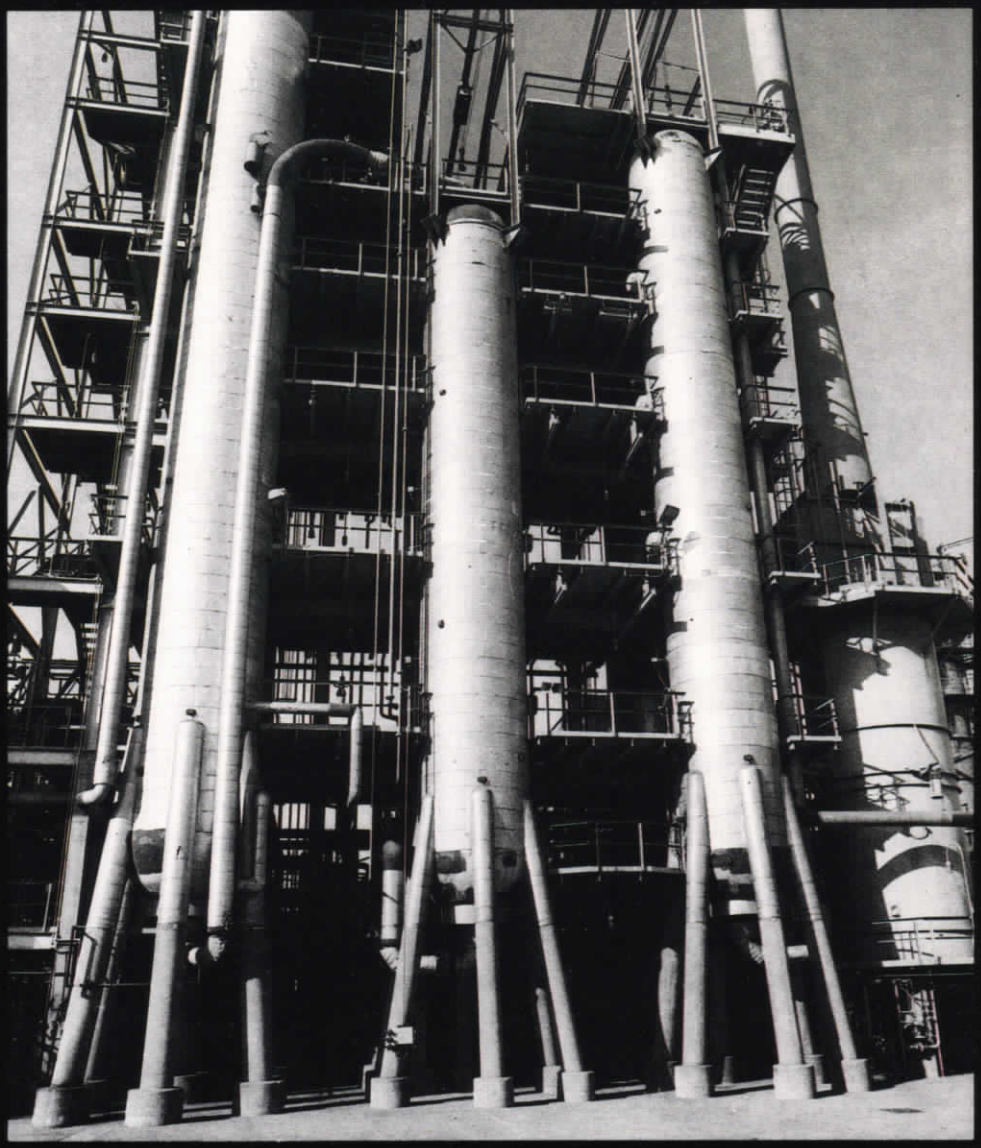






A Union Oil innovation, the Unicracking reactors and heaters (right), *are a company patented refining method that has been licensed for use in refineries throughout the world. Part of the bulk operations of refined oil shipping, these manifolds* (below) *are situated on what is called "the dance floor." Storage tanks in the refinery grounds* (bottom) *provide a study in composition and form.*





Service Awards

CORPORATE

June 1982

10 YEARS **Gary W. Sproule,** New York, N.Y.

November 1982

35 YEARS **Gerald L. Bearden,** Union Oil Center

30 YEARS **Iva K. Bonar,** Union Oil Center
Oren W. Owen, Union Oil Center

25 YEARS **Margaret Deshko,** Union Oil Center

20 YEARS **Jerome S. Roche,** Union Oil Center

10 YEARS **Gordon B. Linton,** Union Oil Center

5 YEARS **Troy A. Drake, Jr.,** Atlanta, Ga.
Ellen J. Quinn, Schaumburg, Il.
Rhoda M. Unger, Union Oil Center

December 1982

35 YEARS **Ray N. Fleck,** Union Oil Center

20 YEARS **Charles L. Weishaup,** Union Oil Center

5 YEARS **Thomas F. Hairston,** Washington, D.C.

UNION SCIENCE AND TECHNOLOGY DIVISION

November 1982

5 YEARS **James P. Barber,** Brea, Ca.
Edward J. Frey, Brea, Ca.
David R. Watkins, Brea, Ca.

December 1982

40 YEARS **William J. Baral,** Brea, Ca.

30 YEARS **Robert E. Elliott,** Brea, Ca.

25 YEARS **Jack L. Porter,** Brea, Ca.

20 YEARS **Dorothy J. Summers,** Brea, Ca.

5 YEARS **Charles R. Williamson,** Brea, Ca.

UNION REAL ESTATE DIVISION

December 1982

40 YEARS **Joyce A. Gordon,** Union Oil Center

UNION 76 DIVISION

November 1982

35 YEARS **Johnny H. Bird,** Albany, Ga.
Douglas H. Garrett, Beaumont Refinery
Wilburn B. Peoples, Beaumont Refinery

30 YEARS **Harry F. Buerger,** Schaumburg, Il.
Bert E. Crego, Chicago Refinery
Barker H. Davis, Schaumburg, Il.
James Dziak, Chicago Refinery
Mary L. Faehnrich, Schaumburg, Il.
Kevin J. Finnegan, Miami, Fl.
Bettie J. Kyle, Houston, Tx.
Williard J. Langenohl, Milwaukee, Wi.
Charles L. McBride, Beaumont Refinery
Frank R. Pullman, Chicago Refinery
Waymon H. Smith, Beaumont Refinery
Ronald L. Sticker, Beaumont Refinery
Carl C. Watson, Columbus, Oh.

25 YEARS **Thomas J. Lenihan,** Superior, Wi.

20 YEARS **Frank E. Williamson,** Columbus, Oh.

15 YEARS **Edward C. Brasher,** Birmingham, Al.
Dorothea A. Brieschke, Schaumburg, Il.
Richard F. Fountain, San Francisco, Ca.
David C. Gross, Schaumburg, Il.
Michael A. Hill, Dayton, Oh.
Bettye J. Lamprecht, Schaumburg, Il.
Gordon A. McLean, Schaumburg, Il.
Nancy K. Morales, San Francisco, Ca.
Ann E. Quarfoot, Schaumburg, Il.
Blair J. Tuckerman, Schaumburg, Il.

10 YEARS **Angelo Cooper,** Miami, Fl.
Nancy A. Ramos, San Francisco, Ca.
Phillip J. Ricci, Nederland, Tx.
Jean K. White, Minneapolis, Mn.

5 YEARS **Robert D. Bryan,** Nederland, Tx.
Sylvia A. Hill, Wildwood, Fl.
William E. Mounts, Jr., Beaumont Refinery

December 1982

40 YEARS **Gwindell F. Bagley,** Atlanta, Ga.

35 YEARS **Raymond L. Bartlett,** Schaumburg, Il.
John A. Creswell, Beaumont Refinery
Harold R. Selman, Beaumont Refinery

30 YEARS **John Ferenc,** Minneapolis, Mn.
Cecil R. Gallien, Beaumont Refinery
Henry J. Hopkins, Beaumont Refinery

25 YEARS **Irene L. Cole,** Superior, Wi.
Terry W. Dedrick, Schaumburg, Il.
Nicholas J. Mayer, Schaumburg, Il.
Davis C. Overton, Schaumburg, Il.

20 YEARS **Richard D. Boult, Jr.,** Lafayette, La.
Joseph B. Pajak, Jr., Pittsburgh, Pa.

15 YEARS **Daniel M. Brock,** Wildwood, Fl.
Andrew R. Campbell, Schaumburg, Il.
Rial N. Greenman, Schaumburg, Il.
Fred A. Hammer, Chicago Refinery
Peter Krol, South Holland, Il.
Kennith W. Lewis, Beaumont Refinery
Donald J. Scensny, Schaumburg, Il.

10 YEARS **Policarpio H. Cabang,** San Francisco, Ca.
Carolina L. Cunanan, San Francisco, Ca.
Colleen M. McConnell, San Francisco, Ca.
Carleen A. Minaldi, Nederland, Tx.
Nancy A. Murray, San Francisco, Ca.
Richard G. Plywacz, Chicago Refinery
Leigh C. Rafferty, Schaumburg, Il.

5 YEARS **John F. Falvey, Jr.,** Nederland, Tx.
Joyce L. Harrison, Schaumburg, Il.
Durand E. Mikkelson, Schaumburg, Il.
John J. Tormey, South Holland, Il.

UNION OIL AND GAS DIVISION

November 1982

45 YEARS **Edward C. Melrose, Jr.,** Houston, Tx.

40 YEARS **Sherman Ditch,** Lafayette, La.

30 YEARS **Donald D. Martin,** Santa Paula, Ca.
Robert J. Morton, Houston, Tx.

25 YEARS **Richard M. Giroir,** Houma, La.
Norma J. McKelvie, Los Angeles, Ca.

20 YEARS **Judy L. Bailey,** Anchorage, Ak.
Jack F. Bonham, Worland, Wy.
Cecil P. Eschete, Houma, La.
Shirley A. Tillery, Bakersfield, Ca.

15 YEARS **George H. Covington, III,** Midland, Tx.
Donna K. Crenwelge, Santa Fe Springs, Ca.
Linda K. Hanes, Olney, Il.

10 YEARS **David B. Harbur,** Los Angeles, Ca.
Charles C. Larson, Cutbank, Mt.

5 YEARS	**Johnny D. Allen,** Ardmore, Ok. **Manuel M. Acos,** Orcutt, Ca. **Michael C. Blundell,** Ventura, Ca. **Larry E. Bullard,** Taft, Ca. **Kenneth W. Duncan,** W. Liberty, Il. **Gunter R. Dzik,** Ventura, Ca. **Margaret George,** Houston, Tx. **Christi V. LaFortune,** Los Angeles, Ca. **Richard N. Mitchel,** Clay City, Il. **Stephen J. Novak,** Clay City, Il. **Dennis K. Simila,** Orcutt, Ca. **Celia L. Thurman,** Midland, Tx. **Mary E. White,** Ventura, Ca.
December 1982	
35 YEARS	**Milton E. Epperson,** Bakersfield, Ca. **Elwood L. Hisey,** Midland, Tx.
30 YEARS	**Elvis W. Bridges,** Houston, Tx. **Roy H. Lane,** Midland, Tx. **Clyde E. Leach,** Coalinga, Ca. **Delbert E. Walrath,** Taft, Ca.
25 YEARS	**Donald J. Arceneaux,** Houma, La. **Billy L. Burns,** Houma, La. **Jerry J. Theriot,** Houma, La.
20 YEARS	**Ray M. Barnds,** Ventura, Ca. **Philip R. Goudeau,** Houma, La.
15 YEARS	**Howard J. Dion,** Houma, La. **William V. Rovira,** Houston, Tx. **Bob C. Smith,** Anchorage, Ak.
10 YEARS	**Carolyn C. Dickinson,** Midland, Tx. **Richard T. Echlin,** Ventura, Ca. **John F. Godfrey,** Clay City, Il. **Joseph E. Gonzales,** Santa Fe Springs, Ca. **Nolan J. Lirette,** Houma, La. **Charles L. Roberts,** Ventura, Ca. **Neil D. Shores,** Lafayette, La.
5 YEARS	**Debra L. Castruita,** Ventura, Ca. **Joseph D. Falgout,** Houston, Tx. **Norman L. Gilmont,** Anchorage, Ak. **Daniel G. Grimes,** Orcutt, Ca. **Karen K. Hedges,** Houston, Tx. **Reid L. Johansen,** Orcutt, Ca. **Kathy L. Miller,** Houma, La. **Jimmy A. Millican,** Houston, Tx. **James S. Minvielle,** Lafayette, La. **Michael F. Portuesi,** Bakersfield, Ca. **Larry L. Richards,** Houston, Tx.

UNION GEOTHERMAL DIVISION

November 1982	
10 YEARS	**Allen Inman,** Big Geysers, Ca.
December 1982	
5 YEARS	**Gerald Hamblin,** Big Geysers, Ca. **Ernesto Trujillo,** Imperial Valley, Ca.

UNION CHEMICALS DIVISION

November 1982	
30 YEARS	**Albert Moreno,** Rodeo, Ca.
20 YEARS	**Donald McCormick,** Arroyo Grande, Ca. **George B. Smith,** Charlotte, N.C. **Laurene A. Szymkowiak,** Schaumburg, Il.
15 YEARS	**Randall L. Culler,** Charlotte, N.C. **Gerald Thorpe,** Kennewick, Wa.
10 YEARS	**Frederick L. Barber,** Wilmington, N.C. **Dana N. Sherrill,** Charlotte, N.C. **Robert Waddell,** Kenai, Ak.
5 YEARS	**Randell Anderson,** Kenai, Ak. **Tony L. Bush,** Tucker, Ga. **Cky Carrigan,** Kenai, Ak. **Ray Conklin,** Kenai, Ak. **Nancy L. Embach,** Schaumburg, Il. **Terry Hall,** Kenai, Ak. **Michael Knight,** Kenai, Ak. **Wayne Nelson,** Rodeo, Ca. **James Ranes,** Union Oil Center **George Spor,** Kenai, Ak. **Bennie Thomas,** Summit, Il.
December 1982	
15 YEARS	**Keith D. Bartz,** St. Paul, Mn. **Billy H. Bentley,** Charlotte, N.C. **William F. Murphy,** Schaumburg, Il.
10 YEARS	**Philip Dedge,** Union Oil Center
5 YEARS	**Janet J. Benhart,** Rolling Meadows, Il. **Richard Birch,** Kenai, Ak. **Bruce Blume,** Kenai, Ak. **Simon Carlough,** Kenai, Ak. **Robert C. Chlapecka,** Bridgeview, Il. **Randall Cronce,** Kenai, Ak. **Raymond Garcia,** Kenai, Ak. **David W. Helms,** Charlotte, N.C. **Donald Munson,** Kenai, Ak. **Gregory T. Simpson,** East Providence, R.I. **Donald Slaughter,** Kenai, Ak. **J. F. Whiteside,** Kenai, Ak.

UNION INTERNATIONAL OIL DIVISION

November 1982	
20 YEARS	**Edwin C. Robinson,** Los Angeles, Ca.
15 YEARS	**Edwin Tibayan,** Los Angeles, Ca.
5 YEARS	**Philip J. Beck,** London, England **Alastair D. Gray,** Sandnes, Norway **Brian T. Simmons,** Aberdeen Scotland **Ian Wilton,** The Hague, Netherlands

UNION OIL COMPANY OF CANADA LTD.

November 1982	
30 YEARS	**John Taylor,** Calgary, Alberta
10 YEARS	**Todd Brown,** Calgary, Alberta
5 YEARS	**Dewey Holt,** Calgary, Alberta **James Pederson,** Red Earth, Alberta
December 1982	
5 YEARS	**Stanley Crothers,** Calgary, Alberta **Marion Towers,** Calgary, Alberta

UNION ENERGY MINING

December 1982	
5 YEARS	**William S. Victor,** Casper, Wy.

MOLYCORP, INC.

November 1982	
40 YEARS	**Charles Baumgardner,** Washington, Pa.
15 YEARS	**Dalio Lujan,** Questa, N.M. **Robert Martinez,** Questa, N.M.
10 YEARS	**Juan Duran,** Questa, N.M. **Dennis Foster,** Mountain Pass, Ca. **John Gonzales,** Questa, N.M. **Edward Martinez,** Questa, N.M. **Toney Martinez,** Questa, N.M. **Andres Montoya,** Questa, N.M. **Rick Sheumaker,** York, Pa. **Thomas Sisneros,** White Plains, N.Y.
5 YEARS	**John Appleman,** Louviers, Co. **Leland Gabriel,** Louviers, Co. **Mark Poole,** Louviers, Co. **Danny Williams,** Louviers, Co.
December 1982	
15 YEARS	**Donicio Duran,** Questa, N.M. **Albert Mascarenas,** Questa, N.M. **Weldon Poff,** York, Pa. **Virginia Starquist,** Questa, N.M. **Vicente Trujillo,** Questa, N.M.
10 YEARS	**Robert Ellis,** Denver, Co. **Steven Ortiz,** Mountain Pass, Ca.

POCO GRAPHITE, INC.

November 1982	
10 YEARS	**Robert Brown,** Decatur, Tx. **Donald Henson,** Decatur, Tx.
5 YEARS	**Fred Maloney,** Decatur, Tx.
December 1982	
15 YEARS	**Lawrence Simon,** Decatur, Tx.
5 YEARS	**Lee Hail,** Decatur, Tx.

JOBBERS AND DISTRIBUTORS

November 1982	
30 YEARS	**Belcher Oil Company,** Brent, Al.
25 YEARS	**Elmer Carls Oil Co.,** Hinkley, Il. **Dobbins Oil Co.,** Elkins, N.C.
20 YEARS	**Central Virginia Oil Co.,** Waynesboro, Va. **Griener Union Oil,** Waynesboro, Va. **Keister Oil Co.,** Plymouth, In. **Sanders Petroleum Svcs., Inc.,** Meridian, Ms. **Jack Taylor,** Sunnyside, Wa. **J. W. Upshaw,** Hayden, Az.
15 YEARS	**Merwin Oil Co.,** Fond Du Lac, Mi.
10 YEARS	**Carlson Oil Co.,** St. Ignace, Mi. **Jon T. Ray,** Douglas, Az.
December 1982	
60 YEARS	**Samson Oil Co.,** Hibbing, Mn.
45 YEARS	**Stadium Oil Sales, Inc.,** Williamsburg, Va.
40 YEARS	**James Devere,** Cle Elum, Wa.
20 YEARS	**D. C. Small Dist. Co.,** Auburn, Wa. **Mark Nelson,** Salem, Or.
25 YEARS	**J. E. Sharber Oil Co.,** Bainbridge, Ga.
15 YEARS	**Farmers Oil Co.,** Walstonburg, N.C.
5 YEARS	**Port Oil Co.,** Mobile, Al. **Wm. L. Harrington,** Olympia, Wa.

RETIREMENTS

July 1982

George B. Hall, Oil and Gas
Torrance, Ca. September 19, 1946

August 1982

Robert L. Allen, Molycorp
Washington, Pa. February 24, 1959

Jack F. Hall, Molycorp
Questa, N.M. March 19, 1964

September 1982

Roy J. Baker, Oil and Gas
Taft, Ca. September 6, 1962

Nick Cisneros, Molycorp
Questa, N.M. August 2, 1965

Leo P. Duhon, Oil and Gas
Lake Charles, Ca. March 15, 1949

Benjamin M. Elms, Oil and Gas
Brenham, Tx. December 1, 1952

N. Barbara Falke, Union 76 Division,
Eastern Region, Silsbee, Tx.
July 14, 1952

Ricardo R. Gonzales, Molycorp
Questa, N.M. April 12, 1957

Homer Gregory, Union 76 Division,
Eastern Region, Stockbridge, Ga.
March 26, 1947

Loreta A. McReynolds, Oil and Gas
Midland, Tx. June 14, 1971

Robert B. Paxton, Union 76 Division,
Eastern Region, Woodridge, Il.
February 15, 1935

William C. Raymer, Oil and Gas
Sugarland, Tx. January 21, 1952

Albert W. Sanborn, Corporate Human
Resources, Altadena, Ca.
July 19, 1948

Marion M. Wellner, Union Chemicals
Arlington Heights, Ca. September 6, 1967

October 1982

Francis L. Banner, Union 76 Division,
Western Region, Hacienda Heights, Ca.
May 25, 1949

William L. Budde, Union 76 Division,
Western Region, Walnut Creek, Ca.
September 29, 1944

Fannie R. Chapin, Union 76 Division,
Eastern Region, Chicago, Il.
August 13, 1946

John B. Craig, Jr., Union 76 Division,
Western Region, Los Angeles, Ca.,
February 9, 1962

Lawrence L. Faulk, Oil and Gas
Lake Charles, La. April 14, 1948

Frederick T. Finnigan, Science and Technology
Fullerton, Ca. April 19, 1940

Ora V. Hickman, Union 76 Division,
Western Region, Long Beach, Ca.
January 28, 1946

Charles V. Hicks, Oil and Gas
Midland, Tx. December 6, 1940

Lewis J. Hines, Union 76 Division,
Eastern Region, Port Neches, Tx.
March 25, 1949

Raymond D. Jolicoeur, Union 76 Division,
Eastern Region, Barrington, Il.
September 17, 1945

Robert G. Kaemmer, Union 76 Division,
Eastern Region, Mequon, Wi.
February 15, 1956

George L. McCracken, Science and Technology
Fullerton, Ca. February 9, 1953

Curtis A. Neal, Oil and Gas
Brea, Ca. July 13, 1953

George L. Perini, Union 76 Division,
Eastern Region, Lemont, Il.
April 26, 1941

Melesio Quintana, Molycorp
Cerro, N.M. September 11, 1963

Joseph A. Scuri, Union 76 Division,
Western Region, San Luis Obispo, Ca.
June 1, 1953

Roman E. Vidas, Union 76 Division,
Western Region, Fountain Valley, Ca.
December 11, 1967

Robert N. Wheatley, Science and Technology
Fullerton, Ca. December 3, 1945

Ernest D. Wilson, Union 76 Division,
Western Region, Portland, Or.
May 30, 1946

November 1982

E. A. Wood Cooper, Molycorp
Chillicothe, Mo. April 6, 1965

Merle Cooper, Molycorp
Chillicothe, Mo. October 19, 1965

Harold Jeffery, Oil and Gas
Coalinga, Ca. October 25, 1948

Laura A. Jeffery, Oil and Gas
Coalinga, Ca. August 8, 1947

Eldon W. Kading, Union 76 Division,
Western Region, San Francisco, Ca.
November 18, 1964

Henry C. Meiners, Corporate
Palos Verdes, Ca. February 1, 1942

Maurice J. Siebenhausen, Union 76 Division,
Western Region, Oceanside, Ca.
October 21, 1948

Viola E. Smith, Union 76 Division,
Eastern Region, W. Bradenton, Fl.
April 1, 1965

Edward A. Walger, Oil and Gas
Midland, Tx. October 24, 1956

IN MEMORIAM

Employees

Francis H. Hollier, Oil and Gas
Typler, Tx. July 30, 1982

Retirees

Louis C. Barsotti, Union 76 Division,
Eastern Region, Lockport, Il.
July 30, 1982

Albin Emil Bezdek, Oil and Gas
Louise, Tx. July 20, 1982

William L. Cowan, Oil and Gas
Santa Cruz, Ca. August 25, 1982

James F. Dugan, Union 76 Division,
Eastern Region, Sullivan, Il.
July 31, 1982

Elmer Ferguson, Arapahoe Pipeline
St. John, Ks. July 29, 1982

Harry W. Fitzpatrick, Union 76 Division,
Eastern Region, Nederland, Tx.
July 17, 1982

Lawrence E. Fossey, Oil and Gas
Riverton, Wy. August 8, 1982

Honald C. Frandsen, Union 76 Division,
Western Region, Los Angeles, Ca.
July 10, 1982

Russell G. Garris, Union 76 Division,
Western Region, Bakersfield, Ca.
July 9, 1982

Paul H. Lewis, Oil and Gas
Gallipolis, Oh. July 23, 1982

Eldon Lightfoot, Union 76 Division,
Eastern Region, Statesboro, Ga.
August 23, 1982

Byron A. Lott, Union 76 Division,
Western Region, Long Beach, Ca.
August 20, 1982

Chester L. McCreary, Science and Technology
Oroville, Ca. August 28, 1982

Horace Mitchell, Union 76 Division,
Eastern Region, Decatur, Al.
July 27, 1982

Jarrell L. Mooney, Union 76 Division,
Western Region, Fountain Valley, Ca.
August 12, 1982

John O'Black, Union 76 Division,
Eastern Region, Lima, Oh.
June 28, 1982

Carl August Peterson, Pure Oil
Eustis, Fl. May 13, 1982

Henry F. Robinson, Union 76 Division,
Eastern Region, Spencer, W.V.
July 17, 1982

Harry J. Schultz, Union 76 Division,
Eastern Region, Milford, In.
July 8, 1982

Woodrow W. Searcy, Union 76 Division,
Western Region, Oakland, Ca.
August 11, 1982

Virgil M. Stedman, Oil and Gas
Madill, Ok. August 17, 1982

Ike E. Stevens, Union 76 Division,
Western Region, Penn Valley, Ca.
August 4, 1982

James F. Stipes, Union 76 Division,
Eastern Region, Jensen Beach, Fl.
August 21, 1982

Emmett W. Taylor, Union 76 Division,
Eastern Region, Glenn Allen, Va.
August 11, 1982

John A. Thigpen, Union 76 Division,
Eastern Region, Augusta, Ga.
August 4, 1982

Alvin O. Timmons, Oil and Gas
Fillmore, Ca. August 14, 1982

UNION OIL COMPANY OF CALIFORNIA
P.O. Box 7600
Los Angeles, California 90051

GARY L FOY
16823 LIGGETT STREET
SEPULVEDA CA 91343

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SEVENTY SIX
UNION OIL COMPANY OF CALIFORNIA

VOLUME LXI, NUMBER 6
NOVEMBER/DECEMBER, 1982

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COVER: Christmas lights add a festive air to the city of Amsterdam, hub of Union Oil's operations in the Netherlands where the company started the first successful commercial oil production from the Dutch sector of the North Sea—**Photograph by Tim Page.** Story on page 1.

Published by CORPORATE COMMUNICATIONS DEPARTMENT, Union Oil Company, Box 7600, Los Angeles, CA 90051.
Karen Sikkema, Director, Corporate Communications; **Sergio Ortiz,** Editor; **Linda Gleason,** Associate Editor; **Catherine Roy,** Editorial Assistant; **Ray Engle and Associates,** Art Directors.