

SEVENTY SIX

March/April 1982



Life on an Arctic Rig

Photos and story by Sergio Ortiz



"It's flat, cold and dreary."

The answer to the question "What's it like up there?" may appear incomplete. But to those who have been "up there"—on Alaska's northern territories where oil companies are actively exploring for untapped energy deposits—the description is perfect.

It is flat—so flat that on a clear day some claim that it is possible to see the curvature of the earth. That may seem like stretching things a bit, but it is plausible.

It is cold—the temperature sometimes in January drops to -135 . That's *minus* 135 (F). "Well," workers says, "it was actually 65 below, but there was a 70 mile-per-hour wind blowing.

And, above all, it is dreary. There is nothing there except a vastness so awesome it makes the human spirit cringe. The frozen winds blow with a vengeance, only easing their fury during the few hours of precious daylight.

While weather conditions sometimes are excellent in the North Slope (ABOVE), the sunlight lasts only a few hours each day, making the unloading of drilling mud from Anchorage (RIGHT) a difficult operation.

ALASKA



But in that icebox of nature workers toil during the winter months when drilling conditions lend themselves to building the ice runways and roads needed to transport the heavy equipment necessary for those types of operations.

The North Slope is just about the end of the world, the northernmost point of North America and closer to Siberia than to Nome, the nearest large city.

Waking up in the drilling campsites is a unique experience. The winds whip over the quarters in a frozen frenzy. At six in the morning the northerns blow at 90 miles-per-hour. Since the temperature outside is already 35 below zero, the wind chill factor drops the mercury to minus 105.

Motors and engines hum mournfully outside the quarters and there is no light outside. Sunrise is expected at about 11 that morning.

A few days before, the temperature had dropped so much that all workers were instructed to remain indoors unless it was absolutely necessary to go outside. Life at the camp came to a standstill, except for the drilling crew that had the luxury of working inside a weather-proof shelter that protects the drilling deck from the bitter cold.

That unforgettable Wednesday morning a worker coming in from the cold turned the heavy, stainless steel



handle on the door of the living quarters and it was so cold that the handle snapped in two. Fuel lines froze, boots cracked, the makeshift runway was inoperable and the wind kept on at a steady 95 miles-per-hour.

This is the North Slope in winter, a place where nature exhibits hair-triggered moods and the harshness of its winter is nature's way of telling man that he is definitely not welcome in this frozen moonscape. If there is a

frozen version of Dante's *Inferno*, this is it. Only the hardy can survive outdoors here and then it's only for brief periods of time.

An eerie grayness seems to have enshrouded the world around the drilling camp. That grayness and the flatness of it all dulls the senses with an overwhelming feeling of void, cold and loneliness.

The wells are very expensive and difficult to drill and the high costs

incurred by such explorations are an example of the large capital investments needed by oil companies to explore for new oil and natural gas reserves in remote places.

In order to set up an exploratory camp in the North Slope, vast numbers of equipment are transported to the nearest available runway as close as possible to where the well is planned. Then, when the weather turns to below freezing, ice roads and runways



A worker trudges over the ice toward the antenna dish that serves as the camp's communication link to the outside world.

are built over the tundra in order to transport all the machinery to the site.

Nature, however, usually has other plans.

The weather suddenly turns to above freezing just when the crews and the equipment have set up the first camp making it impossible to build the ice roads which would lead to the site. All operations then must be suspended, sometimes for up to a month.

The workers must return to Anchorage to await the cold weather.

After the winter storm fronts from Siberia turn conditions to below freezing, the crews then hurry back to the camp and the actual construction of the exploration site begins. From the satellite camp, huge rolodons—mammoth vehicles capable of operating under the worst conditions imaginable—begin their trek to the drilling site and earth movers, snow makers

and tractors soon follow.

Perhaps the most incongruous sight is that of snow makers moving over the frozen tundra.

The thought of snow makers in the Arctic is ludicrous, but before any serious activity is to be undertaken, runways must be built over the tundra. Man takes advantage of nature to suit his needs by laying a layer of snow some three feet thick over the rough terrain. After the snow has been



packed, a sheet of water is then sprayed over it and left to freeze. In a day or two a runway, 5,000 feet or longer is ready for operations.

Then the great migration begins.

Aircraft of all sizes bringing workers, supplies and equipment has become a familiar site on the ice runway there.

The tremendous logistics of the multi-million dollar exploration projects common to the North Slope call

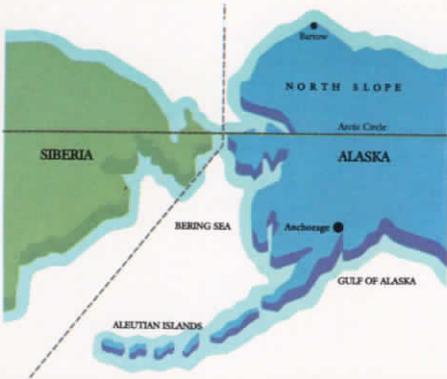
sometimes for hundreds of flights to use the runway between the two or three months before the ice begins to melt and the runways become inoperable, halting the projects.

By spring and summer the drilling sites are returned to their natural state—a barren land that otherwise does not see much of man, except for those in the nearby villages where the *Inupiat* (a name meaning “The Real People,” commonly known as

Eskimos) eke a living from this Arctic land.

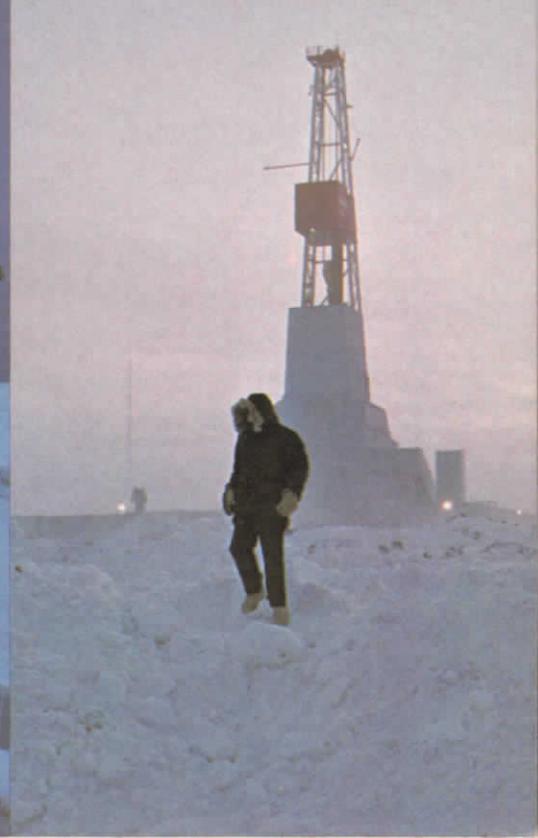
Despite the harshness of winter, workers at the North Slope exploratory projects live a rather comfortable life. For example, the workers receive newspapers, taped television programs and movies every day.

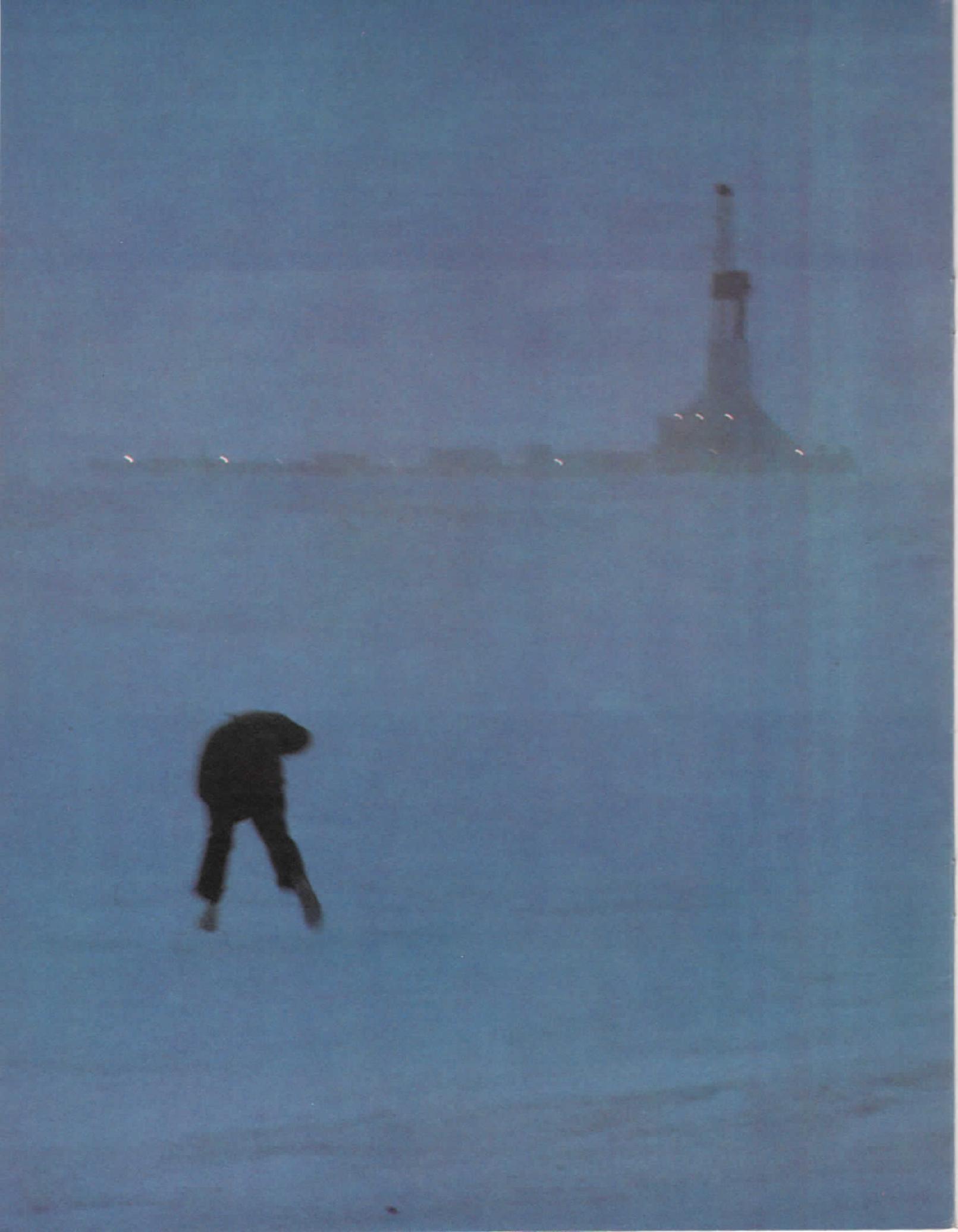
It's a strange experience to sit inside one of the warm recreation rooms by the kitchen watching off-duty drillers, tool pushers and roughnecks guffaw at



General scenes from the drilling site reveal a grim life outside the camp as workers live in very good comfort indoors. The majority of these projects

run in the millions and can be done only in the winter months when ice runways can be built over the tundra where Arctic foxes and caribou roam.





the improbable, silly antics of Bruce Lee in a kung fu epic. To one side, an electrician defends a video world from extra-terrestrial bad guys in a game of Asteroids, while on the corner a heated game of cribbage is going on.

But it's hardly all fun and games. The steamy window reveals a harsh picture outside. There is mostly snow and ice. The visibility is about 500 yards and a Hercules transport from Fairbanks appears like a gray, winged ghost sending angry trails of frozen rain flying in its wake. Workers hurry to unload pallets of drilling mud onto a truck that disappears in the gray, flat, frozen blanket. As soon as the truck leaves, the airplane takes off and the workers hurry back to the comforts of the quarters. The men look like walking sleeping bags, their breath hanging in the air like steam.

Bill, a toolpusher, takes off his parka and begins to unpeel layers of cloth-

ing from his body. "Ah," he says, "there's nothing to working up here. Just dress right, eat good, get plenty of sleep and save your money to go fishing all summer."

"Only problem with fishing Alaska in the summer," says another worker, "is the Alaskan mosquito. Anything that size should not be allowed to fly without numbers on its wings."

"I don't know a single person on the rigs out here who's got all his marbles," chides a Cajun accent.

"That's 'cause all you guys in the Gulf do is eat fish, sunbathe and complain," says Bill to much laughter.

Despite all the banter and the comforts that, although primitive in some ways, make Hearst Castle seem lacking after only a few minutes outdoors, this is a desolate place.

Slushing through the ice and snow one reaches a well-protected rig. A metal stairway leads to the deck where the actual drilling is being conducted. This is a warm, bright, noisy, hectic world. You have to shout over the roar of two huge GMC engines. It's serious work done amidst chains, collars, clamps and pipes. The air on the deck smells of hard work and sweat.

Finishing a visit to the North Slope is a welcome relief.

Just before the aircraft lands, a worker turns and says, "Look, there is a sun dog over the rig."

That is an iris effect much like a rainbow caused when the rays of the sun hit ice crystals in the air (see cover) and seen only under extremely cold conditions. In this case the sun dog comes at about 12:30 pm when the temperature is 63 below zero.

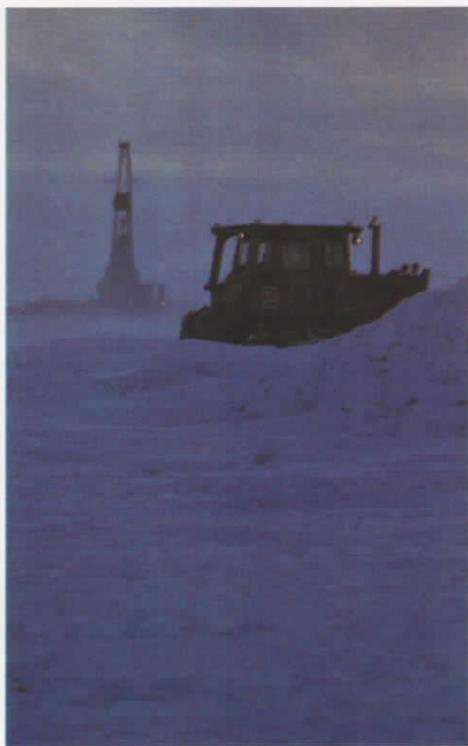
Someone says there's not much time to get aboard the airplane, since it will be on the ground only for a few minutes. Walking a few yards to it is an experience in itself. It's so cold and windy that it's hard to walk. It's as if your entire body was being flogged by an ice whip. Your nose and eyes run, your ears ring and flying ice crystals slap and sting your face.

There is a feeling of near joy upon reaching the plane. The pilot matter-of-factly declares that it looks as if the winter everyone has been talking about is finally arriving.

Once airborne, the camp looks like a toy model sitting on a frozen void.

The words of a worker who said that "no one ever came to the North Slope for the hell of it" ring true.

It's a good two hours and 15 minutes to Anchorage over a wide, frozen range where forbidding mountains loom on the horizon and glaciers run so crooked they could have been laid out by drunks. And it seems as if nature itself had gone on a happy, swacked and careless spree and was showing off when this land was made. (76)



Buffeted by 90-mile winds, a worker is thrown off his feet near the rig. (Left). While the site may look picturesque (Above), the first business at hand is to complete the well from a covered drilling deck where two daily shifts work against time and the elements (Above right).



Retirement Planning Helps Start New Lives.

For some it may be a time to spend unlimited hours in the woodshop carefully honing fine pieces of wood, or perhaps to set up an easel and touch some oils to a canvas. Others might take delight in planning a long awaited vacation. But for everyone facing imminent retirement, it's also a time to make some significant and serious financial decisions.

Several years ago when some Union Oil retirees were asked what kind of information would have been most beneficial to them at the time they retired, they overwhelmingly indicated the need for more information on financial planning that specifically applies to Union Oil benefits and the tax implications those benefits bring upon retirement.

With that insight, Paul Doyle, then vice president of Corporate Industrial Relations who himself has since retired, began developing a program to explain those practical and sometimes complex issues.

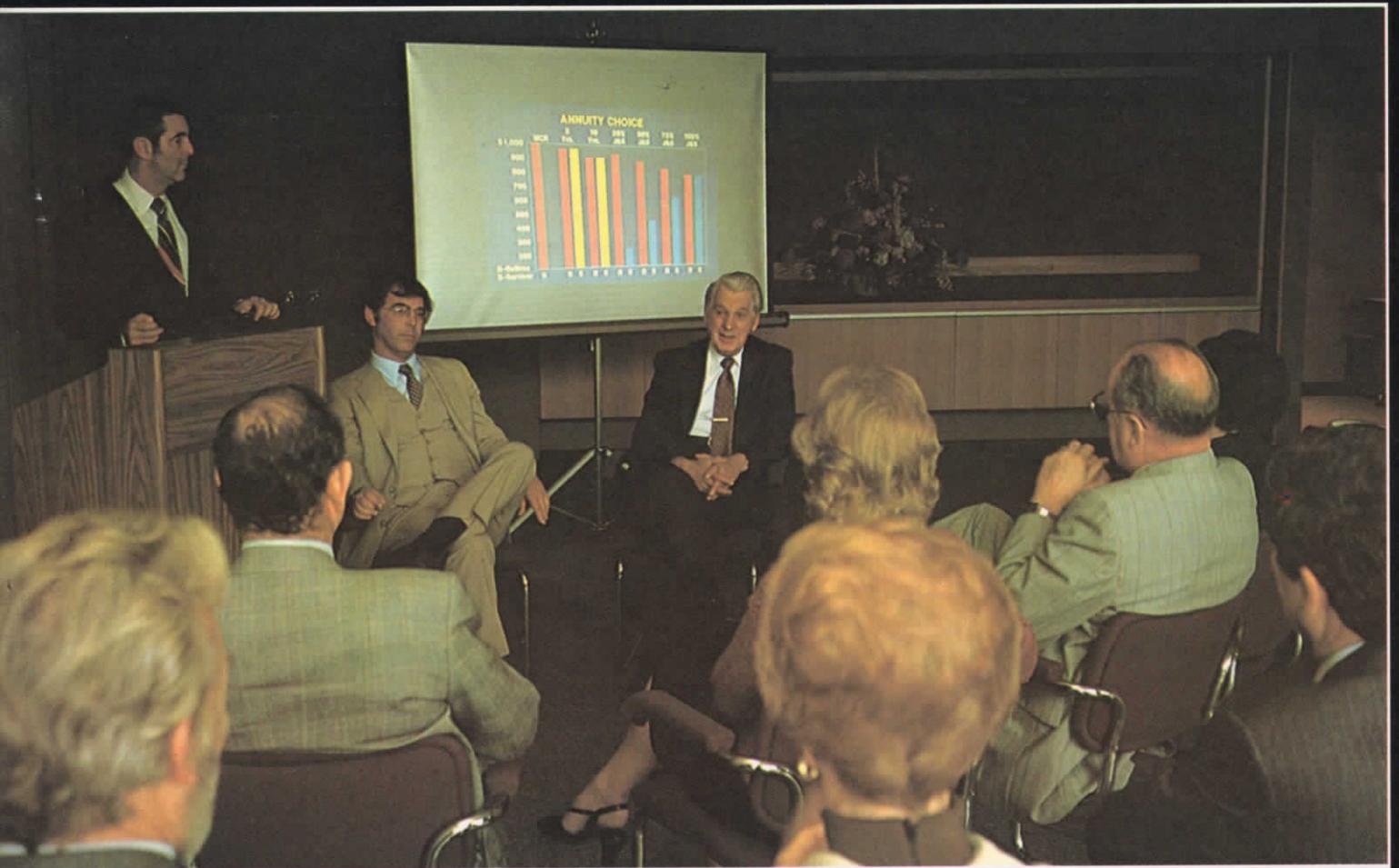
In late 1980, the first pilot of the Retirement Planning Workshop was held. To date 257 employees have attended such sessions and an estimated 240 will choose to take part in the program this year.

**...for everyone
facing imminent
retirement, it's also
a time to make
some significant
and serious
financial decisions.**

Faced with a multitude of decisions and the complexity of benefits and tax laws that are subject to continual change, it is only natural that those about to retire would request some guidance. In fact, the continuous questioning is what generated the program. "We have had all kinds of inquiries from people going into retirement about this type of program," says Don Solberg, manager of Benefit Plans Development. Solberg is responsible for explaining the company benefits during the workshop.

**To date 257
employees have
attended such
sessions and an
estimated 240 will
choose to take part
in the program this
year.**

Another need for this type of program arises out of the fact that Union Oil facilities are so widespread. "This makes it impossible for all employees to receive the same information explained with the same breadth of knowledge," says Carl Brick, manager of Management Development Services, who conducts the day-to-day administration of the program.



(L to R) Carl Brick, Chuck Strathman and Don Solberg address the implications of retirement for potential retirees.

“We have had all kinds of inquiries from people going into retirement about this type of program,”

Rather than duplicate programs used by other companies, Industrial Relations personnel solicited the guidance of a consultant and the input from the experts at Union’s Tax Division to tailor the Retirement Planning Workshop from the ground up and thus fulfill the particular needs of the 300 to 350 employees who retire from Union Oil each year.

Experts with a thorough knowledge of the issues conduct the workshop...

Experts with a thorough knowledge of the issues conduct the workshop, it is aimed specifically at those who are committed to retiring in the near future in order to supply them with the most current information. Therefore, the materials used are constantly updated. “We chose our target group early. Due to consistent alterations in tax laws and benefits, much of the information we have now would be obsolete for anyone planning retirement in three years,” explains Bill Barber, manager of Manpower Planning and Development.

A significant feature of the program, which is offered regularly at Union Oil Center and upon demand at other Union locations, is the inclusion of spouses. Of the 257 employees who have attended, 190 were accompanied by their spouses.

The day-long workshops are conducted by Brick, Solberg and Chuck Strathman, a Union Oil attorney who explains the tax complications incurred by retirement. It is structured informally to encourage questions and a high degree of audience participation.

It is structured informally to encourage questions and a high degree of audience participation.

Throughout the course of the workshop Union's retiring employees, whose average age is 62, are guided through the intricacies of the company's benefit plans, the options available to them and the tax considerations involved. The material is offered as a guide for making some basic decisions facing retirees concerning their retirement, profit sharing and employee stock ownership plans; whether to take lump sums or annuity distributions and how tax laws might apply.

Retiring employees must consider how much supplemental accident and life insurance should be continued after retirement and also whether medical coverage should be continued, if the employee or dependent is eligible.

...retirees are given financial planning worksheets on which to figure estimates of their present spendable income.

...compare spendable income before and after retirement.

Prior to the workshop all prospective retirees are given financial planning worksheets on which to figure estimates of their present spendable income. Another worksheet helps them figure cash needs before and after retirement, and another is used to list assets and liabilities. The worksheets are added to a Retirement Planning Workbook which is considered a key part of the program. This is supplemented with benefit booklets, a Social Security guide and another text on retirement planning.

At the workshop participants are supplied with a report compiled from their personnel records reflecting their current status in the company's benefit plans and showing estimates of those benefits according to the different options available to them at retirement. These figures are used in conjunction with the worksheets completed before the workshop to estimate and compare spendable income before and after retirement.

"The main point of the program," says Paul Foreman, manager of Benefits Plans and Policy Development, "is that prospective retirees understand these worksheets and actually use them to analyze their own personal circumstances."

Information given is not offered as specific advice. Future retirees are advised to seek financial expertise on an individual basis.

"The workshop is not designed to in any way influence the decisions facing the employee," explains Strathman. "We're just here to help arrive at decisions. We take a neutral position."

"We're just here to help arrive at decisions. We take a neutral position."

Says Foreman: "Because of the current economic environment people are especially concerned about their income after retirement. We try to help the people who attend this workshop recognize their own potential for planning their future finances and hope they leave with a better understanding of their financial situation at retirement." 76





GASOLINE:

THE FUEL THAT MAKES THE COUNTRY GO

Photos and Story by Linda Gleason

Whether it be an ancient wreck struggling through its last few miles or the newest shining model just off Detroit's assembly lines, each time you pull your car into a Union 76 service station and fill 'er up, you can rest assured that tankful after tankful, the gasoline you purchase is manufactured to precisely meet Union's specifications for quality and performance—countless people and years of research have seen to that.

Gasoline is but one of the many petroleum products produced by Union Oil Company that is carefully monitored throughout all stages of production to meet stringent specifications.

All gasolines are not the same and each differs because of separate specifications demanded by region, climate and motorist needs.

"There are three basic reasons that specifications are needed," explains Edward Wiseman, supervisor of fuels research at the Fred L. Hartley Research Center in Brea, Ca. "One reason is to control the performance of the product in the customer's machine; the second is to meet legal requirements which usually have some basis to guarantee performance, too; and the third is to control the product's performance in relation to its competitive position in the marketplace."



The primary watchdogs for quality control on all Union Oil products—not just fuels—are the company specifications committees. The two committees, one each for the company's western and eastern regions, are composed of representatives from three key groups within Union Oil with interests in marketing, research and refining.

The committees meet regularly to discuss at length and to consider all important ramifications while grinding out specifications for new Union Oil

(Left) Before any product leaves the Los Angeles Refinery it is checked against stringent specifications. (Above) Edward Wiseman, supervisor of fuels research.

products or to institute changes in those items already existing.

"There is tremendous interplay between these groups in order to arrive at specifications," says Wiseman. "Simply speaking, the marketing people establish the types of products the company should offer in the marketplace. Research personnel then ask the committee for guidance as to what properties the products should have to provide the most acceptable balance of the many performance features of benefit to the customer. Research then recommends specification levels. With this information the refining people create a computerized model which takes into account all the oil stocks available and determine if, in fact, such a product from the stocks can be blended. In addition, they determine how much it will cost and the volume that can be produced."

Production is controlled by specifications imposed by the government and industry as well as those set by the company itself.

The government becomes involved directly with local, state and federal laws which specify the properties fuels must have in order to be marketed. The military also sets very stringent guidelines for the fuels it uses.

Industry standards are set through the American Society for Testing Materials (A.S.T.M.), a consensus body which sets voluntary guidelines. The group is composed of representatives from all interested parties including the automotive and petroleum industries, suppliers to these industries, state and federal people and consumer advocates. A.S.T.M. specifications evolve out of compromise, a tedious process which can take from five to 15 years.

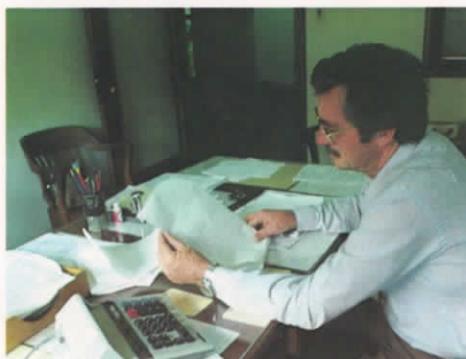
"When Union goes to set its own specifications it looks in all directions—to the A.S.T.M., the military and the local, state and federal governments. It's a huge, complex network in which everyone works together," says Wiseman. "We draw on all this conventional wisdom and overlay our own particular company demands to complete the picture."

It's up to the refineries to sort out the myriad specifications and make the products in accordance with those guidelines. The intricate task is achieved with continuous testing throughout the blending process.

After these guidelines have been determined, the refining process then begins.

Each week a blending schedule is devised by the blend engineer who takes into account the different types of fuels and oils that need to be pro-

(Right) Peter Rey, supervisor of the Los Angeles Refinery analytical lab, conducts an air quality test. (Below) All of Union's refineries abide by the guidelines set by the Specifications committee. (Bottom) Clyde Williams reviews octane levels on a computer printout.



duced from available stocks at the refinery. The blend engineer must be knowledgeable of all the specifications that must be met and compose a blend of stocks that will meet the set requirements.

"We have two major ways by which we control to specifications," explains Clyde Williams, blending process foreman at Union's Los Angeles refinery. "We take control samples periodically as we're blending the gasoline. These are sent to the chemical lab where standard tests are conducted to check different properties of the blend, such as volatility, a value which affects the occurrence of vapor lock in a car. Also, our computer gives us an update every four minutes on octane levels. During a typical 85,000 barrel blend, which takes from 17 to 20 hours to complete, the blender operator can closely monitor this information and make stock

adjustments at the blender control panel to be 'on grade,' or meet target specifications."

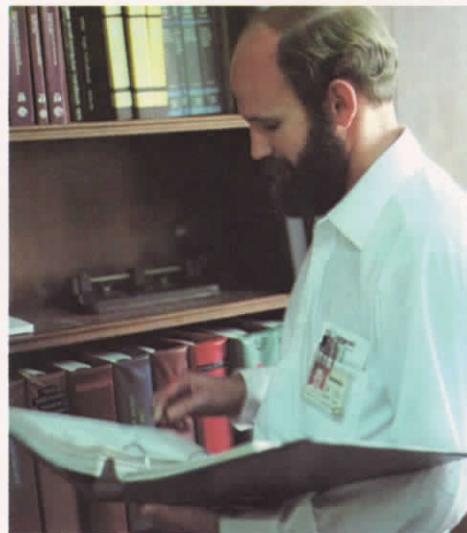
As specifications vary for different types of fuel, the stringency of those controls varies as well. "Gasoline is very tightly controlled compared to other fuels," explains Gary Johnson, blend engineer at the Los Angeles refinery. "When blending some fuels we aim somewhere between minimum and maximum specifications. Certain specifications for gasoline must be met exactly, simply because a gasoline engine won't burn quite the range of fuels that say, a diesel engine will."

To make an already complex process even more difficult, some specifications change seasonally and regionally, since temperature affects a car's performance and because automobile emission regulations differ from state to state.

"We have to plan our production so that on a given date, when the specifications change, John Q. Public can go to the gas pumps and get the fuel he needs for his car," says Johnson.

Before anything leaves the refinery a final check to insure quality is made. "We take a 'true-cut' sample—a composite of the total blend taken from the pipeline," says Williams. "We check all the values of the sample against the specifications dictated by the committee before anything is dispersed throughout the marketing system." 76

(Right) Products are monitored continuously throughout blending at the refinery. (Below) Bob Armstrong, blender operator at the Los Angeles Refinery, makes adjustments at the blending terminal. (Below right) Gary Johnson must familiarize himself with all fuel specifications.

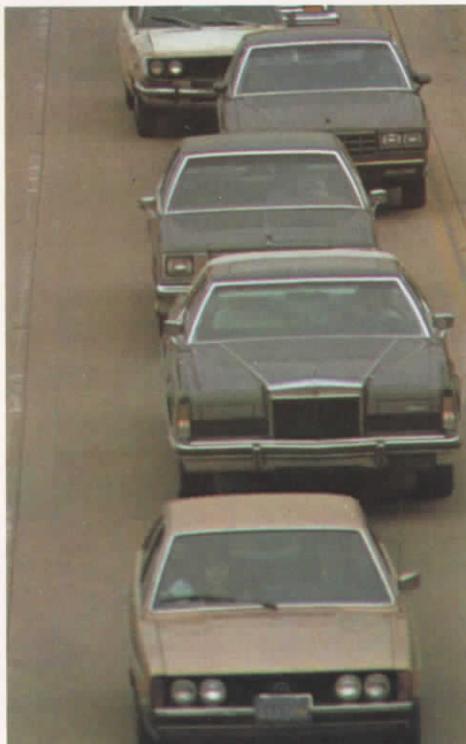




RIDESHARING



HIDDEN BENEFITS FOR ALL



Otis Tobey commutes 42 miles round trip from Hacienda Heights to Union Oil Center in Los Angeles each day and still manages to operate his full-size automobile on a scant four gallons of gasoline per week. His large car isn't a fuel-saving marvel. The Union Oil Manager of Energy Efficiency simply stretches his mileage and shrinks his gas bill by participating in a five-person carpool.

Tobey's extended mileage isn't unique among Union Oil employees. A census conducted in December 1980 shows that approximately half of the 1,550 employees working at three large Union Oil facilities throughout downtown Los Angeles share rides in one form or another—some commuting from as far as El Toro, Laguna and Thousand Oaks, southern California communities as distant as 50 miles away.

Two-person ridesharing groups make up 35 percent of the total, the majority of them married couples dropping one person to another place of employment along the way. A number of married couples are also employed by Union Oil. Three person carpools make up 13 percent, four person groups comprise ten percent, and five percent of all company carpools are comprised of more than four riders.

The various government agencies involved in energy-saving programs consider groups of three or more persons a "carpool" and two persons a "rideshare." A "vanpool" is made up of 10 to 15 people. A small percentage of Union employees participate in vanpools.

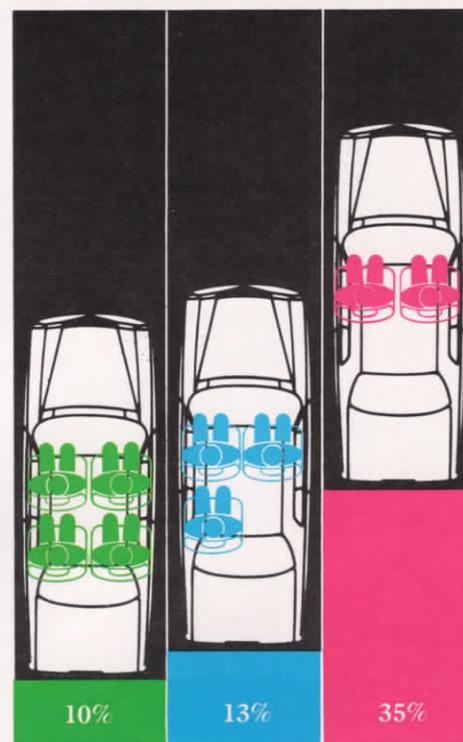
Not only did the census prove that many Union employees were already in carpools, but also that many expressed an interest in joining their

fellow employees in sharing rides to and from work.

"The company has an extreme interest in the conservation of energy in general, and that includes ridesharing," says Tobey. "We encourage all employees to conserve and we actively try to assist people in finding employees to share rides."

The search begins with a list of all employees in the area, categorized by zip code area to enable neighbors to find each other. If a person fails to locate a fellow employee in the zip code area list, Tobey uses maps to prepare area surveys which may turn up potential riders in other adjoining zip code areas. "I only make these on individual requests, but over the course of time I've covered just about the entire southland basin," says Tobey, explaining that Los Angeles, not counting

CARPOOL RIDER PERCENTAGES



suburbs, is spread over 464 square miles and has relatively poor public transportation systems.

"We have an advantage in organizing our ridepools within the company because, basically, we're talking about people being at work from 7:45 to 4:30. When we can't find a ridepool for someone within the company, we look elsewhere," he adds. When neither the zip code list or the area survey produces a shared ride, the employee is referred to Commuter Computer, a publicly funded group to help people find rides.

It's up to the employee to negotiate his own rideshare, but when there is a special problem Tobey is willing to step in. "Sometimes I can devise a special route that will help reduce the commute or even find them a ride for at least part of the commute."

Tobey estimates that the average one-way commute for Union Oil employees is about 20 miles. High concentrations of Union employees come from communities such as Long Beach, Palos Verdes, Pasadena, La Crescenta, West Los Angeles, West Covina and Whittier.

"Carpooling and ridesharing have gone on ever since people began working in downtown Los Angeles," says Tobey, who recalls his father used to share a ride in the 1930s while working at a downtown Union Oil building. "We have one ridepool that has been together, pretty much in the same composition it's in now, since Union Oil Center opened in 1958," he says.

"Ridesharing calls for flexibility," Tobey adds. "Many people feel that they can't rideshare because they work irregular hours, but you can always find someone with whom to work that out. Others feel that it takes too much

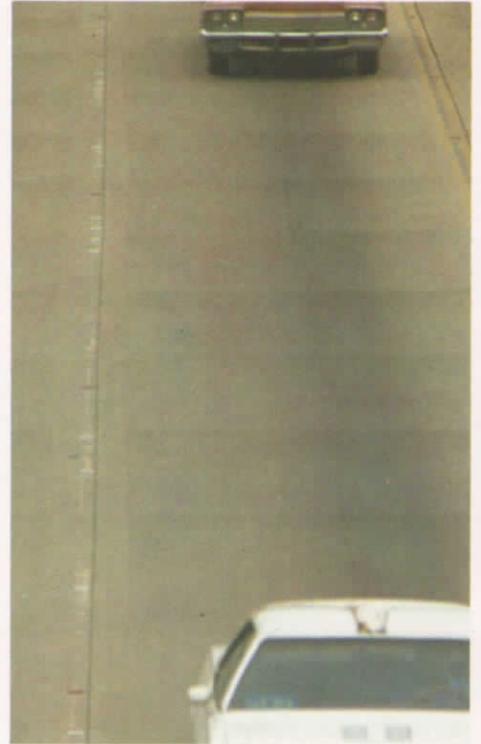
time in the morning to drive around the neighborhood and gather riders. They can solve this problem by making arrangements to meet at one house and 'park and ride.' They don't have to drive very far and it saves a lot of time."

The most obvious incentive to employees is the reduction of monthly gasoline bills. "With the Arab Oil embargo in 1973, which created long lines at service stations and rising fuel prices, ridesharing became crucial to some people," says Tobey. "While ridesharing is good for our own pocketbook, it's also good for the national economy. The American Petroleum Institute reported that in 1977 the United States imported 47.7 percent of its crude oil and product—the highest amount ever imported. By 1981 that number was reduced to 35.9 percent.

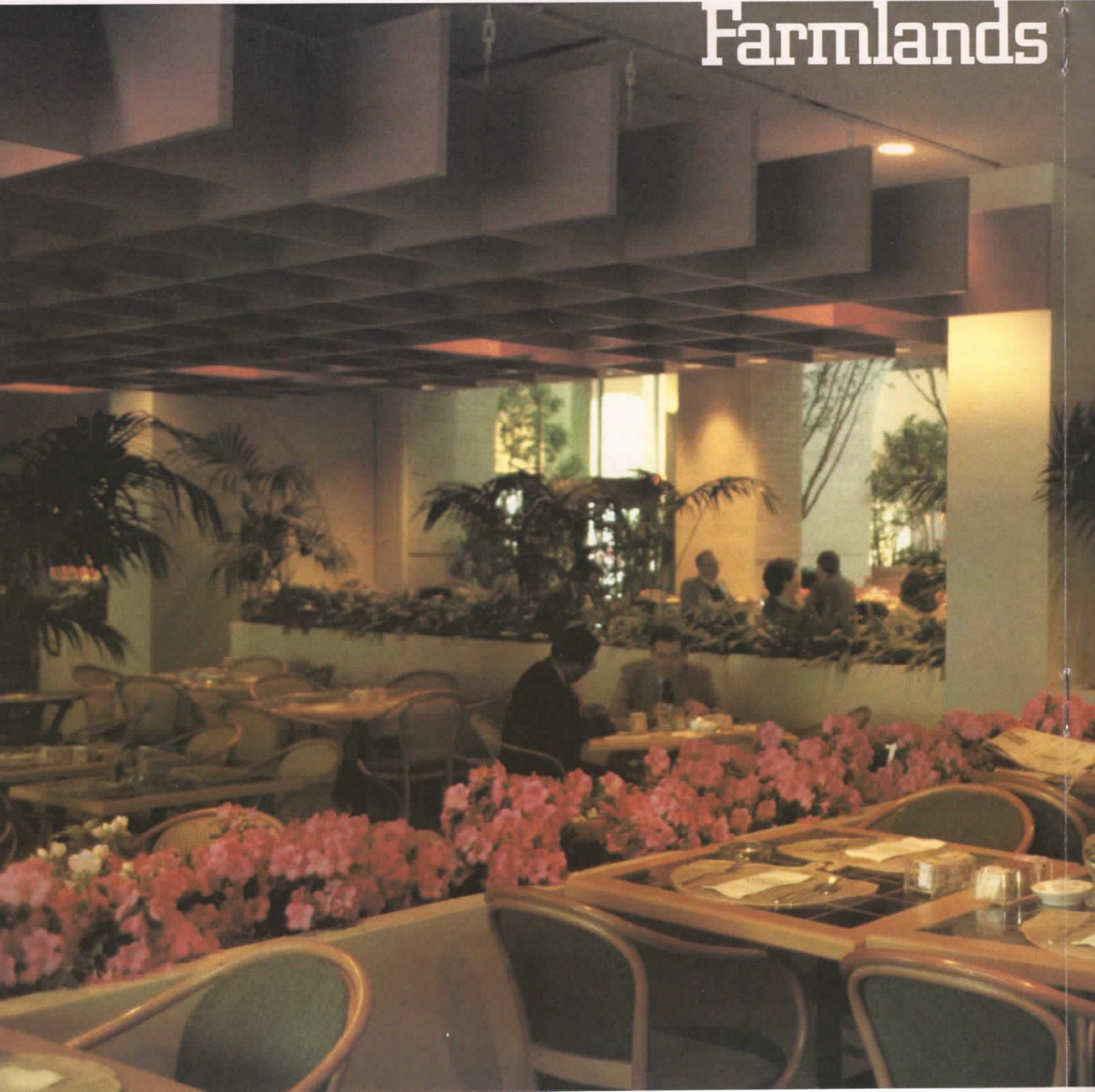
There are many environmental benefits as well, the main ones being the reduction in traffic and air pollution.

"It also helps to have a carpool when the Air Quality Control district predicts a second-stage smog alert (an occasional summer condition in southern California when emissions reach what is considered an unhealthy level). There are usually five to ten days in the late summer months when it is predicted that air pollution will exceed a certain level," Tobey explains. "Certain large companies, including Union Oil, are mandated to cause a reduction in the number of cars driven to work on those days. Union is allowed to have one car per three employees parked in its garages."

Some people who rideshare may do so with the sole intent to save money, others to break the monotony of a long commute alone, but the benefits produced from ridesharing are reaped by everyone. (76)



Modern Facilities Sprout in Old Farmlands



**In years past the
237 sprawling acres
surrounding the
Union 76 Eastern Region
headquarters in
Schaumburg, Ill., were
blanketed with field
upon field of soy bean.**







(Left) Guests can relax in the open, casual setting of Woodfield's Lobbibar.

(Top) An abundance of potted plants creates an airy atmosphere in the hotel lobby.

(Top right) The handsome five-story building blends well with the surrounding community of Schaumburg.

(Right) Around the clock the nearly 500 employees see to guests' needs.



More recently the Chicago suburb has witnessed a tremendous spurt of development, the luxurious five-story Hyatt Regency Woodfield hotel being the newest structure to sprout from a parcel of that land.

In 1958, prior to the 1966 merger with Union Oil, the Pure Oil Company purchased the 237 acres for \$500 an acre. "Today it's worth about \$175,000 to \$250,000," says Bill Huston, manager of real estate investments and new projects, in the Union Real Estate Division. "The Schaumburg area has become one of the hottest development areas in the country. The growth there is comparable to that of Orange County in California."

At the time of purchase the 237 acres were in three parcels, with the 51 acres in the center reserved for what was then the Pure Oil headquarters. To the west, 82 acres were designated to be left for future development property, while the eastern 104 acres were considered for more immediate development possibilities, explains Huston, who was real estate manager in Schaumburg at the time.

In 1972 Union entered into a partnership which included the Pritzker family, owners of the Hyatt Hotels Corporation, and Bennett and Khanweiler Assoc., corporate real estate developer and operating partner, for the sole purpose of developing that specific 104 acre parcel of land. They devised a three-part development scheme and named the project Woodfield Metrocenter.

In September 1980, with the opening of the 13-story Centennial Center I, in which much of the Union Chemicals Division is now based, Phase I was completed. Identical office buildings will be constructed adjacent to the green-tinted glass office building as the need arises. Groundbreaking for Centennial Center II is already scheduled for this year.

In two to three years, the partnership hopes to break ground on Phase III of the development—a shopping mall.

"The shopping center will be small in relation to the Woodfield Shopping Mall across the street. The market indicates that there is a demand for some of the specialty stores that are not already established in the existing



mall," says Huston. "Right now we're meeting with a shopping center developer and looking at high style merchandisers as possible tenants."

Last year the Hyatt Regency Woodfield opened its graceful arched doorways to guests, thus completing Phase II of the development.

"When the market demanded a hotel in the area, the obvious came to mind since the ownership consisted of the Hyatt people themselves," explains Huston. "They are what we believe to be the finest partnership we could get into, as far as the hotel business is concerned." Hyatt has contracted to manage the hotel for 20 years.

Although most Hyatt Regencies are recognized for their opulent towering edifices, the Hyatt Woodfield is an exception. "The five-story design is Hyatt's answer to a residential, neighborhood hotel, in order to blend with the Schaumburg community," says Huston of the conservative looking building.

Once inside however, the Hyatt Regency Woodfield is every bit as elegant as the Hyatt Regency San Francisco or the Hyatt Regency O'Hare in Chicago.

The building is designed around four atria, giving every room a pleasant garden view. The walls in the lobby and the restaurants are covered with specially hand woven silks and cottons from France, Israel, Morocco and India. All the rooms are decorated with colorful nature photographs.

The new hotel is managed by Helmut Brenzinger, who gained his hospitable skills at the Bad-Reichenhall Hotel School in his native Bavaria. Brenzinger has worked at some of the finest European hotels.

Like other Hyatt Regencies, the Woodfield also offers a variety of restaurants and lounges to satisfy any palate.

A Swiss chef prepares the sumptuous gourmet offerings in Baguettes, named for the freshly baked French bread served there.

A more casual dining atmosphere is found in Crumpets, where anyone with a sweet tooth would be stumped with making only one selection at the tempting dessert bar.

Guests can relax with a cocktail in the Lobbibar to the lull of water

gently flowing over Japanese river rocks underneath four seating platforms, or listen to one of the pianists performing in the more intimate setting of Blossoms Bar.

Adjacent to the hotel is the Playground, quickly becoming one of the most popular singles bars in the area. Thirty computerized, synchronized projectors flash more than 3,000 images onto three huge screens lighting up the otherwise austere grey surroundings of this prototype bar. Add three color lasers and five sound systems and while enjoying the beautiful peaks and valleys of the Rockies, Playground guests might find themselves caught in the middle of a seconds-long, multimedia thunderstorm before returning to the serenity of the mountains.

Being part of a larger development plan, the elegant hotel was designed to accommodate future expansion. When the need arises a 400-room addition

will be constructed. Architects have also envisioned the addition of an enclosed aerial walkway connecting the hotel with Centennial Center I and another connecting it with the shopping mall.

"People envision Schaumburg to be the second downtown Chicago by the year 2000 when this project is completed and other land in the area has been developed. It's an exciting piece of ground and it has tremendous potential," says Huston. 76

(Top Left) The hotel was designed around four atria, giving all 484 rooms and suites a pleasant garden view.

(Left) Water gently flows over Japanese river rocks underneath four seating platforms in the Lobbibar.

(Below) Both of the hotel's restaurants overlook the year-round heated outdoor pool and two Jacuzzis.





Surrounded by lush ferns, a CBMM employee suns himself in the appealing living quarters (Above right). The childcare center is a well-kept, professional operation (Above), where children up to seven years of age are taught. As the construction of the conveyor belt goes on (Right) the quiet serenity of the city of Araxa is self evident (Facing page).

TAPPING BRAZIL'S NEW MINERAL WEALTH

Photos by Sergio Ortiz

At one time in the not too distant past, the bellwether of all Brazilian economy was found in the state of *Minas Gerais*. This land-locked but charming state in mid-eastern Brazil was then relatively poor in agriculture, but it was blessed in other resources that made the early settlers of that country rush to *Minas Gerais* much like the Forty Niners once flocked to the gold fields of California in the middle of last century.



The migration to both *Minas Gerais* and California was due to one reason—gold fever. Both states underwent a booming gold rush that brought wealth to many and despair to others.

The mines at *Minas Gerais* were largely responsible for keeping the tottering Portuguese empire as a formidable world colonial power along with other great empires like Great Britain, France and Spain.

This was due to a Portuguese imperial decree which dictated all taxes paid to Lisbon by Brazil, by far its richest colony, must be remitted in gold. The rich gold veins of *Minas Gerais* sated Lisbon's imperial thirst much in the same manner that the mines of Peru and the silver of Mexico's Taxco kept the Spanish crown as a mighty world power during the same time.

Minas Gerais means "General Mines," an obvious name for the state since extremely prolific mines were found throughout its borders. But, of course, that was more than a century ago. The gold mines at *Minas Gerais* have been depleted for the most part. Today's Brazilian gold strikes are in an area far north from *Minas Gerais*—mostly in the Amazon basin.

But that does not mean that *Minas Gerais* has lost its significance in the mineral world.

Far from it.

For in the soil of *Minas Gerais*, so rich in many minerals, one of the most important minerals to modern man is found in good quantities.

In the southern part of *Minas Gerais* near the city of Araxa (pronounced Ah-rah-sha), vast reserves of niobium are found in deposits of pyrochlore ore.

Niobium (known as columbium in the U.S.) is used in many modern industrial projects where strong steel is needed. Niobium is a must in the





was considered a relatively exotic metal without any significant use as recently as the early 1960s.

It was then that the benefits of niobium came to light after research work at England's Sheffield University first demonstrated that very small amounts of the metal result in a significant increase in the strength of steel.

Soon after that, extensive developments and additional discoveries of carbonatite deposits containing niobium were made near Araxa. That new source was so vast that it is practically inexhaustible.

The mine at Araxa, managed and operated by *Companhia Brasileira de Metalurgia e Mineracao* (CBMM)—or Brazilian Metallurgical and Minerals Company—stands today at the forefront of the world's niobium industry. The ore mined there is owned in part by CBMM and partly by the *Minas Gerais* state government.

CBMM, in turn, is owned 53 percent by Brazilian interests and 47 percent by Molycorp, Inc., a wholly owned subsidiary of Union Oil Company of California.

Araxa is perhaps the most efficient and cleanest operation of its type in the world. The open pit mine where the niobium ore is found sits smack in the middle of a series of rolling meadows that resemble the hills of Kentucky.

According to Jose Alberto de Camargo, managing director of CBMM, "every care has been taken to make sure the mine and its operations adapt to the surrounding area."

And it shows.

Located about three miles south of Araxa, a series of modern buildings that resemble a clean and peaceful college campus more than anything else, serve as the administration center,

research laboratories, warehouses, work centers and other support facilities necessary for the operation of the mine.

At the base of a lush green knoll, there is even a small zoo where a vacant-eyed lion named "Juruna" shares a cage with a frisky Doberman called "Happy" in the most admirable of friendships. On the other side, another fenced compound houses mynah birds, toucans, fawns and emus. Mine workers sometimes delight in visiting the zoo during breaks and lunch periods.

The administration building is as impeccable and appealing as the rest of the operation. The sparkling laboratories, where modern computer technology is used to determine the conditions of the ore and control product quality, are equal to those found in many hospitals.

But it is at the mine where the real work begins.

At the pit, giant earth movers and tractors wrest the ore from the ground and load it onto trucks that transport it to the mill.

According to Camargo, "this (the transport operation) will end soon, since we are currently constructing a conveyor belt that will allow us to receive ore at the mill 24-hours a day."

From a distance this conveyor belt looks like a miniature Great Wall of China. It stretches over verdant hills like a giant strip running from mine to the mill where the work of producing niobium takes place. It is two miles long, 42-inches in width, and is capable of transporting 1,000 tons of ore an hour.

Camargo, however, says the belt will handle only 3,500 tons of ore a day during its initial phase.

Still, that's quite a figure and it is

manufacture of steel for trans-Arctic pipelines, heavy-duty turbine blades, offshore drilling platforms and tough earth-moving equipment. All the steel used in these projects must have a very hard resistance to harsh weather and other conditions that wreak havoc on even the toughest alloys.

A significant increase in the strength of steel is acquired by adding a minute amount of niobium. According to metallurgical experts, all that's needed is roughly 0.03 percent of niobium in steel to reach the toughness required for most of today's projects.

This is the reason why niobium has emerged as one of the most useful alloying elements in industry. Its ready availability and competitive prices have resulted in a sustained and vigorous growth in its uses.

That is a long way for the metal to have gone in 20 years, since niobium



The mine and mill's final product, ferroniobium (Facing page), stands on the foreground as trucks and loaders remove ore from the open pit mine. The ferroniobium is obtained after workers fire charges poured into reactor vessels (Top). Some 16 hours later, the slag is tapped from the vessels and left in sand to cool (Above). During all this, construction of the conveyor belt loading station (Left) goes on unimpaired some distance away.

Before touring the mine and mill operations at the Brazilian complex near Araxa, Jose Alberto de Camargo (L), CBMM managing director, confers with Thomas B. Sleeman, president of Moly-

corp, Inc.; Octaviano de Souza Paraíso and Lionel Raby, both CBMM directors and senior managers and Helio Dias de Moura, Molycorp's legal representative in Brazil.



one of the reasons the total production of the Araxa mine will exceed 875,000 tons of yearly ore production by the end of 1982.

Even a cursory visit to the CBMM mine reveals that everything the Brazilian operation was said to be is true. It definitely ranks among the cleanest and safest operating mine and mill of its kind.

The new mill completed at the end of 1981 and responsible for doubling CBMM's capacity, is a very impressive project.

Once the ore has been crushed during the initial production step, it is carried by a small conveyor belt into a ball-mill grinding process. After going through the ball-mill grinders, the ore goes into a magnetic separation process where the magnetite prevalent in the Araxa ore is removed.

From there, the ore goes through a

flotation process which separates niobium from other minerals and results in a niobium concentrate.

The concentrate then goes through a calcining and leaching plant where remaining impurities are eliminated.

Through it all, workers criss-cross catwalks and work in a very no-nonsense manner aimed at producing niobium.

Throughout the project, CBMM personnel take the outmost care in maintaining the cleanliness and beauty of the area.

If the mining and milling processes are impressive, the actual production of ferroniobium—the form in which most of the metal is used—is nothing short of awesome.

The Araxa ferroniobium operation is the largest facility of its type in the world, in terms of size and quantity of ferroniobium produced. Six smelting

charges are fired each day producing approximately 11 metric tons each of ferroniobium.

To accomplish this, charges are poured into reactor vessels and the reaction is initiated with a mixture of sodium peroxide and aluminum powder.

The result is a fire of quite a magnitude. Workers stand back as the building becomes increasingly hot while the metals begin to separate and form.

This all lasts about 15 minutes and the temperature in the vessels reaches 2,400 degrees (Celsius). This temperature allows for the slag and liquid niobium-iron alloy to gradually separate into two layers, with the slag floating on top of the metal. When the reaction is finished, the slag is tapped from the vessel and left in the sand to cool and solidify.

Sixteen hours after the reaction, the

(Top row, l-r): Overall scenes of CBMM's niobium mine and mill operations include a young employee operating a computer in the laboratories, the open pit mine with mill facilities in background, the ball mill and a view of the partly finished conveyor belt.

(Bottom row, l-r): A fire of quite a magnitude results from the reaction, close pals "Juruna" and "Happy," new construction going on in Araxa and workers testing samples in the laboratories.



slag is removed from the sand bed, transferred to a dump truck and taken to a disposal area where it is buried.

What remains is a ferroniobium "button" kept in the sand for several more hours until it solidifies before it is crushed and screened to meet the necessary specifications.

If the production of niobium is the foremost business on hand, maintaining a high quality of life for the more than 500 workers employed in all facets of operation by CBMM ranks among the most important.

A distance from the mine, just outside Araxa, CBMM has built modern structures where its personnel live in comfort. There are medical and dental clinics, stores, game rooms, auditoriums, playing fields and even a day-care center where pre-school children of employees are cared for while their parents work.

Understandably, Camargo takes extreme pride in the accomplishments of CBMM and the Brazilian industry. "When the first plant was built 22 years ago, 90 percent of all the needed equipment had to be imported to Brazil from other highly-industrialized nations," he explains. "Today, 90 percent of all the machinery in the new plant was designed and built in Brazil."

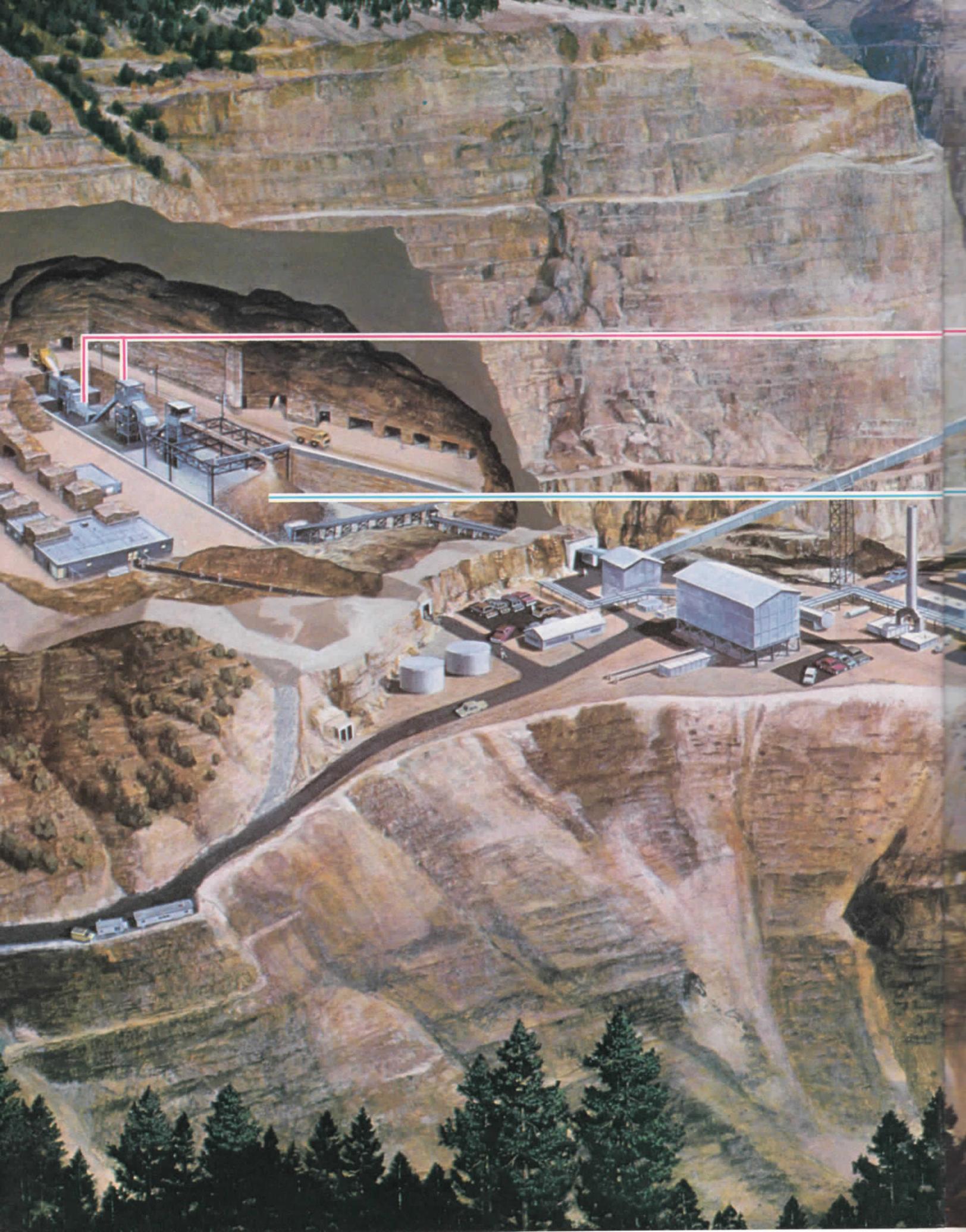
Although the new plant will not be fully operational until later this year, the success of CBMM is evident. All this is due to the result of diligent efforts CBMM to put the Araxa mine at the forefront of the niobium industry.

According to Thomas B. Sleeman, president of MolyCorp, Inc., "The project is a one-of-its kind, and as shareholders and one of the distributors of CBMM products in North America, MolyCorp takes pride in having been

instrumental in the development of the mine and the initial process, which has since been improved. The success of the Araxa mine is evident when one considers that it produces over half of the niobium used in the world."

The total operations are unlike anything in the industry, and workers at all levels express pride that the technology for new products which have important uses in aerospace, aircraft industry and modern technology have been developed in Brazil by CBMM staff, with Brazilian government researchers lending a helping hand.

Very rapidly, Araxa is becoming a mineral center that would leave the old mining camps at *Minas Gerais* that once helped put the Portuguese empire on the map, seem almost void of richness and resources.



SHALE PROJECT EXPLAINED

An artist's conception of Union's oil shale mine and retorting complex in Garfield County, Colorado. The rendering "cuts away" the face of the cliff to reveal the mine's interior.

Shale crushers operate inside the room and pillar mine to crush 12,500 tons of ore per day into pieces less than two inches in size. In the room and pillar mine roughly 75 percent of the ore is mined leaving large pillars to support the ceiling of the 50 by 60 foot mine face.

A conveyor belt carries the crushed shale ore to be screened to the proper size and held in the storage area. The ore is later transported from the storage area, via another conveyor belt, to the feed bin of the Union upflow retort for the extraction of shale oil.

At the retort a rock pump with a ten-foot diameter piston forces ore upward into the retort. Recycle gas, heated to 1000 degrees F, enters the top of the retort releasing liquid and gaseous shale oil from the ore.

After treatment, the gas produced from the retorting of shale is burned in the recycle gas heater to fuel the plant.

Shale oil equipment prepares the oil to go to the upgrading plant eight miles away where impurities are removed and it is converted into 10,000 barrels of high quality syncrude oil daily. From the upgrading plant the syncrude is sent to Union's conventional refineries to be fractionated.

Union's Unisulf process removes the sulfur from the gas before it is burned in the recycle gas heater.

The retorted shale is cooled in two 150-foot deep shafts and conveyed to an enclosed chute and dropped to the valley floor where it will be spread, compacted and revegetated.

RADIAL TIRES HELP STRETCH CAR MILEAGE

From the first pneumatic tubes which were invented in the mid 1800s for the sole purpose of making automobiles ride smoother, to today's radials which offer innumerable benefits for automobile operation—namely that of improving gas mileage—tires have come a long way.

Because manufacturers produce tires with an infinite variety of properties, motorists today are faced with a number of choices when selecting automobile tires. For example, tires come in ten sizes, three rim diameters, three tread types and three sidewall types—and that's just a few of the variances. Of all the choices to be made, however, one of the most significant considerations affecting a car's performance is simply, how a tire has been constructed.

There are three basic tire construction types: radial, bias and bias-belted.

The radial tires sold in Union Oil service stations, which are manufactured by Kelly-Springfield, a Maryland based tire company, usually have two plies—or layers of rubber covered polyester cords—running parallel to each other at 90 degree angles to the center of the tire. The plies are attached to beads, or strands of brass-plated rubber-coated steel wire, which anchor the tire onto the rim.

Three to six layers of belted fabric, steel cord or fiberglass are sandwiched between the body plies and the grooved rubber tread running circumferentially around a radial tire.

The construction of a bias tire consists of plies which criss-cross over each other at an angle to the center of the tire. The bias tire's plies are also anchored with steel beads. The bias tire, which has been the traditional type of tire construction for many years, is noted for its smooth riding qualities.

Steel wire, so essential in the manufacture of radial tires, is being prepared for use as belts in radials at the Kelly-Springfield plant in Fayetteville, N.C., where Union Oil's Five-Star radials are manufactured (Above). "Green," or vulcanized, tires are waiting to be placed in curing presses where they will receive their more familiar shape (Left).





In the bias-belted tire again the plies are criss-crossed at an angle and also has stabilizing belts between the tread and body plies. The stabilizing belts reduce wear in tread, but also give a harsher ride than bias tires and more rolling resistance than radial tires which reduce gas mileage.

While the radial tire may cost more, its construction results in lower rolling resistance—or tread “squirm” when the tire comes into contact with the road—than other types of construction thus increasing gasoline mileage and offsetting the extra cost.

In 1980, studies conducted by the Society of Automotive Engineers showed that under varied test conditions a radial tire’s rolling resistance is 12 to 60 percent lower than that of other types of tires.

While consumers frequently replace their worn tires with bias or bias-belted tires, it is estimated that automobile manufacturers will equip 100 percent of the cars rolling off their assembly lines with radial tires this year. But increased mileage is only one of the many advantages of using radial tires.

Automobiles equipped with radial tires handle better because radial sidewalls are more flexible and allow the tread to remain flat on the road. This also gives a smoother ride at highway speeds.

Radial tires give more traction for cornering, braking and acceleration.

A radial’s stabilizing belts support the tread grooves, keeping them open and in more efficient contact with the road surface. The belts also increase resistance to punctures and road hazards and while enhancing the life of the tread.

In order to get the optimum performance from a radial tire, as with any type of tire, it must be maintained



A tire sorter (Top) inspects a Five-Star Union Steel radial tire as rolls of fabric are processed for use as tire plies (Above). A tire builder prepares to remove a “green” tire from his machine (Left).

properly.

A properly inflated radial tire has a distinctive bulge in the sidewall which sometimes gives it the appearance of being underinflated. Kelly suggests the vehicle manufacturer’s recommendations be followed and also that inflation pressures be checked monthly, if not weekly, warning that tires must never be underinflated. Kelly also recommends that inflation pressures be checked “cold,” that is before the car

has been driven more than a few miles. Improperly inflated tires cause a safety hazard, wear faster and also reduce fuel economy.

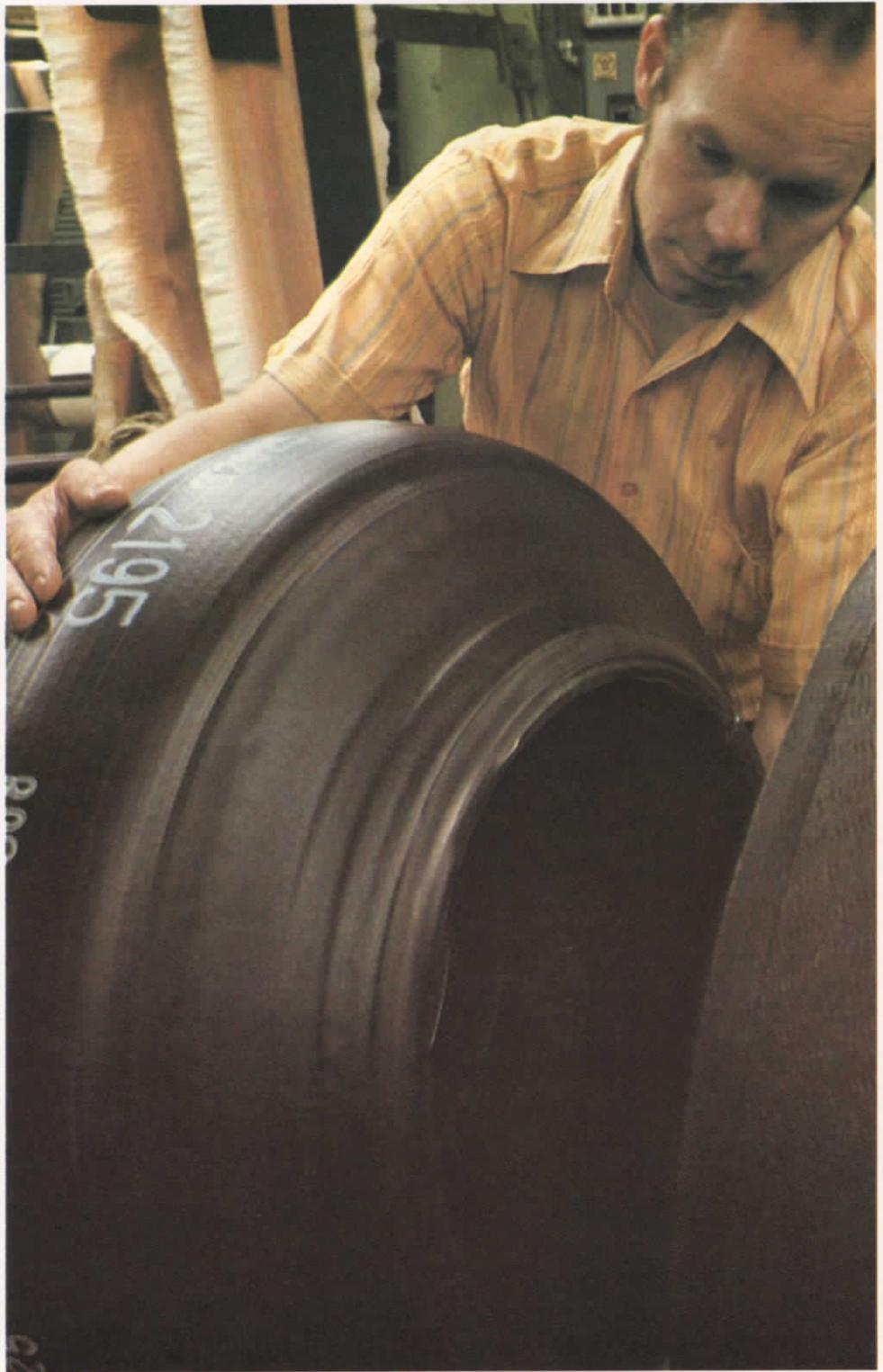
Premature or uneven tire wear is usually caused by misalignment. An unusual shimmy, or vibration, could mean that some front-end repairs are needed.

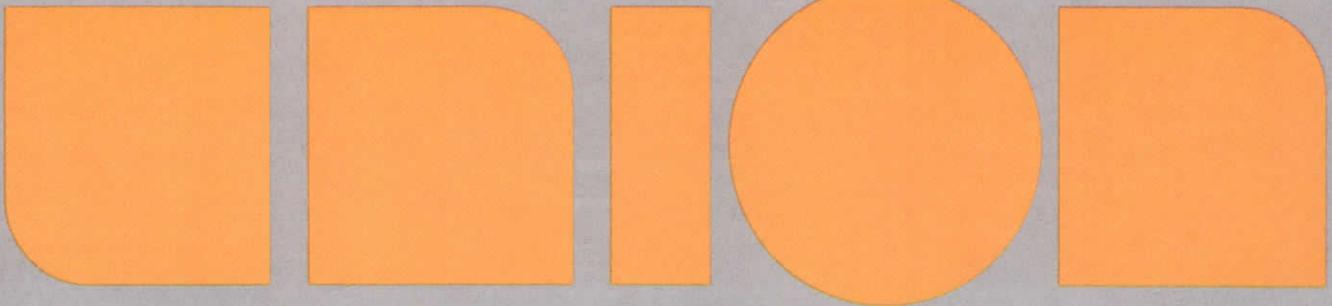
Proper tire rotation at periodic mileage intervals insures more uniform tire wear and increases the tire's life. When rotating tires, inflation pressures should be adjusted according to their new position on the car. A vehicle owner's manual should be consulted for rotation instructions.

Different types of tires may be used on the same vehicle but never on the same axle. For example, two bias ply tires may be used on the front axle and two radials on the rear. When mixing however, radial tires must always be placed on the rear axle.

Radial tires were first introduced in the late 1940s in Great Britain. With the design and materials undergoing continual improvement the radials becoming so widely used today bear little resemblance to the original European innovation. With fuel economy at the forefront of everyone's mind these days advances in technology will undoubtedly result in a radial tire even further removed from its predecessor. 76

A tire inspector at the Kelly-Springfield plant examines a tire bead. The bead is assembled along with other component parts by a highly-trained builder, all part of the delicate process that results in radial tires.





CORPORATE

- March 1982**
- 50 YEARS Oliver M. Frinier, Union Oil Center
- 40 YEARS Herbert P. Scharlow, Union Oil Center
- 30 YEARS John J. Heller, Union Oil Center
Lewis D. Lawrence, Union Oil Center
Mary P. Nevis, Union Oil Center
- 20 YEARS Donald C. Gearhart, Union Oil Center
- 15 YEARS Michael E. Dodd, Union Oil Center
Joseph E. Perkins, Union Oil Center
Charles R. Schiavi, Schaumburg, Il.
- 10 YEARS Maria G. Forster, Union Oil Center
John T. Newton, Union Oil Center
- 5 YEARS William J. Hand, Schaumburg, Il.
Saul D. Miller, Union Oil Center
Donna L. Wong, Union Oil Center

- April 1982**
- 35 YEARS Edward A. McFadden, Union Oil Center
- 25 YEARS Patricia L. Huebert, Schaumburg, Il.
- 15 YEARS Franklin E. Beavers, Schaumburg, Il.
George D. Bennett, Union Oil Center
Carl R. Brick, Union Oil Center
Darryll E. McMaster, San Luis Obispo, Ca.
William N. Scruggs, Union Oil Center
- 10 YEARS Daniel C. McTaggart, Union Oil Center
- 5 YEARS Fredric A. Bonner, Union Oil Center

UNION SCIENCE AND TECHNOLOGY DIVISION

- March 1982**
- 15 YEARS Rick V. Bertram, Brea, Ca.
- 10 YEARS John M. Bickel, Brea, Ca.
Charles E. Schoenfeld, Brea, Ca.
- 5 YEARS Hugh E. Haven, Jr., Brea, Ca.

- April 1982**
- 30 YEARS John R. Macievic, Brea, Ca.
Laurie C. Smith, Brea, Ca.
- 25 YEARS William M. Finn, Brea, Ca.
- 10 YEARS Jerald R. Cranz, Brea, Ca.
Arthur J. Doerr, Brea, Ca.
Rodney J. Meyer, Brea, Ca.
- 5 YEARS Joanne E. Basinger, Brea, Ca.
Craig E. Carlson, Brea, Ca.

UNION OIL AND GAS DIVISION

- March 1982**
- 35 YEARS Gale Conner, Van, Tx.
Fred L. Hixon, Coalinga, Ca.
Claude O. Piepkorn, Coalinga, Ca.
- 30 YEARS Lynn C. Brown, Orcutt, Ca.
Rosie Lee Hart, Midland, Tx.
Irene G. Williams, Midland, Tx.
- 25 YEARS Mary J. Donald, Union Oil Center
Elward J. Price, Houma, La.
Mickey W. Renaud, Houston, Tx.
K. J. Robertson, Los Angeles, Ca.
- 20 YEARS Robert B. Bellamy, Houma, La.
- 15 YEARS Michael L. Atmore, Santa Paula, Ca.
Lowell T. Bernard, Lafayette, La.
Robert H. Church, Anchorage, Ak.
Audrey G. Scott, Ventura, Ca.
- 10 YEARS Bruce S. Alexander, Houston, Tx.
Tony R. Lopez, Santa Paula, Ca.
Mary L. Meena, Ventura, Ca.
Virginia A. Simons, Ventura, Ca.
- 5 YEARS Earl D. Backus, Olney, Il.
Russell J. Bertrand, Houma, La.
Larry C. Broussard, Lafayette, La.
Charles L. Ellison, Van, Tx.
Jeanne M. Gallagher, Ventura, Ca.
Harry Granger, Houma, La.
Michael J. Langlinais, Lafayette, La.
John M. Lingol, Anchorage, Ak.
Randall K. Smith, Anchorage, Ak.
Harry O. Thomas, Jr., Andrews, Tx.

- April 1982**
- 40 YEARS William E. Phares, Midland, Tx.
- 35 YEARS C. Don Case, Houston, Tx.
Wayne M. Hunt, Los Angeles, Ca.
Harold Muscio, Orcutt, Ca.
Buford E. McBride, Houston, Tx.
Dale W. Noble, Worland, Wy.
Sidney J. Vial, Houma, La.

- 30 YEARS Thurman L. Archer, Santa Fe Springs, Ca.
William R. Gardner, Orcutt, Ca.
Robert O. Johnson, Santa Fe Springs, Ca.
Allyn T. Sayre, Union Oil Center
Alfred E. White, Worland, Wy.
- 25 YEARS J. E. Delahoussaye, Lafayette, La.
Lillian S. Lee, Houston, Tx.
- 20 YEARS James E. Brixey, Coalinga, Ca.
Joseph C. Carnes, Midland, Tx.
Everett C. Stangle, Midland, Tx.
- 15 YEARS Robert L. Caine, Worland, Wy.
Robert J. Levine, Midland, Tx.
Fred H. Neal, Midland, Tx.
Lelen Maddux, Orcutt, Ca.
Edward Ratto, Jr., Orcutt, Ca.
Robert K. Rios, Jr., Orcutt, Ca.
Robert C. Warthen, Anchorage, Ak.
- 10 YEARS Lavern Brewer, Midland, Tx.
Stephen W. Earp, W. Liberty, Il.
Willard M. Harper, Anchorage, Ak.
Aubin J. Hutchinson, Houma, La.
James H. Jones, Houma, La.
James T. Lowe, Lafayette, La.
George G. Stanley, W. Liberty, Il.
- 5 YEARS Terry D. Adcock, Ventura, Ca.
Dallas L. Caldwell, Coalinga, Ca.
Edward L. Chancery, Mobile, Al.
Benjamin E. Duggins, Orcutt, Ca.
Albert L. Giles, Mobile, Al.
John R. Giles, Mobile, Al.
Robert V. Hoffmeyer, Casper, Wy.
Steven E. Leusby, Olney, Il.
William W. McGinnis, Santa Fe Springs, Ca.
Eria M. Meurer, Midland, Tx.
Ronald J. Monceaux, Houma, La.
Timothy R. Munoz, Orcutt, Ca.
Ernie Ortiz, Santa Fe Springs, Ca.
Ronnie M. Oyabu, Orcutt, Ca.
Roy O. Priest, Santa Maria, Ca.
Onnie J. Rainey, Anchorage, Ak.
Michael D. Sehie, Clay City, Il.
David T. Sites, Jr., Midland, Tx.
Edward C. Smith, Mobile, Al.

76

UNION INTERNATIONAL DIVISION

April 1982

15 YEARS Thomas K. Muir, Balikpapan,
Indonesia

UNION GEOTHERMAL DIVISION

April 1982

30 YEARS Betty Lou Kinney, Santa Rosa, Ca.

25 YEARS Carel Otte, Union Oil Center

15 YEARS Stephen Pye, Santa Rosa, Ca.

5 YEARS Douglas L. Crea, Santa Rosa, Ca.
Gene A. Suemnicht, Santa Rosa, Ca.

UNION 76 DIVISION

March 1982

40 YEARS Frank Mathos, San Francisco
RefineryJoseph E. Rose, San Francisco
Refinery

Bernard M. Schwalm, Seattle, Wa.

Oscar F. Smith, Columbus, Oh.

Eugene C. Vaughn, Los Angeles
Refinery35 YEARS W. C. Bowie, San Francisco Refinery
William Budd, Beaumont Refinery
Olga A. Dianovsky, Schaumburg, Il.
Kenneth L. Falconer, Los Angeles
RefineryLourae E. Gorich, San Francisco
Refinery

John W. Gorman, Avila, Ca.

Homer Gregory, Atlanta, Ga.

John A. Russell, Pure Transportation
Co., Van, Tx.

Robert R. Smith, Chicago Refinery

30 YEARS Melvin P. Bowers, Tallmadge, Oh.
Charles L. Ferguson,
Cincinnati, Oh.

Harry E. Kenny, Jr., Charlotte, N.C.

Frank S. Moranda, Schaumburg, Il.

Aaron M. Palmer, Los Angeles
Refinery

Ernest L. Savala, Chicago Refinery

Raymond F. Shields, Chicago
Refinery

Donald F. Wilson, Coalinga, Ca.

Vincent S. Zielinski, Chicago
Refinery25 YEARS T. D. Esse, Colton Terminal
Denny W. Evans, San Francisco, Ca.
Eddie J. Girado, Fresno, Ca.
Charles T. Kumle, Schaumburg, Il.
Donald W. Robb, Milwaukee, Wi.
Joseph A. Saliba, Jr., North
Hollywood, Ca.
John F. Shaltz, Los Angeles Refinery
Donald G. Trapp, San Diego, Ca.
James H. Vanderveen,
Los Angeles, Ca.20 YEARS Ludivina D. Reyes,
San Francisco, Ca.
Gerald A. Lyons, Schaumburg, Il.
Norwood L. Williams,
Bainbridge, Ga.15 YEARS Hugh P. Bain, San Francisco
Refinery
William Brent, Jr., Los Angeles
Terminal
Johnny Castillo, Los Angeles
Refinery
Gary L. Conklin, San Francisco
Refinery
James A. Deshotels,
Forked Island, La.
Ronald J. Fontenot, Beaumont
Refinery
Vernon L. Jorgensen, San Francisco
Refinery
Augusta F. Mueller, Schaumburg, Il.
Gregory L. Powers, Los Angeles
Terminal
Richard M. Roach, San Francisco
Refinery
Laura E. (Sandi) Ross,
Los Angeles, Ca.
Anthony L. Stefan, San Francisco
Refinery
Jack E. Thorpe, San Francisco
Refinery10 YEARS John K. Bassett, Beaumont Refinery
David C. Cötter, Chicago Refinery
Clemencia Y. Dehesa, San
Francisco, Ca.
Kenneth R. Dorion, Chicago
Refinery
Constance Godines,
Los Angeles, Ca.
James C. Hall, Schaumburg, Il.
Willie E. Harris, Chicago Refinery
Dwight D. Hays, Chicago Refinery
William J. Houser, Los Angeles
Terminal
Thomas J. Hylka, Chicago Refinery
William Jackson, Chicago Refinery
Lawrence T. Leslie, Jr., Chicago
Refinery
Harry J. Litchfield, Chicago
Refinery
Deborah Patton, Portland, Or.
Edward D. Pawlowski, Chicago
Refinery
George Pitchford, Chicago Refinery
James M. Potter, Colton Terminal
Eugene Stockton, San Francisco
Refinery
Michael D. Ussery, Anchorage, Ak.
Ronald S. Willet, Los Angeles
Terminal5 YEARS Earl R. Bagley, Colton Terminal
Gary R. Balzhiser, Los Angeles, Ca.
Ruskin A. Battersby, Los Angeles
Refinery
Jerr A. Bell, Los Angeles Refinery
Gerald C. Berggren, San Francisco
RefineryThomas F. Bradley, Beaumont
Refinery
Michael J. Calligan, Chicago
Refinery
James C. Carr, Beaumont Refinery
Tommy G. Casey, San Francisco
Refinery
Lee D. Chamberlain, Chicago
Refinery
Melinda A. Chester, Beaumont
Refinery
Kenneth L. Clendening,
Cincinnati, Oh.
Shelley Cole, San Francisco Refinery
Mildred P. Coles, Beaumont
Refinery
G. B. Cravey, Beaumont Refinery
Darrell R. Davis, Los Angeles
Refinery
Ruby L. Decuir, Beaumont Refinery
Daniel E. Ener, Beaumont Refinery
Robert P. Ficks, Schaumburg, Il.
Clarence J. Galler, Beaumont
Refinery
Diane Gibula, Schaumburg, Il.
Thomas R. Gilcrease, Beaumont
Refinery
Ruben Gomez, Beaumont Refinery
Herbert David O. Guerra,
Beaumont Refinery
Walter F. Guy, Los Angeles Refinery
Kellogg R. Hunt, Chicago Refinery
Gene D. Ingram, Chicago Refinery
Sherman M. Jackson, Beaumont
Refinery
Franklin D. R. Kelley, Beaumont
Refinery
Terry W. Keyes, Beaumont Refinery
Adam G. Leday, Beaumont Refinery
James E. Leonard, Beaumont
Refinery
Michael W. Lovell, Chicago Refinery
Michael C. McMillin, Chicago
Refinery
Barbara L. Meyer, Schaumburg, Il.
William F. Miller, Chicago Refinery
Myrna F. Morgan, Beaumont
Refinery
Patricia A. Mrazek, Schaumburg, Il.
John R. Neil III, Chicago Refinery
John C. Nevils, Chicago Refinery
Roxie C. Odom, Beaumont Refinery
Lloyd I. Parkhurst, Chicago
Refinery
Leroy Pete, Jr., Beaumont Refinery
Joe G. Price, Beaumont Refinery
Ronald R. Read, Beaumont Refinery
Edward J. Reiser, Chicago Refinery
Jacob L. Rexroat, Chicago Refinery
Daniel C. Reynolds, Chicago
Refinery
Frederick E. Robbins, Portland, Or.
Robert M. Schoeppler,
Los Angeles, Ca.
Don S. Simmons, Beaumont
Refinery
George E. Smith, Jr., Chicago
Refinery
Thomas C. Sorenson, San Jose, Ca.
Edward C. Strysik, Chicago Refinery
Ruth A. Summers, Schaumburg, Il.
Peggy A. Thomas, Chicago Refinery
Grayce M. Wilkinson,
Schaumburg, Il.
Thomas P. Zak, Beaumont Refinery

April 1982

- 40 YEARS **Raymond J. Boland**, Chicago Refinery
Walter E. Haupricht, Chicago Refinery
Ernest R. Padilla, San Francisco Refinery
William E. Norris, Beaumont Refinery
- 35 YEARS **Raymond M. Bancroft**, Chicago Refinery
Myron L. Clark, Chicago Refinery
Benjamin A. Hurst, Montgomery, Al.
Flora J. Jenkins, San Francisco, Ca.
Thomas E. Lee, Jr., Beaumont Refinery
Richard Rapoza, Honolulu Terminal
- 30 YEARS **Russell E. Anderson**, Chicago Refinery
John H. Bercovitz, Los Angeles, Ca.
Lavern Dean Bishop, Los Angeles Refinery
John E. Brown, Columbus, Oh.
Jack W. Cannon, Los Angeles Refinery
King R. Heath, Schaumburg, Il.
Thomas R. Hutchins, Anchorage, Ak.
Elmer M. Johnson, Los Angeles Refinery
Roy D. Lint, Sacramento, Ca.
Marjorie E. Monahan, San Francisco, Ca.
Robert R. Parker, Schaumburg, Il.
Clarence G. Prichard, Pure Transportation Co., Olney, Il.
- 25 YEARS **John N. Hunt**, Schaumburg, Il.
Mary L. Jones, Atlanta, Ga.
Richard W. Schreiner, Atlanta, Ga.
- 20 YEARS **David M. Carlson**, Eureka, Ca.
Orville G. Linz, Cincinnati, Oh.
Hertha C. McKee, Beaumont Refinery
Robert D. Millen, Schaumburg, Il.
Robert E. Towell, Schaumburg, Il.
- 15 YEARS **Dennis Brannagan**, Los Angeles, Ca.
Leo D. Carr, Milwaukee, Wi.
Richard C. Clark, Beaumont Refinery
Theodore J. Hickel, Portland Terminal
Jimmy L. Holley, Americus, Ga.
Jimmy R. Huckaby, Griffin, Ga.
Walter A. Manzanares, Los Angeles Refinery
Edward T. Meyers, Chicago Refinery
James A. Moller, Schaumburg, Il.
Robert L. Panasiewicz, Detroit, Mi.

- Robert P. Raschke**, Chicago Refinery
Ann Russell, Schaumburg, Il.
Alvin C. Sadler, Beaumont Refinery
Ronald E. Smith, Los Angeles Terminal
James T. Tatum, Beaumont Refinery
Edison R. Willett, Beaumont Refinery

- 10 YEARS **Shawn B. Gilfillan**, Portland Terminal
Eulojio Hernandez, Jr., Beaumont Refinery
John A. Jarzynka, Chicago Refinery
Ken B. Malkin, Santa Maria, Ca.
Roger E. Mandley, Chicago Refinery
Larry W. McLaughy, Chicago Refinery
Donald Meyer, Schaumburg, Il.
Faye M. Miles, San Francisco, Ca.
Freddy Morales, Avenal, Ca.
Julia A. Teskey, San Francisco, Ca.
Gregory J. Tollefsrud, South Holland, Il.
Dalisay B. Yemat, San Francisco, Ca.

- 5 YEARS **Morris J. Allen**, San Francisco Refinery
Cecil T. Atkins, Beaumont Refinery
Larry G. Burton, San Francisco Refinery
Priscilla Cheveres, Beaumont Refinery
David R. Coleman, San Francisco Refinery
Billy G. Dalby, Beaumont Refinery
Steve A. Flack, Fresno, Ca.
James H. Glover, Richmond Terminal
Raymond J. Guillory, Beaumont Refinery
Ralph C. Isaacs, San Francisco, Ca.
Monty U. Jarrett, Beaumont Refinery
Loren M. Johnson, San Francisco Refinery
Kyle L. Koepf, Cleveland, Oh.
Randolph G. Ladd, San Francisco Refinery
Scott B. Lee, San Francisco Refinery
Wilson J. Leleux, Jr., Beaumont Refinery
James R. Lemons, Jr., Pure Transportation Co., Olney, Il.
Steve D. Maher, San Francisco Refinery
Wayne L. McDowell, Spokane, Wa.
Lloyd J. McGlothlin, Beaumont Refinery
Gene H. Michaud, San Francisco Refinery
Richard D. Moreno, Stockton, Ca.
Craig E. Notter, San Francisco Refinery
Randy L. Philpott, Sr., Beaumont Refinery
Caryn L. Reynolds, Sacramento Terminal
Buel L. Sauls, Jr., Beaumont Refinery
Bette J. Smythe, Los Angeles, Ca.
Bryce W. Stansbury, Beaumont Refinery

- Wiley G. Sullivan, Jr.**, Beaumont Refinery
Barbara F. Todd, Sacramento Terminal
James D. Walter, Taft, Ca.
Brian J. Ward, San Francisco Refinery
Vonscylle I. Wilson, Atlanta, Ga.
Ronnie M. Worth, Beaumont Refinery
Becky L. Wyatt, Van Nuys, Ca.
Phillip Yates, Jr., Beaumont Refinery

UNION CHEMICALS DIVISION**March 1982**

- 30 YEARS **James Hardy**, Bridgeview, Il.
25 YEARS **Lupe Adame**, Arroyo Grande, Ca.
15 YEARS **Alfred Brown**, Brea, Ca.
Seldon Reese, Brea, Ca.
10 YEARS **Harold Bloodworth**, Kenai, Ak.
Ben H. Flores, Rolling Meadows, Il.
Ronald E. Poe, Charlotte, N. C.
5 YEARS **Mott B. Covington**, Charlotte, N. C.
Victor Sieux, Newark, Ca.
Roaul A. Yates, Charlotte, N. C.

April 1982

- 30 YEARS **Sekordrei Hawkins**, Bridgeview, Il.
Loye G. Rains, Kansas City, Mo.
Henry L. White, Bridgeview, Il.
20 YEARS **Dan Stump**, Union Oil Center
Henry T. Waits, Birmingham, Al.
15 YEARS **John J. Falco**, Clark, N. J.
Elena S. Mercurio, Providence, R. I.
James F. Ronan, Conshohocken, Pa.
Dionisio Sarmiento, Arroyo Grande, Ca.
10 YEARS **Sandra L. Grimes**, Atlanta, Ga.
Barbara A. O'Neal, Oakland, Ca.
Darrel R. Wallauer, La Mirada, Ca.
5 YEARS **Richard A. Burgess**, La Mirada, Ca.
Graydon Mallory, La Mirada, Ca.
Douglas Weathers, Kenai, Ak.

UNION OIL COMPANY OF CANADA LIMITED**January 1982**

- 15 YEARS **Bert Van Donselaar**, Ft. St. John, B.C.
Jack Yucytus, Calgary, Alberta
5 YEARS **Hisham Abdullah**, Calgary, Alberta
Hart Schneider, Calgary, Alberta

February 1982

- 15 YEARS **W. Jack Gelineau**, Calgary, Alberta

March 1982

- 5 YEARS **Doral Paxman**, Calgary, Alberta

April 1982

- 10 YEARS **Helmut Verges**, Calgary, Alberta

76

UNION ENERGY MINING DIVISION

March 1982

5 YEARS Norman M. Nelson, Rawlins, Wy.

April 1982

5 YEARS Clark R. Whitson, Rawlins, Wy.

MOLYCORP

March 1982

30 YEARS Roy Reily, York, Pa.

20 YEARS William Hewitt, Washington, Pa.
Paul Hickman, Washington, Pa.
James Horne, Washington, Pa.
Carl Miller, Washington, Pa.
John Penn, Washington, Pa.
John Pettit, Washington, Pa.
Shirles Williams, Washington, Pa.15 YEARS Aladino Archuleta, Questa, N. M.
Leroy Garcia, Questa, N. M.
Bennie Martinez, Questa, N. M.
Jake Martinez, Questa, N. M.5 YEARS Margaret Gonzales, Questa, N. M.
Bradley Knaub, York, Pa.

April 1982

25 YEARS Ricardo Gonzales, Questa, N. M.

20 YEARS Robert McBratney, Washington, Pa.
Richard Miles, Washington, Pa.
A. Ray Plants, Washington, Pa.
Thurman Steele, Washington, Pa.

15 YEARS Joe Archuleta, Questa, N. M.

5 YEARS Charles Clontz, Mountain Pass, Ca.
Chauncey Gladfelter, York, Pa.
Michael Glatfelter, York, Pa.
Eileen Hendon, Spokane, Wa.
Dan McClung, Questa, N. M.
Steve Steever, Mountain Pass, Ca.
Michael Sterner, York, Pa.

POCO GRAPHITE

March 1982

5 YEARS Donna McCullar, Decatur, Tx.

April 1982

5 YEARS Thomas Norriss, Decatur, Tx.

JOBBER AND DISTRIBUTORS

January 1982

10 YEARS David Black, Haines, Ak.

March 1982

35 YEARS Bagwell Oil Co., Onancock, Va.
Stocks Oil Co., Snow Hill, N.C.30 YEARS Mid-South Oil Co., Tunica, Ms.
W. Van Caster, Sanger, Ca.15 YEARS Allen Oil Co., Florence, S.C.
Bugge Oil Co.,
Thief River Falls, Mn.
Newman Oil Co., Inc.,
Maryville, Tn.
Twig & Sons Oil Co., Warren, Oh.10 YEARS D. O. Blevins & Sons, Inc.,
Spruce Pine, N.C.
Maury River Oil Co., Lexington, Va.
The Clay Distributing Co.,
Attica, Oh.

5 YEARS Monroe J. Scelzi, Biola, Ca.

April 1982

40 YEARS Latvala Oil Co., Nashwauk, Mn.

25 YEARS Bruce A. Cooper, Kelso, Wa.
Waterman Oil Co., St. Marys, Oh.15 YEARS Earman Oil Co., Inc.,
Vero Beach, Fl.
Ralph O. Lowe Oil Co., Rome, Ga.10 YEARS Arlington Oil Co., Arlington, Tn.
Carrigan Oil Co., Buffalo Lake, Mn.
Salter Oil Co., Temperance, Mi.
St. Johns Oil Co., St. Augustine, Fl.5 YEARS Rolla Oil Co., Rolla, N.D.
Thiel Oil Co., Edon, Oh.
Wise Oil & Fuel Co.,
Cambridge, Md.
Zero Oil Co., Belzoni, Ms.

RETIREMENTS

January 1982

William B. Browne, Union 76 Division
Beaumont, Tx. August 21, 1950Beulah I. Dedde, Oil and Gas
League City, Tx. August 16, 1955Robert A. Fellows, Oil and Gas
Santa Maria, Ca. October 7, 1937James R. Goldsmith, Molycorp
Upper St. Clair, Pa. February 15, 1963Russell Hiatt, Corporate
Taft, Ca. August 25, 1945Perry M. Hicks, Jr., Oil and Gas
Lafayette, La. August 3, 1948August S. Hoyer, Union Chemicals
Palatine, Il. August 9, 1936Willie B. Julian, Union 76 Division
Los Alamitos, Ca. August 25, 1945Lucille V. Magee, Oil and Gas
Houston, Tx. February 16, 1960Charles A. McGuire, Union 76 Division
South Euclid, Oh. October 1, 1946Helen A. Melvin, Union 76 Division
North Hollywood, Ca. August 14, 1961James I. Morris, Oil and Gas
Houma, La. March 16, 1949Bernice E. Pfeiffer, Union 76 Division
Rolling Meadows, Il. October 14, 1957Thomas E. Shelton, Jr., Union 76 Division
Beaumont, Tx. October 17, 1949Iris N. Smith, Union 76 Division
Nederland, Tx. June 10, 1948Henry V. Staudt, Union 76 Division
Lemont, Il. August 1, 1954

February 1982

Louis R. Cargo, Union 76 Division
Rodeo, Ca. March 25, 1954Nathan R. Carouthers, Union 76 Division
Sour Lake, Tx. May 10, 1948Grover L. Cleveland, Jr., Union Chemicals
Yorba Linda, Ca. February 15, 1954John A. Coxon, Union 76 Division
Beaumont, Tx. August 11, 1952William J. Esgar, Union 76 Division
Lockport, Il. September 5, 1961William H. Foster, Union Chemicals
Rolling Hills Estates, Ca. February 17, 1953Elton L. Goodwin, Union 76 Division
Santa Maria, Ca. February 10, 1955Guy Harrod, Oil and Gas
Lovington, N. M. January 26, 1946John D. Hobbs, Molycorp
Taos, N. M. January 6, 1966George B. Holliday, Union 76 Division
Beaumont, Tx. March 28, 1949Wilbur R. Hunsworth, Science and Technology
Laguna Hills, Ca. August 15, 1969Alfred G. Johnson, Union 76 Division
Lemont, Il. November 29, 1939Thomas M. Jolly, Jr., Union 76 Division
Nederland, Tx. January 7, 1953Harold L. Le Blanc, Oil and Gas
Abbeville, La. April 3, 1950Frank K. Lord, Union 76 Division
Huntington Beach, Ca. November 5, 1945Edward F. Miller, Union 76 Division
Crockett, Ca. March 2, 1944Albert W. Murphy, Oil and Gas
Flora, Il. June 29, 1964George L. Pagan, Oil and Gas
Santa Paula, Ca. January 31, 1946Walter Pollard, Union 76 Division
Pismo Beach, Ca. March 14, 1946Walter P. Primbsch, Union 76 Division
Vallejo, Ca. May 9, 1946Paul J. Purser, Oil and Gas
Kermit, Tx. May 13, 1948William H. Roberts, Union 76 Division
Rodeo, Ca. August 22, 1955Frank W. Robinson, Corporate
West Covina, Ca. September 13, 1947Joseph E. Rose, Union 76 Division
Rodeo, Ca. March 17, 1942Burton B. Sandiford, Science and Technology
Placentia, Ca. May 10, 1948Leonard H. Saunders, Union 76 Division
Orinda, Ca. April 14, 1939Bernard M. Schwalm, Union 76 Division
Redmond, Wa. March 23, 1942Richard E. Sorg, Union 76 Division
Joliet, Il. February 24, 1947Frank S. Sunofsky, Union Chemicals
Long Beach, Ca. September 7, 1949Newman E. Tate, Union 76 Division
Albany, Ca. February 2, 1953William R. Van Liere, Union Chemicals
Rancho Palos Verdes, Ca. April 1, 1959

March 1982

Jack E. Coler, Union 76 Division
Long Beach, Ca. February 25, 1952
Charles G. Gearhart, Union 76 Division
Santa Margarita, Ca. June 2, 1945
Florence K. Graf, Corporate
Sepulveda, Ca. May 16, 1966
Marvin L. Hobbs, Oil and Gas
Winona, Tx. November 26, 1945
John J. McGowan, Oil and Gas
Brea, Ca. August 7, 1964
Arthur J. Nelson, Union 76 Division
Santa Maria, Ca. February 10, 1955
Harriet A. Riker (Appel), Corporate
New York, N. Y. September 28, 1965
Robert M. Sandmeyer, Corporate
Burbank, Ca. June 6, 1955
William A. Speights, Oil and Gas
Van, Tx. November 7, 1945
James A. Stimpson, Oil and Gas
Coalinga, Ca. June 15, 1953
Elden H. Turner, Union 76 Division
Santa Maria, Ca. September 16, 1944

IN MEMORIAM

Employees

Shahram Arastoozad, Union 76 Division
Beverly Hills, Ca. December 5, 1981
Garret R. Cypher, Oil and Gas
La Habra, Ca. January 16, 1982
Robert Eisenhart, Molycorp
York, Pa. January 13, 1982
Frank M. Hastings, Molycorp
Henderson, Nv. December 13, 1981
Don Jennings, Union 76 Division
Long Beach, Ca. December 4, 1981
Vernon F. Pilz, Union 76 Division
Lockport, Il. December 22, 1981
Dennis G. Sing, Union 76 Division
Joliet, Il. December 12, 1981
Ilee G. Spencer, Union 76 Division
Lockport, Il. January 30, 1982
James Warrick, Corporate
Buffalo Grove, Il. January 22, 1982

Retirees

Horace A. Lapham, Corporate
Alhambra, Ca. January 23, 1982
Norman C. Arnold, Oil and Gas
Acton, Ca. December 17, 1981
Louis A. Bernard, Oil and Gas
New Iberia, La. January 4, 1982
Arthur N. Bjork, Union 76 Division
Highland Park, Il. December 23, 1981
Virgil J. Braun, W. H. Barber Oil
Minneapolis, Mn. January 17, 1982
Marvin C. Bressler, Union 76 Division
Cincinnati, Oh. December 6, 1981
George W. Buckalew, Union 76 Division
Beaumont, Tx. January 8, 1982
Walter L. Bugg, Union 76 Division
Phoenix, Az. January 14, 1982
John W. Carlson, Union 76 Division

Eugene, Or. November 26, 1981
Robert T. Collier, Union Chemicals
Escalon, Ca. December 18, 1981
Charles N. Combs, Jr., Union 76 Division
El Cerrito, Ca. December 23, 1981
Joseph J. Cotter, Union Chemicals
Newark, N. J. December 4, 1981
Samuel C. Deleese, Union 76 Division
Anaheim, Ca. January 17, 1982
Edwin G. Deleree, Union 76 Division
Arroyo Grande, Ca. December 8, 1981
John Denney, Oil and Gas
Amarillo, Tx. December 23, 1981
Clarence S. Edgar, Molycorp
Washington, Pa. December 8, 1981
Charles A. Goughnour, Union 76 Division
Palm Springs, Ca. January 8, 1982
Rolla Grainger, Union 76 Division
Bakersfield, Ca. January 30, 1982
Otha A. Hawthorne, Union 76 Division
Long Beach, Ca. January 26, 1972
Francis L. Holmgren, Oil and Gas
Fallbrook, Ca. December 5, 1981
Art W. Johnson, Union 76 Division
Astoria, Or. December 10, 1981
Verner B. Kelly, Union 76 Division
Winter Gardens, Fl. January 22, 1982
Henry C. Kinkade, Oil and Gas
San Luis Obispo, Ca. January 7, 1982
Martin Koester, Union 76 Division
Richmond, Ca. December 22, 1981
Frank E. Loughrey, Union 76 Division
Evanston, Il. December 20, 1981
Charles Macho, Union 76 Division
Paso Robles, Ca. January 20, 1982
Glen Irving Morin, Union 76 Division
Grizzly Flats, Ca. January 10, 1982
Leonard Olson, Union 76 Division
Monterey Park, Ca. December 5, 1981
Joseph A. Parker, Barber Oil
Minneapolis, Mn. November 8, 1981
Herbert M. Pinkston, Oil and Gas
Parkensburg, Il. January 24, 1982
Floyd W. Pratt, Oil and Gas
Sapulpa, Ok. November 24, 1981
Jacob D. Rohr, Union 76 Division
Cincinnati, Oh. December 16, 1981
Emil F. Rostain, Union 76 Division
Delano, Ca. November 28, 1981
Lyle S. Salisbury, Union 76 Division
Fort Lauderdale, Fl. January 6, 1982
Paul F. Scheuffler, Union 76 Division
Toledo, Oh. November 20, 1981
Frederick S. Scott, Science and Technology
Whittier, Ca. January 18, 1982
Leslie Silva, Union 76 Division
Pinola, Ca. January 19, 1982
Harold W. Stewart, Oil and Gas
Cut Bank, Mt. December 29, 1981
Harold J. Upchurch, Union 76 Division
Bakersfield, Ca. December 3, 1981
Arthur I. Van Olinda, Corporate
Los Angeles, Ca. January 25, 1982
William F. Waldren, Union 76 Division
Fairfield, Ca. January 31, 1982
Gerral W. Wainscott, Oil and Gas
Orcutt, Ca. November 24, 1981
Roland T. Williams, Union 76 Division
Los Angeles, Ca. December 14, 1981
Robert M. Wilson, Union 76 Division
Temple Terrace, Fl. January 15, 1982
Norman A. Wood, Science and Technology
Placentia, Ca. December 21, 1981
Tom Wooten, Union 76 Division
Nederland, Tx. December 1, 1981



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

BULK RATE
 U.S. POSTAGE
PAID
 Los Angeles, CA
 Permit No. 62



SEVENTY SIX

UNION OIL COMPANY OF CALIFORNIA

VOLUME LXI, NUMBER 2
 MARCH/APRIL, 1982
 CONTENTS

Employee changes processed automatically
 All others include label with change of address



15



29

Life On An Arctic Rig	Page 1
Workers brave forbidding conditions on Alaska's frozen North Slope.	
Retirement Planning Helps Start New Lives	Page 8
Experts explain the intricacies of retirement to Union employees.	
Gasoline: The Fuel That Makes the Country Go	Page 12
High quality products are the result of a complex specifications network.	
Ridesharing: Hidden Benefits For All	Page 16
Union's downtown Los Angeles employees save energy through ridesharing.	
Modern Facilities Sprout in Old Farmlands	Page 20
An elegant hotel is part of an ambitious development scheme.	
Tapping Brazil's New Mineral Wealth	Page 26
Brazil's rolling hills are rich with a steel strengthening mineral.	
Shale Mining Explained	Page 32
An artist's rendering reveals Union's shale mining and retorting process.	
Radial Tires Help Stretch Car Mileage	Page 34
The rubber that meets the road means added savings.	
Service Awards	Page 37

COVER: An Arctic phenomenon known as a "Sun Dog" hovers over an exploratory rig in the North Slope where oil companies constantly seek to find new deposits. **Photograph by Sergio Ortiz.**

Published by CORPORATE COMMUNICATIONS DEPARTMENT, Union Oil Company, Box 7600, Los Angeles, CA 90051.
 Jerry Luboviski, Vice President
 Sergio Ortiz, *Editor*; Linda Gleason, *Associate Editor*; Ray Engle and Associates, *Art Directors*;
 Janis Derrick, *Editorial Assistant*.