

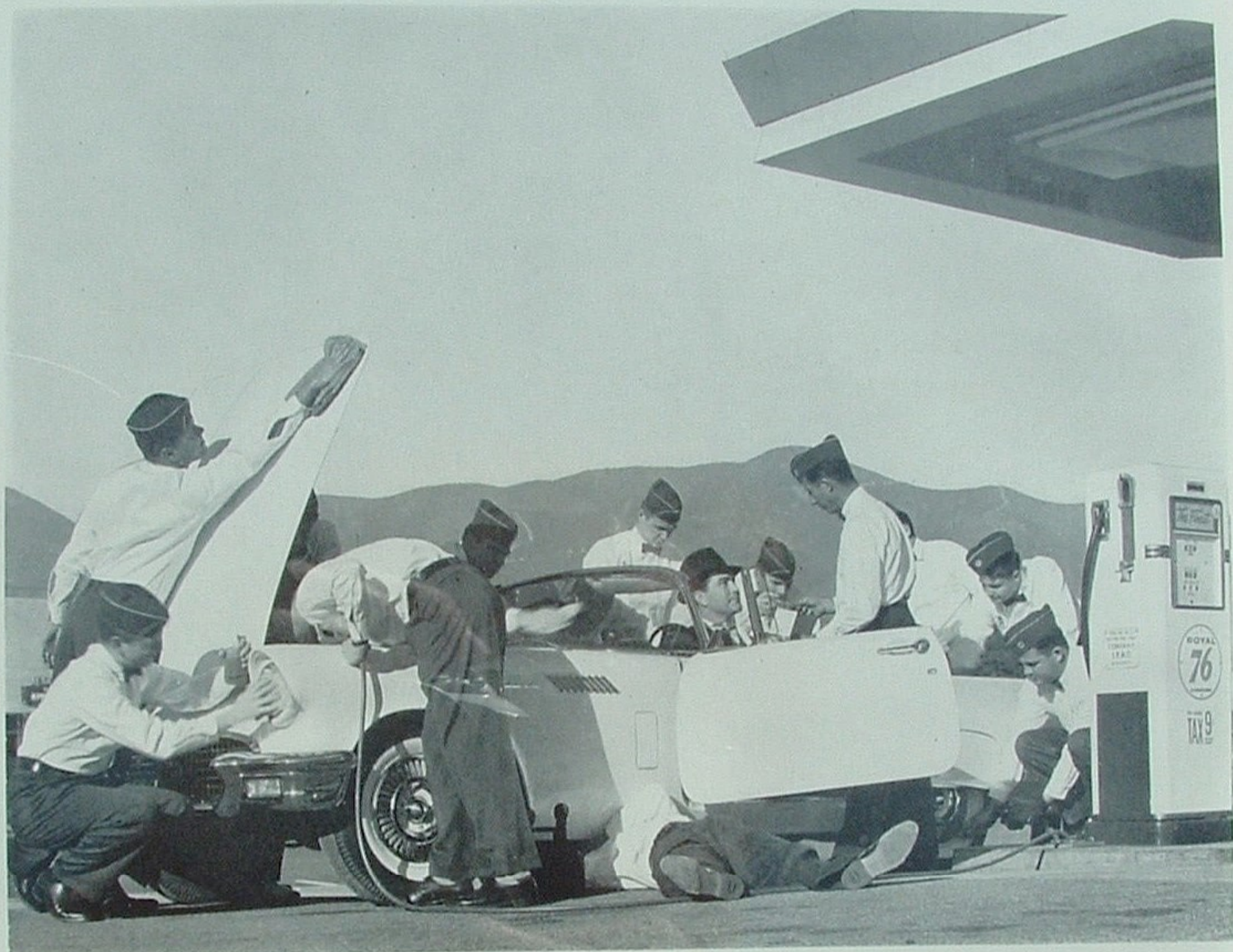


UNION OIL COMPANY OF CALIFORNIA

MARCH 1958



**Maybe this is overdoing it a trifle, but—**



**You could get this impression** of Minute Man service—it's so swift, so thorough, so complete. Best of all, it happens *automatically*, the moment you drive in.

Our customers tell us once you've tried it you're not likely to be satisfied with anything less. Because (the customers add) the service you get at a Union Oil station is as good as the gasoline.

This is exorbitant praise because the gasoline is the West's most powerful premium—new Royal 76.

Minute Man service plus new Royal 76 gasoline. Reason enough to make your next stop the sign of the big 76 where—***you know you always get the finest.***

**UNION OIL COMPANY OF CALIFORNIA**



**TUNE IN:** THE 76 SPORTS CLUB EVERY WEEK ON ABC-TV • **ASK FOR:** FREE SPORTS BOOKS AT YOUR NEIGHBORHOOD UNION STATION



MARCH, 1958

THE COVER: Purchasing Supervisor Bob Brauer (left) and D. V. Ellis of Electrical Products Corporation with the giant, eight-foot sign which will be used at stations with prominent highway locations. This particular sign is for W. E. Stults's station at the junction of Highways 99 and 66 in Ashland, Oregon. Photo by George Strook; story on page 10.

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**76** is a Union Oil Company of California trademark. It also symbolizes the American freedoms won in 1776, which made possible this nation's industrial development and abundance. Our SEVENTY-SIX magazine, published monthly, mirrors industrial freedom through the thoughts, skills, accomplishments and appreciations of Union Oil people. We invite readers to participate with us in an exchange of ideas and information. Address correspondence to The Editors, SEVENTY-SIX, Union Oil Center, Los Angeles 17, California.

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**Tyranny of a Majority**

by Raymond Moley



TYRANNY consists in the wanton or inequitable use of strength by the stronger, in the use of it to do things which one equal would not attempt against another. A majority is tyrannical when it decides without hearing the minority, when it suppresses fair and temperate criticism of its own acts, when it insists upon restraining men in matters not required by the common interest, when it forces men to contribute money to objects which they disapprove and which the common interest does not demand... tyranny lies in the wantonness of the act, a wantonness springing from the insolence which sense of overwhelming power breeds... It consists not in the form of the act, which may be perfectly legal, but in the spirit and temper it reveals, and in the sense of injustice and oppression which it invokes in the minority."

The foregoing deserves meticulous examination, not so much because its author, James Bryce, was a notable statesman, historian, and great commentator on American institutions, but because he was for 23 years Regius Professor of Civil Law at Oxford. Thus he was qualified in the use of the precise language of the letter and spirit of Anglo-Saxon jurisprudence.

Bryce's definition of tyranny has general application these days to government agencies which sordidly pay for political support by encouraging compulsory unionism. An arresting example is in what has been happening in the City of New York.

**QUILL'S GREAT POWER**

The city's Transit Authority, a creature of the city's and state's allied political administrations, ordered on Dec. 2 that Mike Quill's Transport Workers Union be the sole bargaining unit for all unions and workers in the city's transit system.

Quill, with his captive union and his great power in the CIO, has practically made the political heads of the state and city his dependents.

A small union, the Motormen's Benevolent Association, consisting of highly skilled and responsible workers, has struggled a long time to escape imprisonment in Quill's union. Its pleas for the right to bargain independently over a long period have

been spurned by the political powers of the city and state. With all equitable means exhausted and faced with obliteration, the MBA struck against the arbitrary order of the Transit Authority. Somewhat chaotic conditions prevailed for a while in the Christmas rush. The TA sought and obtained an injunction from a judge. MBA's officers were incontinently thrown in jail, and the TA and the city administration sought systematically to crush the strike, prating that "there is no right to strike against the government."

**THE MARXIAN IMPERATIVE**

When tyranny strikes, "the law is still." The TA undoubtedly had no legal right to order that Quill be sole bargainer. The MBA was outside the law in striking. The TA planted a "bugging" apparatus in the MBA headquarters months ago and, when apprised of the outrage, the city's police department winked. And now when the MBA workers, relying on the promise of Republican legislative leaders, have returned to their jobs, Quill is threatening to do with all his union members exactly what he denounced two weeks ago—i.e., strike against the government.

The Declaration of Independence and the great British writers who inspired its author had a lot to say about the underlying right to resist tyranny, even when tyranny shrouded itself in laws of its own fashioning. That was the basic justification of these desperate motormen.

It is disquieting that all except one of the newspapers of the city joined in the cry that "there is no right to strike against the government" and failed to emphasize the underlying right in the whole matter. Nor have they pointed out, as they should, that when government owns and operates the means of production, distribution, and exchange, there is an end of liberty for all citizens generally and workers in particular.

When the British Socialists were nationalizing the industrial life of the country, I asked Aneurin Bevan what he would do if nationalized workers struck. He answered that he would put the leaders in jail and the workers in the army. That is the Marxian imperative.

Reprinted through courtesy of Newsweek



# phantom pumper

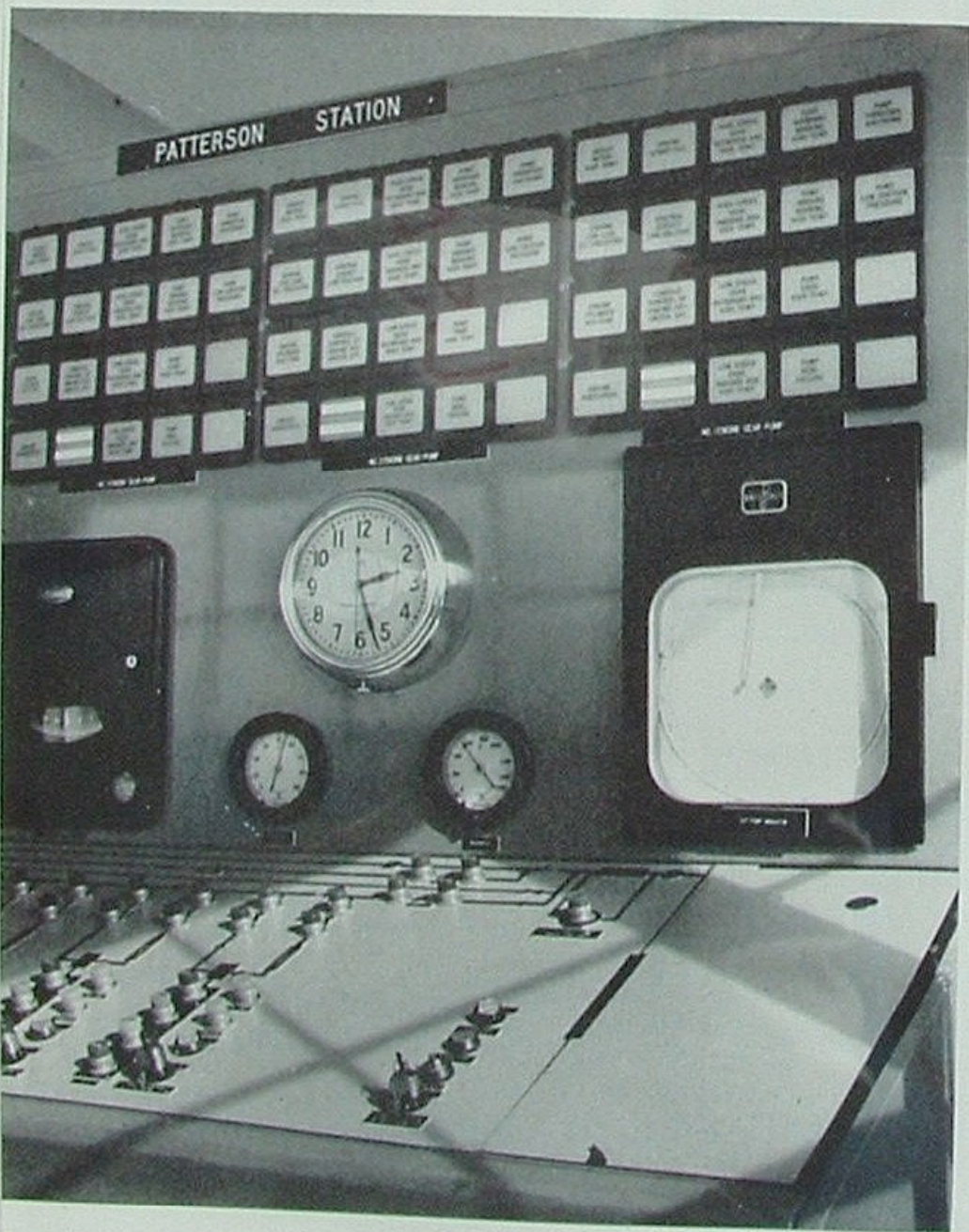
**O**n an uninhabited hillside several miles west of Patterson, California, Union Oil's newest pipeline pumping station is just opening its doors—or, to be more accurate, closing its gates for business.

Patterson Pump Station is as modern as they come. Its Bingham centrifugal pumps are connected by Lufkin speed-increasing gears to three powerful Enterprise engines. The engines use natural gas for fuel or, in the event of a fuel failure, can be switched over to a reserve supply of propane. Two engines operate almost continuously round the clock, the third serving as a standby for use when either of the other two is shut down. Fresh paint, an immaculate pump house and control room—desk, ash tray and phone—weed-proofed yard, sparkling lavatory facilities—everything a pumper could wish for is there. Everything except the pumper!

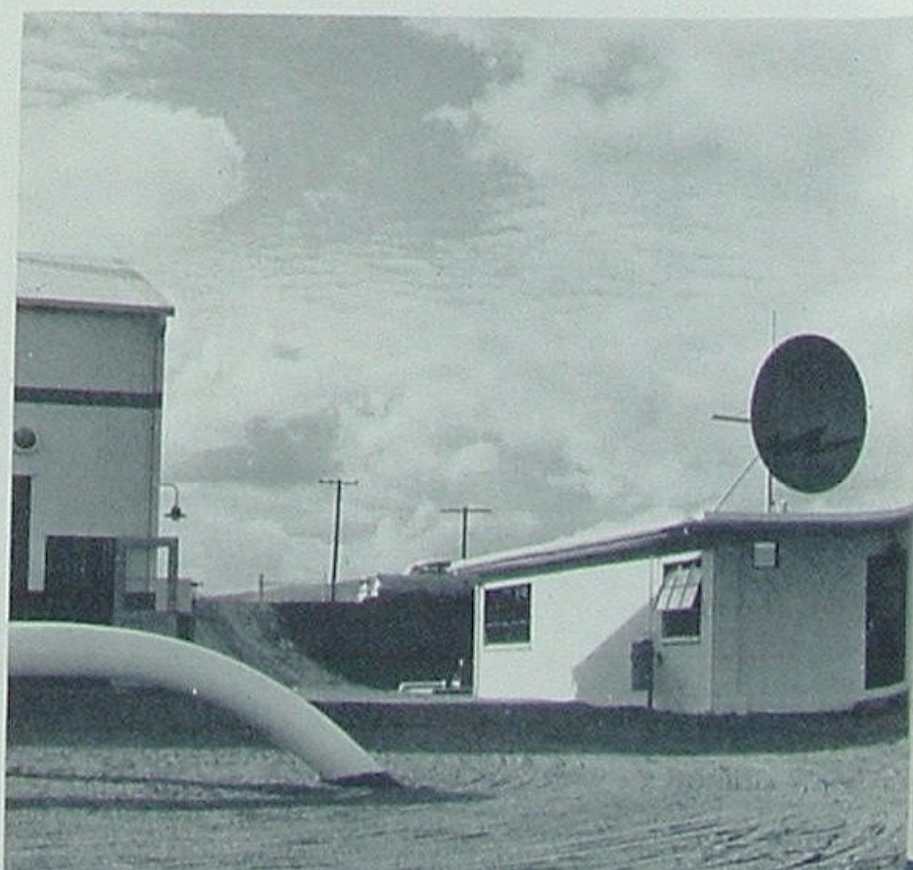
At eye level on the station's control panel are 80 miniature windows, most of them containing such lettered messages as:

JACKET WATER HIGH TEMPERATURE  
ENGINE LUBE OIL LOW PRESSURE  
ENGINE OVERSPEED  
CONSOLE CONTROL OF ENGINE SWITCH OFF  
SURGE TANK LOW LEVEL  
STATION LOW SUCTION PRESSURE

One hundred miles from its Coalinga starting point, the oil again moves underground, with pressure to boost it the final 125 miles.



The control panel at Patterson has 80 miniature warning windows (top), recording instruments (center), and (below) push-button controls—everything except a visible operator.





# of Patterson

PUMP HIGH DISCHARGE PRESSURE  
FOG SYSTEM OPERATING, etc.

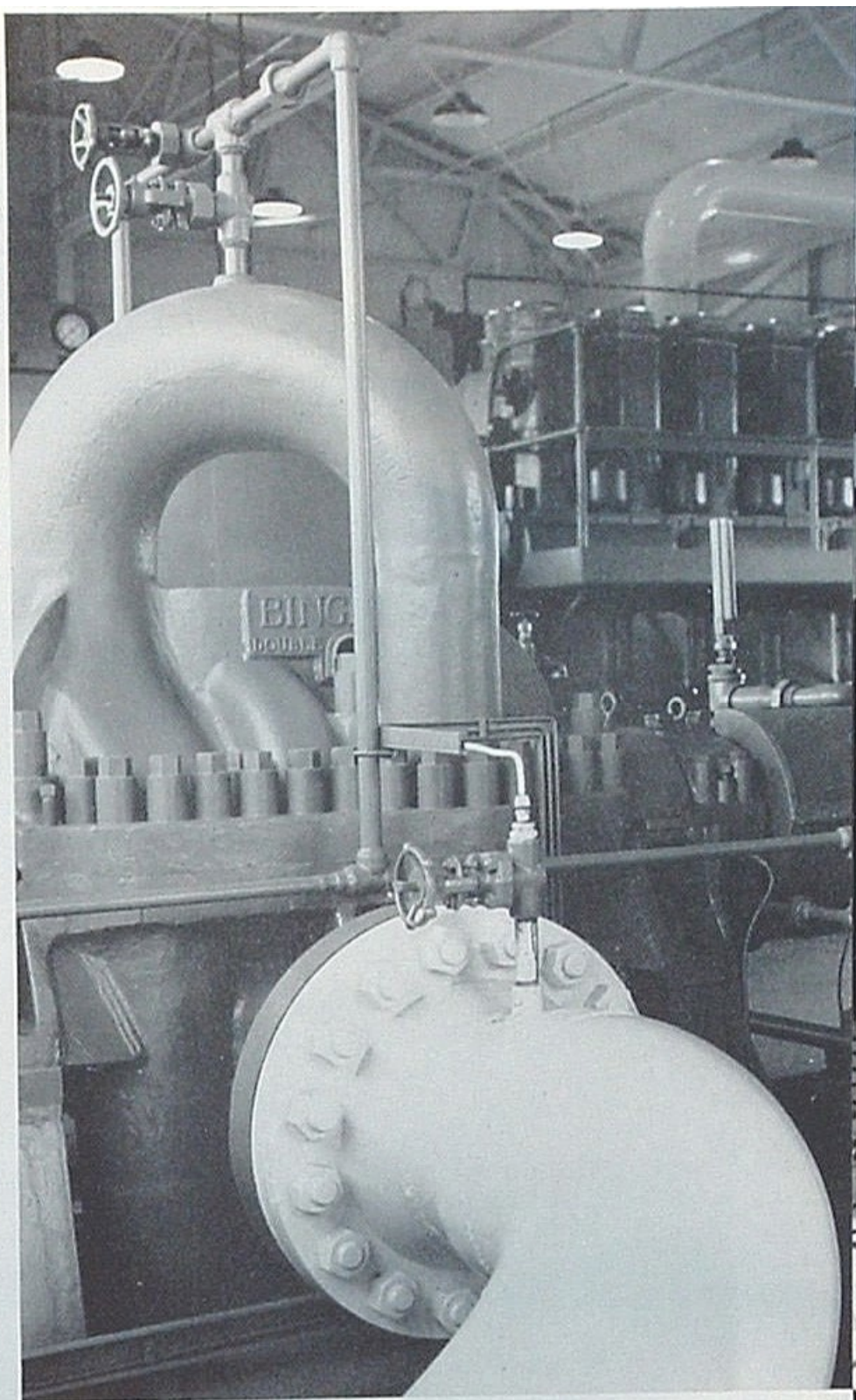
Obviously these are warning devices. If a light behind one of the lettered windows goes on, the operator knows immediately of an engine failure or pumping malfunction. Also he knows exactly where trouble is brewing and oftentimes can put his finger on a corrective pushbutton. But who's finger pushes the button?

Eternal vigilance is the motto at Patterson. If an engine starts to overheat, it is turned off at once and replaced by the standby. Any change in the Oleum Pipeline pumping rate shows up in one of the miniature windows and is immediately investigated. Even if fire breaks out in the engine room, a deluge of fog envelops the flames and everything is shut down promptly. Twenty-four hours a day an operator is Johnny-on-the-spot to handle 80 emergencies, singly or several at once. Johnny? What spot?

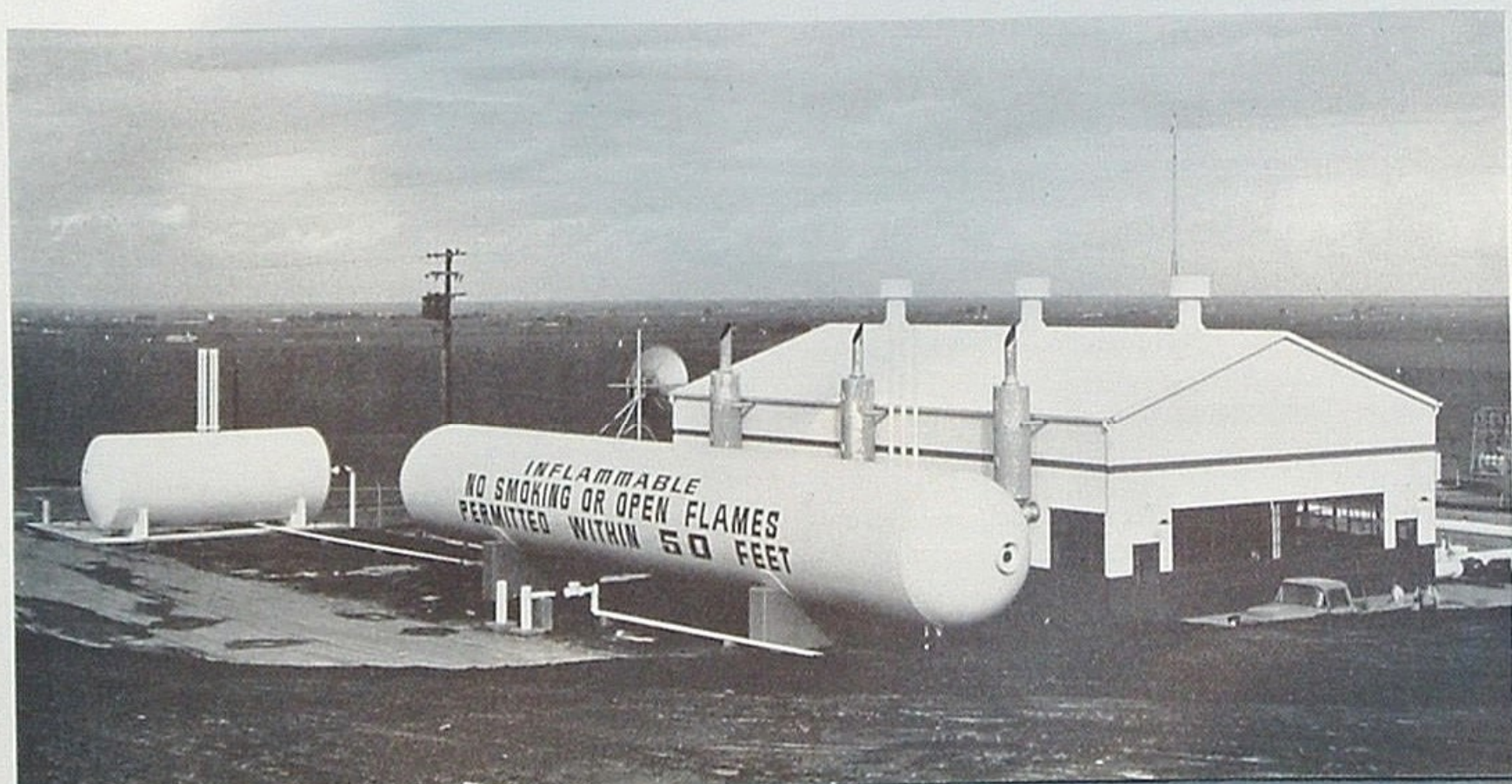
The odd thing is you never see him. No one sits at the control room desk, answers the phone, flicks ashes in the ash tray, or gets excited if an alarm sounds. The station hums in high gear like pump stations everywhere. But no one's in sight; gates are locked from the outside. The nearest Union Oil pipeliner is 100 miles away, at Coalinga.

Let's ask Sam Taber. Maybe he knows the phantom:

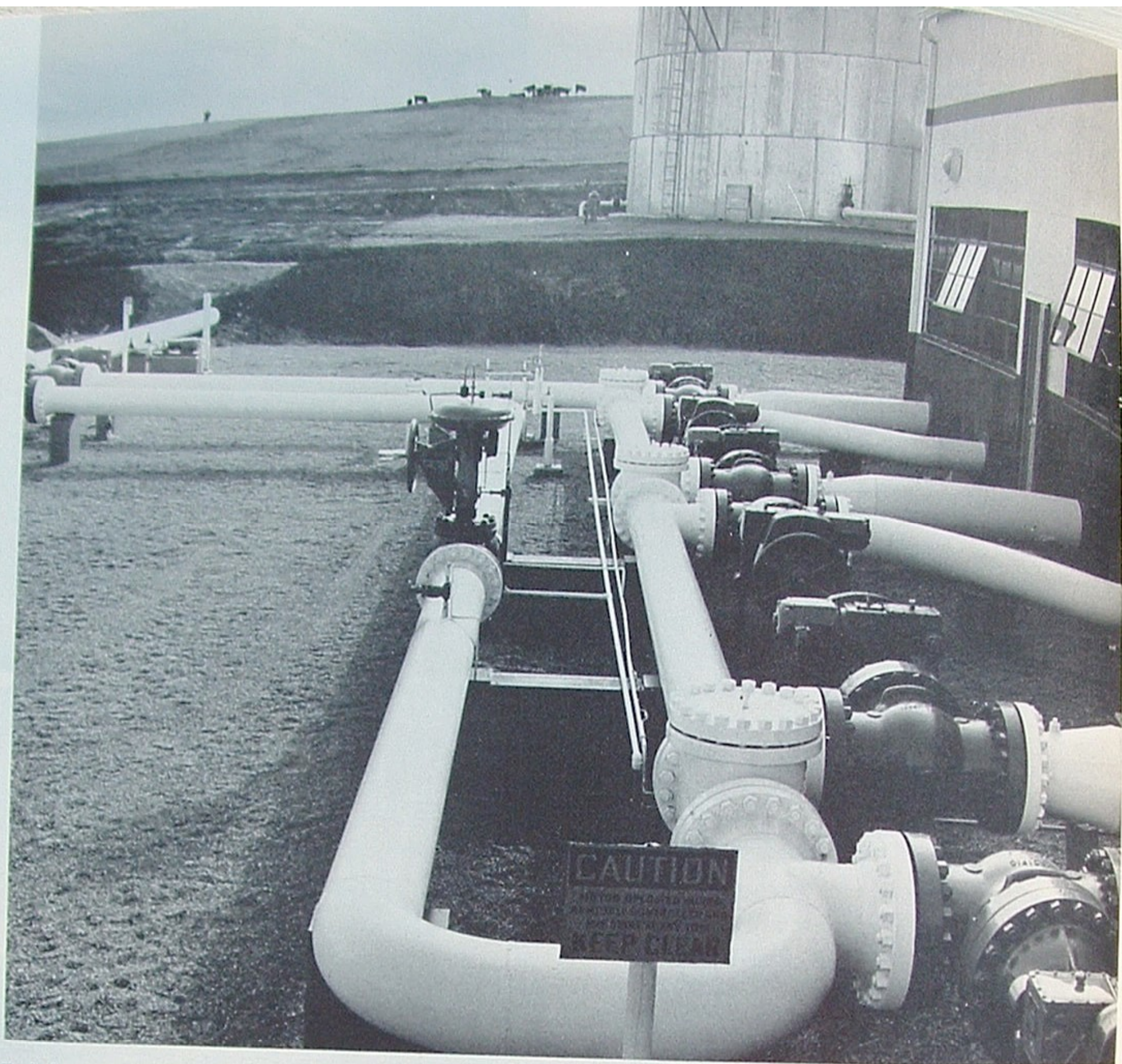
If the station's supply of natural gas runs low, engines help themselves to a reserve supply of propane (foreground tank); even if fire breaks out in the engine room, a deluge of fog envelops the flames. The operator's everywhere at once but you never see him.



Engines, speed-increasing gears and pumps at the new booster station operate or shut down at command of unseen phantom.







Each day under rich pasture lands and farms of California moves an 85,000-barrel stream of oil via Patterson (above) to Oleum Refinery.

## 85,000<sup>B/D</sup> (barrels per day) moved 225 (miles) by 10 (men)

"It's really quite simple," explains Sam Taber, manager of engineering and construction, who helped put the Oleum Pipeline system together. "All we had to do was build a fully automatic pump station at Patterson and hook it up by *microwave* with Coalinga. Instead of having an operator at the control panel of each station and a telephone line to keep 'em in communication, we installed a duplicate of the Patterson signals and controls at Coalinga. Now one operator easily handles both stations. There are no strings or wires attached; it's all done by microwave. Nothing to it!"

We'll take Sam's word for it—also his other bits of information concerning the now completed Oleum Pipeline project:

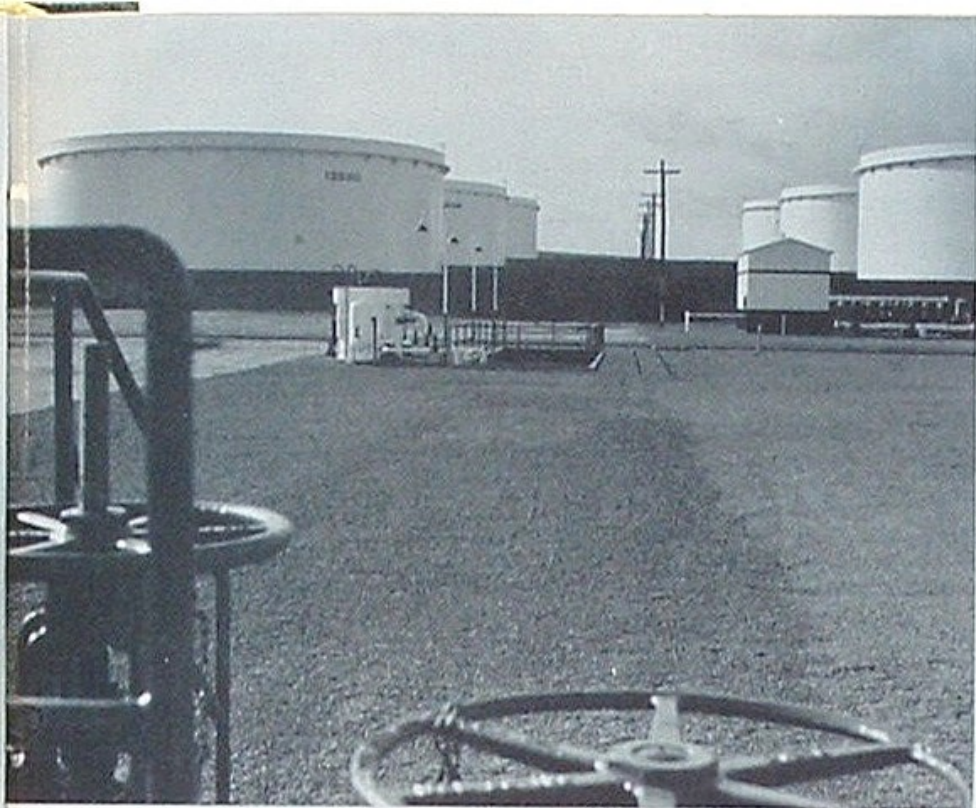
"Prior to completion of the new Coalinga and Patterson stations, pumps at our Junction station were able

to push only about 40,000 barrels per day of oil through the pipeline to Oleum Refinery. Now the pumping rate has increased to about 85,000 barrels per day.

"The six commodities currently being shipped through the system are *semi-refined pressure distillate* and *gas oil* from Santa Maria Refinery; *asphaltic Orcutt crude* enriched with natural gasoline to improve its flow characteristics; *enriched San Joaquin Valley heavy crude*, from which Aristo-type oils are made; *waxy crude*, from which Triton-type oils are made; and *mixed crudes*. Normally these commodities are gathered into storage tanks at Coalinga Pump Station until a minimum *tender shipment*, at least 40,000 barrels, has been accumulated.

"Pipeline operators are constantly concerned about the mixing that may occur when different types of oil follow each other through the line. Engineering has de-





The six commodities being shipped are accumulated in tanks at Coalinga until a shipment of at least 40,000 barrels is ready.

veloped that a heavy or slow-moving liquid tends to move in *streamline flow*, that is, the center of the stream moves ahead while its outer portions sort of drag their feet along inner surfaces of the pipe. However, by increasing pumping pressure and speed, or lowering viscosity, a condition called *turbulent flow* is established, which stops the *streamlining*, keeps the column of oil relatively intact, and prevents excessive mixing. Our operators therefore have to adjust pumping pressure according to the type of product moving through each section of line.

"Extra precautions have to be taken in some cases to prevent mixing. Waxy crude, for example, cannot be *interfaced*, or shipped in contact, with Orcutt crude because the latter's asphaltic fractions are harmful to lubricating oil stocks. So a buffer, consisting of about 6000 barrels of gas oil, is shipped between the two products. The gas oil harms neither of the other products and has value at Oleum as a refining stock.

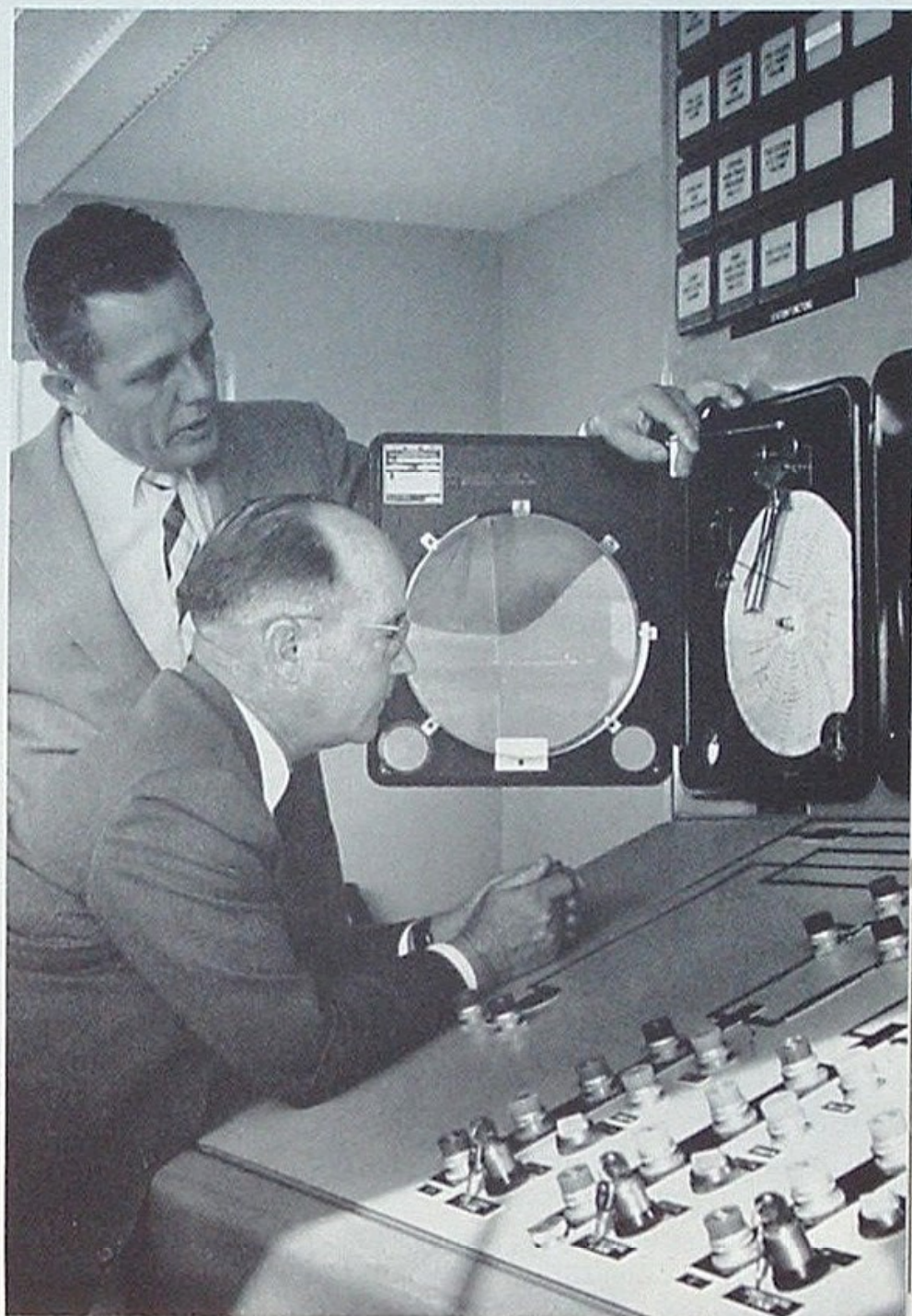
"The 225 miles of pipe between Junction and Oleum has a total capacity of 256,000 barrels, meaning that as many as six or seven commodities may be moving through it at any one time. At present pumping rates a given shipment of oil requires about three days to make the 225-mile journey, not counting storage time at Coalinga. To maintain this volume during the cool winter months, heat exchangers are installed at each pump station for transferring jacket-water heat from engines to the oil stream. This raises the temperature of the oil six degrees per station, thereby speeding its flow."

Oleum Pipeline, certainly one of the world's most modern and efficient oil transportation devices, today does a job that formerly required two or three tankships. Besides being a valuable asset to the Company, it makes the West and the United States less vulnerable to submarine and air attack in the event of war.

Thanks to automation, a mere handful of men will govern the entire operation as soon as all tests have been completed. Three one-man shifts at Junction and Coalinga, plus relief men, will constitute the full 10-man operating crew. Not counting, of course, the phantom pumper of Patterson.

/THE END

Assistant Superintendent "Dutch" Van Harreveld and Foreman Leo Anderson help keep the system up to optimum efficiency.

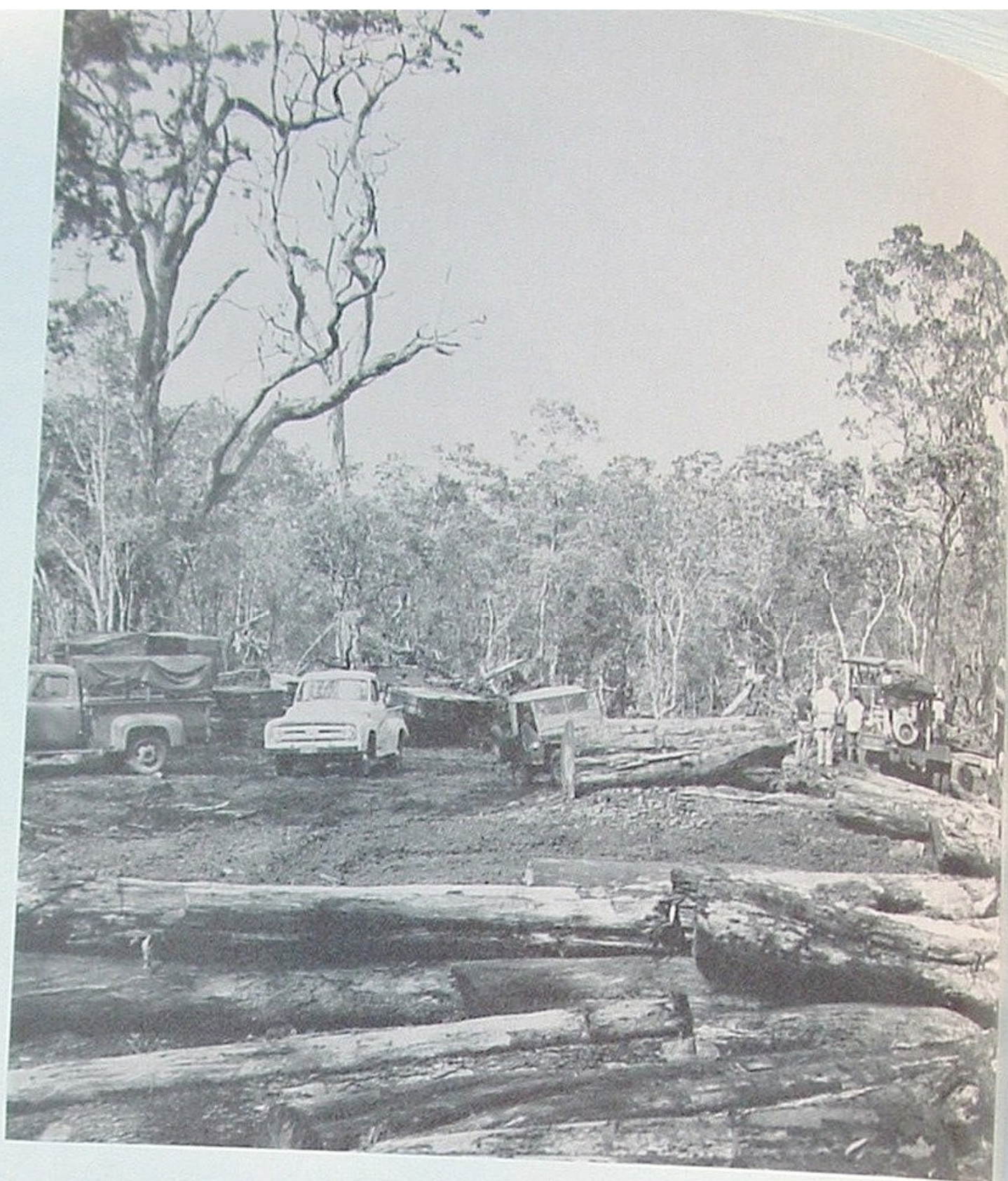


Senior Engineer Mel Whiteday, on one-man operating shift at Coalinga, also controls Patterson through microwave contact.





*Volcanic  
Mauna Loa  
supports  
a unique  
hardwood  
enterprise*

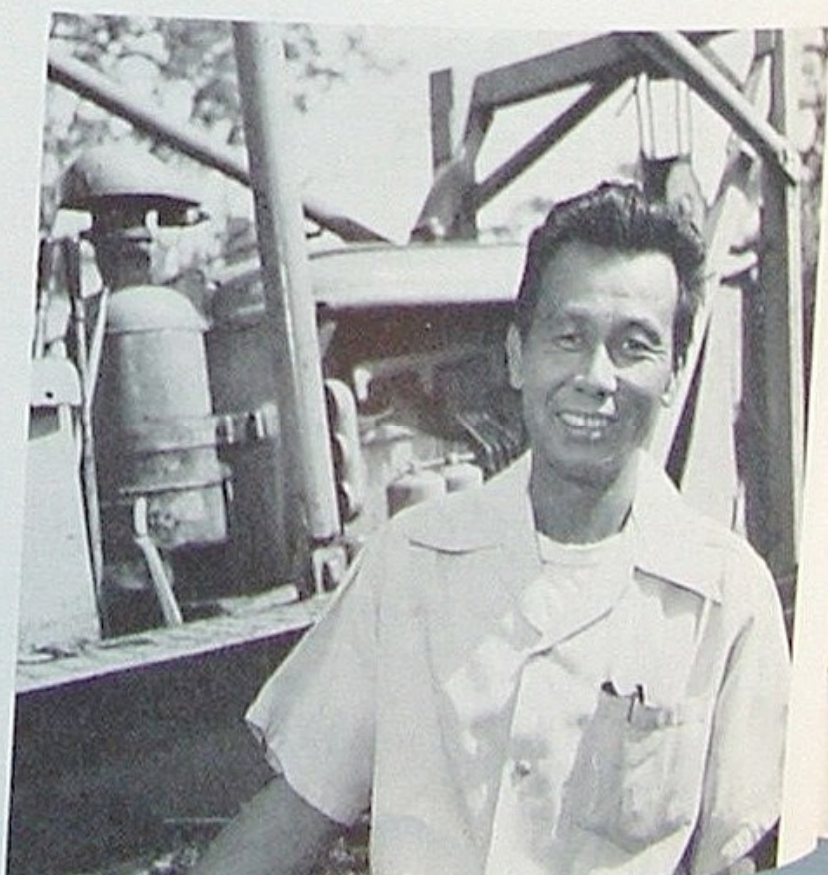


# KOA LOGGING

Industrial Sales Engineer Al Craddock, left, and Kona Petroleum Consignee cooperate on fuel and lubrication recommendations for equipment operating in rain forest on loose lava terrain.



Hajime "Jimmy" Takemoto is production manager for Tropical Koa, Ltd. Using to advantage his father's 40 years of Koa logging experience, he has hewn a fine career in hardwood.





To most people Hawaii means surfing, feasting, dancing, *lei* and "Aloha." To others earning their living cutting koa trees the island paradise means hard work—probably one of the toughest logging operations on earth.

The *acacia koa* tree yields an excellent hardwood, prized especially by Robert Ching Wo, head of Van's Furniture Company in Honolulu, who uses it in the manufacture of art objects, trays, bowls and high quality furniture. The extremely rare tree grows in rich soil, in a tropical climate where there is an abundance of rainfall, and at a narrow elevation between 4500 and 5500 feet. Attempts by individuals and governmental agencies to stimulate its growth through reforestation and tree farming have met thus far with little success.

So one of the world's few koa stands is limited to the slopes of volcanic, 13,680-foot Mauna Loa on the big island of Hawaii. Here along a 1000-foot band of fertile ash mountainside, where the trade winds deposit an annual average rainfall of about 100 inches, the fastidious hardwood struggles for survival in a dense growth of other tropical plants. Its rising high value justifies the strenuous labor and machinery outlay required for logging and transportation.

Tropical Koa, Ltd. have been eminently successful in this unique logging enterprise. From their headquarters at Honaunau it is 19 miles over steep grades

and through loose *aa* lava to the koa rain forest. The terrain is extremely hard on transportation equipment, especially tires. But a well equipped maintenance shop, bolstered by overnight parts service by air from the Pacific Coast, keeps everything in high gear.

Tropical Koa's production manager, Hajime "Jimmy" Takemoto, is one of the canniest woods bosses in the business. He and his crew, instead of transporting whole logs down Mauna Loa to a mill, have installed portable milling equipment at the logging site, thus avoiding the transportation of waste. Included in their mechanical assets are chain saws for felling, tractors, a finger-lift for loading, a Corley mill with 54-inch Atkins water-cooled saw for cutting the hard koa logs, a handy electric saw with 60-inch bar for reducing large logs to mill size, and a diesel-powered electric generator.

Jimmy naturally manifests a preference for Union Oil Company fuels and lubricants. His judgment is backed by 20 years of koa experience, preceded by his father's 20 additional years of koa pioneering.

According to the rain-forest lumberjacks, much of the koa standing today is overmature and declining as a species. Scattered among many non-commercial species, the trees seldom yield an abundance of board-feet per acre. Only through good management and the adoption of every cost-reducing technique has the enterprise maintained its long record of success.

/THE END



Portable milling equipment employed by Tropical Koa near the logging site eliminates hauling of waste down slopes of volcanic Mauna Loa.

Logs too large for the portable Corley sawmill are cut to proper size by two men equipped with an electric chain saw.





of pigeons







# and purchasing

## *How Purchasing produces profits for Union Oil and its dealers*

THE HORIZONTAL WINDOW fins that distinguish the Union Oil Center also make it the handsomest pigeon roost in Los Angeles. Birds come from miles around just to sit and enjoy the view. Already—even before the human population moves in—the Company is trying to find a way to protect the shining glass-and-aluminum facade of its Home Office from the feathered litter-bugs.

Logically, the task of pigeon chasing has been handed to the Purchasing Department. Whatever it takes to discourage the birds—chemicals, electronic gadgets, brute force—Purchasing has a specialist who can put his finger on the method. At the lowest cost per bird removed.

Pigeon chasing ranks as routine to these men who last year bought nearly \$70,000,000 worth of services and material for Union Oil. It's hard to surprise people who, as a matter of course, buy jewelry, pipe, sporting goods, draperies, derricks, desks, landscaping, paper by the hundreds of tons, and chemicals with names such as cerioxide and allyl glycidyl ether.

If you need it, they'll get it, and probably save you money, too.

In the depths of the steel shortage, the Company needed pipe to build its line between the San Joaquin Valley and Oleum Refinery. At that time—two years ago—pipe fabricators could send you their sympathy and little else when you placed an order.

However, a fabricator in Milwaukee knew that a mill in Detroit, which ordinarily produces steel for automobile bodies, had 30,000 tons of extra capacity during the wait between 1956 and 1957 models.

The Detroit mill supplied 30 ton rolls of three-eighths-inch thick steel; another firm in Detroit stretched and sheared it into plates; and the fabricator in Milwaukee produced 900 carloads of pipe. Because of this triple play, the pipe was in the ground a year ahead of normal schedule, in time to keep the refinery operating during a tanker strike that would have cut off its crude oil supply.

Such round-about purchasing methods are, at the

*continued*

Remer Fenton and Bob Becker, of Purchasing, connive with pigeon exterminator to protect Union Oil Center. The bait: a white lady pouter.





The Purchasing Department supervisory staff: (from left) Al Paget, F. M. Knight, Manager Charles Perkins, and H. R. Hanson.



Jeff Raffi and Hanson inspect part of the Company's pipe inventory. Purchasing tries to hold stocks low as practical.



Systematic economies and improvements brought \$65,000 savings in service station signs.

## Purchasing—continued from page 11

moment, a thing of the past due to the swing from a seller's to a buyer's market late last year. There are no shortages. Deliveries can be scheduled on the nose. And the department is able to concentrate on its primary job: buying to the best advantage.

In the language of a purchasing agent, "buying to the best advantage" means: 1) buying an item of the proper quality for the job it must do; 2) at the lowest cost. Tattooed on every Union Oil buyer's chest, right over his heart, is the motto: "A dollar saved equals the profit from \$10 in sales."

Buying for proper quality and price doesn't involve bazaar-merchant haggling nor twisting salesmen's arms. Usually it begins when a reliable supplier is selected by competitive bidding. Often, it comes with tedious research, sometimes years of working to reduce the cost and improve the quality of the things we buy.

The familiar orange-and-blue 76 sign that identifies Union Oil dealer stations is an example. Purchasing has been chipping away at the price of that sign since 1953.

The first chip was knocked off in 1954, when a pre-fabricated crate saved \$3.20 on the shipping cost of each sign. As time went on, the type of plexiglas was changed; so were the numerals, the finish on the frame, the lighting, and the method of producing the basic structure.

Four years and \$65,220 in savings later, the stations have a better quality sign with a lifetime finish, lighter in weight, and better illuminated than the original.

Often, the department's research begins before a nickel is spent, even before the people for whom it buys know what they *want* to buy. Helping other departments make up their minds is a specialty of the house.

Along with the success of the 76 Sports Club program, came a demand for athletic equipment dealers could use in their promotions. No one knew exactly what was needed. But dealers and Company people were buying individually, an inefficient system that jangled the nerves

of the Purchasing Department man who sits in on the joint Public Relations and Advertising—Marketing meetings.

With the blessing of both departments, he put on his track shoes and began running down sources of footballs, basketballs, tennis rackets, fishing rods, of all the things that might appeal to tomorrow's champions.

He came back panting. But in his sweaty hand he had a list of possible items arranged by seasonal sports, with delivery schedules, and special selections such as a mitt, a ball, and a bat, or rod, reel, and creel. Further, his prices would enable a dealer to buy one basketball, for example, at the same low price he'd get by buying a hundred.

The low prices were a result of combining many orders and of selecting standard merchandise already in the supplier's warehouse.

This is the practice Union Oil follows when it buys for itself. Identical materials needed throughout the Company—valves, light globes, packing for pumps, office machines, a myriad of items—are purchased under master contracts. Where possible, a type used by many buyers is ordered. Custom tailoring costs money.

The savings are large, real, and a joy to the Incentive Plan administrators.

While an absorption plant was being planned, Purchasing reviewed the construction contract—another of their services—and found that a special heater tube had been specified. They suggested a standard tube, stocked by most suppliers. The savings: \$4117, with immediate delivery instead of a 30-day delay.

Take the matter of signs: road signs, safety signs, operating signs. Union Oil's plants and oil fields are plastered with them. Most of the signs have been hand-painted. They're short-lived and costly to maintain.

Now—following a Purchasing Department survey—they are being replaced with standard baked enamel signs.





Since the 76 Sports Club started, Dave Timmons has become an expert on athletic equipment. Volume purchasing methods enable dealers to buy equipment for Sports Club promotions at low cost.

produced by a number of companies. The savings: \$50,000 this year, and a considerable number of thousands each year from here on out.

The department's interest in saving money does not end with a purchase.

It keeps a prejudiced eye on the Company's inventories, the five or six million dollars worth of materials, supplies, and repair parts stored for future use. Purchasing's job is to hold the inventory to a minimum. With reason. The combination of loss of earnings by the money invested, taxes, insurance, storage expense, and such actually double the cost of an item that lies on the shelf for four years!

When equipment no longer has value to the Company, the Surplus Division of Purchasing disposes of it. If you'd like to buy a tugboat, parts of a dry-ice plant, a diesel electric locomotive, a fleet of tired automobiles, used laboratory glass, or a few tons of waste paper, Purchasing will be happy to accommodate you.

Perhaps its oddest surplus sale was a supply of water which had been canned for use in lifeboats. They found a buyer, too: an outlet house that sold the water to a company in Arabia, where it's carried in jeeps that travel the desert.

Surplus sales is a business within a business, bringing in more than \$800,000 a year.

These dollars, and the dollars that are saved by scientific purchasing methods, are a brake on the cost of doing business. They help Union Oil keep its prices competitive. They are a major factor in the Incentive Plan, since the Company's contributions are based on net profit. Without the department's passion for making 1958 money act as though it had never heard of inflation, the squeeze between rising costs and static prices could be painful.

Pity the pigeons! And, since Purchasing operates on the waste-not, want-not theory, watch out for the chicken potpie when the Cafeteria at Union Oil Center opens.

/THE END



D. C. Erb, Don Reed, and a few of the types of containers Purchasing has improved—while saving money.

Ralph Clark and Don Reeder with a few of the hundreds of tons of paper Union Oil buys each year.





# Business Highlights of the Month

This excellent photo taken in Houston, Texas, during January shows Union Oil's Board of Directors and their Texas-Louisiana area hosts. Seated (clockwise from left) are Board Members A. C. Stewart, A. C. Rubel, president, Frank R. Denton, Alan J. Lowrey, James R. Page, Horace C. Flanigan, Herman Phleger, W. L. Stewart, Jr., Reese H. Taylor, chairman, Dwight Whiting, K. E. Kingman, William H. Doheny, H. W. Sanders, Francis S. Baer, Frederic H. Brandt, Dudley Tower and Leigh M. Battson. Standing, from left, are David A. Dunn, R. M. Condon, R. F. Niven, David George, J. E. Suttles, E. R. Atwill, J. S. McNulty, W. E. Farrar, Ray A. Burke, Charles W. Stuckey, Jr., Basil P. Kantzer, Albert M. Tolbert, E. J. Marti, E. E. Sands, Jr., Robert L. Clarke, J. B. Evans, Arch Dawson and H. W. Hightower.



## ATTENTION, EMPLOYEE SHAREHOLDERS

Your proxy is your vote. If you do not plan to attend the Annual Shareholder's Meeting on Monday, April 28, your vote can be evidenced by signing and returning the proxy card which was mailed to you recently. The increasing amount of employee-owned stock—now approximately 350,000 shares including the Incentive Plan holdings—emphasizes the importance of employee participation. Please cast your vote to assure maximum representation at the meeting.

### PRODUCTION *Derrick costume by Union.*

After an extended procedure before various committees and agencies of the Los Angeles city government, Union Oil Company was finally granted a city council permit to drill a prospect well on a large lease block in the vicinity of Paramount Studios in Hollywood. The well will be drilled on a small portion of the studio property.

As far as the Field Department is concerned, issuing of the permit marks just the beginning of drilling problems. Field engineers are now actively engaged in designing a rig setup that will keep drilling operations practically unseen and unheard. The rig will occupy a minimum of space. The entire operation will be completely soundproofed and all visible portions of the drilling rig will be camouflaged. Any part of the equipment left showing will be painted to harmonize with the surroundings. Drilling operations will be





planned carefully so that servicing by trucks can be kept to a minimum. Drilling crews, specially trained in this type of operation, will exercise every practice and precaution to win the role of good neighbors.

We hope to spud in within the next 90 days. When you are in the vicinity of Hollywood, steal a glance at the well's location — if you can find it.

*from Dudley Tower*

#### EXPLORATION *Solar smog!*

The Exploration Department is presently conducting an airborne magnetometer survey in our Far North search for oil. The optimum time for conducting such work in this area is from November through April, according to weather statistics compiled during the past 25 years.

Unfortunately the survey party has been grounded much of the time, first because of abnormal weather conditions, and secondly because of severe magnetic

storms. These magnetic storms result from bombardments of the Earth by charged particles from the Sun, which greatly change the intensity of the Earth's magnetic field for short periods of time. Emission of these particles is abnormally high at present, since the 11-year sunspot cycle is at its peak. The exploratory effort is restricted by the climatic and electrical effects, but our survey party is taking advantage of clear weather in all spheres to complete the program.

Incidentally, the International Geophysical Year, now in progress, has chosen this predicted period of maximum solar activity to observe these phenomena.

*from Sam Grinsfelder*

#### RESEARCH *Interesting shale oil specs!*

Our Research representatives presented technical papers at the National Western Mining Conference, Oil Shale Section, in Denver, Colorado, during February.



Information concerning the newly initiated underground oil shale mine was given for the first time, and further progress in retorting and refining was discussed. Included in the retorting and refining paper were just-accomplished facts pertaining to rock throughput rates in excess of 900 tons per day, and the shipping of barrel-quantity samples of JP-4 jet fuel and marine diesel fuel to the Navy for evaluation, including engine testing. These shale-derived fuels not only pass all known military specifications but exceed them significantly in numerous important characteristics, as follows:

#### MILITARY JP-4 JET FUELS

Characteristics	Specification	Shale Product
Aromatics, volume percent	25 max.	17
Freezing point, degrees F.	-76 max.	-78
Heat of combustion, BTU per lb.	18,400 min.	18,634
Sulfur, weight percent	0.4 max.	0.01

#### MILITARY MARINE DIESEL FUEL

Characteristics	Specification	Shale Product
Cetane number	47 min.	55.2
Cloud point, degrees F.	10 max.	-4
Sulfur, weight percent	1.00 max.	0.01

*from Fred L. Hartley*

#### MANUFACTURING *From waste to wages!*

Our refineries manufacture several by-product chemicals that formerly were discarded:

Sulfur, a by-product of petroleum refining, is manufactured at our Los Angeles, Oleum, and Santa Maria refineries. This sulfur, totaling 30,000 long tons in 1957, has a high degree of purity. It is shipped from the refineries in a liquid state by tanktruck.

Ammonium sulfate, amounting to 23,000 tons in 1957, is produced only at Los Angeles Refinery. Used essentially as a fertilizer, the chemical is a combination of ammonia and sulfur. The ammonia, in part, is obtainable from cracked gas fuel produced from thermal cracking operations; the sulfur is part of the sludge acid from refinery treating operations using sulfuric acid.

Petroleum coke is produced at both the Oleum and Santa Maria refineries. It is a residual product from high-severity thermal cracking of residual petroleum stock. Production in 1957 was about 325,000 tons.

*from J. W. Towler*

#### MARKETING *Your sales are showing!*

The Employee Sales Development program showed excellent progress at its first checkpoint on January 9th. Besides hundreds of new credit card customers obtained by Union Oilers outside the Marketing Department, 41 Direct Sales prospects had been brought in.

The Company has entered into a 10-year contract with the Harbor Commission to operate San Diego's new \$600,000 ship bunkering facilities at 10th Avenue Pier. When in full operation, by September 1, 1958, the facility is expected to greatly stimulate development of the port's commerce.

Seattle Division's acquisition of two additional 25,000-gallon-per-month service stations in Anchorage, Alaska, brings us a total of 26 retail outlets in that area.

Union Oil has joined with Port Angeles, Washington, Chamber of Commerce to create an "Olympic Winter Wonderland" in that vicinity. The development should contribute magnificently to winter sports and offset the slump in business that heretofore invariably followed the summer tourist season.

Honolulu became a part of the 76 Sports Club network on January 2 via Cinescope over Station KULA, Honolulu. Bill Brennan, executive producer of the show, and Elroy Hirsch introduced the program to Hawaiian sports fans.

Service Station No. 4444 is nearing completion. It will be Company-operated—at the rear of Union Oil Center.

*from Roy Linden*

#### COMPTROLLER'S *In conformance with the law.*

The Comptroller's Department responsibilities include the preparation of various governmental reports, including those filed with the Securities and Exchange Commission. In one way or another the S.E.C. (Securities and Exchange Commission) affects most of the larger American corporations. Union Oil Company like all other corporations having stocks or bonds listed on national securities exchanges is required to file with the S.E.C. a substantial amount of significant information relating to the Company, its securities and management.

The Securities and Exchange Commission functions under various acts approved by Congress. Two of the acts of importance to the Company are the Securities Act of 1933 and the Securities Exchange Act of 1934. The Securities Act of 1933 is chiefly a disclosure statute. Its purpose is to have the issuer of securities, such as Union Oil Company, give prospective investors, through the medium of a prospectus, all material information about the securities being offered for sale. The Securities Exchange Act of 1934 supplements the provisions of the Securities Act in regulating public trading in securities. It provides for the registration of national securities exchanges, national associations of securities dealers, securities listed on exchanges, and brokers and dealers trading in the over-the-counter securities markets. The Act also requires the issuer of securities to keep financial and other information relating to the issuer up-to-date through the medium of periodic reports which are available to the public.

The prospectus for the Union Oil Employees Incentive Plan, which was recently mailed to all Company employees, is one of the many reports that are required as a result of S.E.C. regulations. The initial prospectus was given to employees in 1954 at the inception of the Plan and in each subsequent year a prospectus is sent to the employees in order to present any significant changes in the Plan, as well as current information with respect to the Company's earnings and the status of the transactions under the Plan.

*from R. E. Dalbeck*



## Tiny tug with a big boom

**D**o you like tackling big jobs? Then take an admiring look, below, at 4½ million boardfeet of logs moving toward the sawmills on Lake Coeur d'Alene in Idaho. It's one of the biggest log cargoes ever seen in this neck of the woods. And pulling all five "brails" at once is a doughty tug — powered of course with Union GM Diesol and lubricated with our T5X.

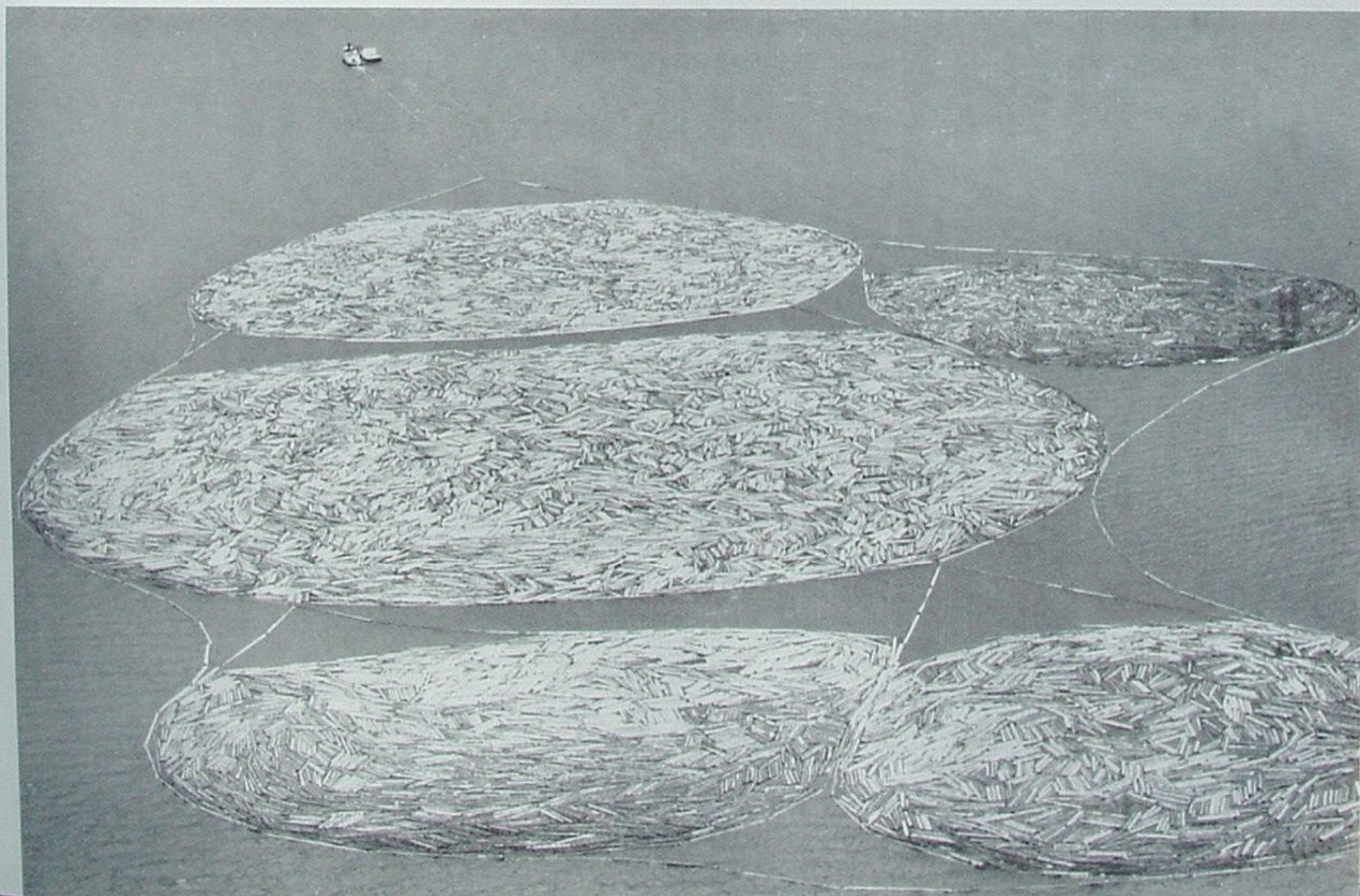
Lafferty Transportation Company, whose president, Mrs. Eva M. Lafferty, modestly confesses to more than 45 years in the transportation business, consider this quite a routine operation. Their half-century on rivers and lakes of the Northwest has been a succession of such Paul Bunyan tasks.

Routine also is the linesman's tight-rope walking act, at right. Balancing himself with a pole, he treads one of the world's most precarious paths to break up a log jam.

Nobody sees and appreciates better than an oil salesman the thrilling drama and "routine" human courage taking place daily in modern industry.



from M. E. Nichols





*Hope Street, below, in Los Angeles is evidence that...*





# the GOOD EARTH is better paved with BLACK GOLD

**C**ITY FATHERS in Los Angeles were reminded a short time ago that Hope Street, at left, might be overdue for resurfacing. Paved with Union asphalt in 1908, the thoroughfare had never been scheduled for repairs except when car tracks were removed or pipe trenching had cut through the original blacktop. For half a century Hope had withstood the buffetings of automobiles, heavy vans and streetcars. The hot sun

had tried to liquidate it. Heavy winter rainstorms had attacked it with curb-to-curb torrents of runoff water. Fifty years of such hardships seemed enough for any paving.

But when engineers examined the street they decided against making any immediate repairs. The old asphalt showed quite a few scars and narrow cracks, still it was basically as stout, smooth and safe as the day it was laid. Tax dollars, the city fathers concluded could be spent to better advantage on street improvements elsewhere.

Hope Street and Wilshire Boulevard are only two of several thousand western thoroughfares paved with Union's brand of black gold. Ever since Oleum Refinery opened, in the 1890's, with asphalt as its first principal product, a steady stream of road oils has coursed through the transportation scene. Besides surfacing thousands of miles of highways and streets in the West, Union asphalt has stood up for longer than a generation in sections of Tokyo, on tropical roadways in Malaya and Thailand, and in numerous other countries bordering the Pacific.

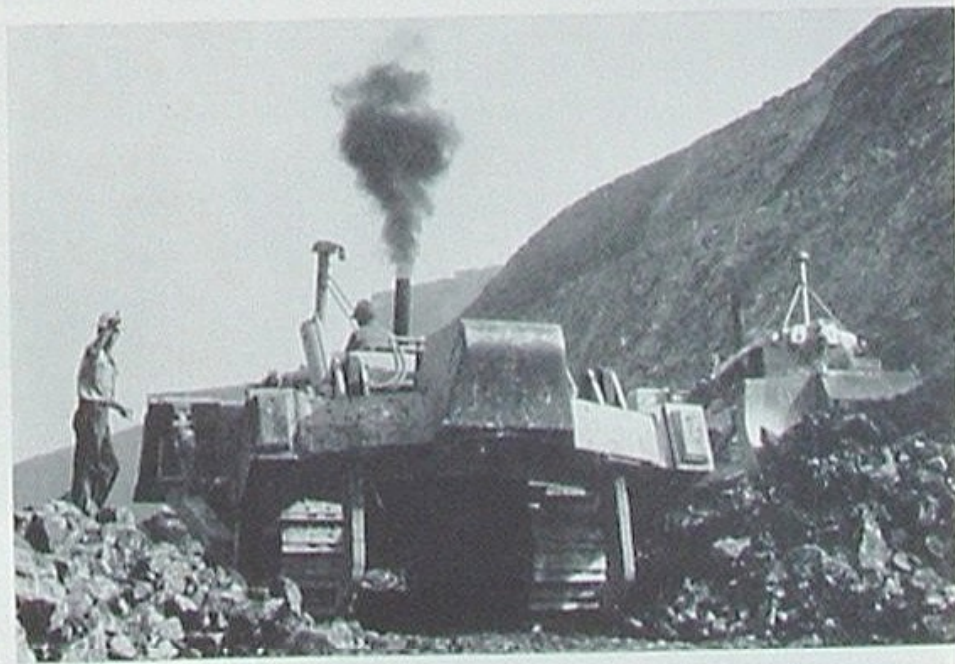
Yet, its era of usefulness is only beginning. Annually long ribbons of asphalt explore new stretches of desert, snake through canyons into isolated mountain retreats, or form rectangular patterns throughout new housing developments. Entire fields are being blacktopped to accommodate the expanding air age. Freeways, old and new, are devouring the jet-black product by the carload, either as original paving or as a material for widening and resurfacing wornout concrete strips. The federal highway program alone—estimated to cost \$100 billion during the next 15 years—will, if its planners are frugal and wise, create the greatest transportation network in history—most of it bonded and surfaced with asphalt.

No known substance on earth quite matches this end product of petroleum refining as a roadway for modern automobiles. When applied over a good sub-base—as all paving materials have to be—it produces ideal driving

*continued*



America has embarked upon its greatest road-building program, including this freeway extension to bring Ventura within minutes of Hollywood.



Incredibly powerful machines are cutting through natural barriers, yearly reducing the world's isolated regions.



## The GOOD EARTH —continued

qualities: smoothness, skid resistance, minimum tire wear. With an elasticity that absorbs heavy pounding and defies extreme changes of temperature, it will endure many years of the roughest treatment. Attractive to sunlight because of its dark color, it dissipates moisture, even snow, faster than concrete, brick or gravel. Small areas of asphalt can be mended ready for use in an hour or two; large repair or resurfacing jobs can be handled in comparably short order, with minimum interruption of traffic and at the lowest conceivable maintenance costs. Original asphalt paving can be laid at one-half, or in some cases less than one-third, the cost of other highway surfacing materials.

Our present generation of Americans, most of whom landed on pretty good paving the first time they fell out of a perambulator, can well afford to recall the history of road building:

Cobblestone streets of ancient cities had little advantage over a dry creek bed for transportation purposes. Roman roads, including famed Appian Way, were impassable much of the time, due more to dust, mud and raging torrents than to hostile travelers. French roads were atrocious; even as late as 1550 there were only three horse-drawn coaches in the city of Paris. England's were no better; nearly every self-respecting Englishman depended upon rivers and canals for overland transportation. Not until 1830 when John L. Macadam, a Scottish engineer, devised a way of bonding successive layers of stones with sand and dust, did Europeans have hope of traveling across country with any degree of comfort.

America was even more backwoodsy. Around 1800 the few stagecoach roads in New England were of such poor character that New York to Philadelphia, now a two-hour auto jaunt, was at least two days of stage-

coach torture. Word of George Washington's death in 1799 reached Boston by stagecoach in 10 days. Elsewhere West and South, men traveled afoot, on horseback, by river boat or not at all. The *prairie schooner* was a Gold Rush development.

All the while civilized Europeans and Americans were trying to impress their advancements on heathen tribesmen, there lay forgotten in the jungles of South America a system of roadways long antedating and far surpassing the best achievements of Mr. Macadam. These were asphalt roads built hundreds of years ago by a people who apparently had few if any wheeled vehicles. Their extensive roads, surfaced with seepage from tar pits, were marvels of construction and engineering for such a savage frontier. Portions of the roads have outlasted stone temples, survived centuries of jungle growth, and astonished today's builders of super highways.

The re-discovery of asphalt occurred in 1879 when heavy oil from the Island of Trinidad was brought to Washington, D.C. to produce the first modern-type asphalt sheet pavement. From this small acorn has grown a mighty asphaltic oak of transportation, whose branches wind through every state, county and city of the United States.

Union Oil's research pertaining to asphalt began in the 1890's and is continuing today. The work has embraced not only refining methods but infinite tests relating to uses of the products in road building and the manufacture of countless commodities. (Your auto's tires, battery, electrical insulation, interior linings and undercoating also contain asphalt.) Out of this long experience and effort have come invaluable skills. Company sales engineers can prescribe an asphalt for every conceivable purpose, and Company refiners are expert hands at filling the prescriptions.

It was through no accident that Hope became *eternal!*

/THE END

Asphalt is of major importance to the transportation future. Either as original paving or a resurfacing material it is "tops" for smoothness, safety, economy of construction, and ease of maintenance. Men below are using it for widening and resurfacing Hollywood Freeway.







Union Oil Leaseholder Joe Rossi, left, discusses oil field development plans with Soren and Viggo Stenderup, vineyardists of Arvin.

*From off the vine, grapes;  
from beneath the vine, petroleum!*

## the Stenderup Pool

**B**ROTHERS VIGGO AND SOREN STENDERUP migrated from northern Europe to California two or three decades ago with the singular ambition of acquiring and farming some of the rich acreage then available in San Joaquin Valley. They selected, near Arvin, the top of a gently rounded surface anticline, which to their way of thinking meant just the proper slope for irrigation. In time and after a great expenditure of hard work, their *high* in the valley floor became one of the West's most fruitful vineyards. Stenderup grapes of a dozen varieties were grown by the truckload for American tables and wineries.

Meanwhile, men with other ambitions studied the topography and underground formations of the valley. And the more they studied the more likely it appeared that oil might be found—directly beneath the vineyard. Geologists from several competing oil companies had similar hunches; Union and Hancock men acted first.

Vineyardists at heart and comfortably successful,

Viggo and Soren hesitated at the thought of leasing drilling sites in their immaculate fields. They assented only when the oil men promised to safeguard growing crops and to pay a fair replacement price of from \$5 to \$25 for each uprooted grapevine.

Against 40-to-1 odds, a wildcat well proved the geologists to be right. From a depth of 10,000 feet, oil began to issue from the vineyard in October, 1956, at an average rate of 300 barrels per day. Ten additional wells were drilled; eight were productive. A 90-foot layer of earth containing the oil is called the Stevens sand in other parts of California, but at Arvin bears the equally good name of Stenderup, as does the pool of oil under the vineyard.

Feverish leasing and exploration plays have followed the 1956 discovery. However, Viggo and Soren seem little changed by this sudden and unexpected good fortune. They continue to till the fields and harvest their grapes. They like the excitement of oil and the frequent visits of Union Oilers who bring the leases, drill the wells, and service the pumps. But they foresee a day, maybe 10 or 50 years from now, when the pumping sites will return to grapes.

Then a new generation of Stenderups will carry on in the wise tradition of their elders. /THE END



*Through  
Junior Achievement,  
thousands of  
American teenagers  
are*



Fall term president of Hango Company, Mike Benjamin (center), is elected to serve for 5 months. Adviser Bo Lamb (right) of Comptroller's helps Mike with his administrative duties.

## Getting their "kicks" outo

Adviser Art Tilston and Sales Manager Bob Crow discuss selling.



There should be less disillusionment and more good business judgment when the present generation of students steps from its classrooms into our world of business and industry.

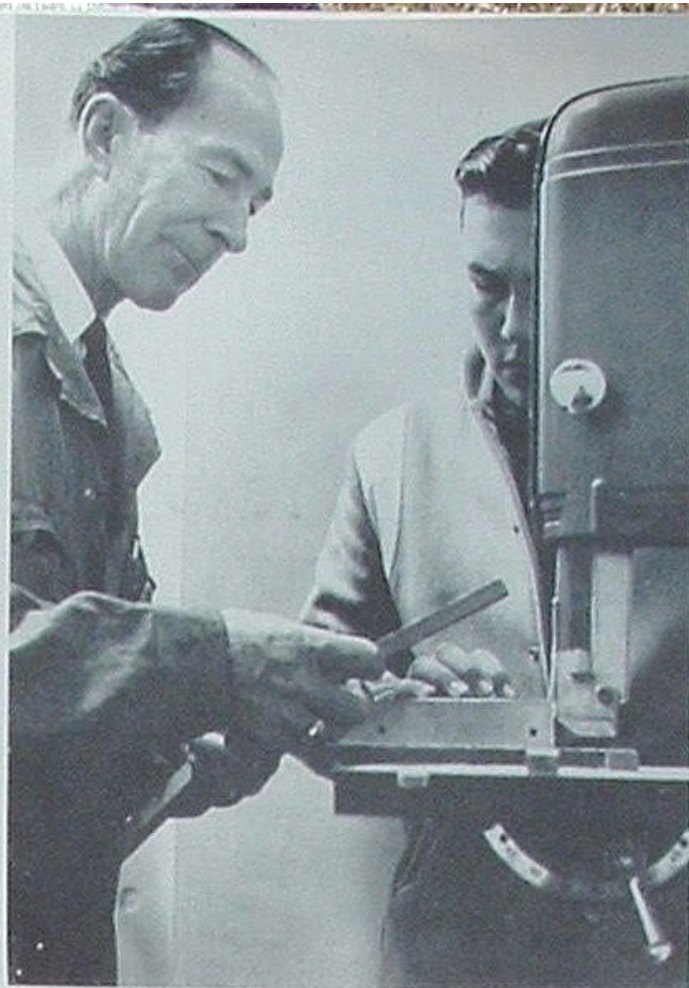
The reason: Junior Achievement or JA, a national organization being sponsored by more than 14,000 business firms, is giving American youth a realistic introduction to corporate life. Some 58,000 teenagers were enrolled in the program as of National Junior Achievement Week in February of this year. Nearly a thousand of that number are in the Los Angeles area, where 350 business concerns and 44 counseling services have pledged enthusiastic support.

Junior Achievement is a learn-by-doing approach to private enterprise. It offers young people, ages 15 to 19, an opportunity to form small corporations, capitalize to the limit of \$200 by selling shares of their corporation stock at 50 cents a share, and "slug it out" in the open market to make a profit. During the eight-month life of each JA corporation, its officers and employees (sometimes the president is also the janitor) tackle wages, taxes, rent, dividends, sales, complaints, personnel problems, accounting, etc. just like the grown-up companies. They fail, break even or prosper on about a par with





Producing a saleable item is the job of Production Manager Barton Holcomb (center). Wasteful cutting means less profit per unit.



Adviser Bill Field shows each member the safe way of operating machinery. Equipment used has to be rented.

## of business

the national business average. A few have gone broke, laid off the employees, and left the shareholders holding the bag. Most have been able to pay modest wages and dividends. Several have succeeded beyond their hopes and paid dividends of 50 cents or more on the invested dollar.

Whether it goes broke or hits the jackpot, every JA company achieves success of a sort. Its organizers learn first-hand how an industry is developed and operated. They see the laws of economics taken out of textbooks and put to work on the assembly line. The great majority of Achievers soon see why their free American system, despite its uncertainties, is the best ever devised to assure highest standards of living for the largest number of people.

The Hangeo Company, some of whose members are introduced on these pages, operate with Union Oil counseling assistance. Their *Finest* product is a redwood hanging basket, which they design, manufacture and hope to market. Four Union Oilers—Ted Proudfoot, Bob Lamb, Bill Field and Art Tilston—serve the young corporation in a spare-time advisory capacity. Despite the current recession, Hangeo expects to meet payrolls and pay an acceptable dividend. /THE END



First samples of the redwood hanging basket are given careful examination before being displayed to buyers during open house.

A one-teller Bank of America branch, complete with bars on the window, gives Junior Achievers experience in business financing.

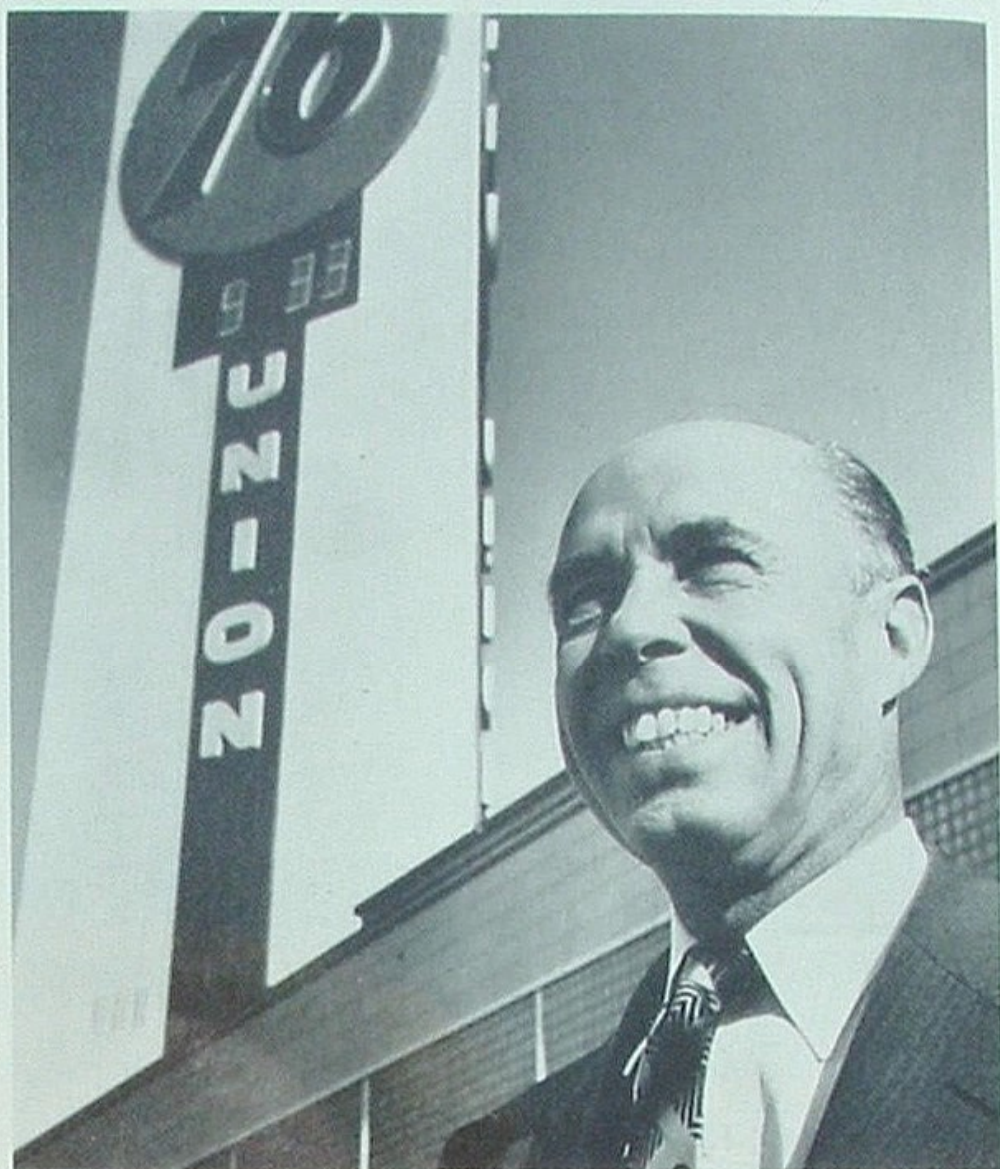




## Surpasses two hundred

Russ G. McAdam, a descendant we hope of the Scottish engineer who invented *macadamized* roads, is all smiles for a very good reason. As of January 26 he had turned in 191 accepted credit card applications in response to the Company's current retail and wholesale business drive. Since then Russ has well exceeded the 200-mark, but would rather not reveal the exact number until a few private wagers are settled inside the Purchasing Department.

Occupying a Purchasing Desk in San Francisco, Russ would appear to enjoy some advantage over those of us who don't spend Company dollars in large amount. However, he says the most plentiful harvest of new retail customers is among friends and neighbors. In fact, Mrs. McAdam has contributed quite a percentage of the total applications—proof that behind every good lad is a bonnie lassie.



## Retires with a million



The retirement in February of J. W. Sinclair, Automotive Department manager, after nearly 34 years of Company service, evoked the usual farewell gestures—and one thing more.

Employees of Jim's widely spread department presented him with about the finest going-away gift a conscientious manager can receive—a record, still unbroken, of one million manhours worked without a disabling injury.

Jim appreciated the "million" immensely—and he said so repeatedly in his final series of meetings with Union Oilers along the Pacific Coast. Helping build and operate one of the petroleum industry's most efficient transportation fleets becomes a heart-warming accomplishment when you realize that everybody came through unscathed.

In the accompanying photo, Jim rises in response to a farewell toast. To his right are Howard Robinson, Bob Thompson, his successor as manager of Automotive, and Bill Butler. Their amusement at some truck-maintenance stories just previously recalled by Arthur Stewart was shared by about 50 other Union Oilers present at the dinner.





in focus  
 in focus  
 in focus  
 in focus  
 in focus  
 in focus

LILLIAN McINTYRE, telephone operator for our Spokane Division, was chosen queen of the 1958 Spokane Boat Show, held February 12th through 16th. Besides being the show's official hostess, she appeared before many local civic groups.

from D. C. Craig



HIS HONOR MAYOR WARD FAGERBERG, left, of Pinole, California, somewhat resembles one of our operators, right, at the Oleum wax deolling unit. Often advised of the resemblance, the Mayor readily admits being both the full-time operator and the part-time Mayor. "But you don't look alike, you only resemble each other," they insist. "That's because I do the work and he draws the pay," Ward replies.

from Don Probst



LARS RUNE PERMAN, left, honor graduate from the Stockholm School of Economics, elected to include Union Oil Company for study during his one-year fellowship in the United States under sponsorship of the American-Scandinavian Foundation. With R. D. Roberts, our general credit manager, he began his inquiry into consumer credit practices.



FRANK WALKER, right, economic analyst at Home Office, took the guess-work out of moving by constructing a model of the wing his department will occupy in Union Oil Center. Intrigued with the layout are, from left, Jean Lakin and Grace Brubaker of the Secretary's office.

"BUCK" BUCKHOLTZ, right, dealer at Des Moines, Washington, has served his way into the best graces of outboard boating enthusiasts. "Buck" maintains a gasoline-purchase file for the convenience of his boating customers; supplies them with tax information; and offers assistance in filling out forms. Currently his station is headquarters for a petition-signing drive to obtain a public mooring ramp.

from W. I. Martin







**LEE CALDERWOOD**, retired Union Oiler, and Tony, a white burro who gained motion picture fame in "Treasure of Sierra Madre," defy old age several times each year by packing into Ice House Canyon at an 8500-foot elevation on Old Baldy. Lee, who first drove a six-horse team into the area 50 years ago, is the navigator and sure-footed Tony is the pilot. Neither will tell the other his age.

from The Los Angeles Times

**SPEED KINGS OF THE FUTURE** won the first prizes of their careers at Jr. Gilmore Race Track in Auction City, California, during a recent National Quarter-Midget Racing Association meet. Under the 76 Sports Club banner, Union Oil dealers of the Downey-Norwalk area donated balls, gloves and rackets to practically every kid who competed.

from Dave Timmons and Bob Brauer



**A MARCH OF LOGS** was converted into \$2500 for the March of Dimes when the Lions Club of Prospect, Oregon, persuaded local citizens to donate timber, labor and time. Among those who made the drive a great success were, from right, R. E. Frisbie and R. H. Renner, Union Oil consignees who donated fuel for the haul.

from L. C. Burklund



**FRANK KERTH**, with headquarters at Anchorage, Alaska, is the Company's northernmost marketing representative. The snapshot places him about dead-center of the frozen Yukon River, one of the world's longest landing strips during cold winter months.

from J. W. White

**CHARLES "CLEM" CLEMENTSON**, who retired four years ago after long service in the Marketing Department, has been named by Helms Foundation to the All-American basketball team of 1911. Clem was founder, coach and star of this sport at the University of Washington starting in 1907. At 69, he still shoots baskets in his Sacramento backyard to keep fit. The All-American honor came 47 years late because no honor teams were selected before 1916.

from Pat Clark







CONSIGNEE GEORGE NEHRBAS of Fairbanks, Alaska, is subjecting a Volkswagen package truck to the cold test. The truck's hardy, air-cooled engine has thusfar given a good account of itself during the North's deep-freeze.

from J. W. White

## RETIREMENTS

March 1, 1958	Service Date
ARTHUR N. CRAWFORD So. Division Field	April 3, 1928
EARL F. FOWLER Los Angeles Refinery	April 21, 1927
JOHN W. GRAHAM Central & S. America	February 21, 1927
THOMAS HEYES Comptroller's	February 12, 1930
COIN W. LEWIS Coast Division Field	June 22, 1921
ALDON V. MELEY Purchasing Department	August 9, 1924
HAZEL PARROTT Comptroller's	September 12, 1945
FLORENCE SAUVINET Research Department	June 6, 1923
CORA W. SEEFELDT Cut Bank, Montana	July 18, 1939
ALFRED WATSON Construction Department	March 1, 1932
PERCY H. WILSON Manufacturing Department	October 6, 1933

## IN MEMORIAM

### Employee:

FRANCIS S. LANNING  
Marketing Department  
February 11, 1958

### Retirees:

FRED VOORHEES  
Southern Division Field  
January 3, 1958

ALBERT C. MAYNARD  
Oleum Refinery  
January 31, 1958

JOHN GARDNER  
Marketing Department  
February 3, 1958

JAMES M. RUST  
Treasury Department  
February 11, 1958

JAMES J. FEDERSPIEL  
Marketing Department  
February 13, 1958



## March 1958

### EMPLOYEES

#### 45 YEARS

GEORGE H. ANDERSON..... Comptroller's

#### 35 YEARS

JAMES G. BUCHANAN..... Oleum Refinery  
COLBERT A. DOMINGUES..... Coast Division Field  
WALTER W. HEATHMAN..... Exploration-Canada  
TOM WICKHAM..... No. Division Pipeline

#### 30 YEARS

WILLIAM G. ARNOLD..... No. Division Pipeline  
HOLLIS V. BLAKESLEY..... Los Angeles Refinery  
CLAUDE M. CANTWELL..... No. Division Pipeline  
JOHN P. COLLEY..... Valley Division Field  
EARL W. EVERLY..... Los Angeles Refinery  
WALTER G. FULLER..... Los Angeles Refinery  
ERNEST R. SILVA..... Oleum Refinery

#### 25 YEARS

CHARLES S. MARTIN..... Central America  
HARRY D. McMAHAN..... Coast Division Field  
ELMER WEHNAU..... So. Division Automotive

#### 20 YEARS

HARRY M. BRANDT..... Los Angeles Refinery  
JAMES R. ELLIS..... Rocky Mountain Field  
WILLIAM I. HAVLAND..... No. Region Distribution  
ALBERT H. LANGE..... Research Department  
HARRY W. WHITAKER..... So. Region Credit

#### 15 YEARS

FRED E. ANDERSON..... Central Region Distribution  
ALBERT G. BATEMAN..... Oleum Refinery  
UBEL W. CLARK..... Oleum Refinery  
SYLVESTER G. CLEMONS..... Coast Division Field  
LORRAINE COSNER..... Valley Division Field  
DAN DICKESON..... No. Region Distribution  
VERN E. DILLON..... Los Angeles Refinery  
RAYBURN M. FORD..... Oleum Refinery  
ELMER A. HOLLINGSHEAD..... Coast Division Field  
JUSTIN E. LA COSTE..... So. Division Automotive  
JOHN M. LEONARD..... Gulf Division Field  
CHARLES F. MEYER..... So. Division Automotive  
HARRY V. MONTGOMERY..... Cut Bank, Montana  
ERLAND W. NYBERG..... No. Region Distribution  
MARGARET W. OSTERAAS..... Industrial Relations  
JOHN G. PETERSON..... Cut Bank, Montana  
MANUEL G. RELVA..... Oleum Refinery  
SYLVIA SIKES..... Comptroller's  
EDWARD E. SILVERIA..... Oleum Refinery  
DAVID A. SMITH..... Coast Division Field  
STANLEY P. SMITH..... Central Region Distrib.

#### 10 YEARS

THEODORE B. AEZER..... Los Angeles Refinery  
HAROLD L. ANDERSON..... Comptroller's

ELLIOTT B. BARTLETT..... No. Division Pipeline  
JORDAN R. BLEDSOE..... Los Angeles Refinery  
JOHN F. CONDON..... Los Angeles Refinery  
RUEBEN G. DANIELSON..... Marketing Department  
JERALD L. EADS..... Los Angeles Refinery  
ROY L. ERICKSON..... Comptroller's  
ROBERT M. GARDINER..... Marketing Department  
SYLVIO P. GOYETTE..... Los Angeles Refinery  
E/A ALICE GREENEY..... Comptroller's  
MAURICE L. HEATH..... Research Department  
BERTRAM H. INGRAM..... Oleum Refinery  
DOROTHY M. JAMES..... Exploration Department  
JONATHAN W. JESSEN..... Comptroller's  
STANLEY J. PINTA..... Marketing Department  
JACK W. POWELL..... Marketing Department  
WALTER F. PUSCH..... Purchasing Department  
MARY A. THOMAS..... Marketing Department  
RAYMOND W. TIMM..... Marketing Department  
WALLACE H. WILCOX..... Los Angeles Refinery  
RICHARD M. WILD..... Los Angeles Refinery  
DEAN A. YOUNG..... Research Department

### DEALERS

#### 20 YEARS

LEHMAN'S STORE..... Deer Harbor, Washington

#### 15 YEARS

E. R. CASEY..... Orchid, California

#### 10 YEARS

BEN & DAVID KRONMAL..... Los Angeles, California  
J. G. LIMOGES..... Mt. Vernon, Washington  
GEORGE A. MINER..... Oceanside, California  
OTSUKA SALES & SERVICE..... Kapaa, Kauai, T. H.  
SAN QUENTIN EMPLOYEES MUTUAL  
BENEFIT ASSOCIATION..... San Rafael, California  
ROBERT L. SMITH..... Big Oak Flat, California  
CLARK F. WAGNER..... Taft, California  
WAYNE L. WOLFER..... Port Townsend, Washington  
G. A. YOUNG..... Boulevard, California

#### 5 YEARS

MANNOR AUTOMOTIVE SERVICE  
Fresno, California  
VERNON W. PAUTZ..... Reseda, California  
WILLIAM D. SCHOEPPE..... Juneau, Alaska

Dealers who deserve recognition but were omitted from previous lists include:

#### 10 YEARS—January

FRED GUAS, JR..... Fresno, California

#### 5 YEARS—January

RICHARD S. SIMPSON..... Fresno, California  
ELWOOD M. VILLA..... San Luis Obispo, California

#### 10 YEARS—February

PAUL M. KAMM..... Salinas, California



# Ray Burke

A new oil well  
every 10 minutes

"Maybe you've never thought about it this way.

"But if the oil industry didn't keep ahead of your demand for its products,



LOCATING A NEW WELL SITE

our whole economy would come to a grinding halt.

"Exaggeration? Let's see if it is. We use 9 million barrels of oil in this country every day right now, and everything moves on petroleum.



THE SEISMOGRAPH HELPS FIND OIL

"Informed authorities estimate that by 1967 we'll need about 14 million barrels a day. By 1977, 22 million barrels a day!

"So far, we've found all the oil we need



"BY 1967 WE'LL NEED ABOUT 14 MILLION BARRELS OF OIL A DAY."

because the U.S. oil industry has been allowed to function in a relatively free, competitive climate.

"Last year, for example—just looking for oil—a wildcat well was drilled once every 45 minutes, every day of the year.

"As a result, entirely new oil fields were discovered at the rate of two a day. To produce the oil found, a new well was drilled every ten minutes.

"The industry spent over 3 billion dollars to get this job done.

"It's true we're entering the atomic age. But as long as our need for energy increases at the rate it has been, we're going to need all the oil we can get—plus atomic power.

"The best way to make sure we will get

it is to continue the free competitive climate in which the petroleum industry has worked so well for so long."

\* \* \* \*

Ray Burke—a geologist in our Exploration department—estimates that the industry will need to spend \$70 to \$80 billions in the next 10 years to keep up with this country's appetite for petroleum products.

As in the past, you can count on the industry to meet this challenge. So long as it is free to compete and do the job it knows best.

YOUR COMMENTS ARE INVITED. Write: The Chairman of the Board, Union Oil Co., Union Oil Center, Los Angeles 17, Calif.

## Union Oil Company OF CALIFORNIA **76**

MANUFACTURERS OF ROYAL TRITON, THE AMAZING PURPLE MOTOR OIL