

OIL in Canada's Muskeg Country

APRIL 1956

TOUIT COMPANY OF CALIFORNIA

# On Tour

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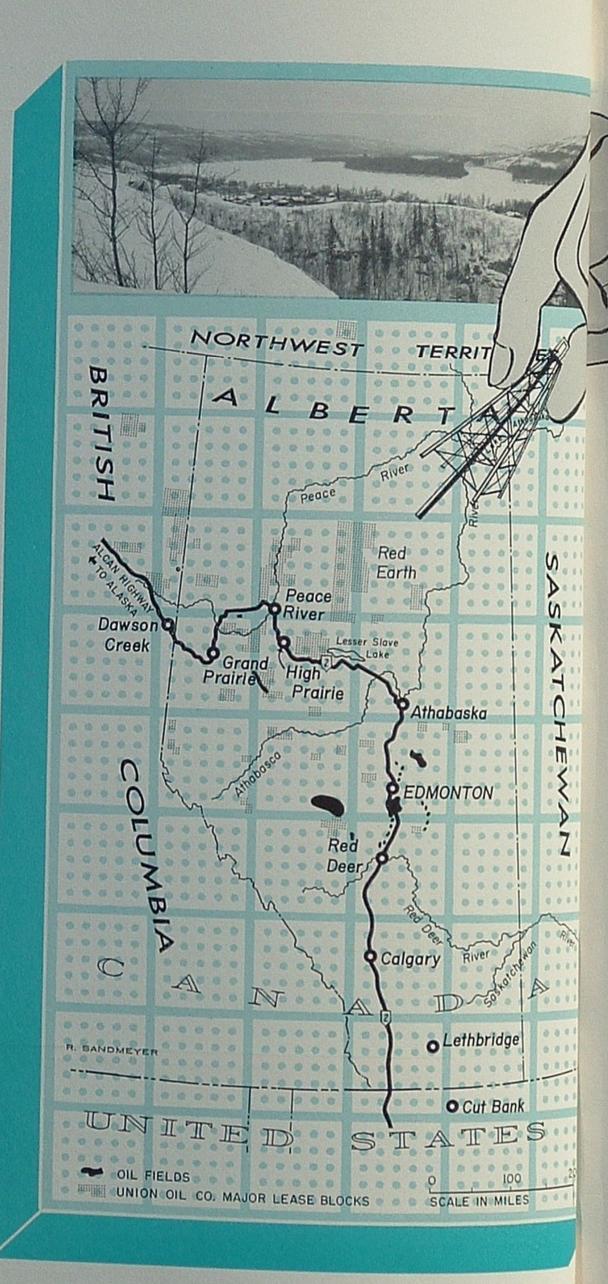
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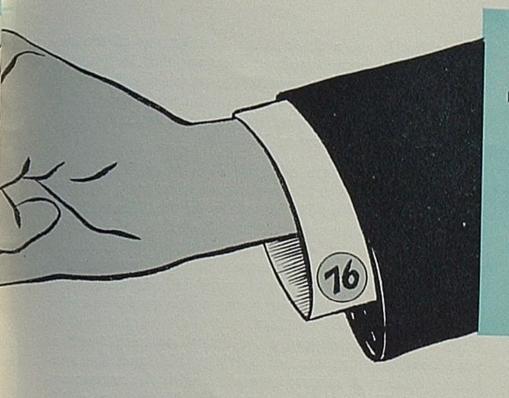
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ALLEN GREEN

"ON TOUR", an oil field expression meaning "on duty." Our magazine by that title is published monthly by Union Oil Company of California for the purposes (1) of keeping Union Oil people informed regarding their Company's operations and progress, and (2) of recognizing and encouraging the fine accomplishments of employee groups and individuals. We invite communications from our employee readers, whose thoughts, interests and opinions are carefully weighed in determining editorial policy. Address correspondence to ON TOUR, Union Oil Building, 617 West Seventh Street, Los Angeles 17, Calif.

T. D. Collett, Editor R. C. Hogen, Assistant Editor





## The Oil Game

# In Canada's Muskeg Country

#### IS ATTRACTING INTENSE COMPETITION AND OIL MEN OF THE PIONEERING MOLD

It's February 29, 1956. You're in Red Deer, a snow-frosted town about midway between Calgary and Edmonton in Alberta, Canada. You're here with a group of petroleum scouts from the two larger cities, who have agreed on Red Deer as a suitable half-way point to hold their weekly scout check. The meeting—an all-day confab through which rival companies save themselves a lot of expensive snooping by frankly exchanging dope on their oil wells—is taking place in the basement of a local hotel.

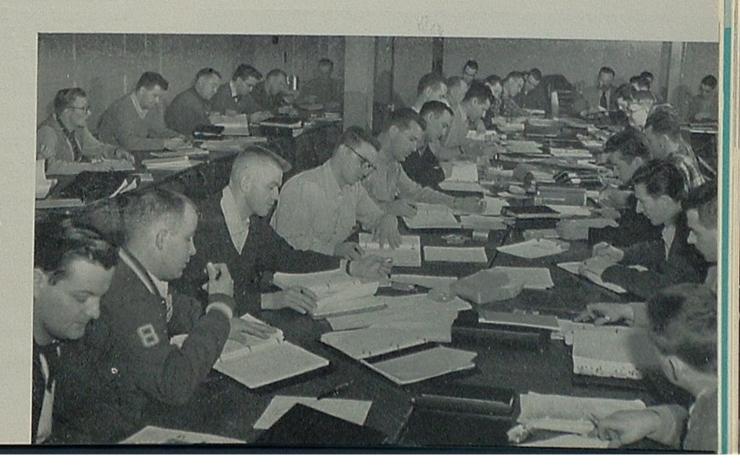
This scout check seems normally routine and above-board. One by one the scouts report on Canadian oil wells being drilled by their 34 different companies. To the layman the lingo is a trifle vague and technical. But the scouts easily interpret it in terms of well depth, type of underground formation, and amount of oil or gas encountered, if any. Every scout hastily scribbles each report on his personal dope sheet.

Today the Union Oil scout, Bruce Freeborn, excites a little more than ordinary interest. His company recently has brought in a thousand-barrel-a-day wildcat at Red Earth. Union also is drilling a step-out well five miles from the discovery and a

third prospect hole on Loon River some 19 miles to the northwest. Success at these two latter locations could define one of the richest oil discoveries in Canada. To avid listeners, who know all about Red Earth 12-17, the discovery well, Freeborn reports Red Earth 14-8 drilling ahead about half way toward the objective depth, and Loon River prospect encountering a troublesome gas blowout. The meeting breaks up. Freeborn heads south to Calgary. And you hitch a ride with a Shell scout to Edmonton, 100 miles north.

Edmonton is glassy white with ice and snow. You check in at the city's

"Today the Union Oil scout, Bruce Freeborn (center row, fourth from left), excites a little more than ordinary interest. His Company recently has brought in a thousand-barrel-aday wildcat at Red Earth."







Union Oil representatives at the land sale in Edmonton were, from right, Landmen Terry Flanagan and Ed Telford.

Manager of Field Operations Walt Heathman has played the Canadian Oil game since its Union Oil inception in 1949,

"The mighty Peace itself, you observe while crossing over to the landing strip, is hidden under six feet of ice,"



newest hotel; eat a thick steak in memory of the caparted buffalo; window shop; take a quick look at a frozen North Saskatchewan River; watch the Canadia curl in a local bonspiel; and hit the sack, wonders what Fort Edmonton was like when founded by the Hudson's Bay Company in 1795.

Next morning at the Natural Resources Building Edmonton, there's a Crown reservation sale of for land parcels totaling 200,000 acres in the Peace Rive country of Alberta, near Union's Red Earth discovery A score of major oil companies are represented at the sale. The men wait with some show of nervousness while Canadian officials open sealed bids in an adjoining room. Finally the door opens and a spokesman for the Crown becomes the focal point of quiet attention. With too much composure he describes each tract of land leased, the amount of the high bid, and the successful bidder. A climax is reached with the announcement that Union is the successful bidder on a big 84,480-acre tract.

Terry Flanagan and Ed Telford, landmen representing Union Oil, reflect smiling satisfaction with the results. Eighty-four-thousand acres added to 1,400,000 acres previously acquired gives their outfit an enviable position around the discovery block. Rival landmen cuss their luck before picking up some not-quite-big-enough checks and heading back for the office.

Is that all there is to obtaining prospective oil land in Canada? Not quite. If you don't find oil, the land reverts to the Crown. If you do find oil, you're entitled to only half the land; in Canada the other half reverts to the government and is sold a second time—to the highest bidder. Find oil on that Peace River tract and you'll either lose half the acreage or pay a fancy sum to get it back.

Where is this spot on the immense Canadian punchboard where oil men are so anxious to try their luck? Well, here's a chance to see it for yourself. National Supply Company's Cessna is flying up to the town of Peace River. Pilot Al Carr offers to drop you off at Red Earth enroute.

In an hour the swift little four-place Cessna is lifting off the airstrip at Edmonton. Up front, ready to help the pilot find Red Earth in the wilderness ahead, is Len Kerkhoff, Union's drilling and production foreman in the district. You can loosen your seat belt now, sit back comfortably, and watch the airplane's shadow race over a big hunk of North America.

The scene for more than an hour northwest of Edmonton is one of cultivated fields, each square or rectangle well defined by a fence, and the fields themselves resting under molested crops of snow. Fat cattle linger in the vicinity of haystacks. Most other signs of life being absent, you assume the farmers are dozing beside their kitchen fires.

Soon even this rural civilization peters out. Taking its place is a wilderness of trees, from your elevation looking like tall weeds projecting out of the snow. This is Canada's muskeg country—a belt two or three hundred miles wide—separating civilized Peace River from all other civilizations—and stretching from the Rocky Mountains to who knows where?

Muskeg, a word of Indian origin, refers to several varieties of moss that grow in these cool, moist regions, finally attaining a depth of four or five feet. Like a sponge, muskeg has the peculiar ability to hold water; hence, you will find muskeg bogs in depressions, on hill tops, even on hill-sides, but everywhere refusing drainage outlet to their content of water. A heavy freeze in December turns the top two feet of muskeg into a reasonably stout crust. But with the first thaw in March, men and their machines race out of the boggy country. If they don't, everything sinks out of sight.

There's occasional relief from this wintry scene of evergreens, leafless stalks and snow-covered muskeg. Creeks and mighty rivers are scrawled irregularly across the tree-map as if a child had scratched them there with chalk. Big splotches of white portray a hundred frozen lakes. One railway and only one auto road have conquered the muskeg northwestward to Peace River town. A few small villages tapping these transportation arteries seem all but lost in the interminable no-man's-land. How do they make a living down there?

Slowly through the Cessna's propeller an extra big splotch of white begins to expand. It's Lesser Slave Lake, about 50 miles long, Kerkhoff informs you, while both he and the pilot study blackening sky to the north—a snow storm.

The Cessna doesn't turn on its normal course from Lesser Slave Lake north toward Red Earth, your tiny target somewhere up in the darkness. Rather, like a weather-wise Canadian honker, it circles west of the storm, hoping to slip in through a side window. But an hour of sparring in the storm's outer fringes brings no sign of Red Earth. Low on gas, the Cessna detours 85 miles toward an airstrip at Peace River town.

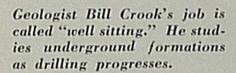
You see the river fully 25 miles away—an endless scar etched deeply into the white prairie through countless thousands of years of river erosion. In the winter, Peace River gulch and its numerous tributary gulches are a fascinating intaglio—one of America's oldest river systems countersunk in a province of snow. The mighty Peace itself, you observe while crossing over to the landing strip, is hidden under six feet of ice.

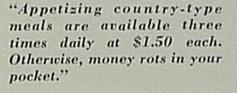
Al Carr wastes only an hour refueling the Cessna and studying the receding storm to the east. Then you fasten your seat belt, recross the Peace and head for the bush.

A phenomenon you had wondered about, then for-



"Endure the North and you can conquer it; conquer it and you've won yourself a fascinating domain."







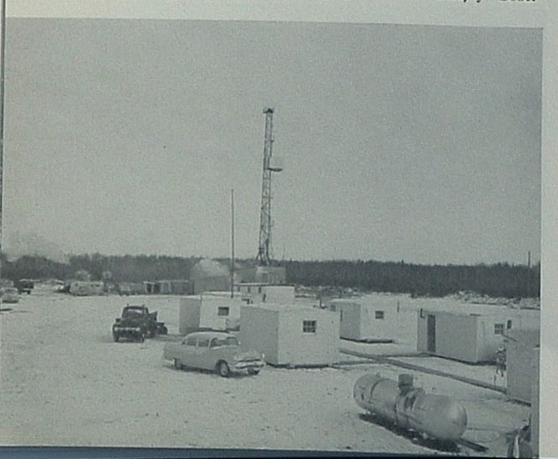




"Next morning the storm is gone and three bush planes take advantage of the best weather in months to land at Red Earth with the 'party,' namely (below from left), Sam Grinsfelder, Hal Godwin, John Sloat, Russ Burns, Dudley Tower, Bill Greenwalt, Jim Smith, Len Kerkhoff."



"Camp life (at Red Earth 14-8) is relatively warm, healthful and perhaps delightful to a thrifty Scot."

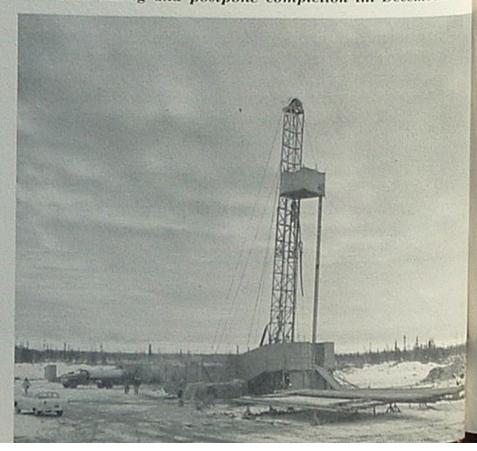




"Red Earth 12-17, the discovery well that has tested nearly a thousand barrels a day of 38-gravity oil, proves to be a scenic disappointment."



Circulation has been restored at Loon River, below. "The party smiles. Over hot coffee (above) Grinsfelder, Kerkhoff and Bob Roethke decide to seal off the porous zone with casing and postpone completion till December."



gotten, during that bout with the storm now has to be answered. Endless white lines are ruled across the muskeg country between Slave Lake and Peace River. They look like roads, but they're too straight, too numerous and too often headed for nowhere. Besides, what road would run smack-dab into a lake and resume on the other side without the help of a bridge or ferry boat?

"Seismic trails," Kerhoff explains in two words. Yessir, during the past five years the petroleum industry's seismograph crews must have blazed a hundred thousand miles of trails through Canada. If the highway and railroad to Peace River were big jobs, then the seismic work was fantastic. Trails streak everywhere, from one horizon to the other, leading you to imagine that the young chalk-map artist somehow got hold of a ruler.

Well, Al's guess is right this time. The storm has pushed five miles farther on, and in its fringe you spot one of the drilling rigs at Red Earth. Al buzzes the camp once to announce your arrival, then flies five miles to the strip-a seismic trail smoothed enough to become an oil field road and pruned enough to accommodate a bush plane's wing tips. While waiting for a car from the camp to heed the buzzing signal, you don fleece-lined boots and a parka. It's cold at Red Earth and your only escape from it is warm clothing, a heated car, or a bunkhouse in camp.

To describe Union Oil's current operations at Red Earth would take a book and an author. It's largely a story of people—a story of about 75 men who do the work and two or three women who do the cooking. They are folks like us—young, in the prime of life or thinking of retirement—ambitious, content, philosophic. But all seem cast in the pioneering mold.

There's always been something challenging about the North country. It dares men to endure loneliness, endless work, cold, mosquitoes, hardship, suffering. But the North rewards its people, not so much with wealth as with independence, courage, pride, individuality, rugged

character. Endure the North and you can conquer it; conquer it and you've won yourself a fascinating domain. To a degree the folks at Red Earth have accepted the North's challenge. You can't name everyone you meet in a two-day visit, so you decide not to name any.

Red Earth 12-17, the discovery well that has tested nearly a thousand barrels a day of 38-gravity oil and triggered one of the largest land grabs in Canadian history, proves to be a scenic disappointment. Its two-valve Christmas tree looks too uncomplicated. A small production line leading to a nearby field tank is loafing along at 200 barrels a day. Even this slow pace somewhat taxes a trucker who temporarily is moving the crude over a 140-mile muskeg road to the Peace River railhead. A seismic crew is camped at the discovery site. But nobody gives the potentially famous well a second look.

There is more activity six miles up the icy road at Red Earth 14-8. the step-out well. Here a drilling rig is boring away 3,000 feet beneath the muskeg, bent on reaching oil sand at about 5,000 feet before time to pull up stakes and beat the thaw back to civilization. The rotary table spins night and day. It's like a drilling operation anywhere-except for squeaking snow underfoot, icicles on the rig, a wind shelter for the derrickman, steel tools that become brittle and start cracking at 30 degrees below zero, five layers of clothing for each member of the drilling crew and earmuffs under their hardhats.

Camp life is relatively warm, healthful, nutritious and perhaps even delightful to a thrifty Scot. Portable bunkhouses, supplied by a Canadian catering firm, accommodate two, four or more persons. A plank walkway connects these with the washroom, diner and radio room. A small shelter in the distance is convenient but unheated. You can hurry from one end of town to the other, minus overshoes and a parka, in about 10 seconds. Appetizing country-type meals are available three times daily at \$1.50 each. Except for this essential expenditure, money would rot in your pockets.

Walk home from work, take plenty of time under the hot shower, spend an hour at dinner, and you've still got 14 hours left for sleep and selfimprovement. Wonderful country for good books!

Most exciting tonight is the camp at Loon River, some 25 auto miles to the northwest. Here the drilling crew lost circulation two weeks ago —that is, drilling mud pumped down the hole to remove cuttings from the well strayed off into some subterranean porosity or cavern, refusing to return to the surface with its load. Meanwhile a gas producing sand in the well found pressure release up the mud-deserted hole and started what oil men label as a blow-out. Natural gas flowing from a wellhead stops the drilling operation cold, because the least spark will start an inferno. For two weeks the Loon River boys have pumped various muds and cements down the hole to fill the gap. But still no circulation. Tomorrow, Company engineers from Edmonton and Calgary -with two vice presidents and a geophysicist from Los Angeles-will fly in to help with the problem. One of the boys predicts, "It'll be just our luck to get fair weather and circulation."

Sometimes that's the way it happens. Next morning the storm is gone and three bush planes take advantage of the best weather in months to land at Red Earth with the party.

The party motors out six miles, on one of the smoothest seismic trails achieved in Canada, to observe some shooting. The crew has been having trouble here getting good reflections. Explosive charges lowered into the 40-foot holes have been expending their force upward, causing spectacular upheavals of mud but poor earthquake vibrations deep down where they are needed. Today, however, with 10 observers looking on, you see faultless shooting. You hear a dull thud through the soles of your boots; expect to see columns of mud geyser into the sky; but hardly detect more than a few bubbles rising from the shot holes. The tormented shooters then lower some really big firecrackers into the holes, if only to impress the waiting camera of John Sloat, visiting geophysicist. Same result: a whacking underground explosion—perfect reflection—and not enough surface blast to disturb a rabbit. Hal Godwin, chief of the seismic crew, explains with a trace of embarrassment that nothing succeeds like success.

The luck of the Irish almost reaches Loon River before the Irish do. Hardly does the party come within sight of the blow-out before the gas stops blowing and the drilling crew notices errant mud returning from down under-circulation! The party smiles. Over hot coffee they decide to seal off the porous zone with casing and postpone completion of the well till next December. The problem now is to get Red Earth 14-8 completed and everything moved out ahead of the thaw. Maybe soon they'll find some way to lay a road through the muskeg and drill round the calendar.

All's well at Red Earth. Supper's delicious. The conversation turns to lighter subjects like war and politics. The Northern Lights put on one of their most brillant performances in a century. Sleeping bags are warm and comfortable. Nobody snores all night.

Lest the party gets the idea that it's all peaches and cream in the muskeg, Saturday, March 3rd, 1956, dawns without the sun. To the solid overcast is added cold and the threat of snow. The bush planes, due back from their warming ovens at Peace River by breakfast time, haven't appeared yet by nine. The camp radio has been silenced by that mysterious electro-magnetic disturbance of last night—the Northern Lights. If the Calgary boys want to get home by Sunday and the Los Angeles boys by Monday, they'd better start driving back to the Peace River airstrip.

From Red Earth to Peace River—only 35 minutes by airplane—is six hours by automobile under favorable conditions. Today's prospects seem favorable. You've got a warm car, two vice presidents alternating at the wheel, and a geophysicist navigating. Man, that's automobiling!

But nobody had counted on heavy snowfall on the seldom traveled muskeg road-nor of meeting a heavy truck on a curve just barely wide enough for one vehicle. By the time you've pushed the sedan out of a half-dozen snow banks and helped the truck driver get his 6500 pounds of drilling mud back on the road, the day is well spent. Moreover, Chuck Wheeler and his fraternity of pilots-hibernating in a hotel room-say it's no day for flying. So you bunk in Peace River town-famed down through history for its Indians, pemmican, fur traders, gold seekers and present wheat farms. "Lure of the Wilderness," playing at the local cinema, offers no temptation.

Sunday morning it's 15 below zero.

Pilots Wheeler and Molin have gotten out to the airstrip three hours ahead of departure time to warm up the Company's DC3. Even so, the airplane cabin's cold as a barn. You sit through the first 15 minutes of flight thankful for a parka.

By noon you're back in Calgary, saying goodbye to the Canadian gang and welcoming six new California-bound Union Oil passengers aboard-two of 'em excited young boys with appetites for airplanes and candy bars. There's an afternoon stop at Great Falls to clear Customs and take on gasoline. Then the DC3 bumps into a storm front and the strongest headwinds it has ever bucked between Montana and California. Everybody resorts to one or several means of ignoring airsickness in the turbulent clouds. But the two lads are frank about it; they heave Jonah along with the candy bars and settle down to hours of unbelievable quiet. Tower and Thomasson administer a few pointers to Grinsfelder and Sloat at dominoes-or was it vice versa?

The headwinds force a stop at Las Vegas for more fuel. Slot machines in the airport terminal have no appeal; they and their adherents seem paltry compared with the oil game and oil people in Canada's muskeg country. Two more hours of headwinds, a drive across Los Angeles, and you're home. Everybody's sound asleep. Good old bed! Monday morning will come too soon.

"Slot machines in the airport terminal have no appeal; they and their adherents seem paltry compared with the oil game and oil people in Canada's muskeg country."

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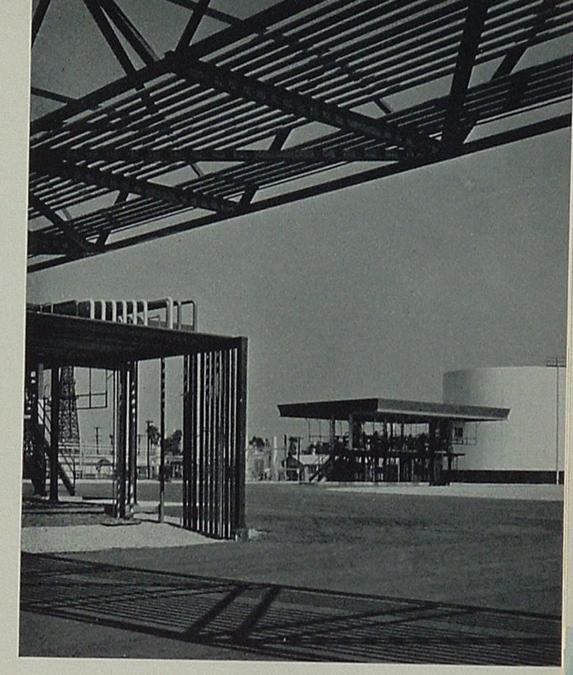
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# New Los Angeles Terminal

IS READY FOR MANY YEARS OF

EXPECTED SOUTHWEST DEVELOPMENT

From W. J. Baral



Through the pipe line portals of Los Angeles Terminal will pass more than 15 million gallons of lubricants annually. Packaging capacity exceeds a quarter-million 55-gallon barrels and 12 million quart cans of oil yearly.

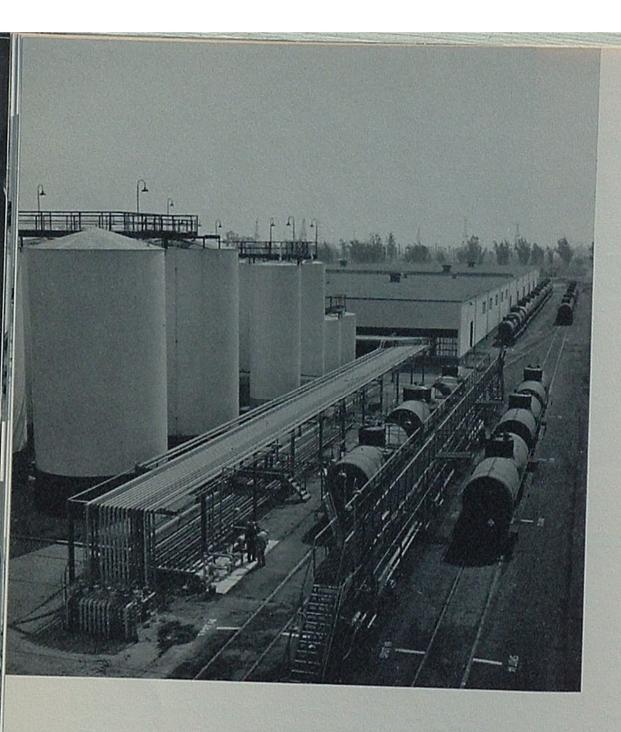
A T a cost of \$3,500,000, Union Oil Company has completed its new Los Angeles Terminal—undoubtedly one of the finest, largest and most efficient facilities in the world for the compounding, packaging, warehousing and marketing of petroleum products. It reflects not only the Company's 66 years of marketing experience, but also the best materials, methods and devices perfected by industry generally.

Selection of the site for this new terminal was made after an exhaustive study of the predicted growth pattern for Southern California. To enlarge and rebuild the Company's older terminal at Sixth and Mateo Streets was prohibitive, due to intense congestion of industry in that area and accompanying high property values. So a decision was made to occupy an 18.7-acre site in the Rosecrans oil field. The location is approximately 10 miles south of Los Angeles Civic Center but is well situated in relation to the many cities and four-state area it will serve. Here the Company has produced oil for more than 25 years, and in 1949 opened an excellent new

terminal for the distribution of gasoline. Besides offering ample room for present needs and future expansion, Rosecrans is convenient to our Los Angeles Refinery and Marine Terminal, has good rail connections, and is bounded by several of the Southwest's major truck routes.

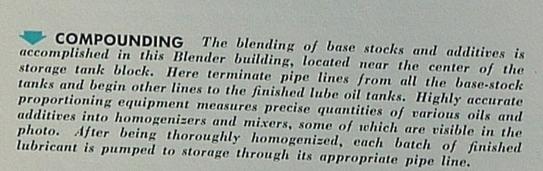
Use of "Rosecrans" to identify the gasoline distributing terminal has been discontinued. Both it and the adjoining new plant are consolidated under one management into the Los Angeles Terminal. As a tool of our Southwest Territory organization, the terminal will distribute petroleum fuels, lubricants and other products throughout an area including Southern California, Southern Nevada, Arizona and New Mexico.

In the near future, when the new plant is in full operation and completely staffed, ON TOUR will introduce the Union Oil people who conceived it or are responsible for its operation. Meanwhile, come along on a short photographic excursion through the finest petroleum terminal of its kind in America:



BASE STOCK SUPPLY A major function of the Los Angeles Terminal is to compound or blend some 50 or more petroleum lubricants from a considerably lesser number of base stocks and additives. A few base stocks and the additives come all the way to the plant by rail or highway transport. But a high proportion of the basic lubricants proceed from our Oleum Refinery on San Francisco Bay to our Los Angeles Marine Terminal via tankship; thence by tankcar about 10 miles to the unloading spur seen here. Some of the base-stock storage tanks are seen at the left. The railroad spur will also accommodate boxcar shipments to and from the warehouse, background.

product skilled a every be it mate Union's ity. In equipped matic tut samples building.



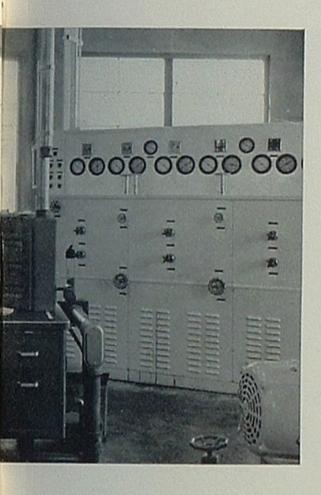


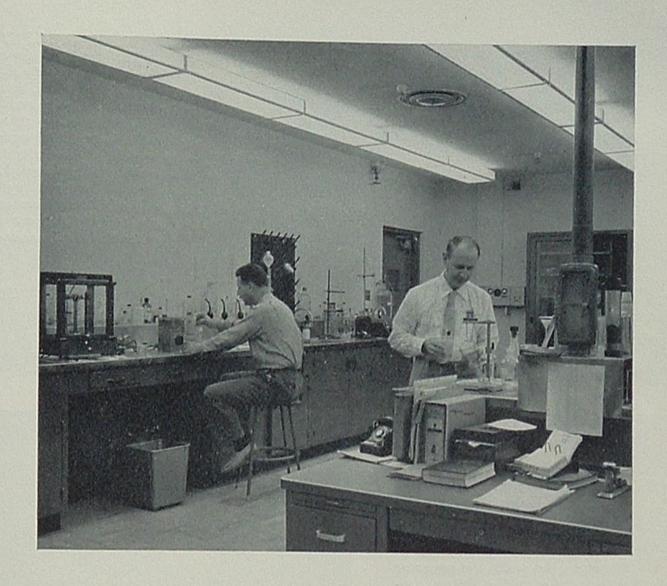
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AUTOMATION Very little is left to human exertion or error in the blending operation. The two white instrument panels, right and left, govern the measuring of ingredients into the homogenizers. On the desk top, center, is a remote gauging panel which, at the press of a key, measures the oil level in any of the plant's storage tanks. The pneumatic tube rising above the desk carries samples of base stocks and finished products several hundred feet to the terminal laboratory.

ON TOUR

LABORATORY The quality of blended products is safeguarded by skilled chemists. They analyze every batch of oil to see that it matches specifications and Union's high standards of quality. Included in the well equipped laboratory is the pneumatic tube, right, through which samples arrive from the Blender building.



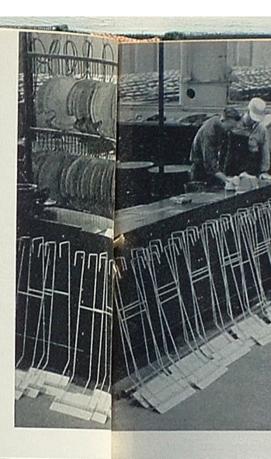


BULK STORAGE To accommodate base stocks, finished lubricants and a number of low-flash products such as thinners and solvents requires this impressive block of storage tanks, now numbering 71. The base of each tank and its connecting pipe lines are painted in a color identifying them with one type of product exclusively. This use of color dynamics enhances the industrial scene while performing the more useful purposes of protecting surfaces and preventing stock mixtures. From the two loading racks, bulk shipments of Union Oil products will proceed by truck to at least four states.

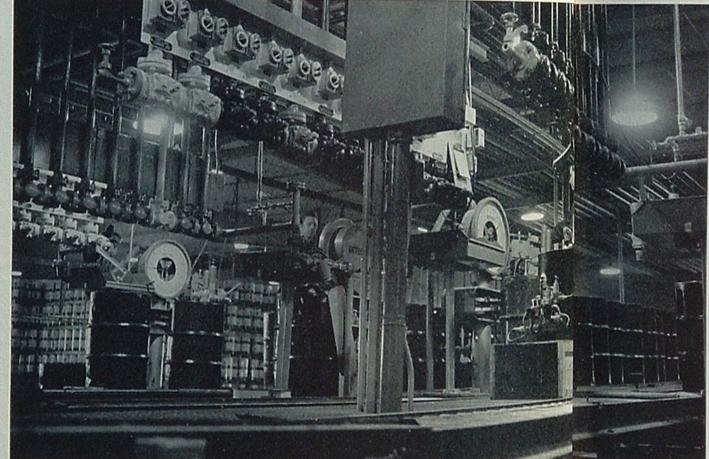




Packaging of the oils begins with the arrival, principally via truck, of empty containers, both new and reconditioned. Powered roller conveyors keep the barrels moving forward without manual assistance. Lights suspended from the dock canopy are used to inspect each barrel for cleanliness. Clean barrels proceeding from and oily barrels proceeding to a waiting cooperage truck here pass each other in orderly rows.

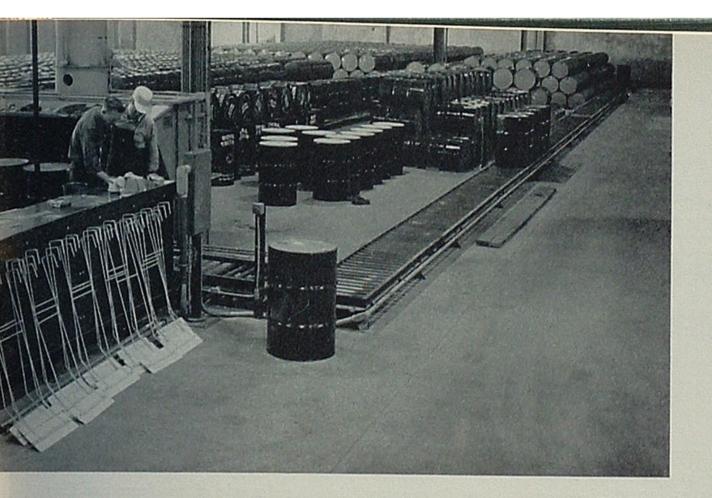


Barrels are filled FILLING with oil at the rate of about 90 gallons per minute by semi-automatic weighing equipment. After aligning each barrel on the scale, the operator governs the entire filling procedure with control buttons. When a barrel receives its precise weight of commodity, the scale automatically closes the shut-off valve. Steel piping with flexible joints replaces the oldertype hose fillers. One operator normally handles two filling machines. Other equipment in the filling section accommodates quarter-barrels, pails, delivery buckets and quart cans.





WAREHOUSING
Shown herewith is a small corner of the 270-by-216-foot warehouse where packaged products are stored. It is well lighted and has forced-air ventilation. The concrete floors are surface-treated with a metallic hardener. Low-flash products are separated from high-flash oils by a solid firewall. Although the plant is practically fire-proof, there are in readiness sprinkler systems, a high-pressure fog system, a 20,000-barrel water reservoir, hose cabinets and portable equipment of various types to extinguish oil fires. Broad aisles in the warehouse facilitate the handling of stocks with mobile fork-lift or side-grab trucks.



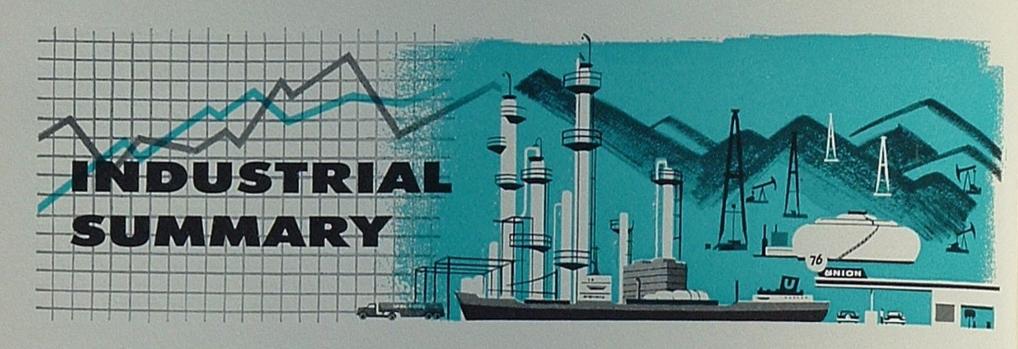
All barrels pass STENCILLING through the stencilling booth, left, where Company and commodity data are spraystencilled on the barrel heads. A strong current of air being pulled into the hooded compartment efficiently removes all paint spray and odor from the working area. When stencilled, the barrels continue by powered conveyor toward the fillers. The gadgets leaning against the booth in this photo are stencilled commodity signs being prepared for use in identifying warehouse storage areas.



SHIPPING The 20-foot wide truck loading dock is sheltered by a 27-foot canopy. Eleven hydraulic dock ramps can be raised or lowered at the touch of a finger to match the bed level of any truck. Orders, preassembled inside the wide

doorways, are loaded entirely by the mobile fork and grab trucks. Offices for shipping personnel are located at the center of the dock. The filling and storage section for packaged low-flash commodities is seen at the end of this platform.





• EXPLORATION Union's recent Granite Wash discovery in the Peace River area of Alberta, Canada—Red Earth No. 12-17—touched off one of the largest land leasing plays in the history of Canada's competitive oil development.

On initial tests the well flowed at a rate of 960 barrels per day of 38-gravity sweet crude through a 20/64-inch choke, from a depth of 4,975 feet. The well is located on a 30-township block aggregating 700,000 acres. After initial tests were completed the Company acquired an additional 700,000 acres of Crown Reservations in this area. Our major contiguous acreage block of 1,400,000 acres is 108 miles from south to north.

Quick to realize the importance of this discovery, other companies immediately took steps to secure an acreage position in the general area. According to last reports, between 20 and 25 million acres of Crown Reservations were filed on during a three-week period. It has been indicated that the land play stretches from the Fort Vermilion district of Northwest Alberta to south of Cold Lake in Northeastern Alberta, then on into the Province of Saskatchewan, embracing a distance of some 400 miles from northwest to southeast.

At present the Company has two wells drilling on our original land block, one about five miles to the northeast and the second about 19 miles to the northwest of the discovery well. Due to normal thawing of this muskeg area in March, further drilling to define the field will be delayed until the freeze next fall.

from Sam Grinsfelder

• PRODUCTION

The importance of natural gas, and liquid products derived from natural gas, as a source of Field Department revenue is steadily growing. In recent years the market for natural gas as an industrial fuel has increased many fold. At present practically all of the gas produced by Union Oil is saved, processed, and either marketed or reinjected into selected reservoirs to increase oil recovery.

There have been several recent developments of interest in the Company's natural gas operations. Contracts have been entered into for the sale of gas from our East Lake Palourde field in South Louisiana; initial deliveries will start October 1, 1956. In Oklahoma, two gas discoveries have been made and sales contracts are in negotiation. In the West Texas Panhandle, Union has leases that are offset by good commercial gas producers, and immediate development is planned. Also in this Division, plans are complete for gathering, processing and marketing all of our gas production in the Lake Trammell area, Nolan County. In Canada, in the Peace River area of Alberta and British Columbia, work will start soon on facilities required in the sale of gas contracted to begin November 1, 1957.

The Company's gas reserves at the end of 1955 amounted to approximately two trillion cubic feet, an increase of about 120 billion cubic feet over reserves at the end of 1954.

from Dudley Tower

operations at the Manufacturing Department's technical review on March 14 and 15. Reports were given on the operation of new process units completed recently under the MP-30 program. Besides a general interchange of technical information and the discussion of many problems associated with refinery operations, a number of talks were given by members of the Marketing, Research, Treasury and Field Departments. Dr. A. A. Brown of the Arthur D. Little Corporation discussed the recently developed program for planning and scheduling the flow of oil through Union Oil Company's system from well to consumer.

Facilities are being installed at the Los Angeles Refinery to recover vapors lost to the atmosphere during

the loading of tank trucks. These installations will comply with a regulation recently adopted by the Los Angeles Air Pollution Control District.

from K. E. Kingman

#### TRANSPORTATION & DISTRIBUTION

A new era in bulk petroleum transportation was inaugurated in February

with our initial shipment of 7600 gasoline through the Southern Pacific Pipeline from Los Angeles to Phoenix, Arizona. Shipments originate at our Torrance Tank Farm and are pumped six miles through a new six-inch line we have installed to connect with Southern Pacific's originating pump station. From the Phoenix Terminal direct shipments will be made to marketing stations and customers throughout central and eastern Arizona.

To meet the increasing communication requirements within the Company, we have recently completed two additions to our private telephone system. Facilities have been installed at Brea Research Center to handle up to 200 additional voice channels, and at the new Los Angeles Terminal a 100-line system has been installed.

from E. L. Hiatt

A new Caribbean District with headquarters at Puerto Rico has been established to encompass Union Oil's marketing activities within islands of the West Indies. It is included within our South and Central American Territory. James Hattrick has been appointed as district manager.

We are supplying the petroleum requirements of Ferry Brothers and R. S. Crowe, builders of a new section of freeway near Oleum Refinery. A cut of 11,200,000 yards they are making through Tormey Hill is said to be the largest single highway earth-moving job in the United States—second in size worldwide only to excavations for the Panama Canal.

Bulk storage at Whittier, Alaska will be increased by 60,800 barrels to permit complete discharge of a 95,000-barrel capacity tankship such as our A. C. RUBEL.

A new marketing station agency, with James Lloyd Coleman as consignee, has been opened at Wellton, Arizona. It will serve Roll Valley, where the Bureau of Recamation expects to bring 75,000 acres of desert land under cultivation by 1959.

Construction will begin soon on a Company service station at one of Southern California's most outstanding locations—7th and Figueroa Streets, Los Angeles, directly opposite the Statler Hotel.

from Roy Linden

Work on the shale project continues. RESEARCH At the Colorado plant site, the primary and secondary rock crushers have been installed. The primary rock crusher is located at the mining level; the secondary crusher is about 1,000 feet lower, near the retort site. The primary crusher was moved up the mountain in several pieces, the largest of which weighed about 30 tons. Foundations have been poured for the aerial tram, the screening tower, and most of the conveying system. Installation of this and other auxiliary equipment will soon be under way. Major design work has been completed on the retort. The general contractor, The Stearns-Roger Manufacturing Company of Denver, is preparing to start fabrication of the retort shell.

The international aspect of Union's Unifining process is amply shown by the fact that, since the beginning of this year, 36,000 barrels per day of capacity have been licensed to refiners in Holland, the Near East, Canada, Trinidad and Japan.

from Fred L. Hartley

Continued on page 22

GROUNDBREAKING for Union Oil's \$6,000,000 Richmond Terminal took place March 16. From left, H. G. Parker, W. V. Criddle and H. B. Anderson of Union Oil, Mayor John J. Sheridan of Richmond, Territory Manager R. H. Rath, Vice President A. C. Stewart, F. K. Lord, Director A. J. Lowrey and L. L. Lishman of Union Oil were among those helping to get the large marketing plant started.



#### VETO OF THE GAS BILL CAUSES

### **National Indigestion**

"President Eisenhower's veto of the natural-gas bill was confused, irrelevant, and a politial blunder. . . . The President declares that 'legislation conforming to the basic objectives of the bill' is needed because the type of regulation of producers of natural gas which is required under present law will discourage individual initiative and incentive to explore for and develop new sources of supply. In the long run this will limit supplies of gas, which is contrary not only to the national interest but especially to the interest of consumers'. . . .

"But the President deliberately set aside the merits of the case, and the interests of more than 20 million consumers, in order to punish the 'highly questionable activities' of a few 'private persons, apparently representing a very small segment of a great and vital industry."

by Henry Hazlitt in "Newsweek"

"It is a rule in American election contests when fraud or bribery is charged and proved, that the apparent election result will not be voided unless the number of votes illegally cast, or not counted, would change the result . . .

"Obviously, since Senator Case returned the money and voted against the (natural-gas) bill, no vote was bought, so far as it is now proved. In the final vote, all Senators were asked whether any other Senator had been similarly approached. No one had been. The bill passed by a majority of 15. . . . Not one illegal or improper vote has so far been proved. Nevertheless, the bill is vetoed, not on its merits but as a result of newspaper headlines."

from "Human Events" Washington, D. C.

"Oddly enough, no one objects when a rich left-winger supports a left-wing candidate for office. But let a rich conservative give financial assistance to a conservative office-seeker, and you'd think the republic was in danger. It's all right for the president of a labor union to put thousands of union dollars into a campaign, but it's all wrong for the president of a corporation to contribute hundreds of his own—not the company's—dollars to the same end. This is patently absurd, and everyone knows it. But any conservative or center-of-the-roader is fair game for a leftist smear these days."

from "The Arizona Republic"



# ARE WE FER IT -OR AGIN IT?

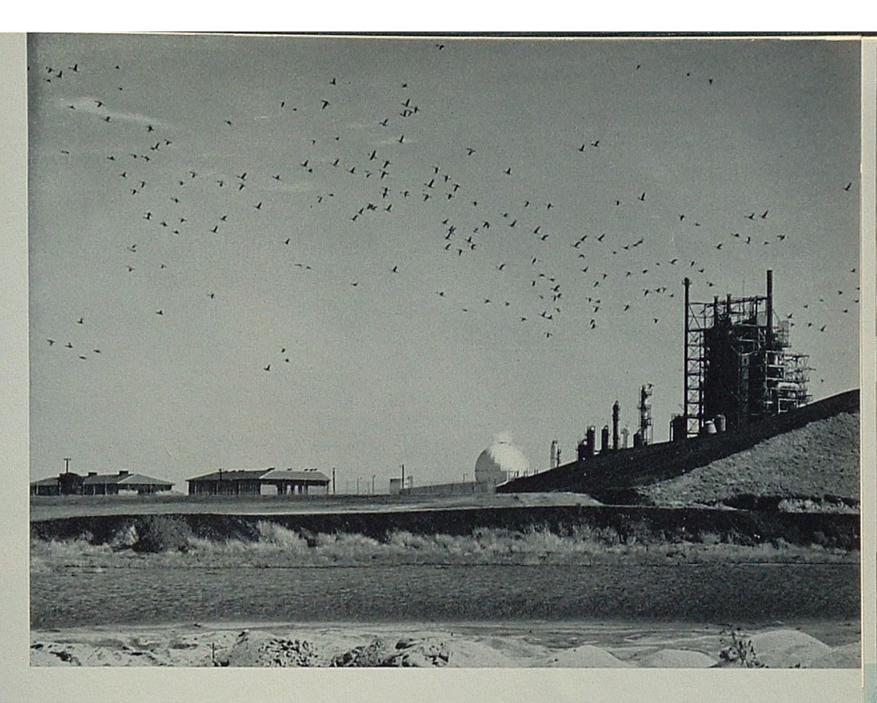
Hundreds of Union Oil people are responding to the opinion poll started in the March issue of ON TOUR. Although it will take another month for the complete returns to be received and counted, here is an up-to-theminute tabulation as this issue goes to press:

THE QUESTION: In regard to the question of money grants to foreign nations, it is my opinion that the United States is now:

Giving away too much money	1215
Giving away too little money	52
Giving about proper amount	209
Other opinon	114

#### NOW...

Another problem considered by many people to be a serious threat to our American freedom concerns the continuing membership of the United States in the United Nations. Are you "fer it or agin it?" Fill in the enclosed stamped and addressed postcard ballot. Write a separate comment if the ballot will not accommodate your full opinion. The balloting results as well as interesting comments on the questions will be reported in future issues of this magazine.



LOS ANGELES REFINERY ENTERTAINS

## Donald's Country Cousins

From Herb Zirnite

MAYBE they caught a glimpse of Donald Duck at one of these outdoor theatres and, like all movie fans, had a quacking desire to see Hollywood. Or maybe our 76 advertising is taking hold in the South. Or maybe they just like the nice smog-free atmosphere around Los Angeles Refinery. At any rate, the city of Los Angeles now has wild ducks—teals, pintails and mallards—a sky full of 'em—all of whom disdain lakes, bayous and even Beverly Hills swimming pools in favor of our refinery water pond.

There were only about 50 birds the morning someone looked down from our pumpkin-sphere to witness the first arrivals. But some of the boys quickly concocted a double-barreled idea. Why not regale the hungry ducks and relieve the country's farmers by scattering a few sacks of plentiful wheat?

Ducks are natural-born public relations men. Now there're fully 1500 of 'em making aerial studies of our alkylation and jet fuel units. Come open season and we venture to say there won't be a shotgun blast fast enough to ruffle their pretty feathers.

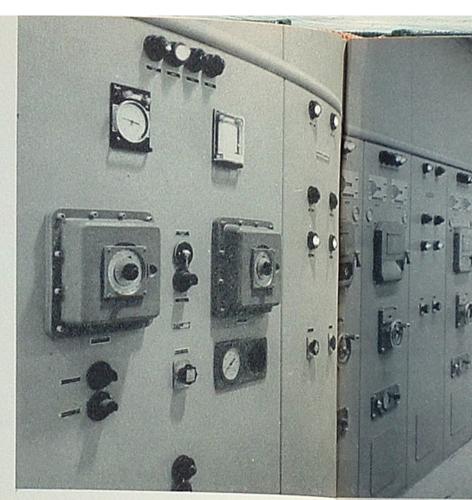
Clem Clements and Bill Forbes, friends of the wheat farmer, beg a skyful of wild ducks to come and get it.



OLEUM REFINERY ANSWERS THE NEED FOR BETTER GASOLINE BLENDING FACILITIES

## In Unit 76

From Reports Prepared by D. Marshall, R Brown and C. Morton



Unit 76, C blending u finished pro

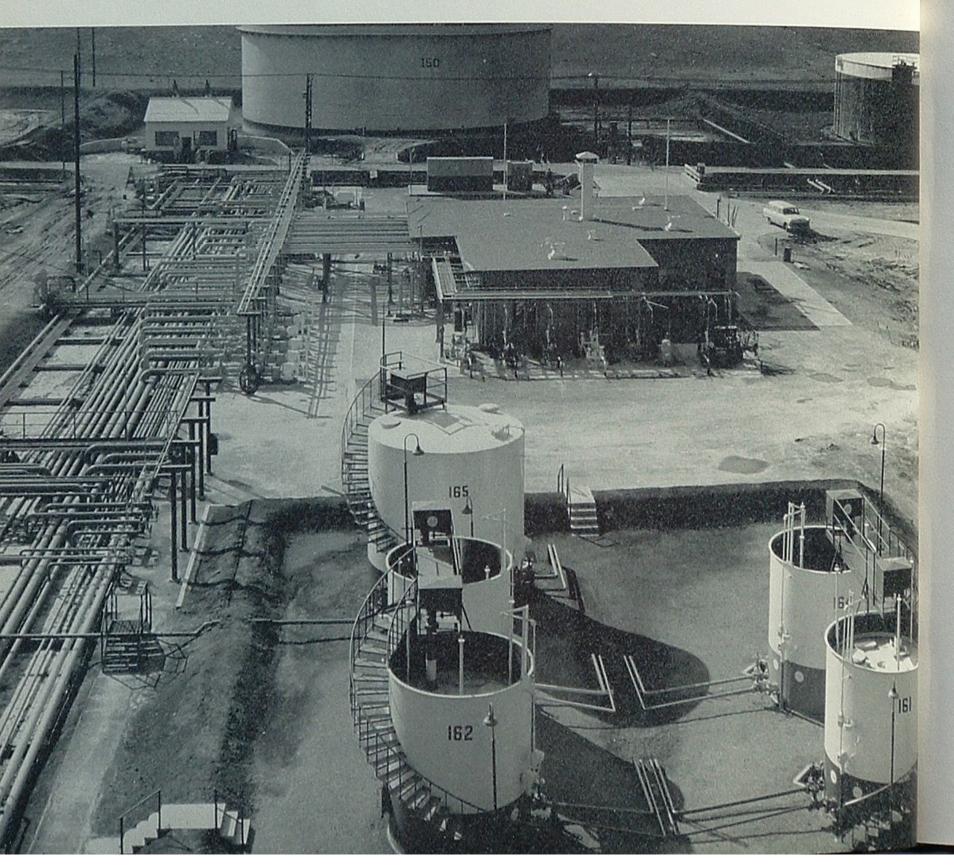
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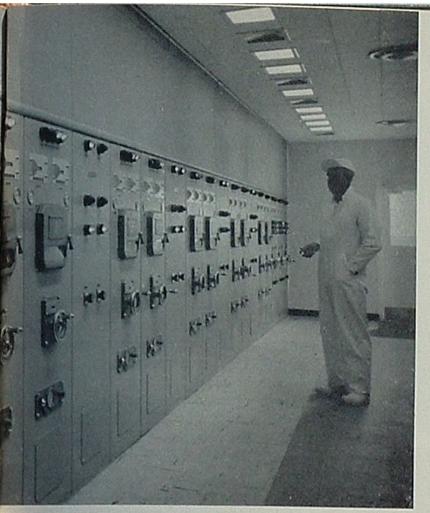
A number blending sy amounts of ing componer with the prorequiring m associated be the convention additives to line tankage And, worst of maintain continuous the special for the special fo

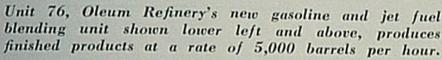
To the inc Refinery has blending uni Appropriated

The new permits the hydrocarbon ferent inhibi No mixing t unit admits of

ON TOUR









The facility is so completely automatic that Blender Harold Johanson, seen at extreme right with Blending Engineer Dean Sandford, can operate it singlehanded.

PETROLEUM REFINERS, during the past few years, have become increasingly dissatisfied with the older method of blending various components and additives into finished gasolines and jet fuels. The method widely used throughout refineries consists of pumping the components into a large tank equipped with mechanical mixing devices and slowly stirring the ingredients together.

A number of objections have been cited to this batch blending system: It is slow and calls for excessive amounts of preparatory or lead time. Pipe lines carrying components to the blending tank have to be equipped with the proper rings and blanks, a time-consuming job requiring many manhours. There are certain hazards associated both with the pipe line adjustments and with the conventional method of adding tetraethyl lead and additives to the batches. Too large a proportion of gasoline tankage is tied up in the batch blending operation. And, worst of all, the batch system makes it difficult to maintain consistent quality of product or to manufacture the special fuels customers sometimes require.

To the increasing demand for a better system, Oleum Refinery has responded with a continuous automatic blending unit, the first of its kind on the West Coast. Appropriately it is called Unit 76.

The new gasoline and jet fuel blending equipment permits the simultaneous mixing of up to 10 different hydrocarbon components, two different dyes, three different inhibitors or other additives, and tetraethyl lead. No mixing tank is required. The precisely controlled unit admits exact proportions of all components into a line where, through homogenizing action, they are immediately and thoroughly blended. Individual pumps, meters, flow controls, recording instruments, etc., governing the movement of separate components, are integrated into the unit operation by a *master* mechanism and set of controls.

This practically automatic blending equipment is ingenious. It not only measures in components with superhuman speed and accuracy, but through totalizers records what it has blended, and through memory totalizers admits any mistakes it might occasionally make because of mechanical failure. Alarm lights summon the operator whenever this gasoline "automat" detects the slightest evidence of wrong-doing. Generally Unit 76 clicks along on its own until the blending order is filled, then automatically shuts down and waits for the next assignment.

Results observed during the first two or three months of operation point to a steady job for the million-dollar Unit 76. It's a go-getter—ready at almost a moment's notice to start turning out any type of gasoline or jet fuel the customer orders. The time-consuming blank-and-ring additions to pipe lines have been eliminated. Hazards, including those associated with tetraethyl lead, have been minimized. Valuable tankage has been converted from blending to gasoline storage. And the unit, manned by only one operator per shift, can produce a steady 5,000 barrels per hour of product to storage or direct to tank-ships.

Most important, we believe these are the finest blends of commercial gasolines and jet fuels ever produced.



INFOCUS

where California's first oil well was drilled in 1865, won petroleum industry recognition for marking the event with a monument in 1955. In the photo, from left, OIIC Chairman Carl Wright presents "Go-Devil" awards to Union Oilers T. S. Argyle, Wade Spence and G. C. Wigg for their outstanding services in this and other OIIC accomplishments.

from Pat Clark

PLANNING Next November, 4,000 educators will be the guests of 25 host firms in Kern County during the Teachers Institute Conclave. Proof of Union Oil's enthusiastic help was evidenced at a recent planning session in Bakersfield; more than half the committee were Union Oil people. Front row from left are educators Martha Allison, Wilma Kiesher, Anna Weiser, Dr. Orral Luke, Shirley Peterson, Betty Spaulding and Frank Schimandle; back row, B. L. Finlinson and Union Oilers A. G. Hilton, J. R. Boltz, Art McDougal, C. A. Steiner, G. G. Chappell, R. H. Grahn, C. A. Goughnour, M. G. deLaveaga, G. S. Grimes, George Baumgartner, L. B. Houghton, Carl Lundblade and C. W. Cary.

from T. W. Proudfoot





tank truck salesman for our Fairbanks consignee, signs a ticket for gasoline just before leaving Seattle and heading home on the Alaska Highway. The new truck is specially equipped for delivering heating oil to our Fairbanks customers. Carl seems little concerned about making such a long delivery in the dead of winter.

from R. J. Sandercock

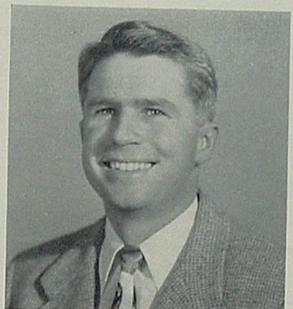
were four more winners of sales contests in our Eastern Continental Territory. They and their hosts at Los Angeles Refinery are, front row from left, T. G. Nasca of Northeastern Region, Refinery Manager H. C. Meiners, W. C. Van Der Aarde of Southeastern Region, Robert Burns of Midwestern Region; back row, W. H. Fain, R. R. Spiro, Don De-Buse, R. E. Dours of Middle Atlantic Region, and C. M. Wharton.

from H. F. Zirnite



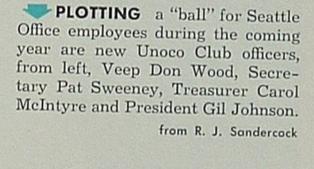


terms on the Employees' Medical Plan Board of Administrators are Frank K. Lord, left, and Walter T. Jameson. Frank is distribution manager for our Central Territory mar-



keting organization, and Walt is superintendent of our Santa Maria Refinery. They fill the expired terms of R. D. Roberts and J. W. Towler. More than 4,000 employees participated in the balloting.

from D. S. Povah



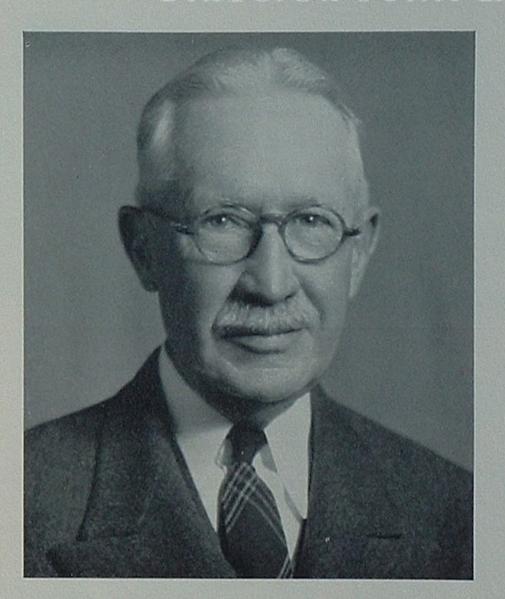


of the Central Territory Girls' Club seem equally pleased and feted whether leaving or taking office. They are, seated from left, Ruth Fischer, Past-President Frances Williamson, 1956 President Vera Angell; standing, Laurette Luce, June Shillestad, Carolyn Short, Toni Masi and Yae Iwasa.

from Pat Clark



#### DIRECTOR JOHN EARLE JARDINE DIES



THE passing of John Earle Jardine on March 16th came probably as he would have preferred it—after a brief illness and at the climax of an industrial era he has been instrumental in building. Mr. Jardine, born in New York City in 1871, was 84. He came to California in 1892, settling in Pasadena and devoting his youthful energies to the citrus industry. Then in 1904 he became affiliated in the investment firm of William R. Staats & Company; worked vigorously in aiding the firm's great expansion; rose to become its president, then chairman of its board, and in 1951 a partner in the firm.

Mr. Jardine's business experience and other outstanding qualifications attracted the interest of Union Oil Company. In 1929 he was elected a member of our Board of Directors, and ever since that date has contributed valuable counsel in the Company's behalf.

His interest and activity in numerous business, social and charitable causes continued until within a few days of his death. Union Oil people, while offering sympathy to Mr. Jardine's family, salute the memory of a great man.

#### INDUSTRIAL SUMMARY-cont. from page 15

A chemical plant for the manufacture of a new low-pressure type polyethylene plastic was announced March 8 as a joint venture by Koppers Company, Inc. and Brea Chemicals, Inc., subsidiary of Union Oil. The plant, costing in excess of \$10,000,000, will be located at Wilmington Avenue and Sepulveda Boulevard in Los Angeles County, three miles north of Los Angeles Refinery. Refinery gas for the manufacture of ethylene will be supplied by pipeline from LAR. The plant when completed in mid-1957 is expected to employ about 300 persons, including engineers, chemists, technicians and skilled and semi-skilled workers.

Polyethylene is used in the manufacture of toys, houseware items, insulating materials, pipe, bottles, jars, packaging film, rope, etc. The Brea-Koppers plant will produce the new rigid-type polyethylene, which has higher tensile strength, greater heat resistance and other new properties. Koppers is already producing the material in semi-commercial quantities at its chemical division plant in Kobuta, Pa. The new facility will have a capacity of 60,000,000 pounds per year.

from Homer Reed

#### RELATIONS

More than 8,400 Union Oil people worked throughout 1955 without a disabling personal injury. Why

then did 120 others suffer a disabling injury—one which injured them severely enough to prevent their returning to work on the day following the accident?

Although injuries were less severe (1922 days lost in 1955 compared to 2567 in 1954), disabling injuries increased 23% to 6.9 per million employee-hours. While this injury frequency is better than the 7.9 petroleum industry average, it is worse than the Company's injury rate for the past two years, which reached an all-time low of only 5.5 disabling injuries per million hours. It is very gratifying that no Company personnel were injured fatally on the job in 1955.

Increases or decreases in injury severity can be attributed to luck, but increases in the number and frequency of injuries are apt to be the result of indifferent attitudes toward following safe job procedures and toward correcting unsafe habits and working conditions.

Have you tested your own attitude toward safety lately? Do you observe the actions of other people and suggest safer methods when you should? Which way is the trend on the accident scoreboard in your department?

from W. C. Stevenson



**EXPLORATION & PRODUCTION** 

#### SERVICE BIRTHDAY AWARDS

#### **APRIL 1956**

Davis, Wallace R., Dominguez35
McCarty, Harold L., Bakersfield
Page, Thomas J., Ventura
Stewart, Cameron C., Whittier
Keegan, Hugh, Dominguez30
Krogsrud, Sverre, Whittier
Shepard, Charles J., Dominguez 30
Webster, Jonathan V., Orcutt
Dreyer, Frank E., Dominguez 20
Thomas, Mervyn L., Rocky Mountain20
Moreno, Joseph A., Del Valle 15 Garrett, Russell H., Bakersfield 10
Hobbs, William L., Bakersfield10
PURCHASES
Meade, Clark S., Home Office
Paget, Alfred, Home Office25
Bowman, Clawson C., Home Office15
Bryson, David A., Home Office15 Knight, F. Marion, Home Office10
Kingin, 1. Marion, Home Onice
COMPTROLLERS
Stine, Ray F., Home Office
Dalbeck, Robert E., Home Office
Golisch, Ervin H., Home Office20 Skinner, Horace A., Home Office20
Eximot, Horace III, Home Office
MANUFACTURING
Abernathy, Clarence H., Wilmington30
Crawford Charles W. Maltha 30
Dickerson, George W., Oleum 30
Crawford, Charles W., Maltha 30 Dickerson, George W., Oleum 30 Foster, Vernon B., Wilmington 30 Francis, Antonio A., Oleum 30
Francis, Antonio A., Oleum
Quintel, Eugene, Oleum30
Austin, Stanley R., Oleum25
Keller, Walter E., Wilmington
Morehead, William P., Maltha
Morse, Hilda C., Oleum 25 Penhale, Harold H., Wilmington 25
Ticehurst Bernard V., Maltha 25 Robertson, Ivan L., Oleum 20
Robertson, Ivan L., Oleum 20 Barulich, Matthew B., Oleum 15
Bradshaw, David C., Oleum
Butt, Berkeley K., Oleum
Deichler, Herbert R., Oleum
Johanson, Harold A., Oleum 15 Pollen, John H., Oleum 15
Pollen, John H., Oleum
Wright, David C., Wilmington15
Allee Clifford F Oreutt 10
Allee, Clifford F., Orcutt 10 Asher, Herman W., Wilmington 10 Barnes, Allen C., Oleum 10
Barnes, Allen C., Oleum
Bendito, Albert M., Oleum
Bungay, Robert H., Home Office
Buster, Chester A., Oleum10
Carter, Erin P., Oleum 10 Ceballos, John, Oleum 10
Country John, Oleum
Costa, Manuel J., Orcutt
Costa, Manuel J., Orcutt
Costa, Manuel J., Orcutt 10 Crafton, Carl E., Oleum 10 Dudley, Richard W., Wilmington 10 Farnum, George A., Orcutt 10 Faulkner, David A., Orcutt 10

700
Fox, Richard K., Orcutt10
Garrett, James M., Wilmington 10
Gearing, Guy M., Orcutt 10 Gilbertson, Edwin, Orcutt 10
Golovich, Jack M., Oleum
Hamilton, Cohen C., Oleum10
Hamilton, Harold L., Orcutt
Harsin, Robert L., Orcutt
Holt, James L., Wilmington
Hoon, Clyde, Orcutt10
Jackson, Gordon E., Oleum
Levy, William L., Orcutt
Lippy, Evangeline P., Wilmington10
Loughridge, James M., Oleum10
Marshall, Carl T., Oleum 10 Murphy, James L., Orcutt 10
Murphy, Joseph M., Oleum
Nuss, Vernon H., Oleum10
Overman, Victor A., Wilmington 10
Patterson, Archie B., Oleum 10 Penhale, Ruth K., Wilmington 10
Purcell, Lyle J., Orcutt10
Raby, Roy B., Oleum10
Razo, Atilano M., Orcutt
Rogers, Enoch, Wilmington 10 Rubio, Amador P., Orcutt 10
Salo, Otto A., Santa Maria
Souza, Edward G., Oleum
Sweet, James C., Oleum10
PIPELINE
Buskirk, Tom E., Santa Fe Springs30
Devlin, Thomas, San Luis Obsi po30
Devlin, Thomas. San Luis Obsi po30 Glenn, Arthur E., San Luis Obispo30
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A grateful company and a host of wellwishing employees are bidding farewell to the following Union Oilers who are retiring after long careers of Company service.

#### HARRY B. KUENY

Comptroller's Department Employed 11/25/10—Retired 4/1/56

#### CHARLES E. CORRELL

Pipe Line Department Employed 4/16/14—Retired 4/1/56

#### JOHN SALMOND

Manufacturing Department Employed 2/7/19—Retired 4/1/56

#### RAY F. JUDY

Field Department Employed 12/12/21—Retired 4/1/56

#### DWIGHT S. RILEA

Field Department Employed 5/6/26—Retired 4/1/56

#### In Memoriam

On February 14, 1956 HUGH C. PRIFOGLE Los Angeles Refinery

On February 19, 1956 GEORGE C. WOOLWAY Southern Division Pipeline

On February 22, 1956 CLARENCE M. PIATT Southern Division Field Retired 2/1/39

On February 23, 1956
TIMOTHY J. LEAHY
Oleum Refinery
Retired 4/1/45

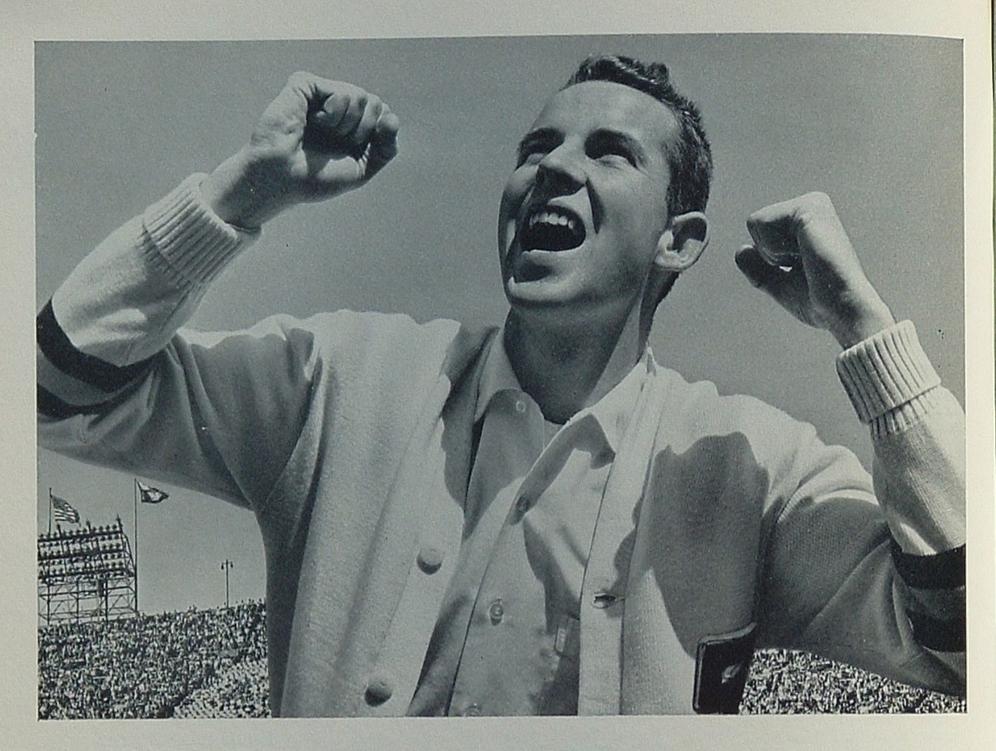
On February 26, 1956 ELMER M. McLACHLAN Central Territory Retired 9/1/55

On March 8, 1956

ANDREW B. LEAGUE
Los Angeles Refinery
Retired 8/1/50

On March 9, 195 EVERETT B. KAYE Southern Exploration Retired 7/1/53

On March 19, 1956 ARNOLD SCHMID Los Angeles Refinery Retired 12/31/50



# Allan Green

For all of us, something to cheer about

Assistant cheer leader Allan Green is a sophomore in the College of Letters, Arts, and Sciences of the University of Southern California.

He's also, through foresight, one of the youngest of the 46,175 people who hold shares in Union Oil, the 40th largest industrial company in the country. And his 55 shares entitle him to a report on our 65th year of business.

In 1955 our customers paid us the record amount of \$368,760,900.

\$59,286,200 of this amount, or 16.1%, was paid our 8,839 employees as wages and for benefits to protect them and their families.

Taxes took 3.6%. This does not include the \$65,875,000 we also collected from customers as fuel taxes for governmental agencies.

We spent 72% with more than fifteen thousand other companies and individuals with whom we do business. This left 8.3% of the \$368,760,900 as net profit. Slightly more than half of these earnings were paid in cash dividends to Allan Green and our other 46,174 share owners, who also received one additional share of stock for each ten held.

The balance of net earnings, equal to 3.9% of the customers' dollars, we reinvested in the business for necessary expansion and modernization of facilities.

Whether or not you own stock in this or any other company, it seems to us that this report is of vital concern to you.

For so long as companies like Union Oil have the incentive to compete and make a profit, Allan Green and others like him will have the incentive to hold shares in that company.

This is the best possible economic climate for continuing prosperity. Which is, for all of us, something to cheer about.

YOUR COMMENTS ARE INVITED. Write: The President, Union Oil Company of California, Union Oil Building, Los Angeles 17, California.

## Union Oil Company of CALIFORNIA

MANUFACTURERS OF ROYAL TRITON, THE AMAZING PURPLE MOTOR OIL