On Tour

WITH UNION OIL COMPANY OF CALIFORNIA

FUEL OIL MAKES THE GRADE

March 1956

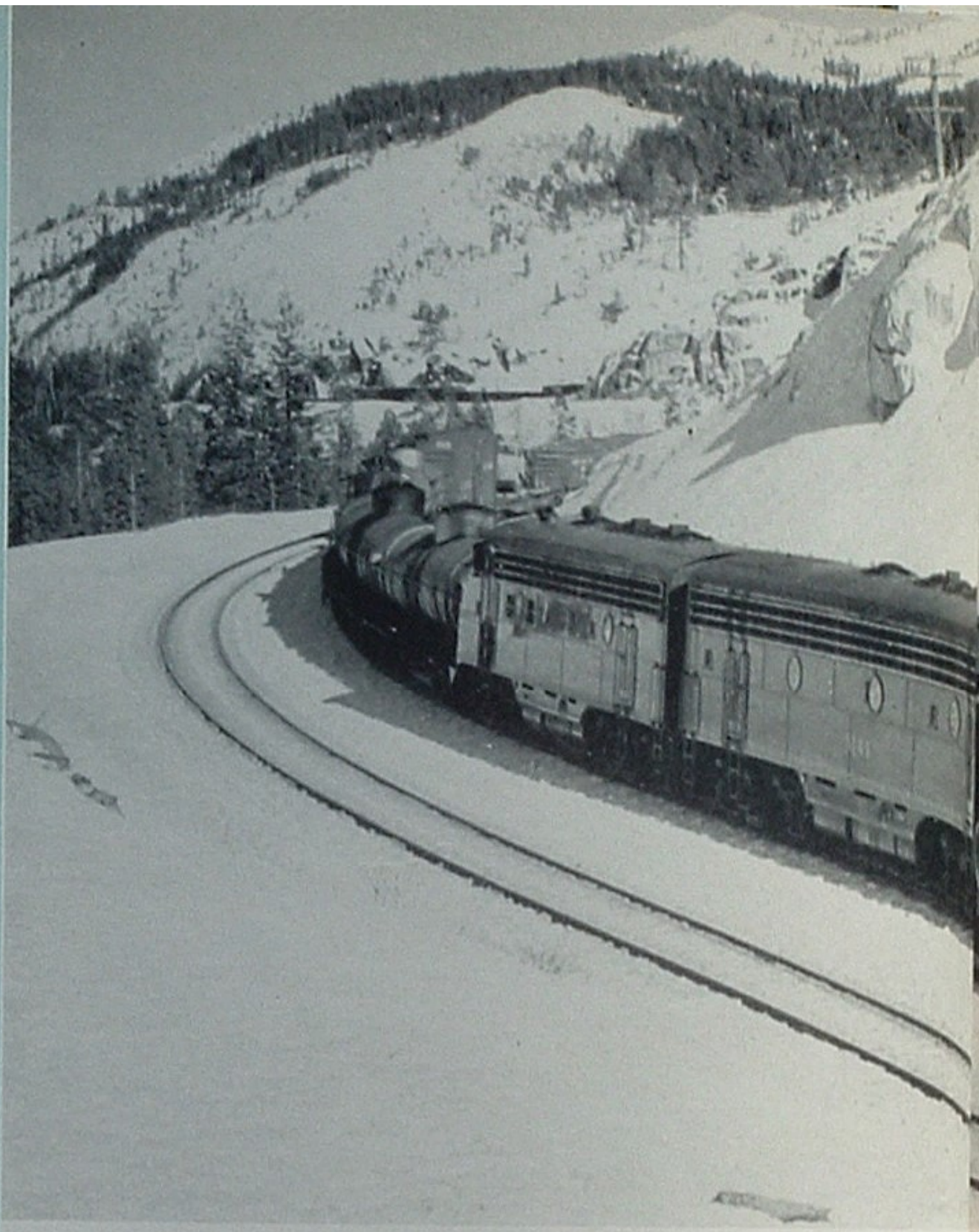
On Tour

Volume 18, Number 3
March 1956

In This Issue

"ON TOUR", pronounced "on tower," is 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. Hagen, Assistant Editor



Fuel Oil Make

IN DIESEL LOCOMOTIVE TESTS CONDUCTED BY THE SOUTHERN PACIFIC AND UNION OIL

from the Railroad Sales & Engineering Department

OUR FRONT COVER *and the photograph above reveal the wintry Sierra-Nevada scene where the Southern Pacific and Union Oil have been conducting successful tests with diesel locomotives, using residual oils for fuels.*

Engine parts being examined by, from left, E. B. Thomas and E. J. Putryae of Southern Pacific, J. L. Broughton and C. C. Mugford of Union Oil, and J. K. Edwards of Southern Pacific, show no appreciable increase of combustion deposits or wear due to use of residual fuels.

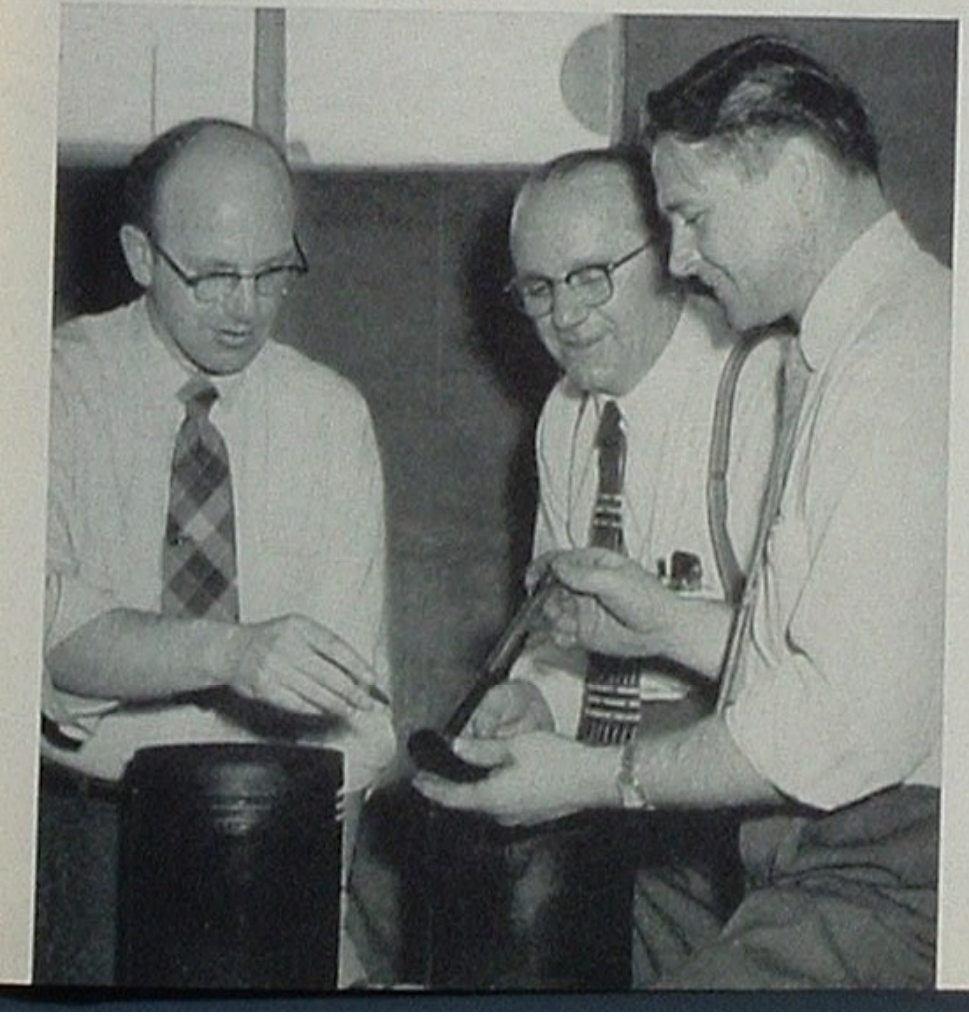
The Grade

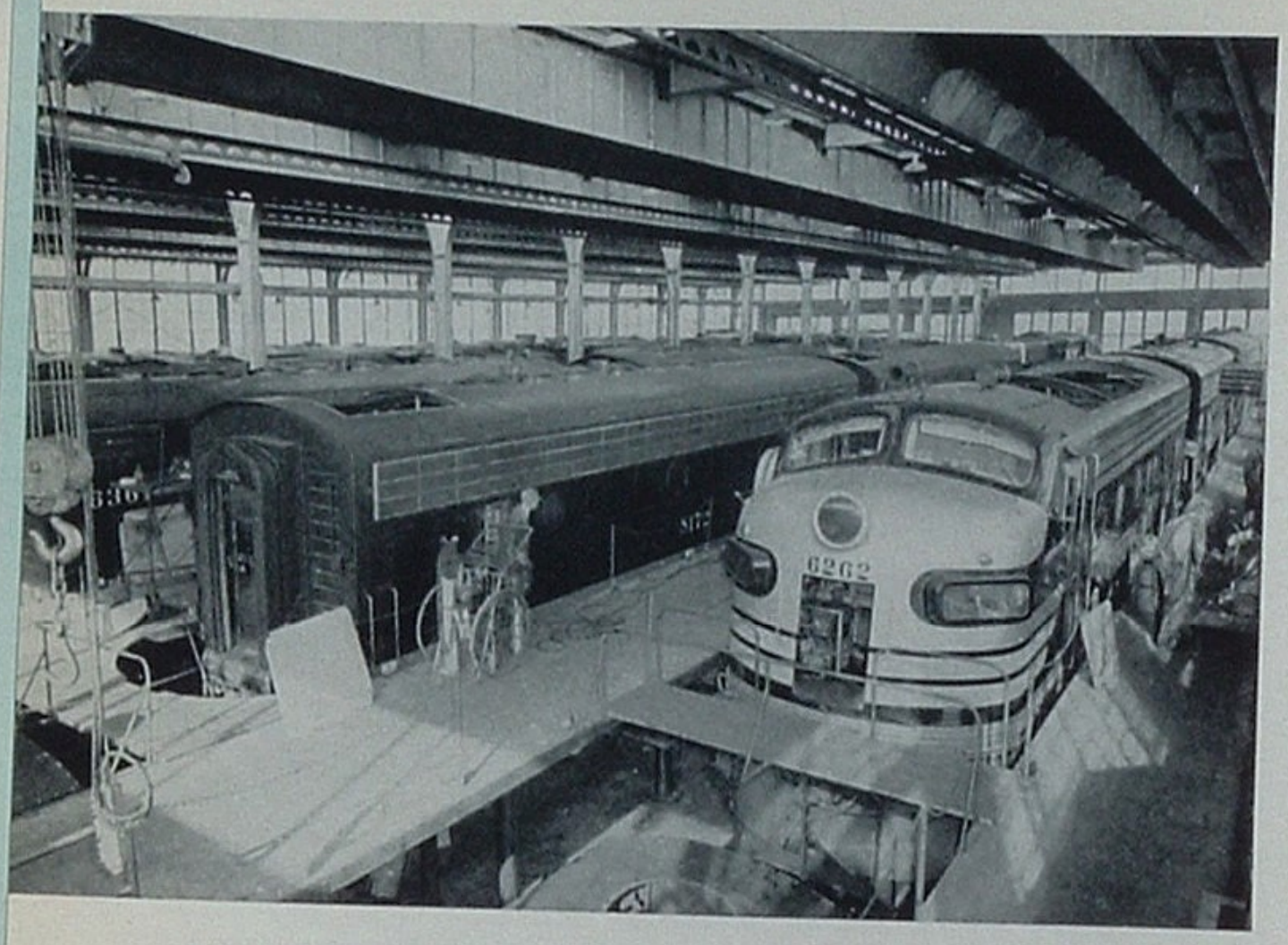
BETWEEN Sacramento, California and Reno, Nevada is one of the world's most challenging sections of railroad. Trains laboring up tortuous grades move from the warmth of Sacramento Valley into near Arctic cold at the summit of the Sierra Nevada mountain range. To steep grades is added the obstacle of heavy snow, sometimes attaining a depth of more than 20 feet. Storm and wind during the winter months often upset train schedules. Two powerful locomotives, consisting of eight diesel units, are the standard requirement in moving a freight train up the Sierra Nevada's west slopes. This is railroading at its most spectacular, but toughest.

So, when Union Oil and Southern Pacific decided that a series of fuel tests be made, the railroaders smilingly nodded toward the Sacramento-Reno run. If a fuel can stand the pull and varied temperatures of this mountainous area, it's very likely to make the grade anywhere.

The testing of residual fuel oils in diesel locomotives was initiated jointly by Southern Pacific and Union Oil in 1954. Our research men and engineers knew that such economy fuels were being used with success in certain marine and industrial diesels that operate at fairly slow and constant speeds. They reasoned that railroad diesels might also be adapted to heavy fuels if equipment could be revised slightly to compensate for the locomotive's fluctuating speed and operating conditions. The Southern Pacific Company, reflecting the forward thinking of rail road management, was most willing to cooperate.

Results of early tests conducted over the Sacramento-Reno run demonstrated that residual fuels presented two problems not encountered with diesel fuel: Under low-load or slow-speed operating conditions, they did not burn efficiently in the diesel's combustion chamber, due to insufficient heat of combustion. Furthermore, at low temperatures, some of the residuals thickened and resisted being pumped through locomotive fuel lines.





In railroad shops, left, at Roseville, California, the Southern Pacific's diesel locomotives are maintained and equipped for the Sacramento-Reno run.

Equipment for the dual-fuel tests consists of (above photos) an insulated, two-compartment tank for the two fuels, and an automatic mechanism which switches from one oil to the other in accordance with the engine's high-load or low-load performance. At right a workman "fills 'er up" with some 350 gallons of diesel fuel and 1150 gallons of residual fuel oil.

However, the residual fuels gave a surprisingly good performance under high-load or high-speed conditions, which type of operation accounts for approximately 85 per cent of a locomotive's fuel consumption. The residuals were consumed at top efficiency by the diesel engine; created no more exhaust fumes than did diesel fuel; and added no appreciable problems to engine performance or maintenance costs. Best of all, the residuals consumed under high-load conditions worked more efficiently—powered the locomotive farther per gallon—than did diesel fuel, due to the higher BTU content of residual oil.

These findings by Southern Pacific and Union Oil researchers justified further experiments and stimulated development of a "Dual-Fuel System for Diesel Locomotives."

Dual-fuel adjustments are simple and the added mechanisms are relatively inexpensive and easy to install:

First, the locomotive fuel tank has to be partitioned to accommodate about 350 gallons of diesel fuel in one compartment and 1150 gallons of residual fuel in the larger. The tank is insulated to assist in maintaining the residual fuel at a favorable temperature.

To overcome pumping difficulties encountered with the heavy oil and to provide proper fuel viscosity for injection, the engineers have devised a system of heat exchange from the engine to the fuel. Engine cooling water is made to transfer its heat to the residual fuel through two circulating systems. One system pre-heats the fuel prior to its injection in the engine, while the other keeps a stream of hot oil flowing to the fuel storage compartment. Thus the heavy oil is kept hot enough to move freely through fuel lines and burn with maximum efficiency in the diesel's combustion chamber.

The pumping of fuel from both storage compartments is controlled by an automatic dual-fuel system. That is, in conformity with the load or operating speed of the locomotive, the dual-fuel system automatically selects diesel fuel at low engine loads and the residual oil at high engine loads. Train crews have no extra valves or operations to worry about.

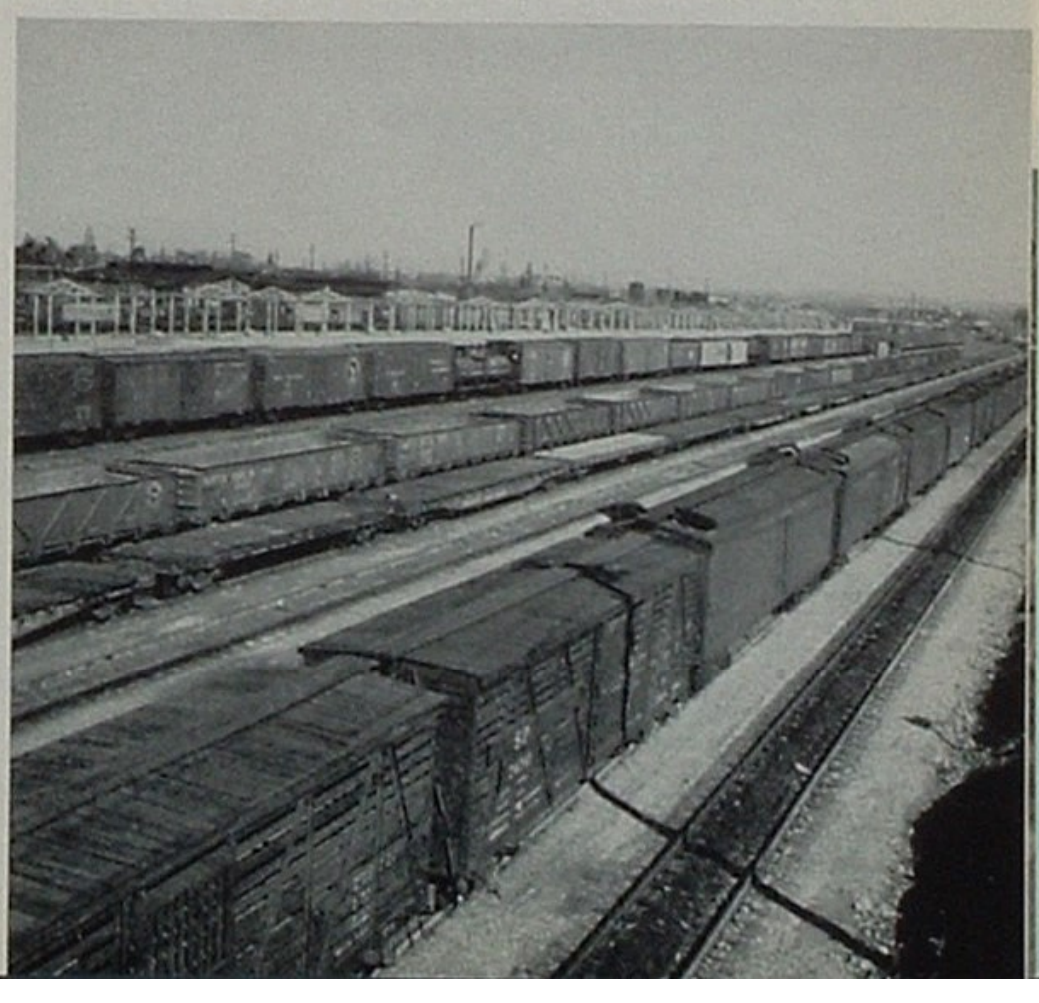
As was expected, an unforeseen problem or two arose during the experiments, calling for advancements in other phases of diesel operation. These not insurmountable problems, including the improvement of locomotive lubricating oil, are being solved by the engineering and research teams.

To date, all tests in this important venture point toward eventual success. The Southern Pacific has converted a dozen or more diesel units to dual-fuel and is in the process of changing many more. Meanwhile, Great Northern Railway and The Milwaukee Road have joined Southern Pacific and Union Oil in more recent but equally successful residual fuel tests with their diesel locomotives. We are continuing to work with the railroaders to assure that our petroleum products meet their exacting requirements.

It was in 1894, remember, that Lyman Stewart of Union Oil persuaded the railroads to substitute fuel oil tanks for coal tenders on their steam locomotives. The idea was adopted nationwide. Some 60 years later, by coincidence, we are recommending fuel oil as good medicine even for the diesel *iron horse*.

Engine crews assigned to the Sierra-Nevada tests have no extra controls to be concerned about and find residual fuel more efficient than diesel fuel at high-throttle operation.

Freight trains being made up in yards at Roseville hint as to the immense volume of freight being moved and the fuel economy that may develop nationwide from current tests.



"There

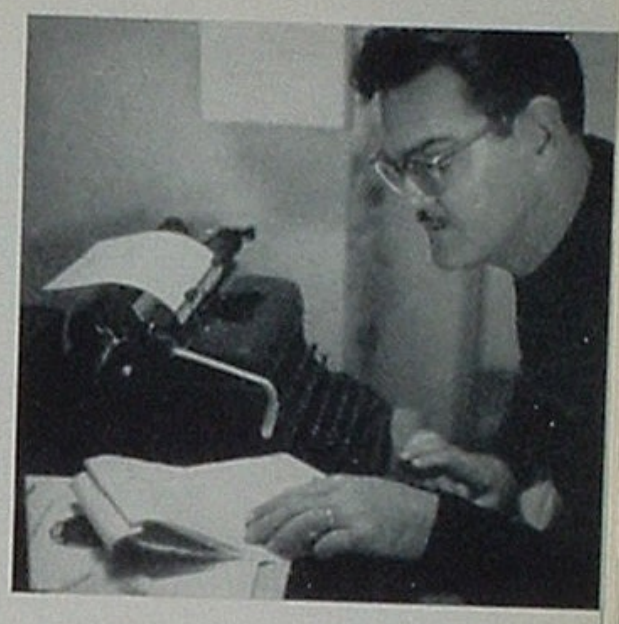
Sinking stern first off the coast of Mexico is the Tuna Clipper "Sunset." The Union Oil Tankship "Unoba," enroute from Panama to California, saw distress flares and rescued survivors, some of whom approach portside, and (below) come aboard with scanty gear.

Rescue photos by Third Mate Gerardo Sued

"Good lads, all!" during the rescue were Union Oilers (below from left) Captain Tom Makibbin, Chief Mate Murphy Hayes, Chief Engineer Ansel Levin, Third Assistant Engineer Rufino Carrillo, Second Mate Julio Correa, Second Assistant Engineer Delio Taylor, First Assistant Engineer Gustave Whitaker, and Third Mate Gerardo Sued (also the "Unoba's" unofficial photographer); crew members are (standing) Geneniano Aguilar, Juan Nichols, Peralto Taylor, Luis Martinez, Eduardo Alvarado; (enshrining a religious statuette left by the grateful "Sunset" crew) Felix Bastidas and Aurelio Penaloza; and (seated) Roberto Coquet, Gaspar Martinez and Jose Perez.

ere No Heroics,"

DURING RESCUE OF TUNA CLIPPER CREW, ACCORDING TO CAPTAIN MAKIBBIN OF UNOBA



Captain J. B. Stene,
Los Angeles, California

Dear Sir:

"On January 17 at 1028, distress flares were sighted from a small vessel about five miles distant. Course was altered immediately and, closing in, we made her out as the Tuna Clipper SUNSET. She was making water rapidly. Her crew had taken to the boats.

"At 1100, engines were stopped to pick up the first boat of survivors, and at 1105, SUNSET went under stern first about 300 feet from us. A sad sight indeed. At 1115, the second boat was alongside transferring personal gear, and at 1130, all hands (10) were aboard. There were no injuries among the rescued.

"The weather at the time was clear, light winds, smooth sea and gentle swell. All UNOBA crew members pitched in to assist the survivors. We also took pictures of the sinking vessel.

"A careful scrutiny of floating debris was made for possible salvage and to determine if any dangers to navigation remained afloat. No dangers were noted, but we decided to salvage one high-speed motor boat, one large and one small skiff. At 1153, the motor boat was on deck, the skiffs in tow, and the UNOBA on her way.

"The position of this event was 17-28N 99-23W in about 400 fathoms of water and about 38 miles southeast of Acapulco (Mexico). Upon conference with the Master of SUNSET, it was decided to proceed to Manzanillo to land the survivors. Relaying thru another tuna boat, a message was dispatched to SUNSET owners and also one to Stene, Los Angeles, advising of rescue and ETA Manzanillo. Upon reflection, I consider that message poorly worded and can only attribute it to the haste in which it was written.

"SUNSET sank in about 36 minutes. The 10-inch intake for main engine circulating system carried away at the bottom of the vessel below the valve. The Chief tried desperately to stuff blankets in the hole and get the pumps going, but she was taking water so fast they had no chance of saving her.

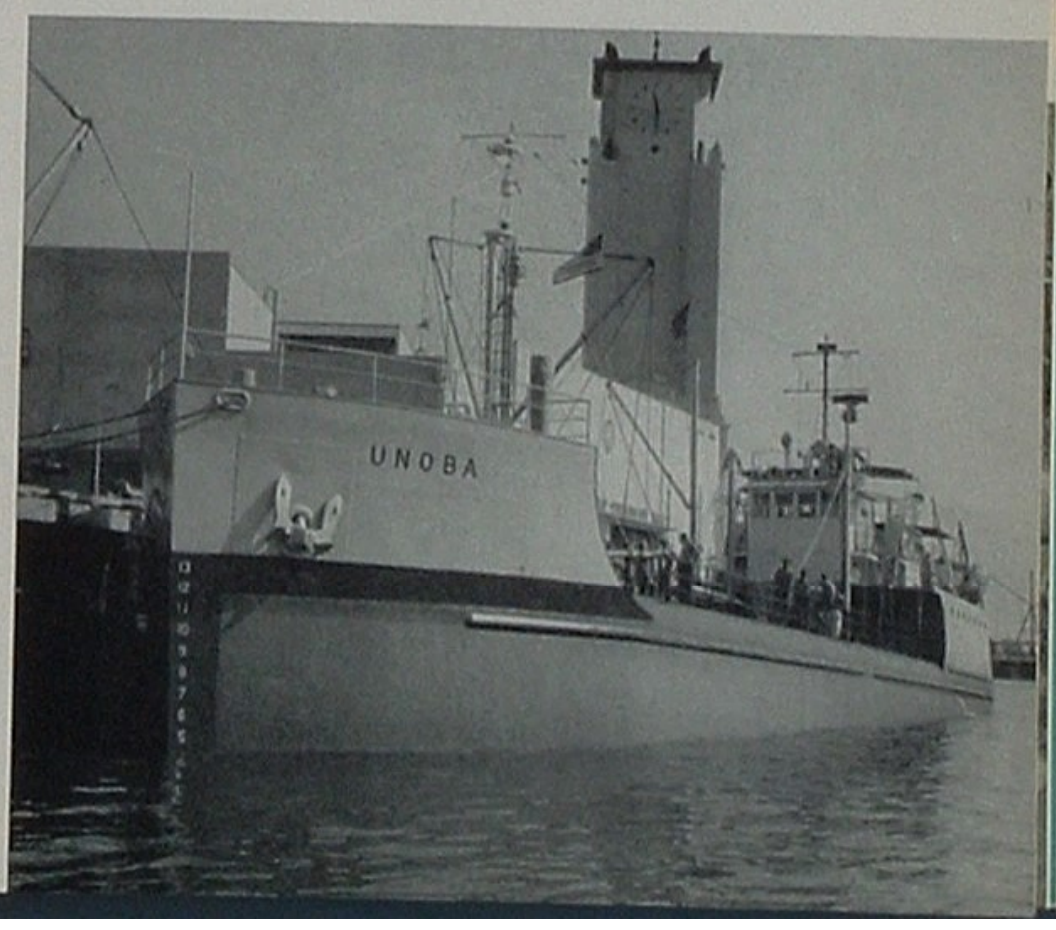
"The skipper is an old-time Portugese sailor man and, needless to say, is broken hearted. SUNSET was returning to San Diego after six months in Central and South American waters. She had about 230 tons of tuna aboard, not insured. She was also a good customer of Union Oil in Balboa, several times having been at the same berth with UNOBA.

"I hope this gives you a good picture of what happened, Captain Stene. There were no heroics. But UNOBA accomplished her obligation quickly and without confusion. I should like to commend the officers and crew to you for the cheerful and unselfish way they shared their small accommodations with the survivors and prepared and served extra meals. Good lads, all!"

Respectfully yours,

T. C. Makibbin
Master M/V UNOBA

Thus the "Unoba" adds to a long list of Union Oil tankship rescues. The vessel is seen below at Los Angeles Terminal loading preparatory to another lengthy tour of duty at Balboa and in Central American waters.



UNION OIL COMPANY
Communications System

Seattle
Spokane
Cut Bank
KOC-485
Great
Portland
Shipping
KMB-812
Administration
Admin-istration
Oleum Refinery
400 LINE PAX
Credit Order
San Francisco
KMD-586
San Luis Obispo
60 LINE SWBD.
Coalinga Nose
50 LINE SWBD.
KMD-669
Santa Maria Refinery
60 LINE PAX
KMC-232
Maltha
Orcutt
60 LINE SWBD.
KMB-877
KMO-55
Bakersfield 120 LINE SWBD.
Wire lines to be replaced by microwave system
Santa Paula
60 LINE SWBD.
Torrey
Purchasing
Southwest Territory
Mulholland
Head Office
Los Angeles
300 LINE PAX
Administration
Los Angeles Terminal
100 LINE PAX
Brea Research
400 LINE PAX
Warehouse
Santa Fe Springs
200 LINE PAX
KME-321
Brea Chemical
Administration
Dominguez
100 LINE PAX
Administration
KMD-667
Los Angeles Refinery
400 LINE PAX
Warehouse

LEGEND

- Teletype Station
- Teletype System *
- Manual Telephone S
- Dial Telephone Sys
- Microwave System
  - existing
  - proposed
- Mobile Radio Base St

* *Leased and company o*

All others Company owned and o

76 UNION

R. SANDVI

Speaking of

COMMUNICATIONS

An Ounce of Understanding and Discretion Will Save Your Company a Ton of Expense

from E. W. Messinger

IF you can't answer the following questions correctly, you'll recognize the advantage of reading on. If you can give the right answer, you'll probably want to read on regardless—in order to trip up the narrator. Here are the questions:

If on the job you have at your convenience two telephones — a public and a Union Oil instrument—which should you use to call an office similarly equipped?

Is it more economical to contact Home Office from San Francisco by teletype or long-distance telephone?

What is your guess as to the average cost per month of each public telephone being used by Union Oil Company — nearly $5 - $10 - $15 - $20 - $25?

Does it cost anything extra to dial a number in an extended service area?

When sending a message to Canada, should you write "twenty-five thousand dollars" or "$25,000.00"?

Well, let's see:

The facilities now provided to permit swift communication between Union Oil people scattered throughout the Western Hemisphere and overseas are, we believe, unexcelled in industry. Besides public telephone and telegraph networks, we have the Union Oil Telephone, one of the country's largest private systems. We have mobile radios by means of which personnel in remote areas or traveling along highways may contact their headquarters or be contacted. A private wire leased by the Company enables us to exchange teletype messages between all of our major Pacific Coast cities. There are numerous telemetering and remote control installations that save us countless miles of travel and hours of operating time. All of these services are being improved and enlarged daily.

But to have two or more means of getting a message to someone adds a measure of complexity to the services and calls for good judgment. So let's examine their advantages one by one, meanwhile considering a few money-saving suggestions.

COMPANY-OWNED TELEPHONE FACILITIES: On the map at left is indicated the extensive coverage of Union Oil's private telephone network. This system, wholly owned and operated by the Company, serves a great majority of our plants, offices and personnel. Consisting of the most modern equipment available, it is our fastest means of contacting Company personnel in an area bounded by Coalinga to the north and Los Angeles Refinery to the south. Most numbers can be dialed directly. A few must be placed through the telephone operator. The chief operator is always glad to assist you in completing a call or reaching a person who may not appear in the Company directory.

Familiarize yourself with this service and use it generally in preference to the public telephone. It is our most economical communications tool. A call to the most distant telephone in the system costs no more than a call to the adjoining office.

E. W. Messinger, communications engineer, and George Robertson, line repairman, are introduced studying additions being made to Company's private dial phone system.

At the Home Office switchboard, from left, Ann Evans, Mary Markl, Mary Lou Kimsey, Cleo Bean, Rebecca Fisher and Jewell Schmidt handle 4,500 telephone calls a day.

PUBLIC TELEPHONE FACILITIES: Services offered by the public telephones are of course essential to us because of our many contacts with people outside the Company or outside our private system. However, some of our greatest communications economies can be effected through employee awareness and discretion in the use of these services.

Public telephone equipment has progressed to the point where a person may dial outside of his local exchange—soon even long-distance—without the assistance of an operator. While adding a convenience, this imposes a problem. In the Los Angeles area, for example, the recent installation of extended dial service means that subscribers can dial from the Central to several surrounding sections where extra tolls apply. There is no operator to record the call or announce the time intervals. However, mechanical devices, far more efficient than any human being, are silently at work recording the length of each conversation. Every such call initiated from a Company office is dutifully added to Union Oil's telephone bill.

Since the inauguration of extended dialing service, the telephone bill of one large Union Oil office building increased over $2,000 a month. The average cost per instrument of public telephones at this one location has now risen to $24 per month. Our private system, on the other hand, costs us approximately $8.50 per instrument per month.

It is therefore of utmost importance that we:

Minimize the number of public telephones now in Company use, particularly where a Company instrument is available or few outside calls have to be made.

Eliminate where not actually needed push-button holds and other auxiliaries that increase the cost of each public telephone so equipped.

Before making a long-distance call, weigh the practicability and cost advantages of the Union Oil Telephone system, teletype, or letter writing.

If in doubt about reaching your party long-distance, always place a person-to-person call.

When making a personal call over the Company's public telephone facilities, place the call through the Company's local telephone operator. The costs will then be charged rightfully to you.

When in doubt about placing a call, consult the Company telephone operator. She can suggest many savings in time and toll costs.

The teletype is a fast and economical communications tool. On Home Office equipment, Betty Candlin (foreground) and Clara Nickoloff handle 250 messages daily.

TELETYPE: Also shown on the accompanying map are Union Oil locations served by teletype facilities. Teletyping is done over instruments and a wire leased from Western Union on a flat-rate basis. A message of average length can be typed in Los Angeles, for example, and received in Seattle within five minutes. Since the flat-rate charge applies to the entire service on a monthly basis, there is no charge for the individual message. The more we use this service, the greater appear its economies.

Teletype is our fastest and cheapest means of sending a written message to locations equipped with teletype machines. The service should be used in preference to public telegraph or long-distance telephone.

CABLEGRAMS AND TELEGRAMS: Sending cablegrams and telegrams over public facilities calls for an economy of words as well as a knowledge of the various charging procedures.

On most cablegrams, every comma, period or digit not spelled out counts as a word, and we pay for the message on a per-word basis. Moreover, the cable networks apply various rules in calculating the charges. Thus, if we wrote "$25,000.00 due May 19, 1956," the message would be counted as nine words in a domestic telegram or overseas cable, but as 16 words in a telegram to Canada. The same information written "twentyfive thousand dollars due May tenth fiftysix" would count as only seven words in all three instances.

Over Western Union facilities the address and name, including company name, of the receiver are sent free of charge. Only the text of the message needs to be minimized. Punctuation and the word "stop" should be omitted from the text wherever possible. The signature and company name of the sender are also sent free of charge, but the addition of the sender's address must be paid for.

In overseas cablegrams, every unit in the address, text and signature is counted. Therefore, when sending a cablegram, it is important to understand the use of code symbols, cable addresses and abbreviated signatures.

Your Communications Department, managed by J. Howard Robinson in Home Office and his competent staff in the field, is eager to improve Company communications both facilitywise and economywise. The foregoing information is offered solely with those objectives in mind. Union Oil people are urged to call upon the Department for further assistance. By so doing you will help the Company to help the Incentive Plan to help you.

INDUSTRIAL SUMMARY

• INDUSTRIAL RELATIONS

Union Oil is proud of the service records of its people—justly so, because more than 36% of the employees have been with the Company over 10 years, and accordingly have been presented with a service emblem. The number of employees having over 10 years' service is shown in the following compilation:

Years of service	*Number of employees*
10 to 15	1,236
15 to 20	380
20 to 25	540
25 to 30	553
30 to 35	343
35 to 40	147
40 to 45	11
45 and over	4

In connection with service emblems, it is interesting to know that during 1955, 420 10-year emblems were distributed and 343 ruby and 59 diamond inserts were made. Since July, 1927, a total of over 8,100 pins have been issued, along with 11,200 ruby and 370 diamond inserts.

from W. C. Stevenson

A geologist probes the ocean floor off California for outcrop samples that may lead to offshore oil discoveries.

• TRANSPORTATION & DISTRIBUTION

During 1955 the Company fleet of 56 transports operated over 350,000 hours and traveled 4,500,000 miles to deliver 437,000,000 gallons of petroleum products to service stations, direct-shipment customers and marketing stations. In this round-the-clock operation, some of the transports delivered over 1,000,000 gallons a month, and the average for the entire fleet was 650,000 gallons per month.

The SS SANTA MARIA recently made her first delivery of Aqua Ammonia for Brea Chemicals, Inc., to the Pioneer Mill Company at Kaanapali in the Hawaiian Islands. The 10,000 barrels of Aqua Ammonia and 30,000 barrels of fuel oil were handled through a single 750-foot hose floated from shore to the vessel on empty 50-gallon drums. Special precautions were taken to avoid product contamination. This marked the *first* delivery of Aqua Ammonia through such equipment.

from E. L. Hiatt

• EXPLORATION

During the last few years, active exploratory work has been conducted on the continental shelf of the California coast from San Clemente on the south to as far north as the San Luis Obispo County line.

The geologic reconnaissance includes seismic operations and actual submarine geology. *The accompanying photograph, taken some distance beneath the surface of these waters, shows a geologist obtaining an outcrop sample from the ocean floor.* Most of such specialized work is contracted to companies organized for this particular purpose.

As is evidenced in the Gulf Coast, geological and structural conditions and the environment for the accumulation of oil and gas may extend from on-shore to under the ocean. Every method known to science is currently being applied to determine favorable areas for prospecting off the California coast.

The State Lands Commission of California has been requested to offer for lease 74,200 acres of state-owned

tidelands off Santa Barbara, Ventura and Orange Counties. The first parcel, consisting of about 52,000 acres, is located between Point Conception and Elwood, just west of Santa Barbara. Another parcel, aggregating 16,700 acres, extends about nine miles northwesterly along the Ventura coastline from the Los Angeles - Ventura Counties line. The third parcel of 5,500 acres is off Sunset Beach, Orange County. These parcels extend oceanward for a distance of three miles and are under water up to a maximum depth of 300 feet.

In most cases several companies have joined together to apportion the great expense involved. Our Company is one of four companies operating in an Offshore Group that has been evaluating the potential possibilities of these prospective areas. It is the accepted belief that many millions of barrels of oil underlie these submerged lands. Future development may substantiate and justify the large expenditures now being made in the search for this additional offshore oil.

from Sam Grinsfelder

• PURCHASING

Everyone realizes that standard materials produced in large volume cost less than materials tailor-made to individual order. Usually the big problem is to adapt the standard item to our particular need. To accomplish this requires the combined skills of engineering, purchasing and operating personnel and suppliers. Standard materials must be considered when a new project is in the design stage. They must be investigated during the entire period of operation and maintenance.

The Purchasing Department is set up to make available to all Company locations the latest information on standardization activities. Results of tests that are of value in establishing Company standards are available to interested parties. Information on industry standards as well as national standards is also available for general use. We solicit your inquiries on any standardization problems affecting cost and availability.

from C. S. Perkins

• MARKETING

Preliminary screening by the Brand Names Foundation, Inc., finds five Union Oil dealers among the 40 service station operators being considered for the coveted title of "1955 Retailer of the Year." They are Schoedel Brothers of Spokane, Washington; John Haney of Bend, Oregon; Alvin Muir of San Mateo, Chet Mayor of Pasadena and Harry Palmer of Temple City, California. Hopefully, one of these dealers will be at the Waldorf Astoria in New York on April 18 to be acknowledged "Retailer of the Year."

Recent personnel changes include the appointment of A. R. Ousdahl as Assistant to the Vice President, reporting to A. C. Stewart. Mr. Ousdahl will advise and consult with Marketing management on sales planning and programs. He will be a member of the Products Supply & Requirements Coordinating Group, besides carrying out other assignments.

Eastern Continental Territory is off to a flying start in 1956, with 11 new distributors having been established.

During the December-January floods in Northern California communities, local Union Oil representatives were called upon to assist in evacuation work as well as in supplying petroleum products for essential services.

A new Retail Sales District has been established to serve retail business in the eastern portion of metropolitan Los Angeles. Carlos Knight has been appointed district sales manager. He will headquarter at the new Los Angeles Terminal.

from Roy Linden

• PRODUCTION

True conservation in the production of oil and gas can best be defined as use of the most efficient operating and engineering methods currently available to effect maximum recovery from producing zones. Your Company believes in true conservation. A large part of our production research efforts is expended in searching for new techniques that will permit us to increase the ultimate recovery from oil and gas reservoirs. In all of our producing operations, primary consideration is always given to the use of practices and methods that will permit maximum oil recovery from a producing zone.

The most efficient and practical method developed to date for increasing ultimate recovery is injection of outside energy into the oil and gas reservoirs. The principal

Consignee Al Duckhorn at Sebastopol was catering to marine trade only during this stage of recent floods.

materials injected are natural gas and salt water. If the injection program is started early in the producing life of a field, the project is termed "pressure maintenance." If the field has been largely depleted by primary production activities before injection is started, the operation is called "secondary recovery." At present the Company is operating gas-injection pressure maintenance programs in six California oilfields. In addition we have participating interests in similar projects operating under unitization agreements in eight other fields. We are also actively operating water injection projects for secondary recovery in 11 oil and gas fields in the state. Most of these projects have been in operation long enough to assure that substantial quantities of additional oil will be recovered.

One of the outstanding secondary recovery projects in California is the Dominguez First East Central Fault Block Water Flood, operated jointly by Union Oil and Shell. This project, started in July of 1954, has shown such successful results as to assure its financial success and ultimate yield of several million barrels of production unattainable without the secondary recovery techniques. Many other fields and reservoirs are being studied to determine their pressure-maintenance or secondary-recovery possibilities.

Progress in these matters is not expedited by the type of government control set forth in the controversial so-called "Conservation Act," which is soon to be voted on by the people of California. Rather should we strive for the continuing improvement of producing techniques in the development of new oil recovery methods, and a minimum of governmental interference.

from Dudley Tower

• MANUFACTURING Construction of the State Freeway, which passes through Oleum Refinery property, is now in progress. This portion of the six-lane freeway is located on undeveloped refinery land, and adequate provision is being made for access between developed and undeveloped portions of our property.

The production of sulfur at Oleum and Santa Maria Refineries during December, 1955, reached a new high, resulting in Company-wide production for the month of over 4,000 tons.

Oleum experienced extremely heavy rains in December and January. Despite earth slides and flood conditions, no damage was sustained by processing units.

from K. E. Kingman

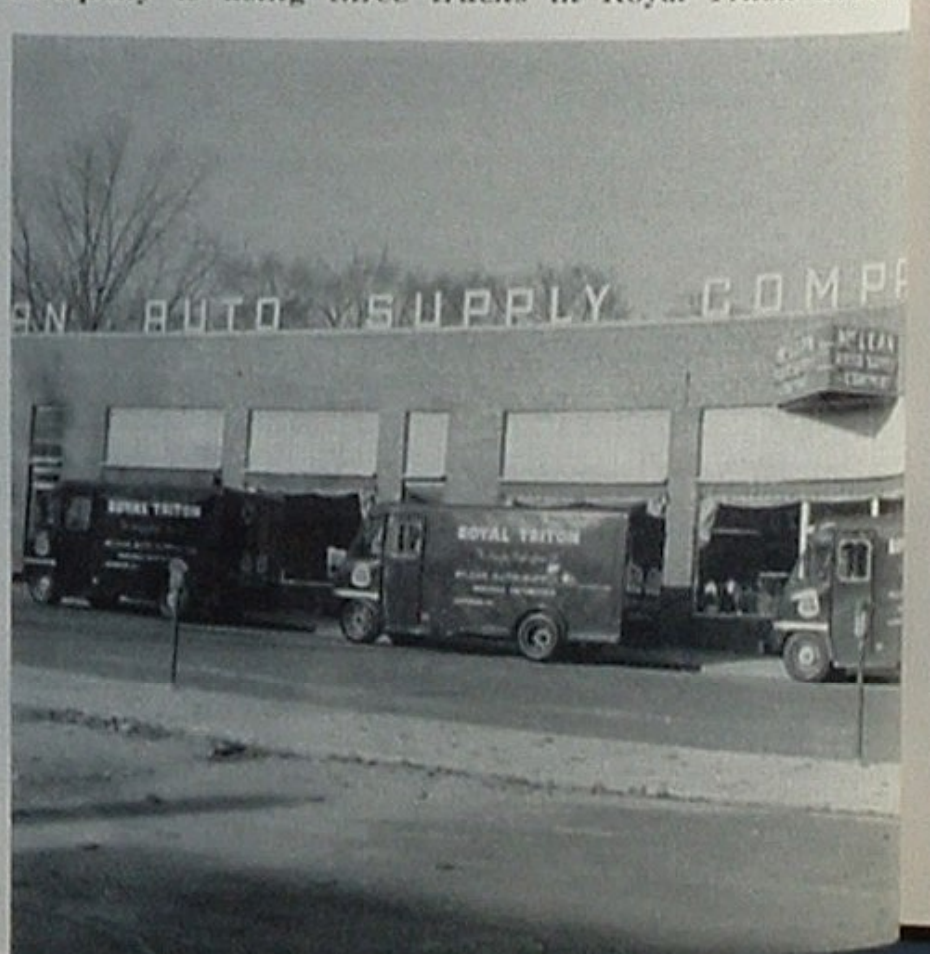
• RESEARCH The Company's oil-shale project in Colorado is progressing. At the Parachute Creek demonstration plant site near Grand Valley, the all-weather access road from the valley floor to the mining face was completed in February. The mining area has been selected and the contractor is now stripping away overburden. The retort site is cleared and two prefabricated buildings are up. Foundation work for equipment is underway and the primary crusher will be installed soon.

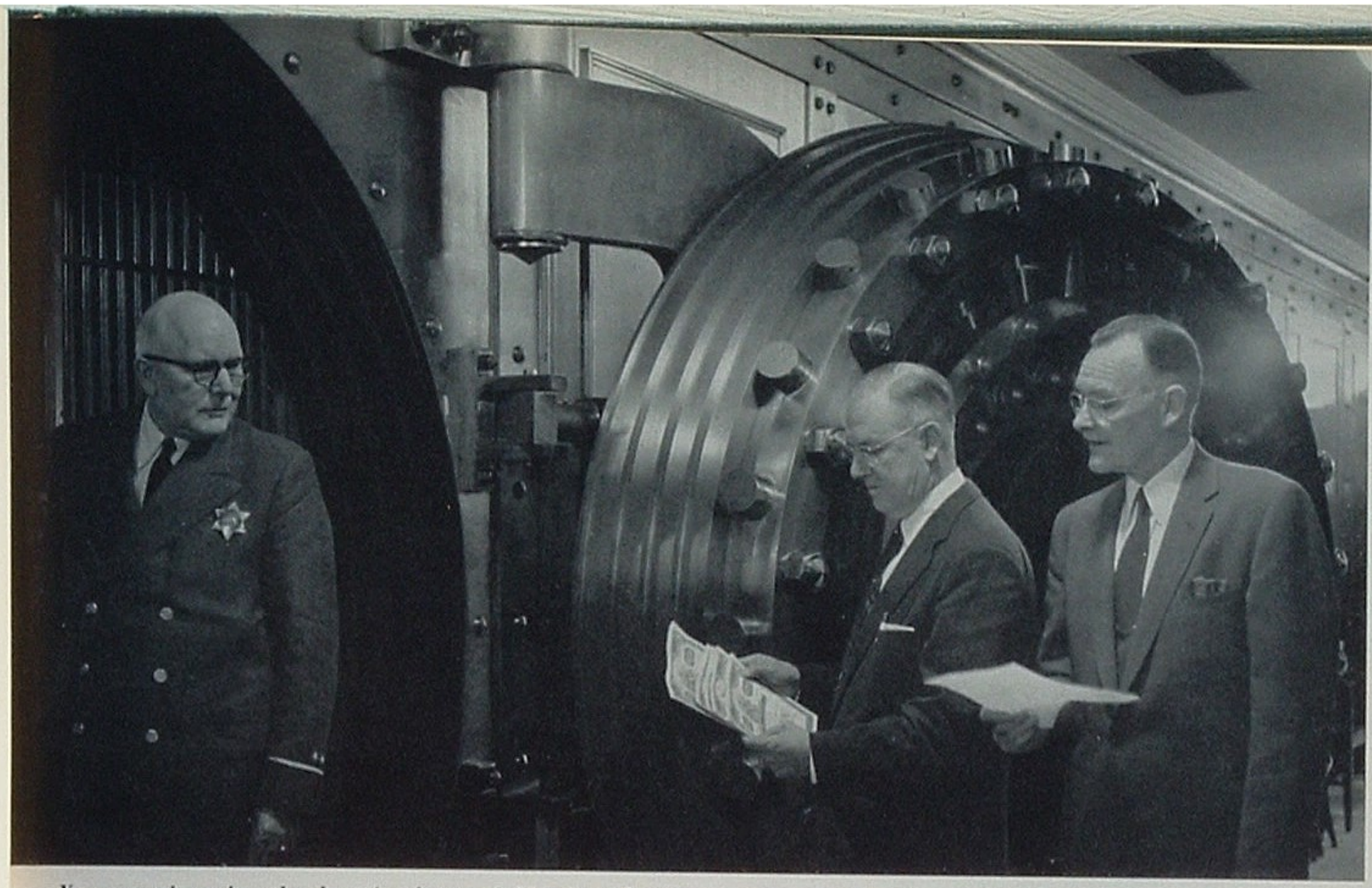
The Mitsubishi Oil Company, Ltd., of Japan has signed a Unifining license, giving us two such Japanese licensees to date.

from Fred L. Hartley

At Roanoke, Virginia our distributor, W. B. Clements, Inc., took "Royal" advantage of the Virginia State Fair.

At Laurinburg, North Carolina the McLean Auto Supply Company is using three trucks in Royal Triton service.





You are witnessing the deposit of several 100-share Union Oil stock certificates in the safe-deposit vault of Security-First National Bank of Los Angeles for the trust account of Union Oil Employees Incentive Plan. Guard William F. Blue unlocks the way for Assistant Cashier Austin H. Hazard and Administrative Officer Frank H. Thompson to enter. All such deposits and withdrawals are witnessed by at least two responsible representatives of the trustee.

Your Shares are Well Guarded

BY THE ADMINISTRATORS AND TRUSTEES OF THE UNION OIL EMPLOYEES INCENTIVE PLAN

from A. L. Reed and Staff

AS of March 15, 1956, the Security-First National Bank of Los Angeles, trustee for the Employees Incentive Plan, holds about 75,000 shares of Union Oil Company stock on behalf of 5,825 members in the Plan. Thus, Incentive Plan members constitute the fifth largest stockholder group in the Company. The stock figure is based on 61,990 shares recorded in the Plan as of December 31, 1955, the 10% stock dividend paid January 14, 1956, based on stock of record December 15, 1955, and approximately 4,000 shares purchased by the trust each month in 1956. At this rate of acquisition, the Plan could become, in the near future, the Company's largest stockholder.

Since inception of the Plan July 1, 1954, the membership of eligible employees has risen from 72.9% to 80% as of the close of 1955. During this same period, members contributed a total of $2,212,652, while the Company contribution, representing 3% of net earnings before taxes, amounted to $1,604,637. Allowing for deduction of trustee's fees and administrative costs from the Company's contributions, this means that for every dollar put into the Plan by an employee, 75 cents, arising from Company contributions, was added to his Incentive account up to December 31.

During the first 18 months, members' accounts have been further increased by $74,948, representing cash dividends paid to the trustee on stock held in trust. This is exclusive of the 10% stock dividend payable January 14, 1956, which will be credited to the individual member accounts as of that date.

To December 31, 1955, the average price of stock purchased by the trustee, exclusive of the stock dividend, was $53.68 a share. The 10% stock dividend, paid in January, in effect brings the average cost per share to approximately $49.00.

It would be well to re-emphasize here that the 10%

All Incentive Plan accounting work is done on behalf of the Trustee by members of our Comptrollers Department,

including, from left, Supervisor A. L. Reed, E. F. Tackaberry, J. A. Lysle, Claudia Willaume and J. M. Robertson.

stock dividend payable January 14, 1956, will appear in the Annual Statement to Members prepared as of the end of 1956—but not on the statement being mailed during March of this year.

ADMINISTRATION OF PLAN

Functions of the trustee of the Employees Incentive Plan are to receive contributions and dividends—purchase and hold the shares of stock — distribute shares and cash balances to withdrawing members—and vote the stock according to instructions received from members.

Receiving employee contributions semi-monthly and the Company's Incentive contribution shortly after the close of each quarter, the trustee sets up a quarterly stock buying plan of so many shares a day through local stockbrokers, in accordance with good investment practice. Also, the trustee purchases shares from members who withdraw from the Plan and wish to dispose of their stock; such purchases are made at the market price without commission charge.

Administration of the Plan is vested in the Incentive Plan Committee, composed of W. L. Stewart, Jr., L. A. Gibbons, A. C. Rubel, W. C. Stevenson and Irving J. Hancock, all appointed by the Board of Directors.

Accounting functions on behalf of the trustee are assigned to our Comptrollers Department, and are directly under the supervision of A. L. Reed, supervising accountant, Disbursements and Payrolls. Machine accounting units handle the voluminous accounting computations and postings involved, thereby keeping detailed clerical operations to a minimum. This is the first of our benefit plans to be so handled. All records of the trust, whether maintained by the trustee or by the Company on his behalf, are subject to annual audit by the independent auditing firm of Lybrand, Ross Bros. & Montgomery.

The Plan provides that a member with a minimum of three years' participation in the Plan may, while remaining in Company service, withdraw all the cash and shares in his Member (personal contribution) and Incentive

ATTENTION
INCENTIVE PLAN MEMBERS
EMPLOYEE SHAREHOLDERS

Your proxy is your vote. If you do not plan to attend the Annual Shareholders' Meeting on Tuesday, April 10th, 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 over 221,000 shares including the Incentive Plan holdings—emphasizes the importance of every employee casting his or her vote to assure maximum representation at the meeting.

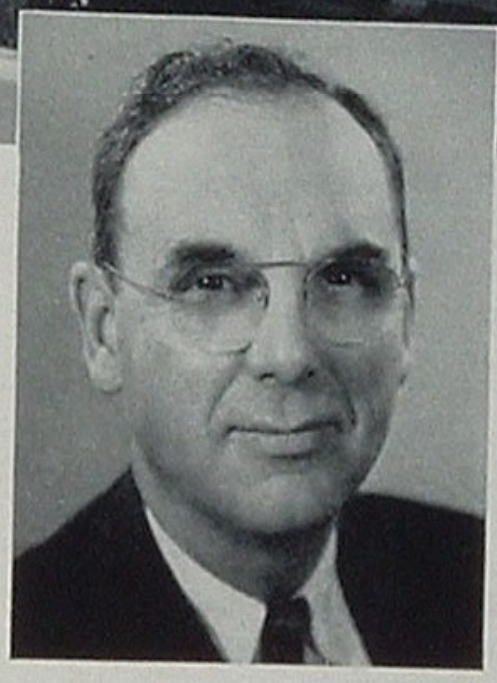
R. F. Niven, Secretary

....To take advantage of the opportunity to contribute the maximum amount following the 6 per cent general pay increase, members of the Plan must apply to their supervisors or payroll office for Form 457-IP-A. This form must be received by the payroll office prior to April 1, 1956 to become effective for the second quarter of the year. Members whose contributions fall below the 2 per cent minimum must complete the Form 457-IP-A to bring their contributions within the allowable bracket by the first of the month following the increase.

The Trustee is represented by Administrative Officer F. H. Thompson, Lucille Perkins, M. J. Broady and Vice President T. B. Williams.

(Company contribution) accounts; but by so doing he may not again participate in the Plan for a period of 12 months after his settlement date. Or after three years, the member may withdraw up to one-half the cash and shares in both accounts, with a penalty period of six months following, during which he can neither contribute to the Plan nor share in Company contributions.

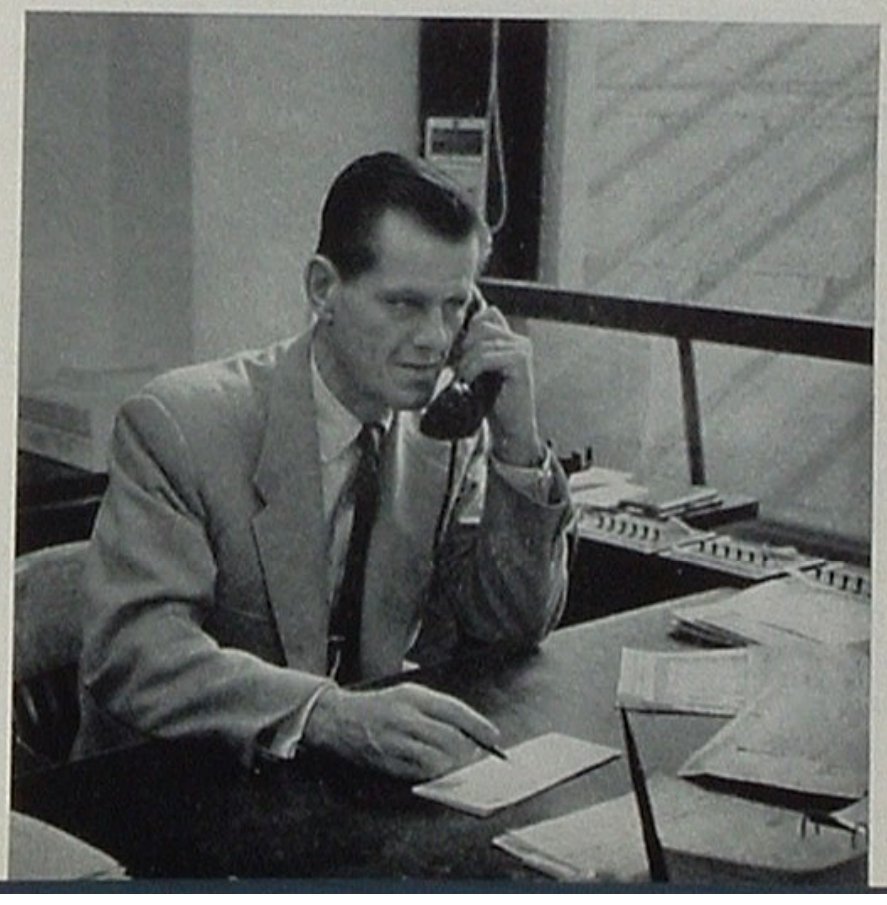
Members or their benficiaries withdrawing due to retirement, death or total and permanent disability have vested rights to the cash and shares standing to their credit in the Incentive accounts regardless of the period of participation. Others withdrawing with less than three years of participation in the Plan forfeit the cash and shares arising from Company contributions to their Incentive accounts. The forfeited amount is allocated by the trust to remaining members at the end of each quarter's business. In the first six quarters the cash value of balances so forfeited and reallocated amounted to $59,062.



Purchases of Incentive Plan shares are made for the Trustee by Albert Schultz, who places orders through a number of stock brokers daily — never to "play" the market.

VOTING OF INCENTIVE PLAN SHARES

At the time proxies are sent to regular shareholders of record, in anticipation of the Annual Meeting of Shareholders, members of the Incentive Plan having shares in their stock accounts receive from the trustee a packet containing proxy information and a voting instruction form. This form affords the member a convenient means of confidentially instructing the trustee how to vote the shares credited to the member's accounts. The Trust Agreement provides that, in the absence of instructions by the member, the trustee may vote such shares, together with shares in the trust not yet allocated to members. During the 1955 solicitation of voting instructions, 3,332 members of the Plan forwarded their instructions to the trustee.



Senate Approves Natural Gas Bill

Reprinted through courtesy of the Los Angeles Times

A BATTLE between regulation and free market advocates has ended, in the Senate, with the passage of the bill to lessen the power of the Federal Power Commission to fix the price of natural gas.

The bill has been tagged with the label "controversial" by the news writers and indeed it did engender much controversy. It also brought forward more demagoguery and misrepresentation than any bill within memory, not excepting the bill which restored the tidelands to the States.

Reasonable Gimmick

As passed, the measure is something of a compromise. Instead of saying, what we believe to be the truth, that the price charged for natural gas at the well head is none of the Federal government's proper concern, the bill provides that no more than a "reasonable market price" may be allowed by the Federal Power Commission, to be charged as costs by the interstate gas transporters.

The clause has been rated as a "gimmick" by opponents of the bill, who charge that it fails to protect consumers. Actually the gimmick is in the word "reasonable" which is superfluous and meaningless in this connection.

The market price is the reasonable price. The word "reasonable" is therefore either a weasel-word or it has no importance.

What are the facts? The facts are that there are thousands of individual gas producers, competing against each other, for the sale of their gas; and that the price is arrived at by bargaining. No gas transportation company will pay more for gas than it has to and no producer will accept less than he can get.

What is the public interest? The public interest lies in seeing that natural gas is distributed fairly, without discrimination, and that the distribution charges are fair. The public needs a dependable continuing supply and it should pay enough for it so that producers can make a profit, and be encouraged to go on exploring.

The Public Interest

The real issue involved was how this continued exploration and development can be encouraged. We should have preferred to see this question settled by saying it can best be encouraged by a free market. Congress has not quite gone that far; but it may be it went as far as it could in view of the clouds of misinformation with which the issue was surrounded.

Especially misleading were the figures which purported to show what passage of the bill would cost consumers. This is a question which only experience could possibly answer, for there are too many uncalculable variables and uncertainties involved. The answer would depend in part on a judgment of human nature: what would the producers do under certain circumstances? To attempt to say is mostly guesswork.

Our guess is that they would do more exploring if left free than if they were hog-tied with red tape; and that the more exploring they did the more gas there would be produced and the lower would be the price.

Injected into the cloudy atmosphere at the last minute was the situation of Sen. Francis Case (R), S.D., who told the Senate he was inclined to change his vote because of what he construed as an attempt to influence it by the contribution of $2500 to his campaign fund.

The Nebraska lawyer who admits making the donation said it was given to Case's campaign manager, and without strings, but that it was influenced by Case's announced attitude of support for the bill. A Senate committee will investigate. But, meanwhile, what shall be thought of a Senator who proclaims that he will not be influenced by a monetary contribution but nevertheless allows it to influence him?

Sen. Case's Vote

Either Case was right in supporting the bill in the first place or he was wrong, and a gift to his campaign fund could not change this situation. The Senator appears to have allowed indignation rather than reason to rule his mind. He voted against passage.

The fact is that since the Supreme Court decision in the Phillips case, in an opinion which has been characterized as judicial legislation, the amount of wildcatting for gas has considerably decreased, and as a result there have been many fewer new discoveries than in the preceding years.

Congress has not, and nobody seriously proposes that it should, attempted to regulate the price of oil, coal or any other fuel, and why gas should be singled out for regulation seems unexplainable. But the Senators from gas-using States ran like scared rabbits when they were informed by such rabble rousers as Sen. Humphrey (D) Minn., Sen. Douglas (D) Ill., and Sen. Lehman (D) N. Y., that the public was about to be gouged.

President Eisenhower is expected to sign the bill and he will not be deterred, we believe, by the noisy demands for veto of such notorious ADA captives as Gov. G. Mennen Williams (D) Mich., who jumped in early with a plainly partisan move. The bill is not ideal; it concedes too much to the principle of regulation. But it is probably the best that can be had at this juncture.

(Editor's Note: The Natural Gas Bill was vetoed by President Eisenhower February 17, 1956)

Are We Fir It —Or Again It?

PRESENT FOREIGN SPENDING OF THE UNITED STATES

THE extent to which this nation is being governed "by the people" is reflected in the large number of opinion polls being conducted by research organizations and publications of many kinds. Business organizations are anxious to know how their goods and services are being received. All mediums of communication are being measured for effectiveness, readership appeal, scope of audience. Political organizations must measure the public's reaction to issues and candidates. Elected and appointed public officers must know the will of their constituents. The upshot is that the opinion of every American citizen is being heeded as never before.

ON TOUR means to be no exception in the current communications trend. The magazine's columns have always been open to opinions, questions, suggestions and criticisms from employee readers. Today, however, we are anxious to expand this publication service and function. Not only is your opinion invited, it is solicited. And if enough Union Oil people respond, a service of immeasurable value could accrue to you as employees of a great company and as citizens of a great nation.

Some of the most vital issues of America were decided several decades ago around the thought-provoking warmth of the pot-bellied stove. There it was threshed out whether the majority was "fer it" or "agin it." The prevailing opinion oftentimes echoed as far away as the halls of Congress.

Borrowing the democratic *atmosphere* rather than *heat* of the pot-bellied stove, ON TOUR launches the first of what may prove to be a series of opinion polls. The issue presently under consideration is briefly stated below. In line with that issue, please mark the accompanying postcard ballot in accordance with your personal view. You will note that the card need not be signed, stamped nor addressed, and can be returned to ON TOUR either through Company mail or U.S. postal channels.

THE QUESTION

We are being besieged daily with the opinions of experts—real or self-styled—in both economic and political fields. One such field is that of international relations. We are told by some, for example, that the United States must give more money to other nations. Experts of another camp say with equal assurance that we must give less money. And a third category feels content that the United States is now giving about the proper amount of foreign aid in relation to existing conditions.

What is the consensus of Union Oil opinion on this subject, which directly affects our individual welfare? Send your opinion by return mail. ON TOUR will tabulate and publish the results.

BEN KREIGER, newly elected president of the Oleum Supervisors' Association, uses a new Triton-bank gavel just presented to him by the outgoing president, Chet Frisbey. A hundred members and guests attended the February 4th inauguration dinner.

from Clyde Morton

HAINES FINNELL, manager of Eastern Continental Territory, was one of 11 oil men to receive certificates of appreciation for meritorious work with the Oil Industry Information Committee. Presenting the certificate at an API meeting in San Francisco is, at left, President H. S. M. Burns of Shell.

from Pat Hohnsbeen

JANICE YOUNG, daughter of Home Office Union Oiler, Ralph Young, receives first place award from Sydney Haupt of East Pasadena Kiwanis Club for her essay on "Our Free Enterprise System." Her fine essay was printed by Kiwanis and given wide circulation.

from Clarence Hand

DAVID ZENK, personnel supervisor at Oleum and chairman of the West Contra Costa Oil Information Committee, receives the Go Devil Award from Chairman E. M. Mead, left. This is the second such award received by Mr. Zenk, and his committee has been similarly honored four times for OIIC activities.

from Clyde Morton

THE MAMMOTH TUSK, which I incorrectly called a mastodon tusk in the May, 1955 ON TOUR, has been restored by the University of California and is now on display in our Oleum lobby. Much easier to identify are Betty Halioties, left, and Lorretta Larson, whom we display stenographically near the same lobby.

from Clyde Morton

ARTHUR C. STEWART, vice president, holds a DC-6B half-shell model recently presented to him by Arthur F. Kelly, right, vice president of Western Air Lines, as W. L. Spencer, manager of National Refinery Sales, looks on. Western recognized Mr. Stewart "for outstanding contributions to the progress of air transportation in the West."

from Jerry Luboviski

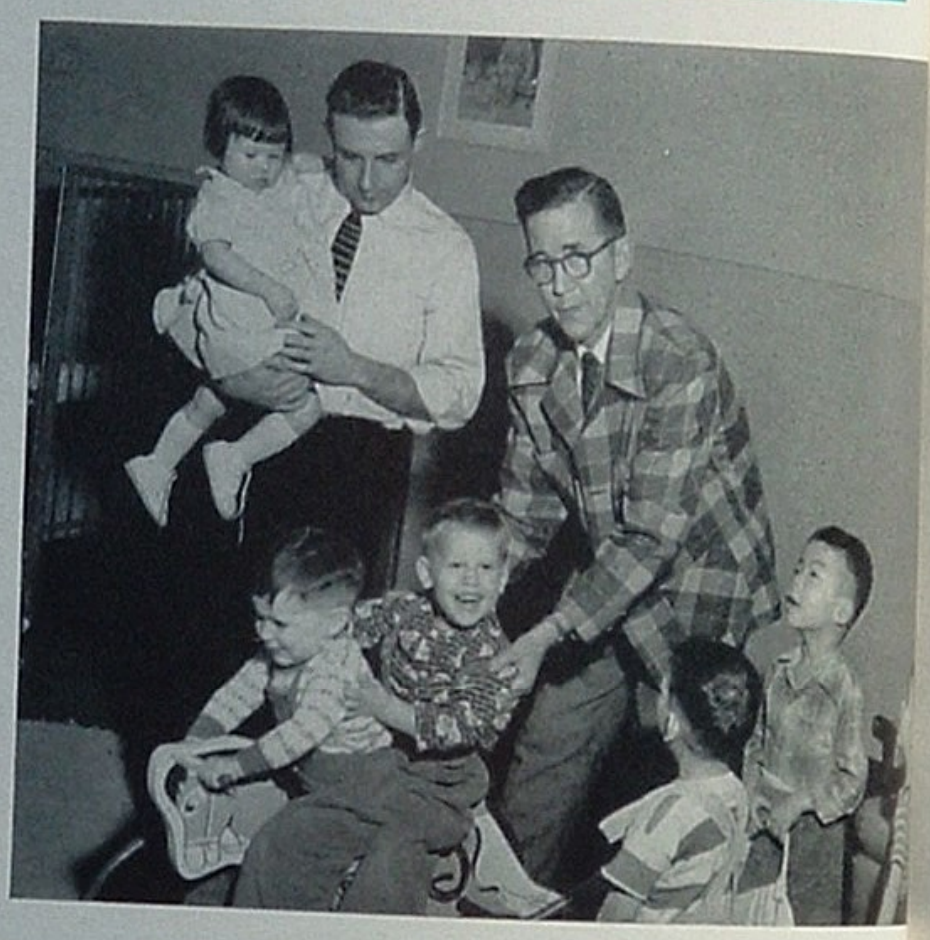
ERIC WESTLY, right, manager of Union Oil Products for Theo H. Davies Far East, Ltd., our distributor in the Philippines, was an interested pre-viewer in February of our new Los Angeles Terminal facilities. Escorting the visitor were, from left, B. J. Young, process engineer, and Philip Fell, manager Export Sales.

HYMAN LEVINE, right, is congratulated by H. M. Schafer, manager of Distribution for Southwest Territory, on the 50th anniversary of Mr. Levine's cooperage firm. Union Oil bought four oaken barrels a day from Mr. Levine in 1906; now he supplies us with nearly a thousand steel containers a day. The firm has over 700 employees in Los Angeles.

OLEUM HAS NEAR-PERFECT FIRE YEAR

Oleum people have achieved what may prove to be petroleum refining's outstanding fire-prevention accomplishment of 1955—a fire loss totaling only $13 for the entire year. Examining some charred wiring that slightly detracted from their fine record are, from left (standing), Neil Sheridan, Ernie Parker, Gayle Lott, Bill Dolbear, Ruby Self, Casey Casebolt, Ham Hamilton, Earle Horne, Duane Hall, Joe Romo, Pete Peterson, Eldon Hendrickson, Danny Murphy; (seated) Pete Pietrick and Glenn Simmers—advocates of a perfect record in '56.

from Clyde Morton



"OPERATION DADDY" INITIATED BY UNION OILERS IN PORTLAND

Observing one day that children in a Portland orphanage operated entirely by women responded bashfully toward men visitors or their foster fathers when adopted, Mrs. William S. Newton, wife of our credit manager in Portland, decided the children needed more fatherly attention. So, "Operation Daddy" was born, and a group of Union Oilers were drafted to start the ball rolling. Now they spend one hour twice each week trying to convince the kids that dads have some sort of utility. Above from left are Don von der Hellen, Irvin Smith and "Fig" Newton improving their "credit" rating. The idea's originator, Mrs. Newton, is introduced at left.

from R. D. Roberts

SERVICE BIRTHDAY AWARDS

MARCH 1956

EXPLORATION & PRODUCTION

Youngquist, Paul H., Whittier 40
Cruise, William H., Whittier 35
Evans, Thomas J., Dominguez 35
Talley, Robert L., Orcutt 35
Tessner, Norman H., Whittier 35
Adams, Fred B., Whittier 30
Allen, Kenneth, Dominguez 30
Clark, Earl E., Richfield 30
Hill, Kenneth B., Whittier 30
Johnson, Gerald, Richfield 30
Walker, Charles S., Whittier 30
Fritz, Edward B., Dominguez 20
Green, Vincent J., Cut Bank 15
Giesey, Samuel C., West Texas 15
Beckwith, Robert W., Bakersfield 10
Grahn, Richard H., Bakersfield 10
Ramsey, George, Dominguez 10
Woodward, Albert F., Whittier 10

PURCHASES

Fenton, Roland R., Home Office 35

MANUFACTURING

Bernsten, Albert, Wilmington 30
Culp, George J., Oleum 30
Hall, Russell W., Wilmington 30
Olsen, Leo W., Oleum 30
Owens, Arthur J., Oleum 30
Phillips, Harold I., Wilmington 30
Stone, Gregory B., Oleum 30
Valerro, Vernon F., Oleum 30
Cooper, Orion L., Oleum 25
Williams, Roland T., Home Office 25
Dutcher, Frank C., Wilmington 20
Gott, Raymond, Wilmington 20
Graef, Howard W., Wilmington 20
Lewis, Richard V., Oleum 20
Link, Donald B., Wilmington 20
Briggs, Loran J., Oleum 15
Daneri, Henry W., Oleum 15
King, William A., Jr., Oleum 15
LaFortune, George A., Wilmington 15
Board, Frank B., Oleum 10
Bowerman, Herbert F., Wilmington 10
Cargo, Albert M., Oleum 10
Deck, Floyd, Santa Maria 10
Hanson, Lloyd E., Wilmington 10
Huck, Earnest W., Oleum 10
Kennedy, John R., Oleum 10
Lemieux, George E., Oleum 10
Lowery, M. Phillip, Oleum 10
McDonald, James G., Santa Maria 10
Murphy, Daniel F., Oleum 10
Owens, Robert L., Oleum 10
Parker, Lloyd M., Oleum 10
Pollard, Walter, Wilmington 10
Riley, George W., Wilmington 10
Sieli, Angelo, Wilmington 10
Simpson, Albert H., Wilmington 10
Spicer, Jerry H., Oleum 10
Williams, John R., Wilmington 10

MARKETING

Clem, Daniel D., Walla Walla 30
Smyth, Hugh R., San Diego 25
Meserve, Norman L., Seattle 20
Blaylock, Wallace J., Los Angeles 15
Blessing, Virgil A., Los Angeles 15
Crowley, William J., Santa Rosa 15
Fosdick, Norman K., Seattle 15
Keating, Gerald O., Eureka 15
Castro, Luis G., Central America 10
Knight, Carlos T., Tuscon 10
Lawhon, Katherine M., Los Angeles 10
Danley, Alonzo L., Rosecrans 10

RESEARCH

Garofalo, Ross J., Brea 30
Howard, Homer E., Brea 20
Peterson, Charles F., Brea 20

TREASURY

Hansen, Hjalmar, Home Office 30
Houghton, Leroy B., Home Office 25

CREDIT

Temple, Harold S., Home Office 30

COMPTROLLERS

Rath, Joanne M., Home Office 20
Higbee, Lawrence B., Home Office 15
Tilbury, Gus F., Home Office 10

MARINE

Benbury, Alma E., Wilmington 15
Nevins, Fred A., Wilmington 15
Johnson, Stanford G., Wilmington 10

PIPELINE

Smith, Ercell H., Santa Fe Springs 15
Faunt LeRoy, Cedric E., San Luis Obispo 10
Longfellow, Clayton G., Jr., San Luis Obispo 10

AUTOMOTIVE

Newton, Donald B., Santa Fe Springs 10
Sealy, Ardeth N., Santa Fe Springs 10
Woolsey, Clair W., Santa Fe Springs 10

Retirements

A grateful company and a host of well-wishing employees are bidding farewell to the following Union Oilers who are retiring after long careers of Company service.

LAWRENCE C. LEONARD
Central Territory
Employed 9/16/29—Retired 2/1/56

CECIL V. HARDMAN
Field Department
Employed 11/6/16—Retired 3/1/56

ELMO KIRKPATRICK
Northwest Territory
Employed 12/27/23—Retired 3/1/56

WALLACE H. DARROW
Oleum Refinery
Employed 1/21/24—Retired 3/1/56

CARL HOWARD
Field Department
Employed 1/15/27—Retired 3/1/56

ALVIN B. JONES
Southwest Territory
Employed 3/2/27—Retired 3/1/56

HERBERT D. McCARTHY
Southwest Territory
Employed 11/5/31—Retired 3/1/56

GARFIELD T. HOCKING
Field Department
Employed 1/1/34—Retired 3/1/56

BERT STICKLER
Oleum Refinery
Employed 3/8/45—Retired 3/1/56

In Memoriam

On January 11, 1956
JOHN BROWNFIELD
Southern Division Field
Retired 9/1/45

On January 12, 1956
CHARLES H. HENDERSON
Los Angeles Refinery

On January 14, 1956
DAVID LUCID
Oleum Refinery
Retired 9/1/49

On January 25, 1956
GILBERT J. MEADOWS
Coast Production

On January 28, 1956
RUTH L. CARPENTER
Southwest Territory
Retired 6/1/55

On January 29, 1956
JOHN ANDREW LEONARD
Central Territory

Robert Angell

...or how automation makes more and better paying jobs

"You hear a lot of talk these days about how automation is going to cost people their jobs.

"Me, I work in the most 'automatized' industry of them all—petroleum. And far from costing me my job, automation has made it a better one.

"When I was just getting started in the refinery back in 1925 the average production for the industry was 32 barrels

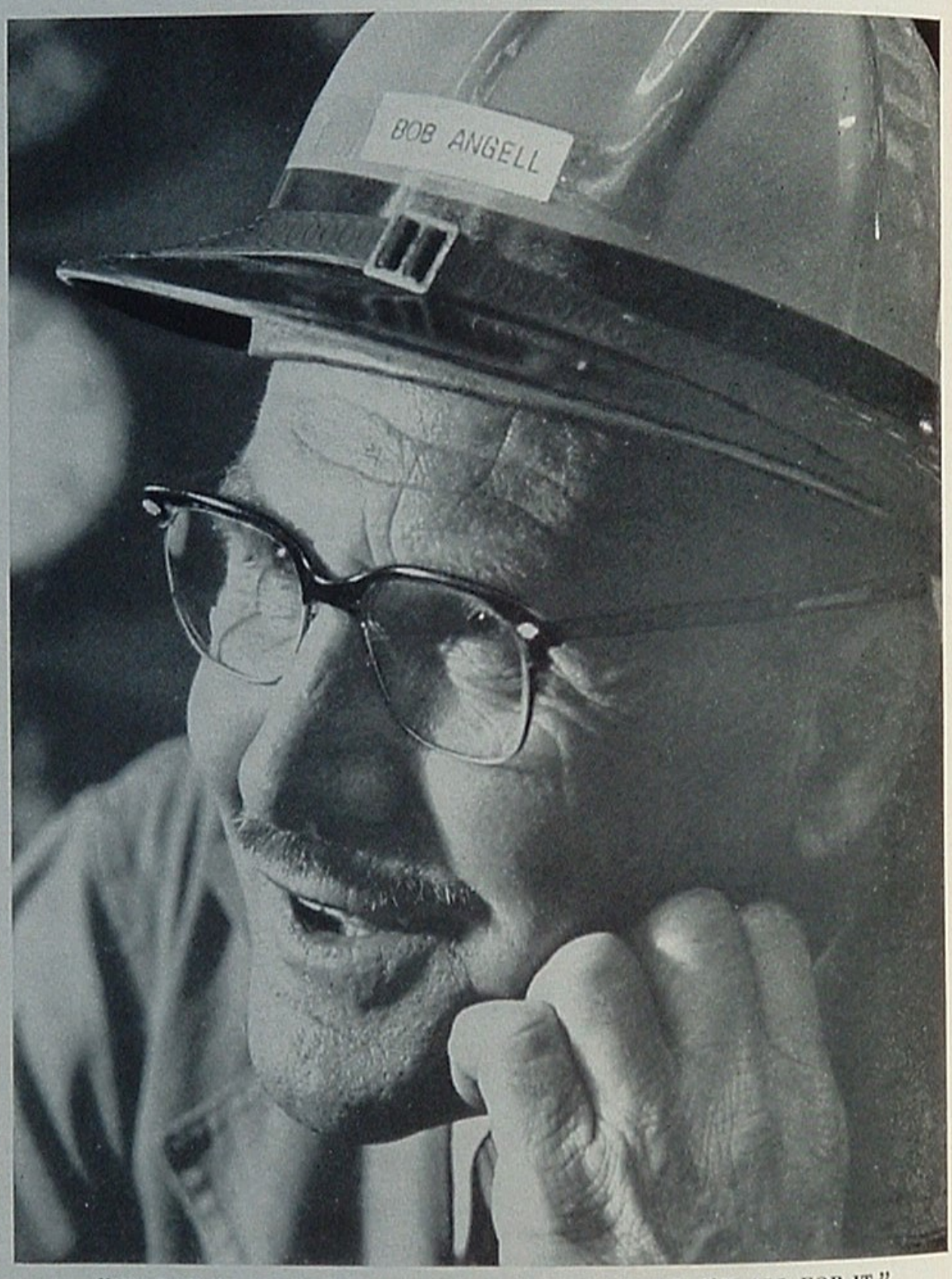
of product a day per man. The average investment in refinery tools at the time was $10,000 per man.

"Today the industry's investment in tools for each refinery employee is $50,000. Offhand you'd think that that much machinery would put some refinery people out of work. But just the opposite is true.

"Back in 1925 the refineries employed just over 65,000 people. Today they give jobs to over twice as many—133,000. What's more, our production has gone up to 59 barrels a day per man.

"We produce these 59 barrels in 40 hours a week, instead of the old 51 in 1925. And we make more money. In my case my pay is up 288.89% since I started on the job.

"If this is automation, I'm all for it."



"MY PAY IS UP 288%. IF THIS IS AUTOMATION, I'M ALL FOR IT."

Automation, it seems to us here at Union Oil where Angell works, illustrates again the basic strength of America's free competitive economy.

So long as business *has* to compete, it must constantly improve its products. This calls for the fullest use of new and better machines.

This has sometimes caused temporary readjustments in an industry. But in the long run it creates better paying jobs for more and more people.

Which is another reason why the number of Americans at work and the standard of living they enjoy continue to climb.

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

Union Oil Company OF CALIFORNIA

MANUFACTURERS OF ROYAL TRITON, THE AMAZING PURPLE MOTOR OIL