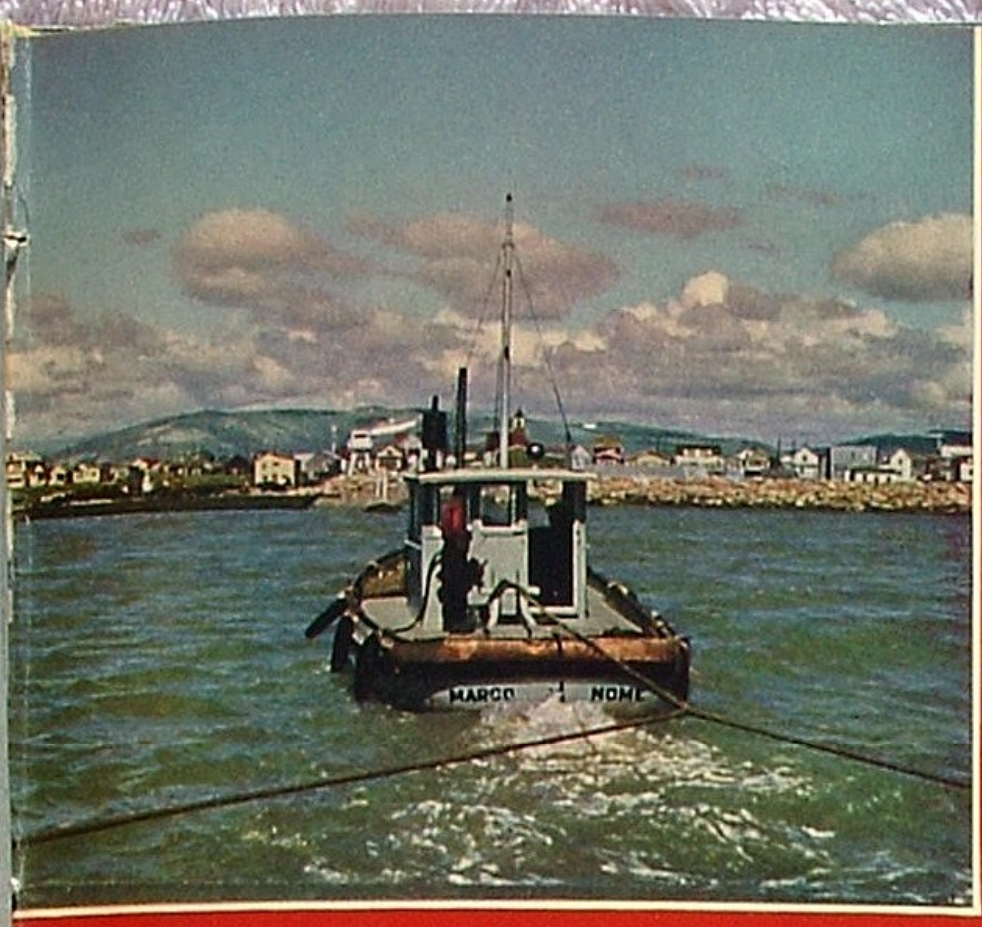

A tug, with oil barge in tow, approaches city of Nome.

The Paul M. Gregg discharges at Alaska-Juneau dock.

Mendenhall Glacier is a landmark to tankship officers.

Juneau Airport is one of many fine Alaskan terminals.

In Alaskan Waters

"On Tour"

APRIL 1952

On Tour

VOL. 14, NO. 4
APRIL 1952

In This Issue

T. D. Collett ..... *Editor*
R. C. Hagen ..... *Asst. Editor*

ON TOUR is published monthly by Union Oil Company of California for the purpose of keeping Union Oil people informed regarding their company's plans and operations. Reader participation is invited. Address communications to ON TOUR, 617 West 7th Street, Los Angeles 17, California.

Pacific Northern A

Open Third Decade of Air Service in Alaska

By Gundrun Larsen

"GOOD pilots—good maintenance—rigid operating procedures—and good petroleum products."

Those, according to Vice President H. A. Olson of Pacific Northern Airlines, Inc., are the four pillars upon which his company has logged more than 100 million passenger miles in Alaska since 1932 without a single passenger fatality.

Furthermore, Mr. Olson seemed anxious to explain, flying conditions in Alaska are not as bad as most people imagine. Landing fields there are among the world's best, being large, well lighted and equipped with every modern facility.

Nor is the Alaskan weather much of an obstacle. The coastal cities from Juneau to Kodiak enjoy average daytime temperatures in summer of between 61 and 65 degrees. During the same season, the average temperature is 67 in Seattle and 59 in San Francisco. Even winter temperatures in these coastal cities of the Far North average between 21 and 39 degrees during daytime and are comparable to thermometer readings in Chicago and New York. In fact, over a period of several years, Pacific Northern have completed 97 per cent of their scheduled flights. And, since inaugurating their Seattle-Portland to Alaska run last October 1, their only weather cancellations or landing changes have been due to Oregon-Washington warnings; not a single Alaskan flight has been cancelled.

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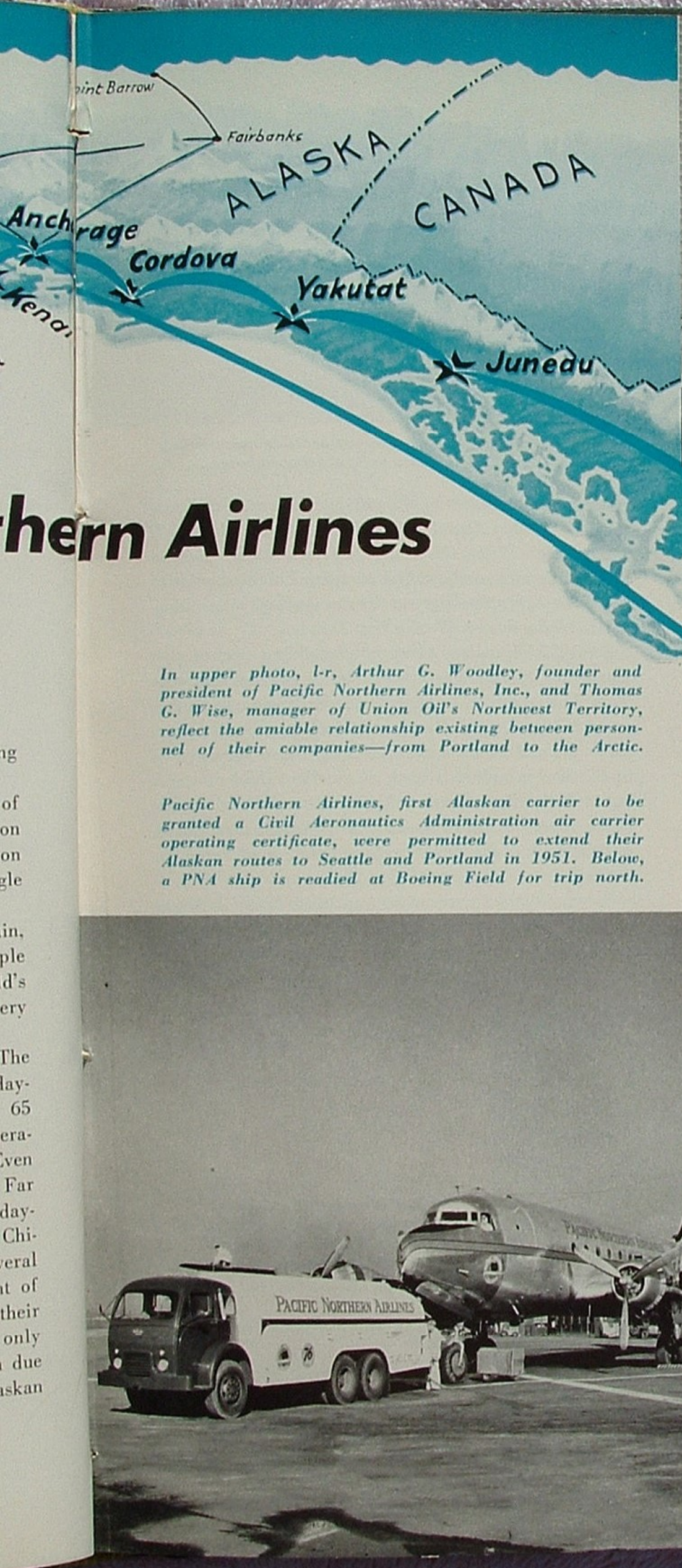
In upper photo, l-r, Arthur G. Woodley, founder and president of Pacific Northern Airlines, Inc., and Thomas G. Wise, manager of Union Oil's Northwest Territory, reflect the amiable relationship existing between personnel of their companies—from Portland to the Arctic.

Pacific Northern Airlines, first Alaskan carrier to be granted a Civil Aeronautics Administration air carrier operating certificate, were permitted to extend their Alaskan routes to Seattle and Portland in 1951. Below, a PNA ship is readied at Boeing Field for trip north.



To help fuel Pacific Northern's third decade of growth in Alaska, two tank trucks go aboard ship at Portland. . . . .

Arriving at Seward, Alaska, the new vehicles receive their first wintry baptism of snow before going ashore. . . . .

Union O... form a r...

The story of Pacific Northern Airlines is optimistic in other respects. It began back in 1932 when Arthur G. Woodley went into the business of "general aviation" at Anchorage, with Merrill Field as his base. Known as Woodley Airways, his small company used single-engine aircraft to carry passengers, supplies, medicines or what-have-you to any part of the Alaskan coast or wilderness. The company's audacity in brushing aside obstacles, its determination to serve where service was needed, and its obvious devotion to everything Alaskan, soon earned for Woodley Airways an enviable place in the lives and hearts of those it served.

Arthur Woodley, the founder, is an outstanding example of the stout-hearted men who pioneered air routes in Alaska. By 1935 he had blazed new air trails from Anchorage to Kodiak, Bristol Bay and the Kuskokwim—trails that, under the Civil Aeronautics Act of 1938, became fixed air routes. He pioneered instrument flight in the Territory; was among the first to adopt radio systems for improving safety and service; and, when multi-engined aircraft began proving their worth, Woodley immediately found a job for them Up North. A tribute to his skill as a pilot is the fact that the Alaskan Defense Command chose him as special civilian pilot to carry the Army Intelligence Service on highly confidential missions during World War II.

By 1939, Woodley Airways were flying several passenger and mail routes toward the north, east and west from Anchorage. Air travelers from Seattle and other parts of the United States, who had presumed Juneau to be the end of their aviation road, were surprised to find it the beginning, instead, of excellent service extending to Bistol Bay. Comfortable, multi-engined airplanes, flying routes certified by the Civil Aeronautics Board, were at work in the Territory long before many would-be explorers.

War provided a tremendous impetus to flying in Alaska as it did elsewhere. It brought the excellent new fields and equipment. Aircraft rapidly became larger, faster, more powerful, with greater range and greater usefulness.

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D. L. Beller and Ray Field of PNA obtain Union aviation fuels and lubricants at plant of our Anchorage consignee.

Flyi... world... PNA... 100... witho...

Union Oiler W. E. Thompson and Felix Aubuchon of PNA form a reception committee as the trucks reach Anchorage.

Without further ado, one of the petroleum dromedaries gets busy at its airport refueling task near Anchorage.

Along with aviation, Woodley Airways also developed. They played an important part in transporting military personnel and supplies between Alaskan defense centers. Their pilots and mechanics kept abreast of new equipment, new techniques. Arthur Woodley caught a new vision of what aviation could do for the Far North when war ended. And when the war did end, there promptly emerged, as successor to Woodley Airways, a new and larger company—Pacific Northern Airlines, Inc.

The growth of Pacific Northern since 1946, the year of their incorporation, has been breath-taking. They now fly 2,500 route miles within Alaska in addition to a 1,000 mile route extension from Juneau to Seattle and Portland inaugurated in October, 1951. Their total business in 1951 amounted to 38,000 revenue passengers, 679,000 ton-miles of air cargo freight, and 219,000 ton-miles of U. S. mail—or an increase of 66 per cent over their 1950 volume. The mileage flown by their aircraft fleet in 1951 soared to 17,634,000. But their anticipated increase in 1952 is moving along at a 90 per cent clip and will amount to about 32,000,000 total miles of travel this year.

One of Alaska's greatest assets is the friendliness of its people—a trait very much in evidence among the 350 employees that now staff Pacific Northern Airlines. In fact, practically all PNA people have lived in the Territory for many years and have a sincere interest in everybody who flies north. The stewardesses, who often are singled out as the finest of their profession, are Anchorage-based and Anchorage-trained.

Needless to say, Union Oilers of Northwest Territory are boosters of Pacific Northern Airlines. We acquired the account as a 100 per cent Airport Unit at Juneau in 1946, and have watched their purchases grow to well over a million gallons of aviation gasolines, Red Line Aero Oils and Strona Greases in 1951. But aside from bread-and-butter considerations, we deeply appreciate the cordial relations that exist between personnel of our two two companies, whether at Seattle and Portland terminals or up by the Arctic Circle.

Flying over some of the world's most rugged terrain, PNA aircraft have completed 100 million passenger miles without a passenger fatality.

Officers and crew of the SS A. C. RUBEL called this a rough voyage.

Captain W. A. Bodden

IN ALASKAN WATERS

Since 1946, Union Oil tankships have handled an increasing volume of cargo to keep pace with industrial growth in Alaska. Their voyages northward are often accompanied by good weather, as is indicated by Captain W. H. Peterman's color photographs appearing on this month's cover. Or the reverse can be true. Voyage No. 484, made by our SS A. C. RUBEL in January was described by Captains W. A. Bodden and Robert Kamdron, an Alaska pilot, as their worst North Pacific experience in 30 years. Assistant Engineer Elliott Ringle took the accompanying pictures. The text represents excerpts from the log and reports of Captain Bodden.

Jan. 9—Departed Oleum at 1455 and until Jan. 12 at 1200 encountered about usual weather conditions for this route during winter—moderate rough northwesterly to westerly sea and swell, moderate to strong winds.

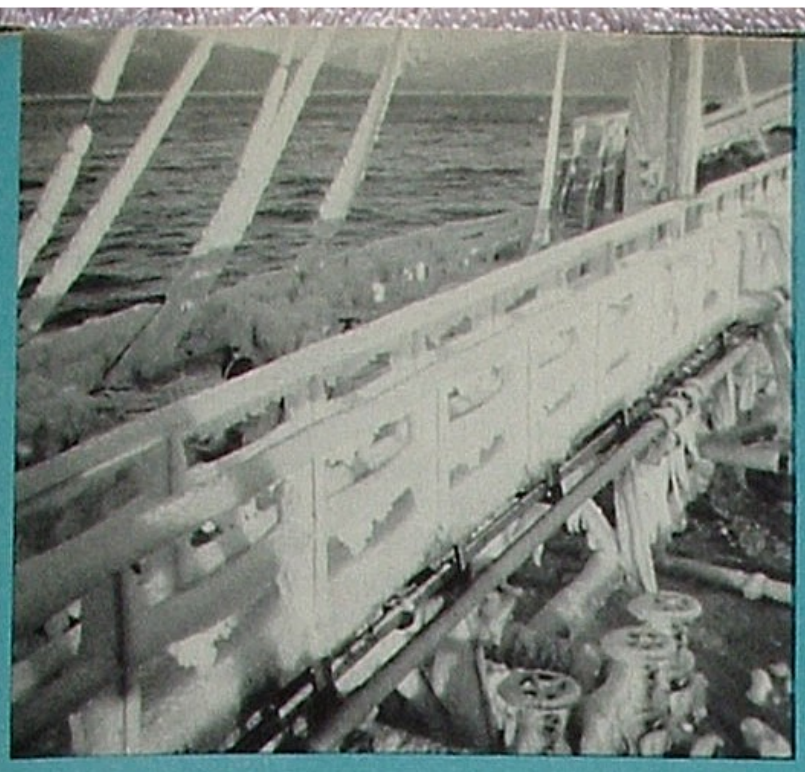
Jan. 12—Encountered heavy squalls and increasing rough seas and swells. Air temperature 35 degrees.

Jan. 14—Snowing, rough sea and swell, air temperature 22 degrees at 0350. Ice forming on rigging, catwalk and deckhouses.

Jan. 16—Considerable icing on arrival at Whittier at 1325. While mooring, the after mooring wire fouled around propeller. At 2030, tug RAYMOND H. BASSER came alongside to assist keeping vessel secure to dock. Violent squalls estimated at 50 to 70 miles per hour, choppy sea, air temperature 25, sea temperature 36.

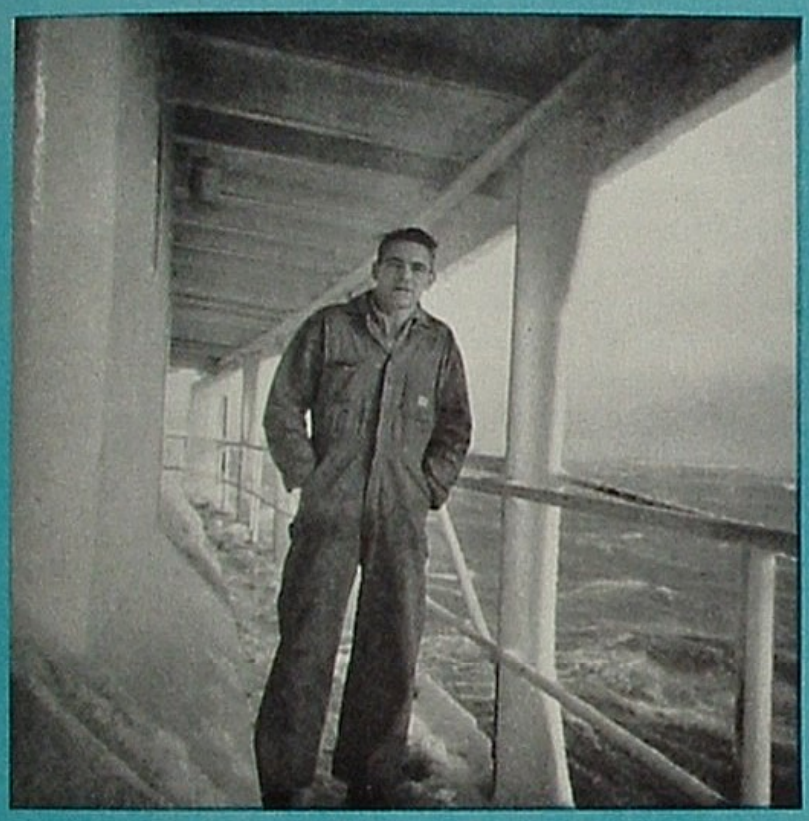
Jan. 17—Continued violent squalls. At 0830, forward mooring wire parted. At 1330, all Whittier cargo discharged. At 1730, finished clearing wire off propeller. After ballasting vessel for sea, departed Whittier for Juneau at 2120. Partly cloudy, strong winds, air temperature 25 degrees.

Jan. 18—Cape Hinchenbrooke abeam and vessel pass-

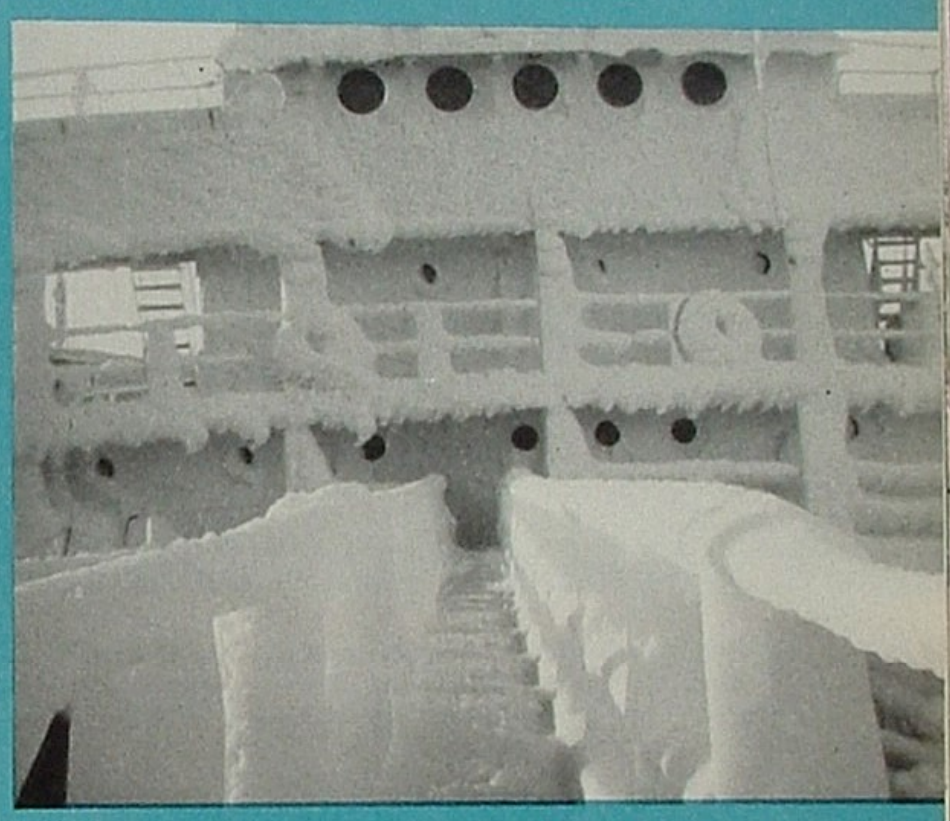


Ice began forming on rigging, catwalk and deckhouses January 14, five days after departure from Oleum Refinery.

Engineer Stuart C. Donald holds to a pane of ice formed by heavy gales that swept down from Arctic regions.



Assistant Engineer Elliott Ringle was ON TOUR's unofficial but welcome photographer on the RUBEL's epic voyage.



Dolled up in Jack Frost's ermine best, the ship delivered the last of its cargo and "Left Alaskan waters."

ing out of Prince William Sound at 0417. Air temperature 17 degrees, snowing and freezing, wind and sea increasing.

Jan. 19—Rough sea and swell, snowing heavily. From 0100 to 1800, average speed about 3 knots. Proceeded inshore to get in smoother water. Top part of galley stove pipe iced up; unable to make fire in stove until 0930; no breakfast served this day.

Jan. 20—Entered Alaskan waters at 1300. Winds to 100 MPH expected for Lynn Canal tonight. Anchored in Icy Passage off Pleasant Island waiting weather to moderate.

Jan. 21—U. S. Coast Guard at Point Retreat reported wind 55 miles per hour. Departed Pleasant Island; entered Chatham Strait; anchored off Juneau at 1630 awaiting wind to moderate. Winds gusty all night, air temperature 0 degrees, sea temperature 28 degrees.

Jan. 22—At 0905, proceeded to Union Oil dock, tug TROJAN assisting. At 1300, violent gusts of wind caused vessel to surge. Put starboard anchor on bottom to help hold bow steady. At 1740, vessel surged and broke aft spring line, also causing a 4-inch diesel hose to break. Replaced and doubled this spring line.

Jan. 23—At 0135, finished discharging and began ballasting vessel. At 0305, left dock. Unable to navigate channel at this time as channel buoys are extinguished and partly submerged with ice. Winds continuing gusty, air temperature 4, sea temperature 28. At 0900, departed Juneau. At 1145, Midway Island abeam. At 2005 Cape Omnaney abeam. Left Alaskan waters.

Out-Foxing a

By Quido Dapont

Production Engineer Ben Blanchard, left shows Quido Dapont the broken collar and piece of bent casing that were put out of commission by movement of a shale bed.

A SHAFT driven 80 feet into the ground is far from being a usual sight in the oil fields. But that is precisely what you will find at Union Oil's Well No. 5 on the Elkins Lease near Fillmore, California.

The well, drilled by Los Nietos interests in the late 1930's, had been shut in for several years, due supposedly to its low yield and unprofitable operation when crude was plentiful elsewhere. However, with the rising demand for oil in 1951, No. 5 was one of many wells that gave promise of relieving a tight situation, if only to the extent of a few barrels a day. A crew was assigned to *pull the tubing* as a preliminary step in placing the well back on production.

It was during this job that a complication came to light. Workmen found the casing (the outer steel pipe that encases tubing and sucker rods in an oil well) so badly twisted that the well could not be pumped.

The cause of this twist was a landslide. No. 5 had been drilled through an 80-foot top layer of wet shale resting on a sloping and extremely smooth rock face known to geologists as *slickenside*. The top layer, especially when soaked with subterranean seepage, creeps slowly forward over the slide plain, exerting almost irrestible pressure on anything in its path, including steel pipe. Over a period of years, the steel casing had been bent like a piece of stove pipe.

How would you solve such a problem, or would you?

Union Oilers at Santa Paula had a rather interesting improvisation up their sleeve. Under the direction of Clarence Froome, district superintendent, and Ben Blanchard, production engineer, they decided not only to re-

Force of the slowly creeping landslide was so great that the steel collar, right, holding two sections of oil well casing together snapped apart like cardboard.

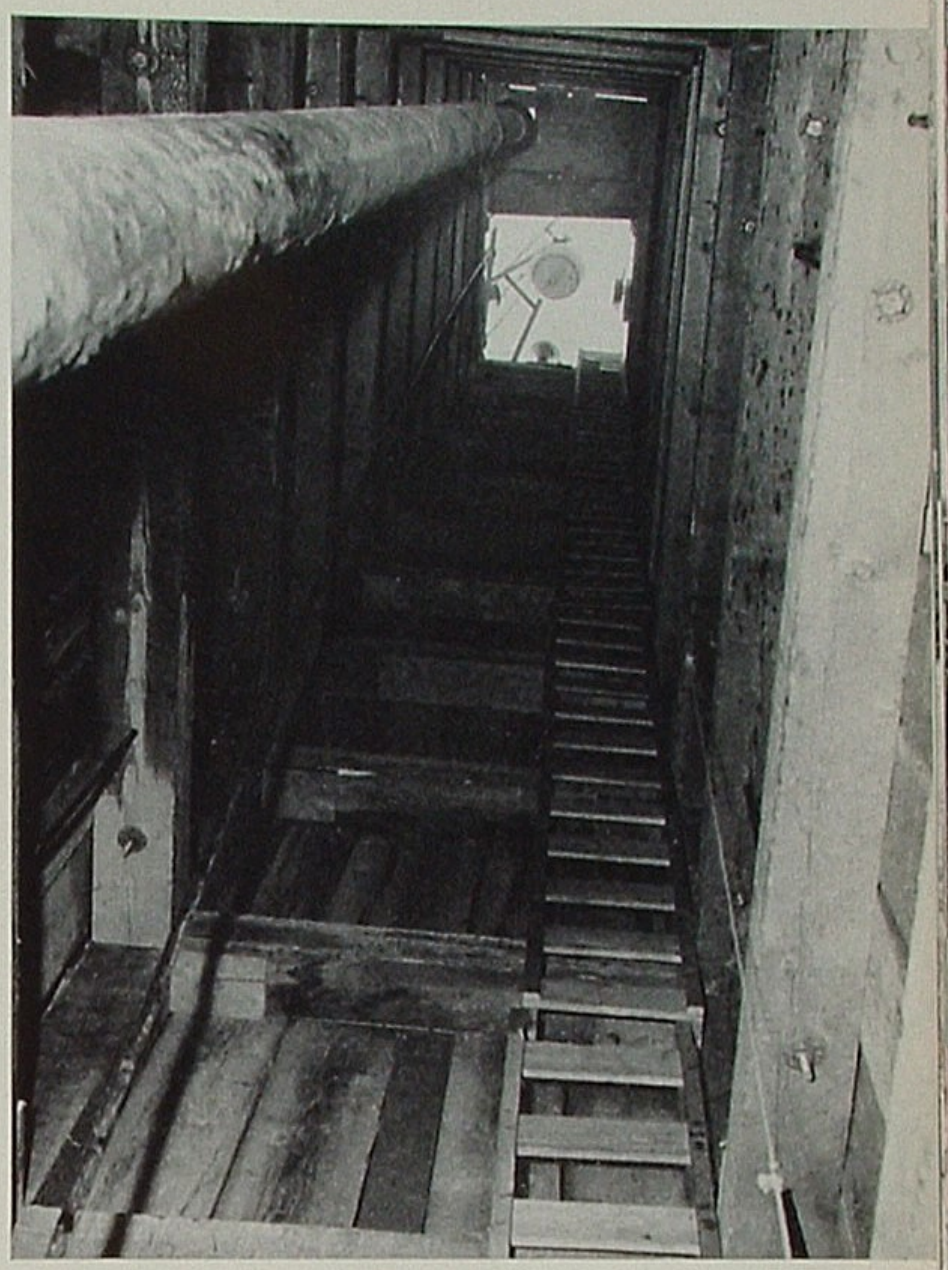
ng a Landslide

deem the well but to out-fox the landslide. This is how it was done:

A first requirement was to determine the exact depth of the slide and the direction in which the casing was twisting from vertical. Scientific instruments were not immediately available for such a survey, so a device was invented on the spot. It consisted of a flashlight dangling from a long piece of cord. By repeatedly lowering the light down the casing, noting the point and direction of its disappearance, and taking measurements of the suspending cord, they were able to determine the extent and exact position of the twist. The casing, it was found, started to bend at the 63-foot level and continued off perpendicular for a distance of 13 feet.

Next problem was to recondition the well in a manner that would prevent the continuing slide from twisting off new installations of casing. The solution was an 80-foot shaft buttressed with heavy timbers. The shaft of course will move with the landslide, but, being 10 feet long by six feet wide, it will provide protective space for the casing during No. 5's remaining span of life. In other words, the casing may seem to move gradually from one side of the shaft to the other, but it should not again be damaged by the moving shale.

This also is one example of how the petroleum industry is conserving natural resources. Well No. 5 was a small producer when shut in and was not expected to do any better after its long rest. In fact, it took almost as much accounting as excavating to reopen the well. Therefore, every barrel of oil now being produced from it, is a tribute to skilled men and to the vigorous energy of a great industry.



Looking upward from bottom of the 80-foot shaft, we see the reinstalled casing, top, and the protective space that will keep it from harm as the landslide continues.

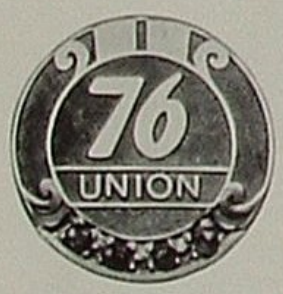
District Superintendent Clarence Froome, left, and Engineer Blanchard inspect the shaft as Well No. 5 resumes its useful career—that of exploiting an old reservoir.

INDUSTRIAL SUMMARY

• INDUSTRIAL RELATIONS

As of March 25, the date of this report, it was not known definitely whether Union Oil Company is to be a party to forthcoming wage dispute hearings ordered by President Truman to be conducted before a panel of the Wage Stabilization Board. The alleged dispute involves the Oil Workers International Union, CIO, other unions, and various oil companies, but Union Oil was not named in the President's initial order as being one of those companies. Although a wire from the Wage Stabilization Board chairman later stated that Union Oil was considered a party to the disputes, our Company is seeking further clarification. We pointed out that there are 25 collective bargaining units within Union Oil Company; that the Company has firm agreements with 18 of these; that, of the remaining, three under jurisdiction of the Oil Workers International Union could possibly end in strike action after proper notice were given; but that no strike had been threatened against Union Oil nor, to management's knowledge, had strike votes been taken.

Through letters addressed to the homes of all employees, President Reese H. Taylor is making important developments known as rapidly as they unfold.



New Service Pin

A handsome new service pin has been designed and, effective May 1, 1952, will be presented to all employees attaining 10 years of continuous service. The gradual elimination of our former Union emblem and its replacement with the more distinctive "76" made it advisable to redesign the pin accordingly. After May 1, employees attaining their 10-year service mark will receive the new pin as soon as eligible. Those in possession of the older-type pins may either retain them or receive new pins when eligible for ruby or diamond additions. In either case, the pin will be jeweled to indicate total years of service, according to the practice that has been in effect since our service emblem was inaugurated in 1927.

Ernest C. Cheatham

Ben T. Anderson

Recently elected to fill the expired terms of L. A. Billington and C. E. Rathbone on the Board of Administrators of the Employees' Benefit Plan were Ernest C. Cheatham, telephone foreman of Southern Division Communications, and Ben T. Anderson, executive supervisor of Research, Brea.

The Safety Board's recently appointed Engineering Committee has submitted its first recommended standard to the Board. It concerns pipe connections for conventional tanks and makes use of lessons learned from tank fire experiences. This subcommittee, in working with the Fire & Safety Division, is reviewing old and developing new basic engineering and construction standards relating to accident and fire hazards. All main operating and staff departments are represented.

Safe Driver Award certificates and pins are being distributed to drivers of Company motor vehicles who qualified by driving throughout 1951 without a chargeable accident, as defined in the booklet, "Defensive Driving Pays." Last year 1,000 drivers received wallet-size certificates, and 443 drivers of trucks received, in addition, gold pins for three consecutive years of good driving. Because of the interest shown in this plan, it now is expanded to include employees who drive their personal automobiles on Company business and in excess of 3,000 miles per year without an accident. It is anticipated that many more employees will receive awards next year.

from W. C. Stevenson

• FIELD

Two important completions have been made by the Company in widely separated parts of the country.

C. C. M. O. 84-24, drilled on land recently taken under lease a few miles southwest of McKittrick, Kern County, California, was brought in flowing at a 985 B/D rate through a 20/64″ bean. Production is from 62 feet of Oceanic Sand, with the well bottomed at 6,227 feet. The C. C. M. O. lease adjoins our Jewett Fee 320-acre parcel, believed to be "on trend," and accordingly our next well will be known as Jewett 83X-24.

Miller 1, drilled as a northerly extension test in the Adair Wolfcamp area of Terry County, Texas, has been completed flowing 1,048 barrels per day through a 16/64″ choke. Production is from four saturated sections of limestone reef, totaling 84 feet in thickness. It is significant that the reef was encountered at 8,437 feet, the highest in any well drilled in this area up to the present time. Miller 2 will be drilled next, and several more locations are indicated on our favorably situated acreage.

Less heartening news is the abandonment of a 10,000-foot wildcat in California—Hartnell 13, Orcutt Hill deep test, abandoned at 10,303 feet.

Several recent completions worthy of note were: In the Gulf Division, State 540 3-B, a southerly extension of the West White Lake Field, was completed as an exceptionally good gas condensate well from a total depth of 12,650 feet. In the West Texas Division, the first production in Upton County was our First National Bank of Kansas City No. 8, which flowed 38-gravity oil at a rate of 418 B/D from a total depth of 7,815 feet. In California, Hein 52 has been placed on production flowing 158 barrels of clean oil daily.

from Sam Grinsfelder

• MARKETING

The current allocation of 7600 Gasoline is due to a 19 per cent increase in public demand for this product during 1951. Every effort is being made to increase supplies of 7600 and at the earliest possible date allocations will be discontinued.

Plans are being developed to conduct a test of Triton RR Diesel Engine lubricating oil in locomotives of the Chicago, Milwaukee, St. Paul and Pacific Railway. The run, between Tacoma and Hoquiam, will provide another opportunity to demonstrate outstanding performance characteristics of this new diesel engine lubricant. Incidentally, the previously reported full scale road test in a Southern Pacific freight locomotive has now passed the 35,000-mile mark with excellent results.

A thorough knowledge of products and their intended applications is a basic requirement to successful salesmanship. A March-April training program for Marketing representatives was designed to stimulate sales of our numerous industrial lubricating oils through first making known their merits and uses to Company personnel.

from Roy Linden

• MANUFACTURING

Technical meetings were held on February 27 and 28 at Brea Research Center for representatives of Research and Process, Economics and Planning, Marketing, and Manufacturing. The program included discussions of future supply and demand for petroleum products, technological developments in refining, refinery expansion and operations, and development of new and improved products.

The foundation for our new Fluid Catalytic Cracking Unit at Los Angeles refinery required 1,500 yards of concrete. Specifications stipulated that the 80 x 107 x 5-feet-thick foundation be installed in a single pouring. This required about 360 truckloads of concrete in 10½ hours, or a truckload of concrete entering the refinery every two minutes.

from K. E. Kingman

• TRANSPORTATION & DISTRIBUTION

The renewal of over three miles of 8-inch and 10-inch main pipe lines in the Wilmington area was completed in March. The old lines, badly corroded and pitted after more than 30 years of continuous underground service between Los Angeles Refinery and Torrance Tank Farm, were replaced with new lines which were provided with both wrapping treatment and cathodic protection. Renewal was very difficult. as practically all line lay under the pavement of Wilmington streets.

from Ronald D. Gibbs

• PURCHASING

Now that less critical materials are being used in the Government's defense buildup, the increased production capacity of the country is pouring more formerly scarce commodities into the civilian economy. In every market in which we are interested, Purchasing finds more goods available with less lead time and often at lower prices. Copper and copper products, long scarce, are expected to be much more readily available shortly. Steel containers and cans are in such ample supply that controls undoubtedly will be lifted. Textile mills are working only three to four days a week. Coal stocks are at an all-time high. The quota available of tetraethyl lead has been increased, and other chemicals are abundant. This increased availability of materials means that our own inventories should be reduced. We can depend increasingly on suppliers' stocks and be in a better position to take advantage of price decreases as they occur.

from E. H. Weaver

Some Facts About Wages, Prices and Profits

WAGE-PRICE-PROFIT relationships have become of increasing interest to all citizens. The accompanying charts and data are timely and are offered for Union Oiler consideration.

Government statistics show that oil workers are among the highest paid people in industry. In 1951, for example, petroleum refinery workers received an average of $84.56 per week. This was the highest average of any manufacturing industry reported by the Department of Labor in that year. (The comparable Union Oil Company figure is $85.52). During the same period, the average weekly wage of all manufacturing workers was approximately $65.

But how have petroleum wages fared through the years in relation to rising costs of living?

Since 1939, the year in which our current wage-price spiral began gaining momentum, oil wages have far out-stripped consumer prices. Chart A clearly illustrates the widening margin of advantage enjoyed by petroleum refinery workers over a period of 13 years. Had their earnings simply kept pace with the increases shown by the U. S. Department of Labor's Consumers' Price Index, they would now be averaging about $65 a week, roughly the national average of *all* manufacturing workers.

Let us consider Chart B. Stockholders—the large and important segment of American people including many petroleum workers themselves, who have saved and invested part of their earnings to provide our productive tools—have fared not nearly so well.

In fact, a comparison between average refinery wages and average dividends distributed by 30 leading U. S. oil companies is shown on chart B to be greatly in favor of the wage earner. The shareholder's return on his invested savings when compared to the amounts paid to the wage earner show that between 1939 and 1951 the shareholder's increase was only two-thirds as great as the wage earner's.

According to Department of Labor and American Petroleum Institute figures plotted on chart C, since 1939 gasoline prices have advanced less than 50 per cent while the average prices of goods and services, measured by the Consumers' Price Index, were advancing over 90 per cent.

What makes these price differences possible? Competition has made it essential to conduct research to improve products and processes. Heavy capital expenditures have been made by the petroleum industry to design and construct larger and more efficient facilities. The result has been relatively lower product prices.

It almost invariably happens that general wage increases are passed on to the consumer in the form of higher prices. Chart C shows that the petroleum industry has kept its price increases to a minimum.

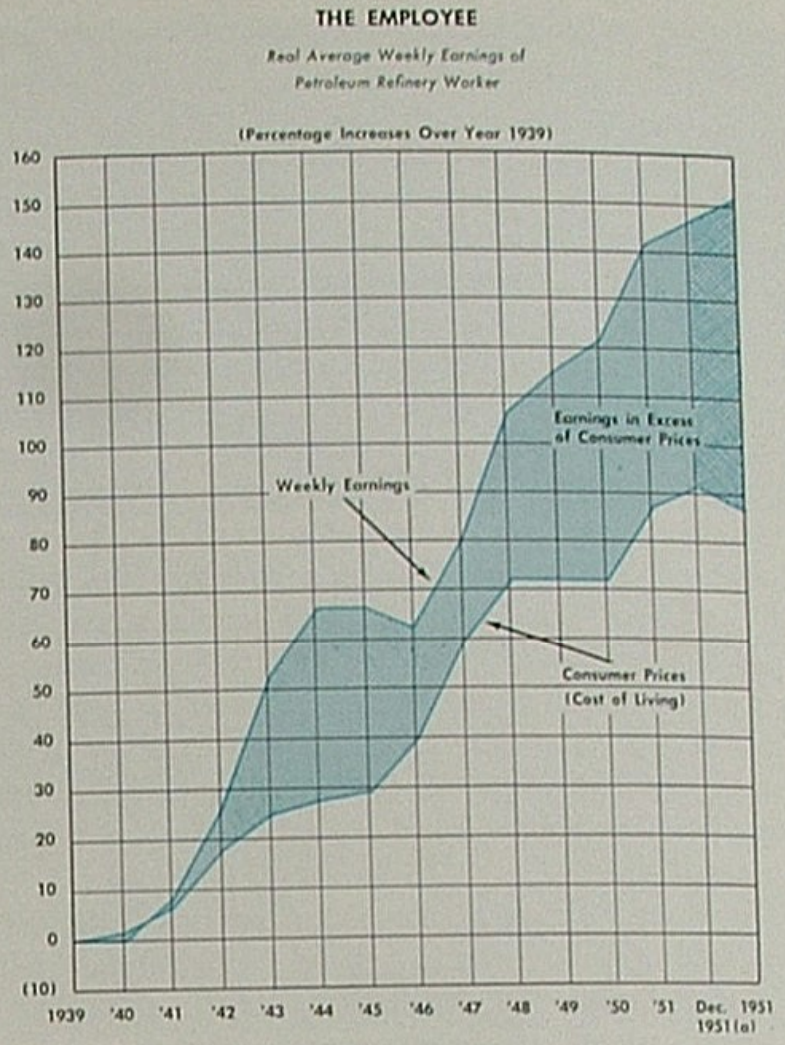


Chart A

WEEKLY EARNINGS OF PETROLEUM REFINERY WORKERS

Compared with

THE PRICES OF GOODS AND SERVICES USED BY WORKERS

Year	Average Weekly Earnings Petroleum Refinery Workers Dollars	Base 1939	Consumers' Price Index Base 1939
1939	$34.97	100.0	100.0
1940	34.98	100.0	100.8
1941	38.02	108.7	105.8
1942	43.99	125.8	117.3
1943	53.49	153.0	124.4
1944	58.18	166.4	126.5
1945	58.39	167.0	129.4
1946	56.75	162.3	140.3
1947	62.95	180.0	160.6
1948	72.06	206.1	172.9
1949	75.33	215.4	171.2
1950	77.93	222.8	172.9
1951 (Prelim.)	84.56	241.8	186.7
1951 (Dec. Est.)	86.52	247.7	190.2
1951 (a)	88.11	252.0	186.7

(a) Year 1951 actual plus 4.2 per cent increase offered by industry and refused by unions in January, 1952.
Source: U. S. Department of Labor.

THE OWNERS (STOCKHOLDERS)

Stockholder Dividends—Percent Return on Investment
Thirty U.S. Oil Companies

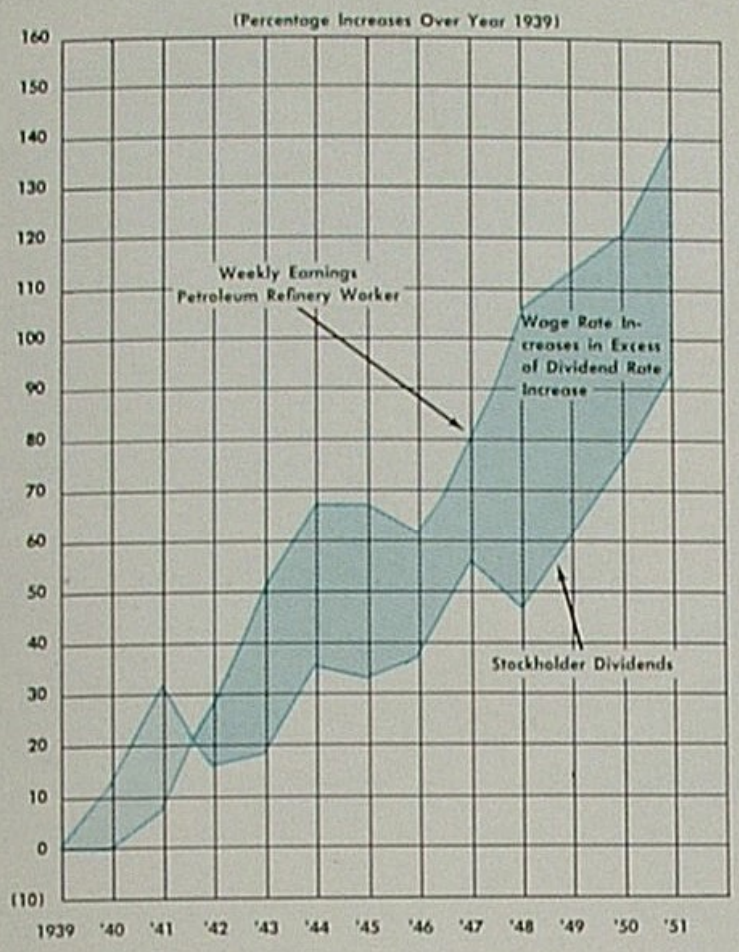


Chart B

THE PUBLIC

Average Retail Gasoline Prices At Service Stations
In 50 Representative U.S. Cities

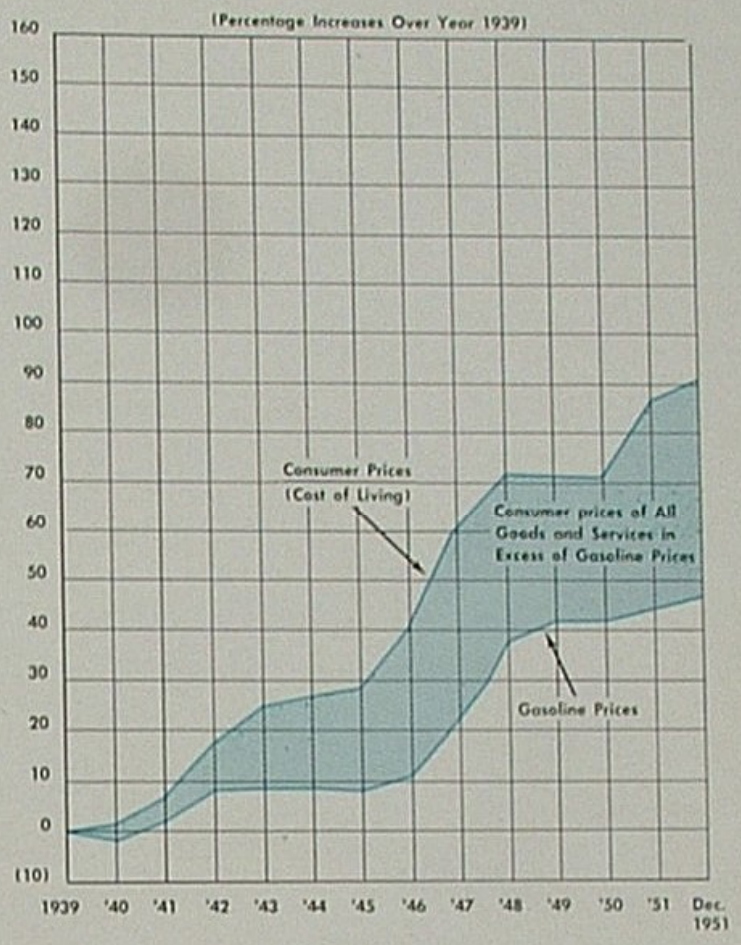


Chart C

STOCKHOLDER DIVIDENDS— PER CENT RETURN ON INVESTMENT

Compared with

WEEKLY EARNINGS OF PETROLEUM REFINERY WORKERS

Year	Stockholder Dividends % On Invested Capital		Average Weekly Earnings of Petroleum Refinery Workers	
	Percent	Base 1939	Dollars	Base 1939
1939	3.1	100.0	34.97	100.0
1940	3.5	112.9	34.98	100.0
1941	4.1	132.3	38.02	108.7
1942	3.6	116.1	43.99	125.8
1943	3.7	119.4	53.49	153.0
1944	4.2	135.5	58.18	166.4
1945	4.1	132.3	58.39	167.0
1946	4.3	138.7	56.75	162.3
1947	4.9	158.1	62.95	180.0
1948	4.6	148.4	72.06	206.1
1949	5.0	161.3	75.33	215.4
1950	5.5	177.4	77.93	222.8
1951 (Est.)	6.1	196.8	84.56	241.8

Sources: U. S. Department of Labor
The Chase National Bank, N. Y., 1939-1950
Year 1951 estimated

AVERAGE RETAIL PRICE OF GASOLINE AT SERVICE STATIONS

Compared with

THE PRICES OF ALL CONSUMER GOODS AND SERVICES

Year	Gasoline Service Station Price (cents per gallon)				Consumers' Price Index
	Ex-Tax	Tax	Inc. Tax	Base 1939	Base 1939
1939	13.31¢	5.44¢	18.75¢	100.0	100.0
1940	12.75	5.66	18.41	98.2	100.8
1941	13.30	5.93	19.23	102.6	105.8
1942	14.46	5.97	20.43	109.0	117.3
1943	14.56	5.97	20.53	109.5	124.4
1944	14.62	5.97	20.59	109.8	126.5
1945	14.48	6.02	20.50	109.3	129.4
1946	14.69	6.08	20.77	110.8	140.3
1947	16.93	6.18	23.11	123.3	160.6
1948	19.54	6.34	25.88	138.0	172.9
1949	20.27	6.52	26.79	142.9	171.2
1950	20.08	6.68	26.76	142.7	172.9
1951	20.31	6.84	27.15	144.8	186.7
1951 (Dec.)	20.31	7.32	27.63	147.4	190.2

Sources: U. S. Department of Labor.
American Petroleum Institute.

The Marketing Department's new district office in Long Beach is attractively situated near the Villa Riviera Hotel.

THE SIXTY-MILLION LOOK AT LONG BEACH

Hard at work on a 60-million year at Long Beach are (left) J. E. McHenry, Hazel Hartley; (right, clockwise beginning at head of table) P. H. Boyd, P. A. Grand, C. T. Knight, R. B. Franks, G. G. Parker, A. N. Tilston, J. H. Garrison, E. R. Greaves, O. M. Totten, L. G. Weir and J. E. McHenry. Their new offices rate favorably with the Company's finest.

THE Long Beach District of our Marketing Department consists of two Company-operated marketing stations with 59 employees; six consignee-operated marketing stations, four consignee-operated marine stations, and three distributors, whose employees total 41; which gives the district a sales force of exactly 100 Union Oilers.

Although most of the district's volume is sold through 146 service stations, large quantities of Company products are served to heavy and light industry, to numerous farming accounts, and to a marine trade that ranks among America's greatest. In 1951 there were 511 more ships entering this harbor area than entered the San Francisco Bay area.

Within Long Beach District confines are some of the country's most valuable oil deposits and oil processing facilities—among them Los Angeles Refinery and Brea Research Center. The city of Long Beach itself is actually built over a great oil field.

Important military installations dot the area, including El Toro Marine Base, Los Alamitos Naval Air Base, the Naval Ammunition and Net Depot, the U. S. Army Air Base, the Navy's Lighter-Than-Air Base, the U. S. Army's Fort MacArthur, and the Navy's largest Repair and Supply Depot.

Lakewood Village, near Long Beach, is the world's largest subdivision, consisting of over 20,000 new homes built, 7,000 now under construction, and a population of 100,000 expected by 1952.

Upon such statistics rests the prediction of District Manager Paul H. Boyd that his 100 salesmen will attain six million gallons in sales during the month of August and 60 million for the year 1952. At any rate, as the accompanying pictures testify, Long Beach District is well situated for such an achievement.

The capable sales staff at Santa Fe Springs includes (l-r) E. R. Greaves, resident manager, M. L. Winson, V. E. Connolly, A. G. Crocker, E. F. Moffitt, V. E. Robinson; (below) R. Waddell, W. Weatherby and F. Church.

These new marketing facilities at Santa Fe Springs are located close to other recently constructed buildings housing Union Oil's district headquarters for Pipe Line & Communications, Field, Purchasing and Automotive Departments.

ALBERT MURPHY, Union Oiler of Seattle, has the expected nickname of "Spud" and the unexpected hobby of cartridge collecting. In the above photograph he is describing his collection, one of the largest and finest in existence, to Walter Scott, right, an attorney and former employee of the Company.

It all started when Spud was 14 years old and was forbidden to experiment with a few cartridges he and several other boys had found. The forbidden objects so intrigued him that one of his first steps on severing home ties was to start a gun and cartridge collection. Today the basement of his Richmond Highlands cottage bristles with several hundred guns and approximately 10,000 cartridges—nearly all of them old, foreign or experimental items now impossible to obtain.

Prizes of the collection include French and German cartridges used in the Franco-Prussian War—others so old their date of issue is unknown—three cartridges in three different calibers of a type said to be non-existent by the American Rifleman Association—and the 1880 Winchester display shown above.

At least three dozen drawers are filled with guns, including a 21-caliber Bergman-Pistole, the first automatic—an 1877 Remington found on Snake Creek Battlefield, Montana, in 1896, and still loaded—several Civil War guns—and some Japanese oddities of World War II.

Recognized as an authority on small arms ammunition even among the experts, Murphy has an extensive firearms library and in it a prized book of which 30 were issued to the highest law enforcement officers only.

L. S. "LES" MORRIS, also of Seattle, is a lapidary in his spare time. He not only cuts, polishes and engraves precious stones but does much of his own prospecting around Vantage, Washington, or along the Oregon Coast. His cutting machine, buffer and polisher are also Morris-made. Most fortunate of women is Mrs. Morris, seen below accepting jewelry fashioned by the talented hands of her husband.

Above, at Seattle Bill Logan prepares to "Give for Korea." Assuring him that the giving is not painful is another Union Oiler, George Trimble, veteran of 18 such donations at Oakland, Portland and Seattle.

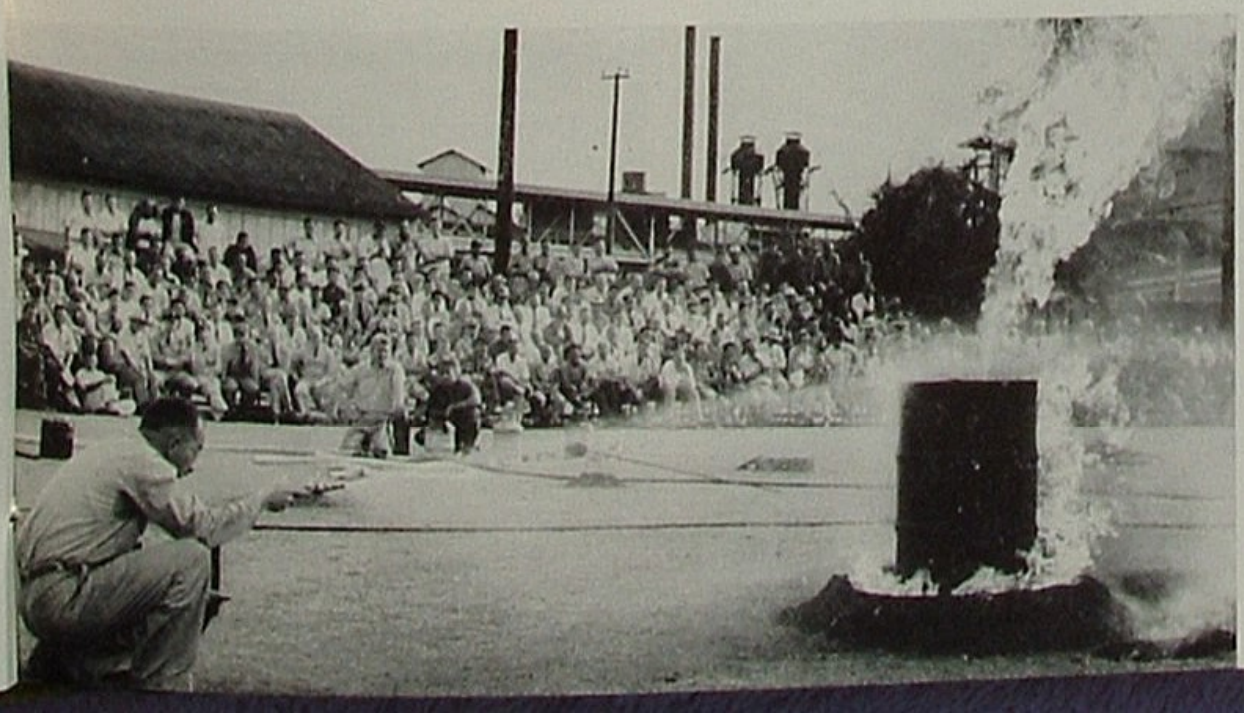
GOOD SAMARITANS ALSO were Union Oilers of Northwest Territory during December Red Cross appeals for more blood.

Resident Manager C. W. Endicott, right, of Eugene, Oregon, was program chairman of an outstandingly successful Bloodmobile drive. Concentrating on oil industry people, he and his committee "not only sold 'em on the urgent need for whole blood but signed and delivered 'em at the proper time to the proper place." This bold technique netted 542 pints of blood from 660 donors in the two days following Christmas and has been heralded through newspaper editorials and radio broadcasts.

Meanwhile, other Northwest Territory people, including the above group, took turns at Seattle in answering the "Blood for Korea" call. One of the group is Betty McDonald, whose triumph over a deafness handicap was described in the February ON TOUR and who has been a donor four times.

C. W. Endicott

C. H. VAN MARTER is known widely and favorably throughout the Company as a skillful exponent of fire-fighting techniques. Now this same opinion is shared by hundreds of Hawaiians before whom Van gave a series of lectures and demonstrations in January. Included among his observers were members of service clubs, professional firemen, military personnel and people in industry. The knowledge acquired through many years of Union Oil experience and research has thus been put to work to help protect life and property in the Hawaiian Islands. Photos were courteously mailed by the Hawaiian Pineapple Company.

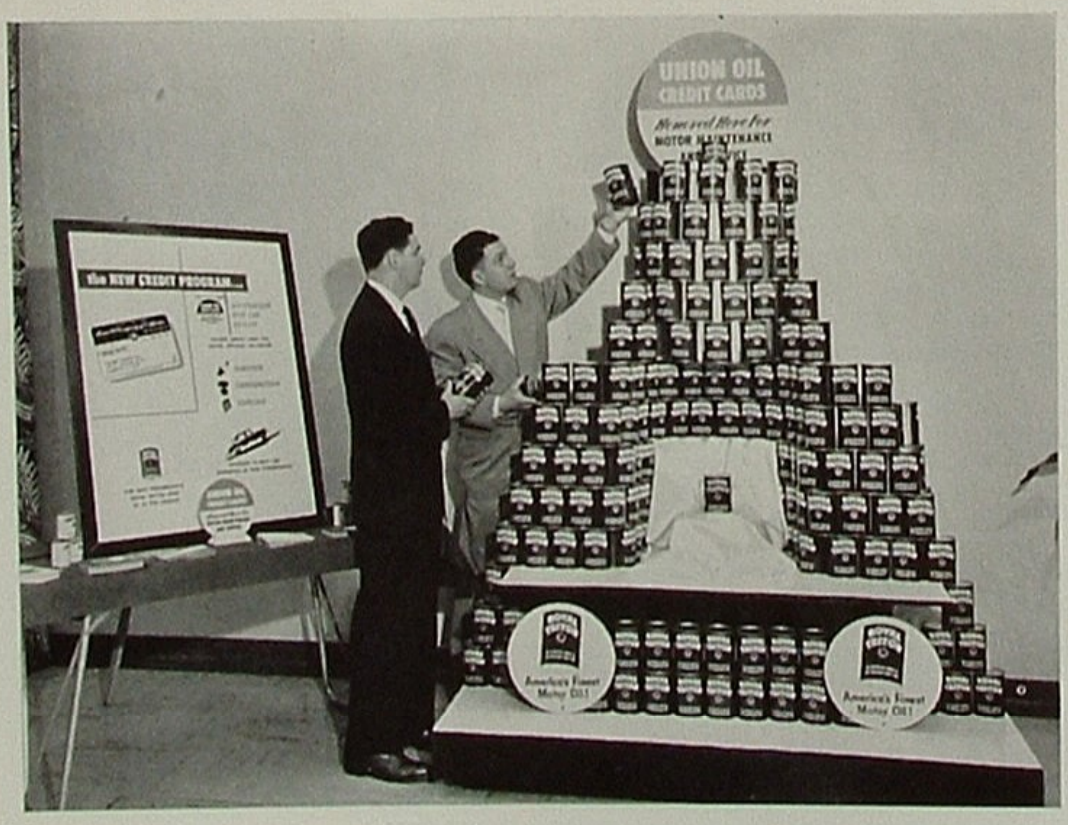


"Van" used a microphone, above, to explain fire-fighting techniques and a simple garden hose, at left, to prove that oil fires can be controlled with household devices and oil-industry know-how.

EXCLUSIVE EXHIBITORS at a convention of the Western States Meat Packers Association, Biltmore Hotel, Los Angeles, February 13 to 15, were Union Oilers appearing in the two photographs above. The advertising-minded salesmen are, from left, Joe Sanford, Les Legacy, Leo Penney and Lew Reid.

This association is made up of meat packers in the 11 Western states. Union Oil helped form the group; worked out an economical arrangement for serving their 100 or more member firms with petroleum products; and have found the busi-quently in salmon fishing derbies.

PERFECT ATTENDANCE for more than a year or two is rarely attained by any of us on the job. But T. R. "Pete" Free, stationary engineer at our Willbridge Plant, has lived up to his job title in more ways than one. During 25 years of Union Oil service just completed, Pete has missed not a single day of work due to sickness or accident. Furthermore, he has not followed what might be called a sheltered career. Pete has always worked in the plant, not behind a desk. His hobbies are target shooting and a home machine shop. And he enters a boat frequently in the salmon fishing derbies.



CREATIVENESS also is where you find it. Roger Levan, sales representative, and Carl Cole, right, resident manager at Seattle, didn't wait for advertising specialists when a new Royal Triton display was needed. They built one themselves in Roger's workshop basement. Flight-tested in the Northwest Territory office, the display proved so pleasing to employees and customers that it was next chosen for use in the Company's credit program for new-car dealers. As new models of cars arrive at Company-served car dealer agencies, the display is given a place on each salesroom floor. Roger Levan, who is our car dealer representative in Seattle, spends a day or two at the exhibiting place telling customers about the new Union Oil service.

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TOYING WITH AN IDEA at right are Carol Dahl and L. W. "Laddie" Janes of Southwest Territory. The idea was Laddie's. In looking at one of the colorfully painted Union Oil tank cars that recently moved along Pacific Coast rails, he wondered whether railroad hobbyists and builders of miniature railways might not be interested in small duplicates of the car for addition to their rolling stock. The Irwin R. Athearn Company of Los Angeles, a foremost manufacturer of small precision models was contacted, and an agreement was promptly reached last November 12th. By Christmas, 5,000 of the precisely built kits were on the market, and an estimated 50,000 will be available in 1952.

A SAFETY AWARD seems almost superfluous when viewed alongside the recipients good fortune in coming through a perilous traffic year unscathed. However, Safety Councils regard such accomplishments as good management rather than good fortune. Accordingly, Union Oil's winning of a recent Inter-plant Safety Contest Award at Spokane is a tribute to the management and operating skill of Spokane Union Oilers. Resident Manager Fred Olsness, left, is seen receiving the award from John W. Murphy and I. G. Doty of the Spokane Area Safety Council.

"76" HONORED Each year the citizens of Tijuana are asked to cast a vote for their favorite products and services. Through this unusual method of testing consumer acceptance, Union Oil's "76" was adjudged the preferred gasoline sold in Tijuana during 1951. A similar poll conducted in Mexicali brought an identical result there. In both cities, a "Diploma de Honor" was presented to our distributors in recognition of their superior merchandise. In Tijuana, Distributor Fernando Rodriguez also received top honors for his radio commercials advertising Union Oil products.

Diploma de Honor

Otorgado a Gasolina Union 76

ENCUESTA PUBLICA

"CALIDAD Y PRESTIGIO"

The rescued Hilton family, above. Rescuers, at right, were l-r: Francis Drake, George Sausman, George Ramstad, Sergeant Pettengill and Ed Arata.

RESCUE AT TRAGEDY SPRINGS

George Sausmon, Union Oil dealer at Jackson, California, is the owner of two "Weasels," light tractors designed by the U. S. Army to travel over deep snow. As the first heavy storm struck the Sierras in late November, George was contacted for help by Sergeant Henry Pettengill of the Highway Patrol. It had been reported in Reno that the Ralph Hilton family were overdue and probably marooned in deep snow near Tragedy Springs.

George summoned his "Weazel Gang," consisting of George Ramstad, Francis Drake and Ed Arata, and with Sergeant Pettengill set out on a rescue mission. The lighter of the "Weasels" led to break trail in soft snow for the heavier one.

Arriving in the Tragedy Springs area, so named because of an Indian massacre there in 1848, the searchers made a tour of every barn, cabin, or mound of snow that might contain the missing automobile. One such mound with a broom sticking out of it proved to be the car. But, to everyone's relief, it had been abandoned.

Foottracks finally led the men to a barn and cabin. Their shouts aroused no quick response here, so they continued following the trail toward Silver Lake. Actually, Mrs. Hilton, her daughter and grandson were sleeping in the cabin but failed to get to the door before the rescue party had moved away.

However, the continuing foottracks brought one of the "Weasels" to another cabin door. Here Ralph Hilton had stopped to rest before continuing on for help. He happily greeted the rescuers and, of course, directed them back to the women and child.

Thus, George Sausmon's "Weasel" hobby was instrumental in preventing a 1951 tragedy at Tragedy Springs.

DISTINGUISHED COMPANY A wish of Maruzen Oil Company officials to visit a Hollywood movie studio resulted in the extraordinary studio luncheon at left on February 5th. Seated from left are J. W. Miller, manager of Southwest Territory, William Posch of Maruzen, Actor Michael Rennie and Actress June Haver, K. Okasaki, president of Maruzen, Y. Wakisaka, Maruzen's manager of planning, Actor James Gleason, Union Oiler R. S. Dowling of Foreign Sales, Mrs. J. E. Ruman; standing, J. E. Ruman, transportation manager of 20th Century Fox, and Union Oiler J. H. Moulton of Foreign Sales.

QUEEN of Seattle University's Homecoming this year and being crowned by Governor Arthur B. Langley of Washington, at left, was Joan Fitzpatrick, daughter of T. F. "Tom" Fitzpatrick of our Sales Service Department in Seattle. Joan, the youngest of Tom's three daughters, is charming and popular as well as being a beautiful brunette. She reigned at the Coronation Ball on February 8th.

SPEAKER before a large group of Los Angeles Metropolitan Junior College students during February was Ethel Farnsworth, secretary to W. C. Stevenson of Home Office. To some 80 prospective secretaries in the group she offered pointers on how to meet the exacting requirements of such positions in industry. Ethel was exceptionally well qualified for the assignment, having taught night classes in business college for several years and in 1952 completed her 25th year as a Union Oil secretary. Last year, a similar invitation brought her as a principal speaker before over 300 selected high school graduates.

TWENTY-EIGHT YEARS TO FREEDOM

Last month ON TOUR introduced Eleonor "Ella" Anderson, hostess at our Central Territory Office coffee shop and benefactor of a certain seagull named "George," without mentioning the dramatic story of her life. Here in briefest outline are some of the events that preceded her coming to America and freedom:

Eleonor was born while her parents, Mr. and Mrs. Waller, were fleeing from Siberia toward Shanghai during the 1919 Communist revolution in Russia. The event, now a blessed one, took place on a refugee-crowded cattle car and without a doctor in attendance. The mother and young daughter, needing medical attention, were put off in a village ravaged by a cholera epidemic; remained two days and nights in the railroad station; and then were moved to the next village, where aid was available. Vladivostok offered a temporary home until 1924, when they were obliged to move ahead of their Communist pursuers to Shanghai.

The hardships of revolution and war soon became routine to this family without a country. They witnessed the rise of the Nationalist Party in 1927 while residing in Hankow, China. Then came the Japanese invasion of 1932 with its hardships. In 1937 the Palace Hotel at Shanghai was accidentally bombed by a Chinese pilot. Eleonor was employed in the hotel lunchroom, but had left the building for a short rest period only moments before the bombing.

From Shanghai, Eleonor moved to Hongkong, to Singapore, and back to Shanghai where, in 1940, she met and married Clark Anderson, a Canadian. In December of that year, they were interned as British subjects by the Japanese military within Shanghai. Next, in 1942, they were sent with thousands of other internees to Camp Lungnva outside the city. Here nothing whatever was provided by the captors. Survival became a matter of improvising one's own shelter, sleeping quarters and sanitation. Food consisted of buffalo meat, Chinese cabbage, river fish and unhusked rice. A pint ration of drinking water per day could be supplemented only by slime-covered water in stagnant pools. Eleonor, with a small group of others, was moved later to a nearby American Country Club building, where she found lodging in what had formerly been the bowling alley.

Repatriation in September, 1943,

brought the Andersons under welcome sanctuary of the Canadian and American Red Cross. They sailed on a Japanese ship to Goa, India; thence on the "Gripsholm" to New York City, Montreal and freedom.

After going to Shanghai in 1947 to locate her parents, Eleonor returned to San Francisco and her present job with Union Oil. Her competence and cheerful personality belie the hardships she has known, and to many who associate with her daily these facts will come as a surprise.

from Ethel Cline

Editorials

What are 'Profits'?

By David Lawrence

JUDGING BY SOME of the statements recently broadcast by labor-union spokesmen in hearings before the Wage Stabilization Board, corporation profits are somehow an evidence of personal greed or illegitimate gain.

Certainly the smear campaign against profits which has been conducted by the "left wing" in America is not much different from what Moscow has been proclaiming in its propaganda.

Is it conceivable that there are any Americans in positions of responsibility in our labor unions who do not really know what profits are—or do they merely profess not to know for political reasons of their own?

Profits in American corporations are not what's left after deducting certain selected expenses.

Profits are the net income after deducting all expenses, including the money paid out in taxes to the Government of the United States and the governments of the various States and cities.

Profits—the money left in the company's treasury after paying all expenses—are not then paid out to its officers. They get only their salaries, unless some of them happen also to receive dividends as individual stockholders.

But stockholders or owners are not getting all the profits either. Dividend payments nowadays are rarely more than half of a company's annual earnings after taxes. This is because corporations must lay aside funds for working capital, for reserves, and for replacement of plant equipment.

To assail profits as sinful, or as tainted with some sort of wrongdoing, is to undermine the jobs of every American workingman and the future jobs of their children.

For jobs are created by enterprising individuals who put in their own money, or who borrow the savings of others, to create new enterprises.

If profits are destroyed—as is the case under communism, fascism, or state socialism—then government takes charge of labor unions, too. Liberty disappears all around.

Why should any Americans who head up our labor unions be so interested in destroying profits or smearing those who try to earn them for their fellow men?

Thoughtful leaders of American labor, upon reflection, will realize that a profit system is a loss system, too, and that the capital risked in any enterprise cannot be guaranteed against the hazards of competition or changing times.

To focus on one year's high profits, moreover, and demand that fixed expenses such as wages be inordinately increased—so that companies will be saddled with a wage level which they cannot deflate when there is a serious decline in profits—is to do a disservice to everybody.

Profits and the incentive to the making of profits are symbols of industrial progress. Profit-sharing plans have been adopted by many forward-looking companies. But it is one thing to agree to share the risks of enterprise with the employees and quite another to increase the fixed expenses every year. For then prices must be raised to meet the higher costs, thus stimulating the inflationary cycle. This, in the end, can hurt the workers by causing the dollar to buy less and less.

Today the problem of earning enough to replace at present-day costs of materials and labor the plants that are wearing out is the most serious single financial difficulty that faces private enterprise.

Unless there is money enough set aside yearly to rebuild worn-out equipment and expand factory space and buy new tools, the American economic system will grow weak. Who but the enemies of the profit-and-loss system wants that to happen?

Unless enough money is placed in reserve in the good years to take care of the lean years—to tide over a depression—unemployment will reach disastrous proportions the next time there is a downward turn in the business cycle.

After paying all expenses, including taxes, corporations are expected to pay the shareholder a reasonable return on his investment. Yet while the wages of "borrowed" money—bonds and mortgages—are accepted as an item of expense under our systems of accounting and tax laws today, the wages of the investors in capital stock—dividends—are not a deductible item of expense before taxes, though money put into capital stock is also "borrowed" money. And what's left after paying dividends is all that is available annually for reserve and for future expansion. If a surplus for such vital purposes cannot be accumulated year by year, economic anarchy will destroy from within the most powerful industrial nation in the world.

It is time that union leaders uttered a word of caution to their spokesmen to avoid making public statements that seek to smear profits as such or that exaggerate their true size by deliberately ignoring taxes as an item of corporate expense.

SERVICE BIRTHDAY AWARDS

APRIL 1952

Department	Location	Years
MARKETING		
Seelye, Joseph H. S.,	Los Angeles	35
Chambers, Edward C.,	San Diego	30
Mallory, Clyde B.,	Everett	30
Miller, Emma,	Los Angeles	30
Oglesby, Walter T.,	Los Angeles	30
Reynolds, Charles B.,	Mojave	30
Bode, Charles J.,	Seattle	25
Dimond, Catherine,	Los Angeles	25
Dyer, Russell W.,	Van Nuys	25
Luckham, Thomas H.,	Los Angeles	25
Marusick, John A.,	Edmonds	25
Sheets, Geo. L.,	San Francisco	25
Young, Joseph R.,	San Francisco	25
Bolton, Roger V.,	Los Angeles	20
Hayes, Douglas B.,	Salem	20
Josselyn, Willard W.,	San Francisco	20
Morse, Raymond J.,	Spokane	20
Akervick, Robt. M.,	Juneau	15
Bann, Norman C.,	Yuma	15
Johnson, Arthur Wm.,	Astoria	15
Kragh, Herbert S.,	Eugene	15
Small, McLean,	Salinas	15
Bevan, Edward B.,	San Francisco	10
Gossard, Blenda P.,	Seattle	10
Ramazzini, Walter,	Colusa	10
Rice, Ransom T.,	San Francisco	10
Stone, Riley T.,	Edmonds	10
EXPLORATION & PRODUCTION		
Clemons, Stewart N.,	Orcutt	35
O'Leary, John M.,	Orcutt	35
Rico, Bert E., Jr.,	Whittier	30
Tate, Guy,	Ventura	25
Knowles, Thos. D.,	Whittier	20
Quick, Jonah J.,	Orcutt	20
Hughes, Howard C.,	Coalinga	15
Shelby, Carl L.,	Cut Bank	15
Snell, Donald E.,	Orcutt	15
Strane, Alfred M.,	Texas	15
Glenn, Jess Abner,	Richfield	10
PURCHASES		
Rojas, John G.,	Santa Fe Springs	35
MANUFACTURING		
Faria, Frank A.,	Oleum	30
Hodgskins, Geo. H.,	Oleum	30
Fowler, Earl F.,	Wilmington	25
Leavenworth, Chas. R.,	Wilmington	25
Luard, Rex A.,	Wilmington	25
Scott, John,	Oleum	25
Selleck, Milton G.,	Oleum	25
Valentine, Alfred E.,	Oleum	25
Armstrong, Daryl K.,	Oleum	20
Hagan, Herbert H.,	Oleum	20
Muncy, Roy W.,	Wilmington	20
Correia, Wm. L.,	Oleum	15
Busby, Charles G.,	Wilmington	10
Bush, Lynn A.,	Oleum	10
Dolbear, William C.,	Oleum	10
Forcades, Salvador C.,	Oleum	10
Padilla, Ernest R.,	Oleum	10
Seibert, Henry,	Oleum	10
Sharp, Floyd,	Oleum	10
Weaver, John W.,	Oleum	10
PIPELINE		
Correll, Wm. P., Jr.,	San Luis Obispo	25
White, John H.,	Home Office	20
Barlogio, Charles,	San Luis Obispo	10
Wood, Billy Joe,	Santa Fe Springs	10
RESEARCH & PROCESS		
Hamilton, Fred J.,	Brea	25
Jones, Chas. F. W.,	Brea	25
Silvis, Wm. Newton,	Brea	10
AUTOMOTIVE		
Hopkins, Hobart H.,	Santa Fe Springs	25
COMPTROLLERS		
Sperbeck, Irma,	Home Office	25

Retirements

A grateful Company and hosts of well-wishing employees are bidding farewell to the following Union Oilers who have concluded long careers of Company service and are retiring:

JESSIE H. FLOWERS
Los Angeles Refinery
Employed 10/13/31—Retired 4/1/52

ERNEST V. JONES
Southern Division Field
Employed 2/7/17—Retired 4/1/52

JESSE G. MARSHALL
Los Angeles Refinery
Employed 7/22/12—Retired 4/1/52

IN MEMORIAM

With deep regret and with earnest sympathy toward their families and intimate associates, we report the death of the following employees:

On December 8, 1951
PETER FAHEY
Oleum Refinery
Retired June 1, 1939

On February 12, 1952
WILLIAM J. GILMORE
Southern Division Production
Retired October 1, 1934

On March 10, 1952
HUBERT V. COCKE
Los Angeles Refinery

LETTERS TO THE EDITOR

Dear Editor:

Whoever called the wheel on the February cover of ON TOUR a "bull wheel" evidently was not a cable-tool man. The wheel shown has a smooth surface for the brake band and a steel sprocket attached for a chain. It was called a "calf wheel" and was used to raise and lower the casing. A "bull wheel" has two wheels, one with a smooth surface for the brake band and one with a slotted or tug rim for the "bull rope." Just wanted to set you right.

T. R. Coverly
Lakewood Village, Calif.

Dear Editor:

. . . it was not a "bull wheel" but a "calf wheel."

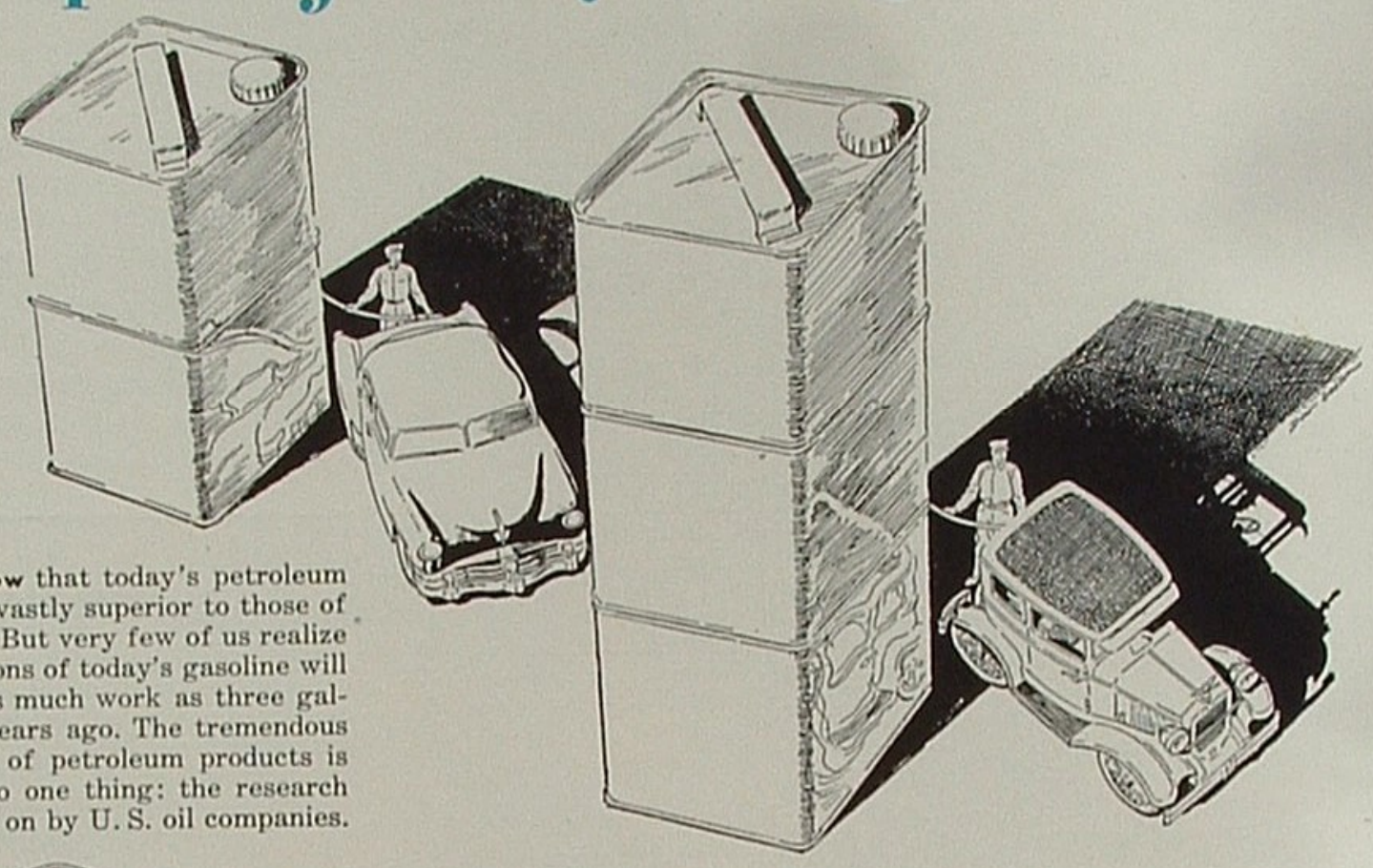
Henry C. Kinkade
Grover City, Calif.

Dear Editor:

I was always told that was a "calf wheel" and I have built quite a few. Of course it may have been a "bull-calf wheel," but I think you will find that a "bull wheel" is two wheels on one shaft.

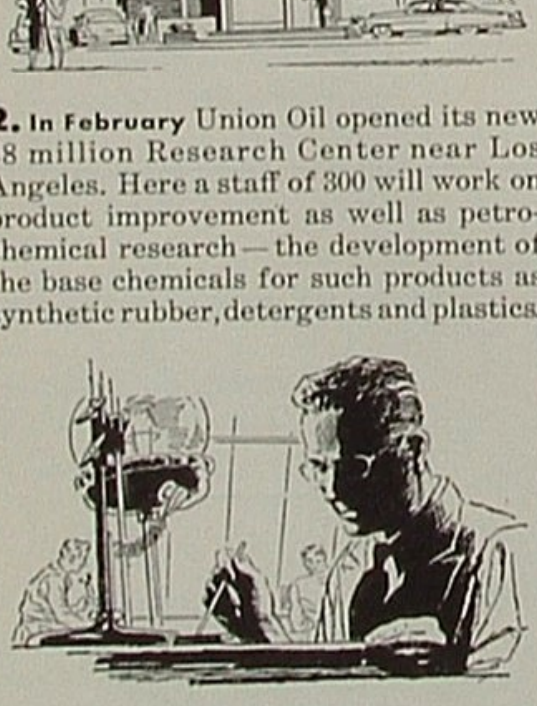
Harry Winchel
Brea, California

Why 2 gallons of the gasoline you buy today equal 3 gallons you bought in 1926



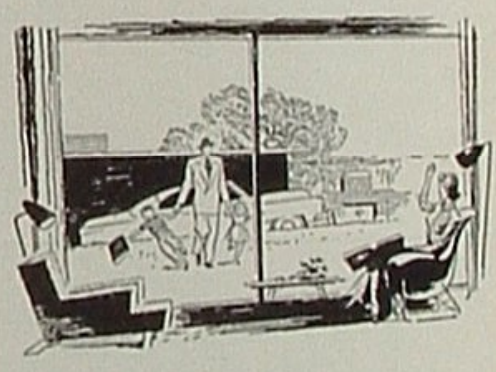
1. We all know that today's petroleum products are vastly superior to those of 26 years ago. But very few of us realize that two gallons of today's gasoline will actually do as much work as three gallons did 26 years ago. The tremendous improvement of petroleum products is largely due to one thing: the research being carried on by U. S. oil companies.

2. In February Union Oil opened its new $8 million Research Center near Los Angeles. Here a staff of 300 will work on product improvement as well as petrochemical research—the development of the base chemicals for such products as synthetic rubber, detergents and plastics.



3. Over the last 61 years the money we have spent per year on research has risen steadily from $3 thousand to over $3 million. Why? Not because we like to spend money or because someone told us we must. But *to keep ahead of our competitors*—all of whom are working on new and improved products too.

4. These 30,000 U. S. oil companies—big and little—are all competing with each other. Consequently, the *incentive* to develop new and improved products or techniques is constantly with all of us. This incentive is the driving force behind our whole free, competitive American system.



5. For it encourages the introduction of new and better products to a greater degree than could ever exist under a governmental monopoly.* As a result, the American people have the highest standard of living the human race has ever known.

**As long, that is, as the government doesn't tax industry to the point where there's no incentive left for research and development.*

UNION OIL COMPANY
OF CALIFORNIA

INCORPORATED IN CALIFORNIA, OCTOBER 17, 1890

This series, sponsored by the people of Union Oil Company, is dedicated to a discussion of how and why American business functions. We hope you'll feel free to send in any suggestions or criticisms you have to offer. Write: The President, Union Oil Company, Union Oil Building, Los Angeles 17, Calif.

Manufacturers of Royal Triton, the amazing purple motor oil