

# UNION OIL BULLETIN

APRIL 1933





RESEARCH—that unceasing seeking for scientific facts—is the foundation of present day oil refining. Here the photographer has given us a glimpse into one of the research rooms at Union Oil Company's Los Angeles refinery.



# UNION OIL BULLETIN

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APRIL

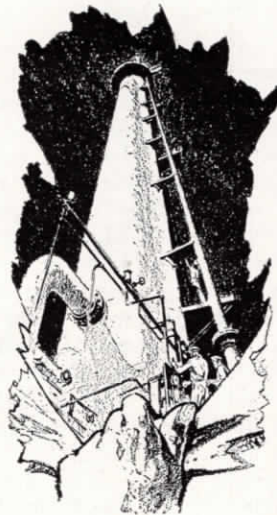
BULLETIN No. 3

## "The Secret Is Out"

UNDER the heading, "The Secret Is Out," the Union Oil Company on April 13 inaugurated a new advertising campaign to familiarize Pacific Coast motorists with the factors that are responsible for the anti-knock leadership of "76." An effort is to be made in the campaign to explain, in non-technical language, the manufacturing steps responsible for the superiority of Union's motor fuel.

There is a certain amount of confusion in the public mind as to what should be expected of a gasoline. Some companies have emphasized anti-knock exclusively, while others have attributed the sole virtue of their gasoline to cracking.

The Manufacturing Department of the Union Oil Company has long held to the



belief that a "single-virtue" gasoline was inadequate to meet modern motoring needs. For that reason it has adopted specifications calling for a thoroughly balanced motor fuel, and has not sacrificed that balance to anti-knock qualities, even while attaining anti-knock leadership for "76."

Reviewed briefly, "76" gasoline is a blend of four gasolines. The first two are obtained in the initial distillation of special crude oils that possess a high percentage of aromatic hydrocarbons. One is a light fuel and the other heavy. The former possesses the light fractions that, in addition to providing quick starting and rapid acceleration, have a high anti-knock value. The heavy fractions in the second gasoline give speed,

power and good mileage, but in their original form are deficient in anti-knock qualities. To increase the anti-knock value of this gasoline it is reformed at temperatures above 950 degrees, Fahrenheit.

The third gasoline is obtained by cracking the heavier oils separated from the gasoline and kerosene in the rectifier following the first run of crude oil through the stills. This process produces a "cracked" gasoline of an extremely high anti-knock rating.

The fourth gasoline is natural gasoline, stabilized to remove the extremely light fractions that would cause vapor locking if retained in the fuel. The stabilized natural gasoline possesses a high anti-knock rating which gains slightly in value under actual use. It is the only one of the four gasolines in which this is true.

Following special treatment to remove harmful ingredients such as gum and acid,

the four gasolines are scientifically blended to produce "76."

Tested by the "motor method" which involves the use of the Co-operative Fuel Research engine, and is the one officially recognized by the Society of Automotive Engineers and American Petroleum Institute, "76" has been found to possess the highest anti-knock rating of any non-premium gasoline on the Pacific Coast. In this connection it is interesting to point out that the Union Oil Company is one of the first in the West to adopt the "motor method" for testing octane value. It was officially put into use April 1. The test is the only one in which conditions encountered in the actual operations of an automobile are approximated. Gasoline that in other laboratory tests have a fairly high octane rating show an appreciable loss in octane value under the motor test.

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## Earthquake Effects on Oil Facilities

### *History of Temblors Proves Need of Shockproof Design*

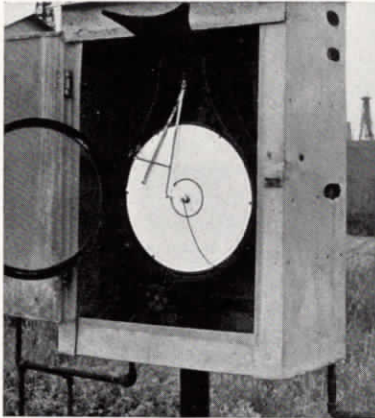
By George F. Prussing

ON JULY 14, 1769, there set out from what is now San Diego, California, an expeditionary force of Spanish explorers under the leadership of Don Gasper de Portola, together with one servant and twenty-seven leather-jacket soldiers, one lieutenant and seven volunteer soldiers of the Free Company of Catalonia, an engineer, seven muleteers and fifteen Christian Indians. Accompanying them were two fathers of the Franciscan Order, Juan Crespi and Francisco Gomez. To the diary of the former, historians are indebted for the interesting and naive narrative of the journey. And to the same record we must go for the first historical account of earthquakes in California.

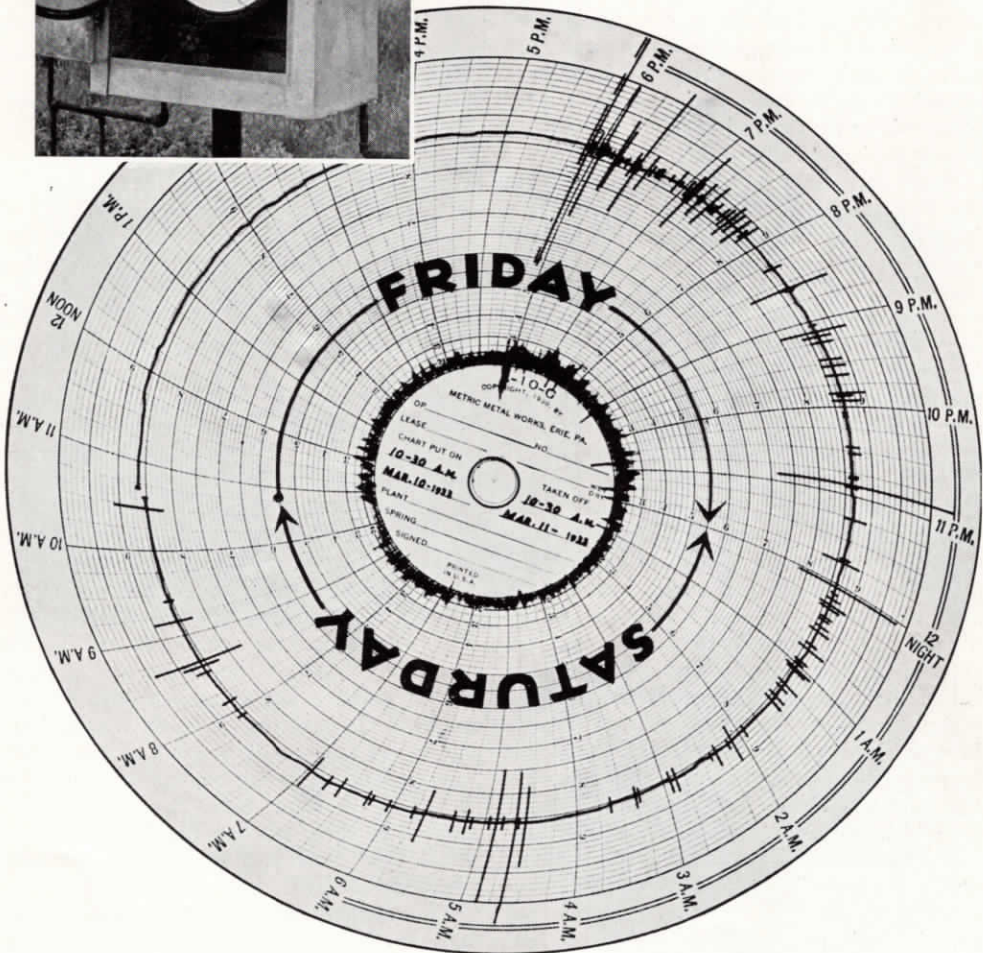
Fourteen days after leaving San Diego the party had reached the extreme south-eastern portion of what we call the Los Angeles Basin and had camped at what is

now known as the Santa Ana River near the present town of Olive, east of Anaheim. Quoting from Father Crespi's diary—"I called this place the sweet name of Jesus of the Temblors because we experienced here a horrifying earthquake, which was repeated four times during the day. The first, which was the most violent, happened at one in the afternoon, and the last one about four. One of the heathen who were in the camp, who doubtless exercised among them the office of priest, alarmed at the occurrence no less than we, began with frightful cries and great demonstrations of fear to entreat heaven, turning to all the winds."

Two days later the party had reached San Gabriel River and on that afternoon, so Father Crespi tells us, "We felt another earthquake." On the next morning at half-past eight another shock was felt. On the



The field gas meter box, shown at the left, located at Huntington Beach, became a seismograph during the recent Southern California earthquakes. The interesting recordings of the meter box during the night of March 10 and the morning of March 11 are graphically indicated on the gas pressure chart reproduced below. The box faced east, hence the movements of the pen recorded the north-south earth shocks



following day the party was close to the present site of Los Angeles and "at ten in the morning the earth trembled. The shock was repeated with violence at one in the afternoon, and one hour afterwards we experienced another."

Another day passed and the party was now on the banks of the Los Angeles River which Father Crespi named Porciuncula, because of the day, August 2nd.

"Here we felt three consecutive earthquakes in the afternoon and night."

Fording the river the party continued westward, crossed what is now the business district of the city and out into the plain stretching toward Beverly Hills and Santa Monica. Continuing with the diary—"All the land that we saw this morning seemed admirable to us. We pitched camp near the water. This afternoon we felt new earth-

quakes, the continuation of which astonishes us. We judged that in mountains that run to the west in front of us there are some volcanos, for there are many signs on the road which stretches between the Porciuncula River and the Spring of the Alders, for the explorers saw some large marshes of a certain substance like pitch; they were boiling and bubbling, and the pitch came out mixed with an abundance of water. We noticed the water runs to one side and the pitch to the other, and that there is such an abundance of it that it would serve to caulk many ships. This place where we stopped is called the Spring of the Alders of Saint Stephen."

Here then in a few quotations we have the first historical account of earthquakes in California, the first description of the region which now supports some three million people and, most interesting to oil men, the discovery of the Brea Pits in the Wilshire district of metropolitan Los Angeles, in which 142 years later were discovered the fossils of saber-toothed tigers and other now extinct animals of prehistoric times.

The study of earthquakes is a science all its own. Enough for us to know that in California we live in a region of earth movements and growth which almost constantly cause tremors which can be detected only on delicate seismographic instruments and which ever so often cause earthquakes of sufficient magnitude to shatter masonry and similar structures. The average number of the seismograph records runs around 800 a year; the number of real earthquakes in which there is property damage can not be reduced to an average figure, but in the last 27 years there have been at least four in which the loss has been considerable. San Francisco in 1906, Inglewood in 1920, Santa Barbara in 1925 and now Los Angeles Basin in 1933 are the ones referred to. This is not the place to discuss the damage done to ordinary dwelling and business structures in the earthquake of March 10, but it would be well to point out that even in the cities in which the damage was greatest, there were more structures in which there was little or no damage than those in which the damage was great. All pictures and popular articles dealing with earthquakes must because of their news interest confine themselves largely to structures which collapsed or suffered severe damage. To the engineer

interested in earthquake-proof construction, these structural casualties are very important, but even more so are the buildings which came through the quake unscathed. There was little learned from the last quake regarding building construction that was not already known. Yet in spite of all that has been learned heretofore, little attention had been paid by builders and owners (particularly the latter) of small houses and stores to the design of these from the standpoint of earthquake resistance.

To the oil operator and to the public, the behavior of typical oil facilities in an earthquake is of relatively recent concern. Hence, more has been learned from this last quake than from all that preceded it of the effect of earth movements on tanks, pipelines and the thousand and one other units that make up the property investment of our industry. It speaks well for the designers of oil equipment that in the region which we call the Los Angeles Basin where there are literally thousands of large tanks holding millions of barrels of every sort of oil from crude to its most highly refined product, scores of large and small refineries, casinghead plants, marine terminals and marketing stations, and oil fields having a potential production of several thousand barrels of crude per day, the total property damage was probably less than \$1,000,000. But one oil company employee lost his life on duty. No less significant and perhaps of far greater importance to the general public is the fact that in spite of such damage as did occur only one fire of any consequence resulted in the oil facilities and that the total damage done by this fire was limited to three wooden derricks and three small field tanks on an independent lease near Signal Hill.

Immediately after the first shock all oil pipelines and refineries and many of the producing wells were shut down voluntarily by the operators to afford time for a complete survey of possible damage and consequent public danger. Since then the damage done by the earthquake to oil properties has been analyzed and found to consist principally of a few broken pipelines where these crossed "fault lines;" broken or cracked tank connections where these were especially rigid in design and were made up of standard cast iron fittings; some bent roof rafters on large steel tanks;



The effect of the earthquake on storage tanks is shown in this group of photographs. The tank at the left settled several inches, causing the stairs to bow out. Full tanks of crude oil, equipped with floating roofs, slopped over during the various shocks indicating the direction of the earth vibrations. The nature of the overflow is shown in the center picture. In some tanks the edge of the floating roof caught on the top of tank shell when the contents slopped over, as is shown in the circle. The tank in the background split a shell plate during the earthquake, causing its contents to seep out into the enclosing basin formed by the surrounding dikes.



leaks in the seams of some tanks. There were two instances where tank shells developed cracks and one instance of complete failure of a large tank. There were no fires, other than that mentioned, although first reports gave the impression that all of Signal Hill was in flames and that some refineries were burning. There was little sub-surface damage to drilling and producing wells.

To the Californian earthquakes are a matter of historical experience and practical concern. He has learned how to build to protect against excessive damage. Where he fails to use this knowledge he pays a high price for his negligence. In the oil industry, because of the hazardous nature of the product handled, the prudent operators consistently have used higher factors of safety and far better engineering and much more of it, than has been displayed

by many owners of private buildings. Oil companies have trained their employees in fire prevention and fire fighting, and have associated themselves for mutual education and aid along safety lines. All of this has cost money, but in times like the recent emergency the wisdom of this policy is demonstrated in savings both to the stockholder and to the public.

# Ten Minutes

# of Grace



"W. P. Grace," first of the Grace Line vessels.

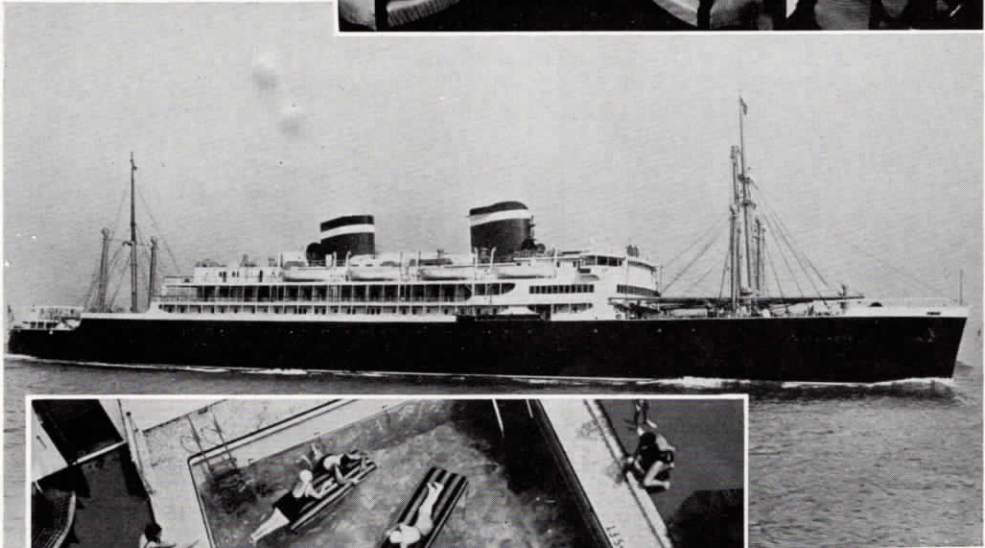
By Richard Sneddon

**I**N the early dawn of marine history, intrepid adventurers used to steer their perilous ways along rocky shores, guided by nothing more than the yelping of some distant watch-dog, or the sight of a familiar church spire, and trembled vastly, if, by ill luck, darkness should fall before their boats had been safely beached beyond the reach of the lapping waters. From these haphazard and inauspicious meanderings, however, came the inspiration that ultimately developed the precise science of navigation, as we know it today, and from the skeletons of these first futile craft have sprung the stately liners that now glide majestically to the farthestmost ports of the world. The intimate story of this evolutionary

process has never been told—never can be told, but if it were possible to reconstruct in detail every step that has contributed to the present excellence of ocean travel and transportation, the result would be a narrative of romance and adventure such as Jules Verne never dreamt in his wildest flights of imagination.

However, intriguing as we concede them to be, these early and somewhat obscure chapters of nautical history are not our concern at the moment. We prefer, rather, perhaps because it is so much easier, to deal with recent accomplishments, in which we find there is ample to interest and to entertain.





It is something more than a boat ride to take a trip on one of the Grace Line's ships—it's a vacation at sea. At the left is an outdoor swimming pool, and above is one of four new Grace sister ships, and photographs of some of their appointments.

It is really astonishing how little the average individual knows or is concerned, about ships. He reads, for instance, in his morning paper that the beautiful new Grace Line steamship Santa Rosa is to arrive in Los Angeles on a certain date, and the news item goes on further to describe the equipment of the vessel, which description he scans very superficially so that he might hastily get to the end and find out how many movie stars are aboard. He may, if moved by some unusual impulse, go down to the harbor to see her come in, and will subsequently return home, and enlighten the neighbors with these terse but comprehensive words, "She's a swell boat." That is the extent of his knowledge, yet the tale leading up to the building of the Santa Rosa, and her three sister ships, the Santa Paula, Santa Lucia, and Santa Elena, is something to excite a new feeling of confidence in the future of America, and a profound regard for the firm that gives such concrete evidence of its faith—a \$20,000,000 investment—in these times. There are no finer examples of up-to-the-minute ship building than we see in these four vessels, recently completed for Grace Line's Panama Mail service.

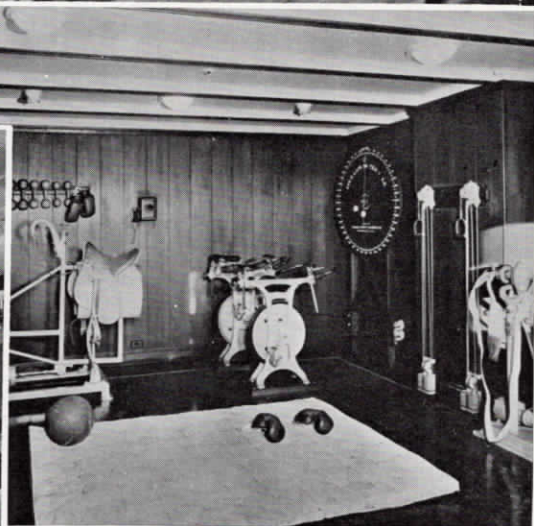
It is just sixty years ago since that grand old sailing ship, the "W. R. Grace," was completed and delegated to the California trade, and what a picture she made, but how hopelessly inadequate she would be now in competition with her younger sisters. Nevertheless, she played her part, and an important one, too, in building up trade connections, and establishing the confidence on which the splendid business of the Grace Line is founded.

Progress, however, demanded that the older type vessels be discarded, and replaced, and this process has been continued until now in the Panama Mail Service alone Grace Line operates eight fully modern liners, four of them with a displacement of 17,000 tons, each; and nine more are operating on regular schedules in the South America service, three sailing from New York, and six from the Pacific Coast. Two more are engaged in special local service to Panama. The itinerary of the Panama Mail service includes Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Havana, and New York, while the South America service includes Colombia, Ecuador, Peru and Chile.

Now the gentleman who voted the Santa Rosa "a swell boat," might shrug his shoulders and remark, "Well, that doesn't mean anything to me. There isn't much chance of my taking one of these trips, at least until the depression is over," but it means plenty to the gentleman just the same, as he would quickly concede if there was no coffee for breakfast some morning, or if the tire factories were to close for lack of rubber. Imagine, too, what a predicament he would be in if his supply of hair shampoo ran out through lack of cocoanut oil, and finally try to picture the everlasting hullabaloo he would raise if there were no Havana cigars on the market and he had to go back to smoking birch bark again. These are just a few of the commodities that are picked up by Grace Line ships and brought back here for our comfort and enjoyment.

Then there is the other side of the picture. The itinerary of the Grace Line ships would again become a matter of prime importance to the disinterested gentleman, aforesaid, if he were a producer of citrus fruits, a manufacturer of jiz-saw puzzles, chewing gum, or any other of the multitudinous array of products that are carried to foreign ports to keep our industrial wheels turning, and to assure our friend sufficient income to purchase more Havana cigars.

However, if he still remains apathetic, there are two things that are certain to exercise the desired appeal—the appointments, and the mechanism of these latest triumphs of the shipbuilding art. Man is common in his appreciation of solid comfort, and in the general appointments of the Santa Rosa, Santa Paula, Santa Lucia, and Santa Elena, he will discover such a degree of solicitation for his comfort, entertainment, and safety, as is rarely to be found in any land institution. All four of the ships are identical in size and equipment, and not a single thing has been omitted that might in any way contribute to the ease and enjoyment of the passengers. These are the first American ships to offer to their patrons all outside staterooms with private baths, and it is no longer necessary to assume the convolutions of a garden hose in order to fit into a bunk that looks and feels like a pantry shelf. The staterooms have real beds with coil spring mattresses and feather pillows, just like mother used to make.



Further illustrating some of the comforts and luxuries available to Grace Line passengers.

There is a large well equipped gymnasium for the enthusiast who can't get along without his physical jerks, and if his flair happens to be for tennis, there is an excellent deck court available for his exercise. In either case, to cool off after his exertions he may plunge into the largest and most enticing open air swimming pool that was ever built on an American vessel, and may follow this by taking a sunbath on deck. The roof of the dining room on the promenade deck is constructed in such a manner that it may be rolled back to reveal the tropic skies, and when the passenger has taken on his ration of unexcelled nourishment in this enthralling atmosphere, he may then retire to peruse languidly the latest volumes of a well stocked library, or to witness the showing of a lately released sound picture in the projection room. If his aspirations are towards more energetic entertainment there is a fine ballroom at his disposal, and an accomplished orchestra to set his feet a-drumming. In addition to these attractions there is available for the further convenience of the passengers a beauty salon, barber shop, novelty shop, laundry, and photographic dark room. So it goes, from morning till night, there is never a dull moment on board these magnificent ships. The tastes of individuals may be as varied as the colors of a macaw, but he would be an unusual person indeed who would fail to find constant occupation and entertainment aboard the new Grace liners.

As to the mechanical equipment of these floating palaces, here again we find the latest and most modern appliances for promoting absolute safety and smoothness of operation. The navigating instruments include a gyro-compass, by means of which the vessel is kept automatically on a true course; a rudder angle indicator which keeps the navigator constantly informed regarding the exact position of the rudder; and a depth finding fathometer that immediately indicates the number of fathoms of water beneath the keel. Through an elaborate telephone and signal system, the captain on the bridge may get in touch with every room, compartment, and crew quarter on the vessel, in a very short space of time. The cook's galley is located on the boat deck, and cooking fumes are completely dissipated by a unique ventilating system, so that the character of the next meal

### Heads A. P. I. Committee



A. C. Rubel, manager field operations, who has been appointed national chairman of committee on drilling practice, American Petroleum Institute. F. W. Lake, general superintendent at Santa Fe Springs, is a member of the California district committee on drilling practice.

is not advertised, as it used to be in the old days, and to the joy of eating good food is thus added that element of surprise which always enhances the fare.

There is a system of forced ventilation in all of the staterooms, which enables the introduction of hot air in cool weather and cool air in hot weather. These and countless other modern appliances and systems, many of them developed by Grace Line's engineers, and exclusively used on the company's ships, are in effect a complete demonstration of the advance of marine navigation and transportation up to the present minute. And the immense amount of energy that keeps the glistening wheels of these giants turning with never a falter, through calm and storm, to the uttermost reaches of their travel, is derived from that messy looking, but powerful and dependable substance—fuel oil—which flows from the stills of Union Oil Company of California.

## President Heads Service Pin Award List for March

**L.** P. ST. CLAIR, president of the Union Oil Company since July, 1930, last month completed twenty-five years' association with the company.

Since 1904, when, as a small producer in San Joaquin Valley, he took the lead in organizing the Independent Oil Producers' Agency to stabilize crude oil prices in that area, he has held a prominent place in the industry in California, and has been identified with the various movements to conserve the state's oil resources and prevent overproduction. At a meeting at Bakersfield on the 13th of this month, at which 80 producers were represented, he was elected to serve his twenty-sixth consecutive term as president of the I.O.P.A.

Mr. St. Clair was also one of the early advocates of the organization of the American Petroleum Institute and served as a director and vice-president-at-large, retiring at the close of 1931.

He was elected a member of the board of directors of the Union Oil Company in 1919, and three years later was elected a vice-president. He was elevated to the presidency in 1930,

following the death of W. L. Stewart. During the month of March, Jacob R. Krebs joined Mr. St. Clair as a twenty-five year employee, and G. H. Anderson,

Mogens Andreason, Albert Barton, and Wreford Clark each completed twenty years of service.

Affectionately known in the San Francisco district, where he is now employed, as "Sidetrack," Krebs holds the distinction of having driven the first load of gasoline out of the San Jose plant—and, it was horse-drawn. To him also goes the record of having driven the first tank truck from the San Jose

plant. Krebs cast his lot with the Union Oil Company in 1907, and has spent his period of employment with the company in the Sales Department.

When he was 16 years old, George Anderson started his service with the company as junior clerk in the Comptroller's Department, holding many positions until he was elevated to his present post—Northern Division auditor. Anderson is one of the youngest 20-year men in the company.

*(Continued on Page 19)*



L. P. ST. CLAIR



Jacob R. Krebs



Wreford Clark



Geo. H. Anderson



Mogens Andreassen



Al Barton

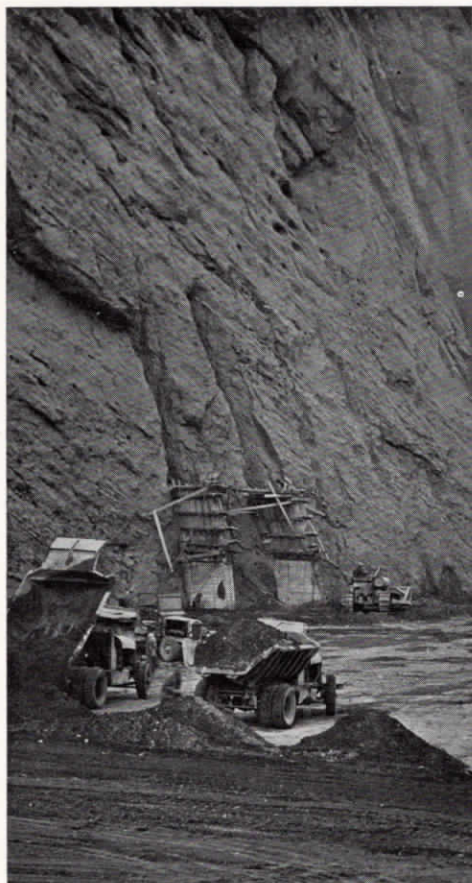


### Nearing Main Objective at Hoover Dam

**D**URING the first week of next June, eighteen months ahead of schedule, workmen are expected to start pouring concrete for Hoover Dam. Since April 20, 1931, when the contract was signed for this greatest of man's engineering projects, an army of workers has concentrated its efforts toward the attainment of this chief objective—the building of the 730-foot concrete barrier. Each move has been a revelation in efficiency. Obstacle after obstacle has been overcome. Roadways for automobiles and roadbeds for work trains have been carved from the sheer rock canyon walls, and those same walls

pierced for a distance of three-quarters of a mile with four 50-foot diversion tunnels. The canyon has been spanned and respanned with bridges and aerial tramways, and finally, the river turned aside into man-made channels so excavation for the foundation of the dam proper could be undertaken.

The diversion of the river started last fall, and since then building of the 50-foot cofferdam above the main dam site and the rockfilled barrier and cofferdam, below, have proceeded rapidly. These dams serve the double purpose of diverting the water from the site of the big dam and preventing erosion. The up-stream coffer-

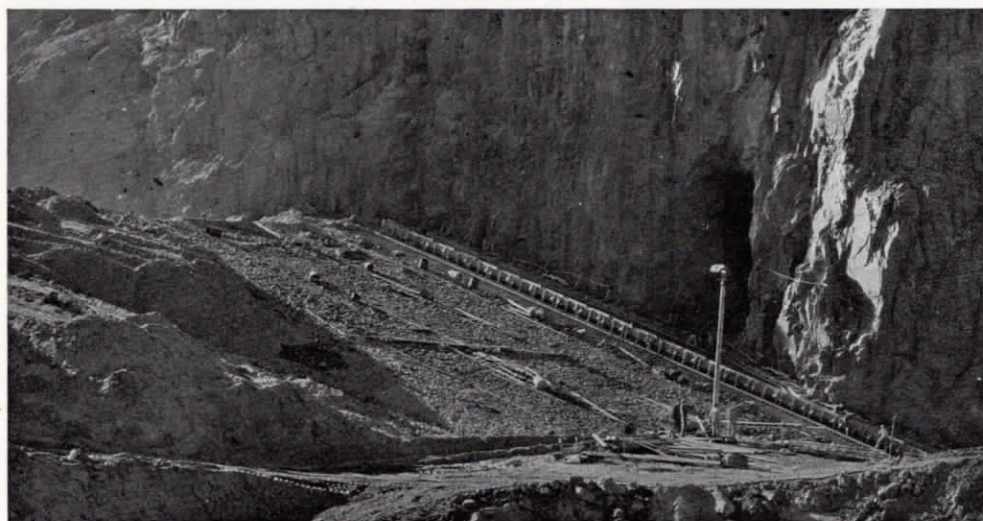


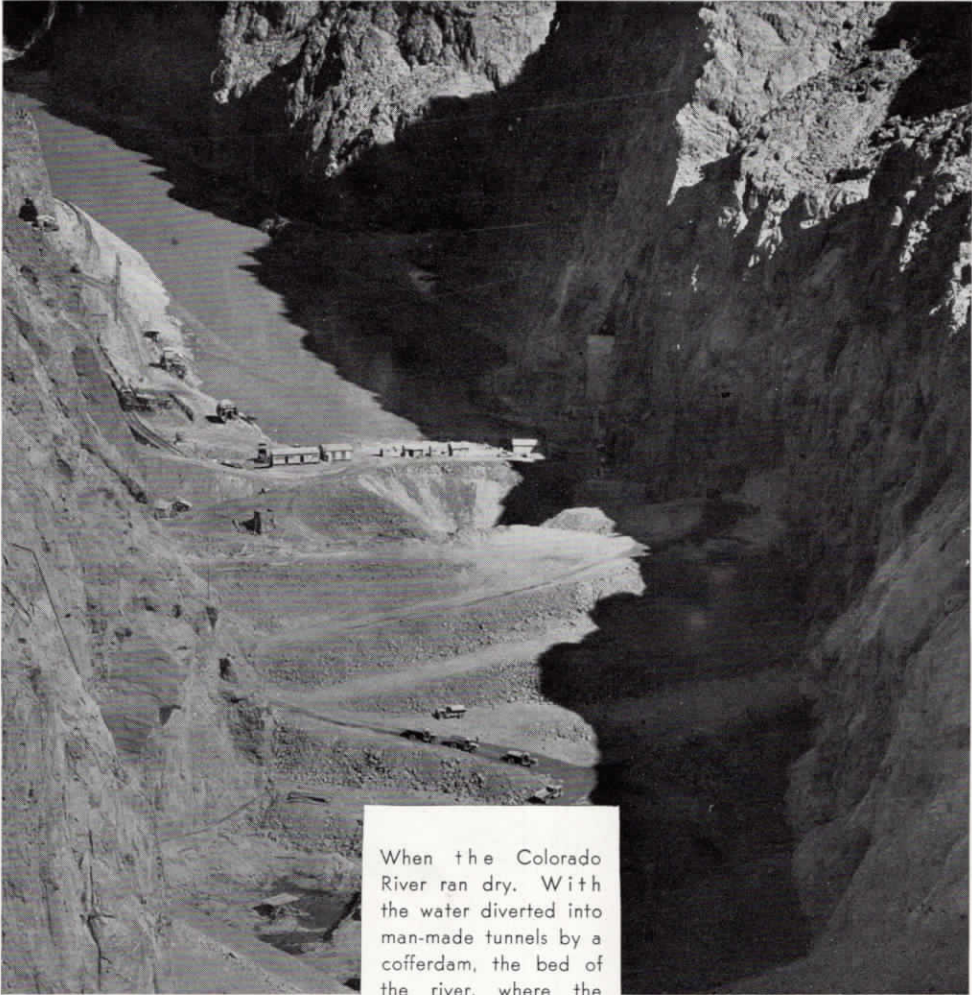
dam has been completed, including the concrete surfacing, and the lower cofferdam is nearing completion.

In the construction of Hoover dam the engineers have estimated that 3,400,000 cubic yards of concrete will be used, and an additional million cubic yards will be required to build the power plant and appurtenant works. This is sufficient to erect a solid concrete building, a city block square, a quarter of a mile high. When completed the dam will be more than 300 feet higher than the present tallest dam in the world. The width at the base will be 650 feet and the length along the crest approximately 1200 feet.

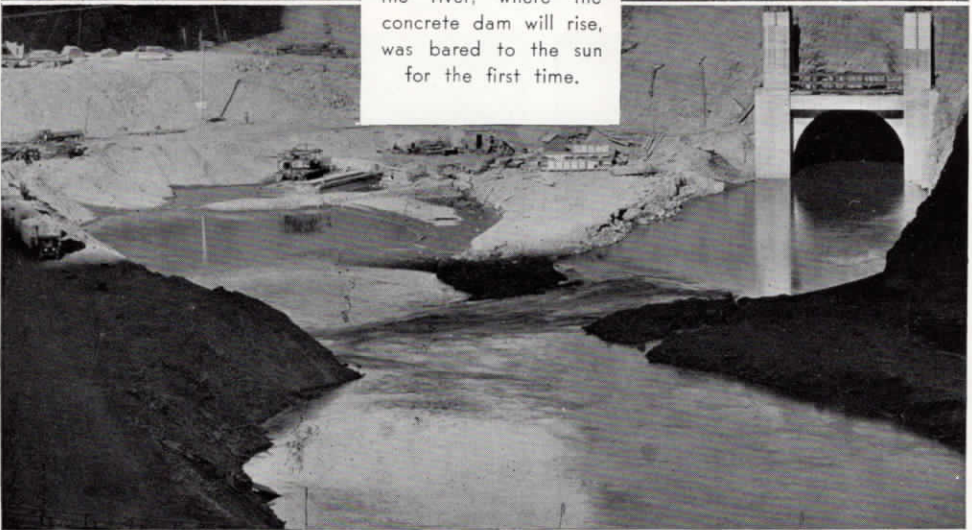


Construction of cofferdams is shown in progress in the accompanying photographs. Preparations to concrete the surface of the up-stream cofferdam are shown below.

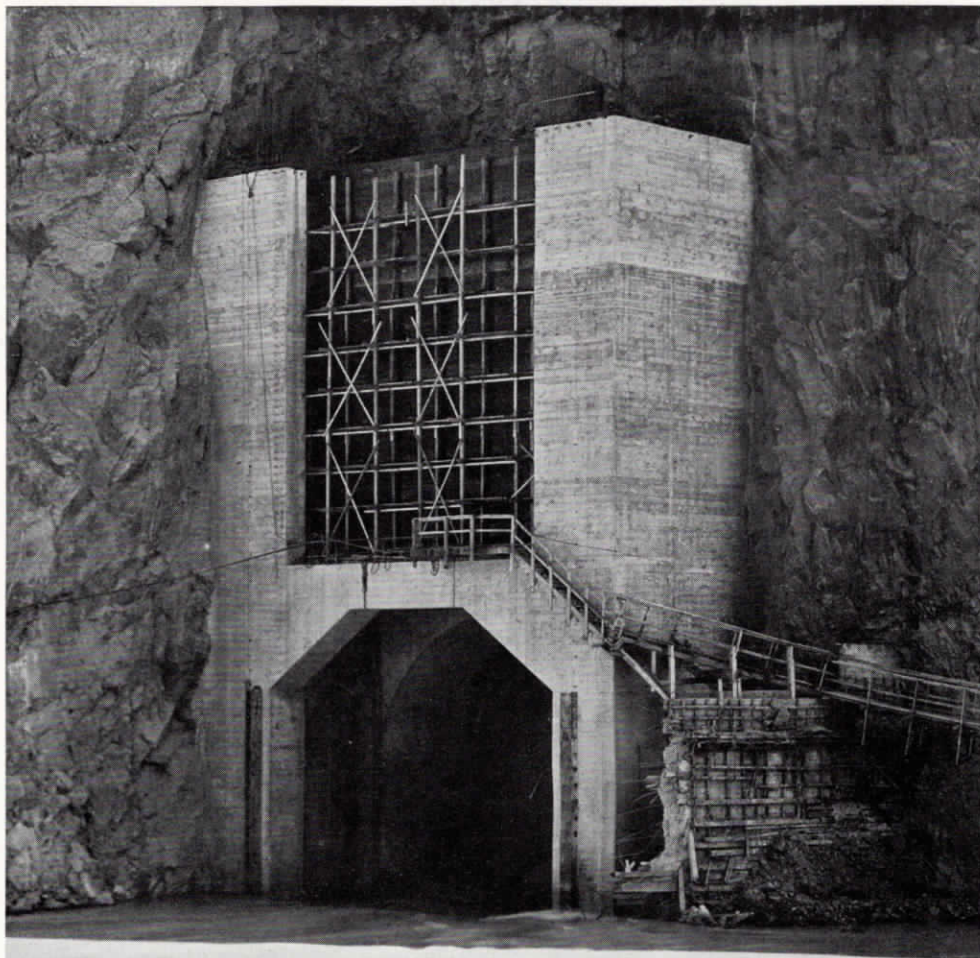




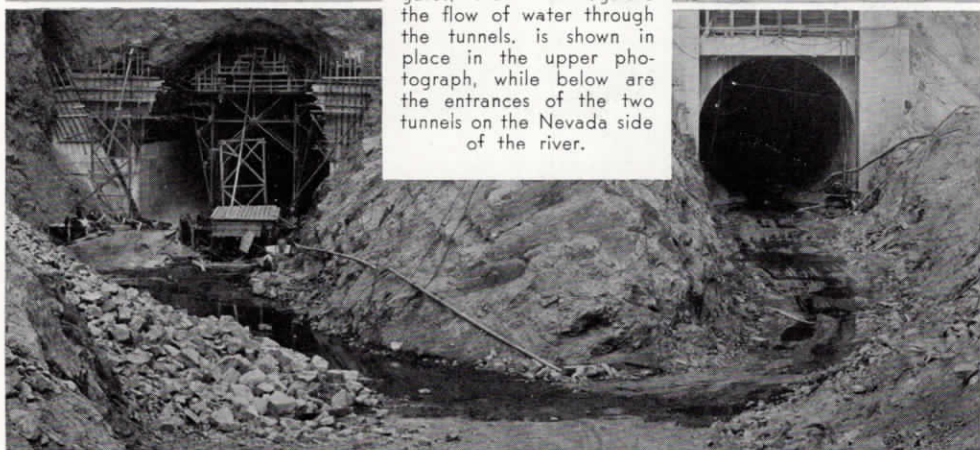
When the Colorado River ran dry. With the water diverted into man-made tunnels by a cofferdam, the bed of the river, where the concrete dam will rise, was bared to the sun for the first time.

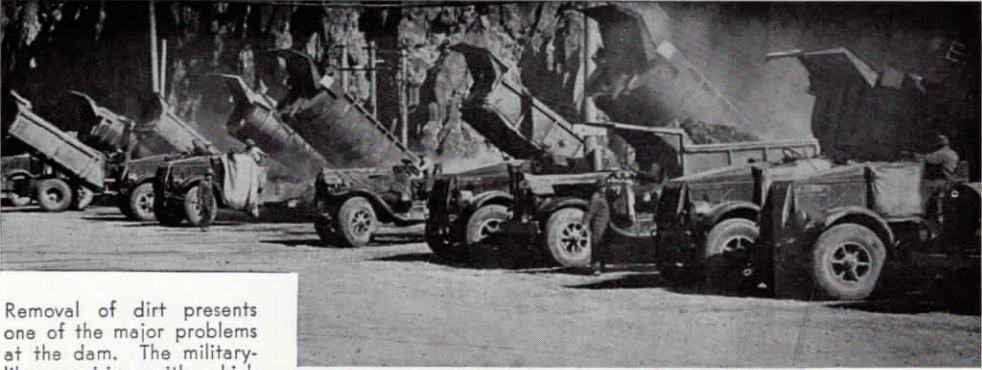




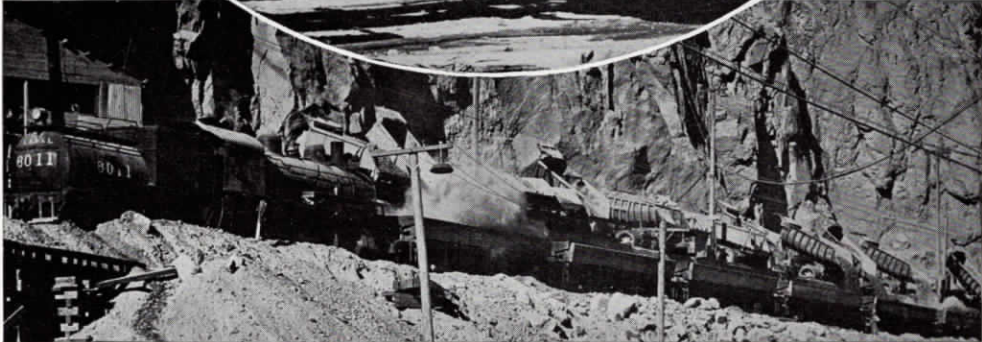
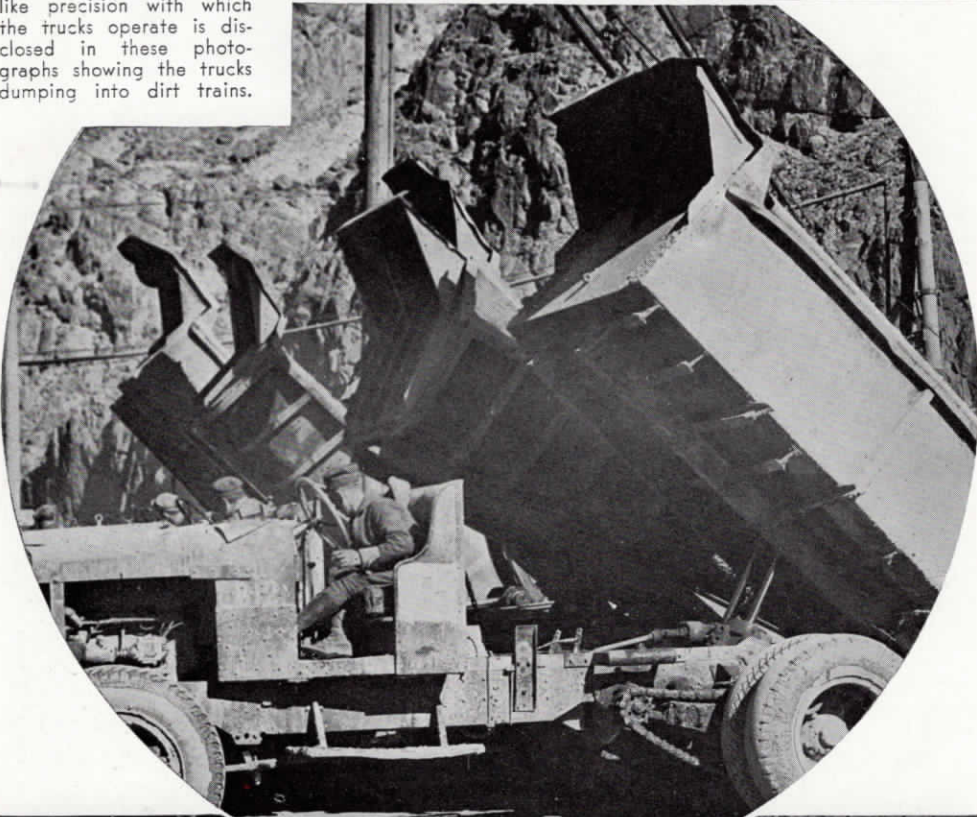


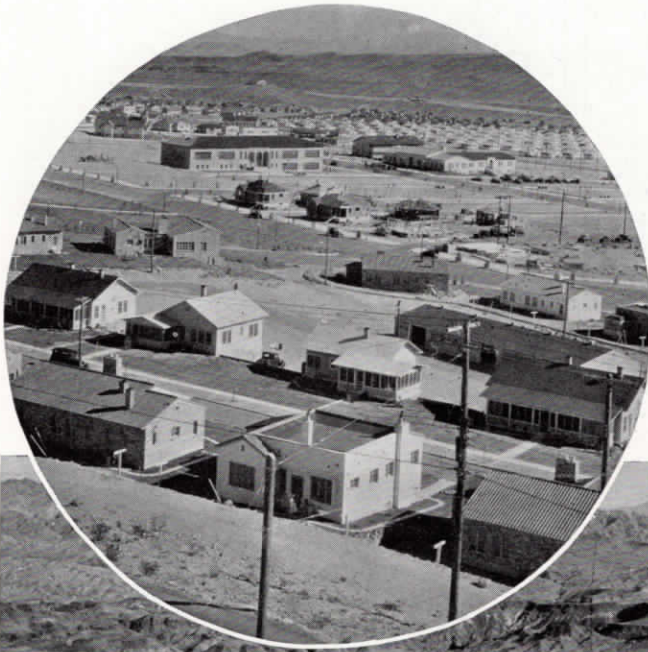
One of the four two-million-pound steel intake gates, that will regulate the flow of water through the tunnels, is shown in place in the upper photograph, while below are the entrances of the two tunnels on the Nevada side of the river.



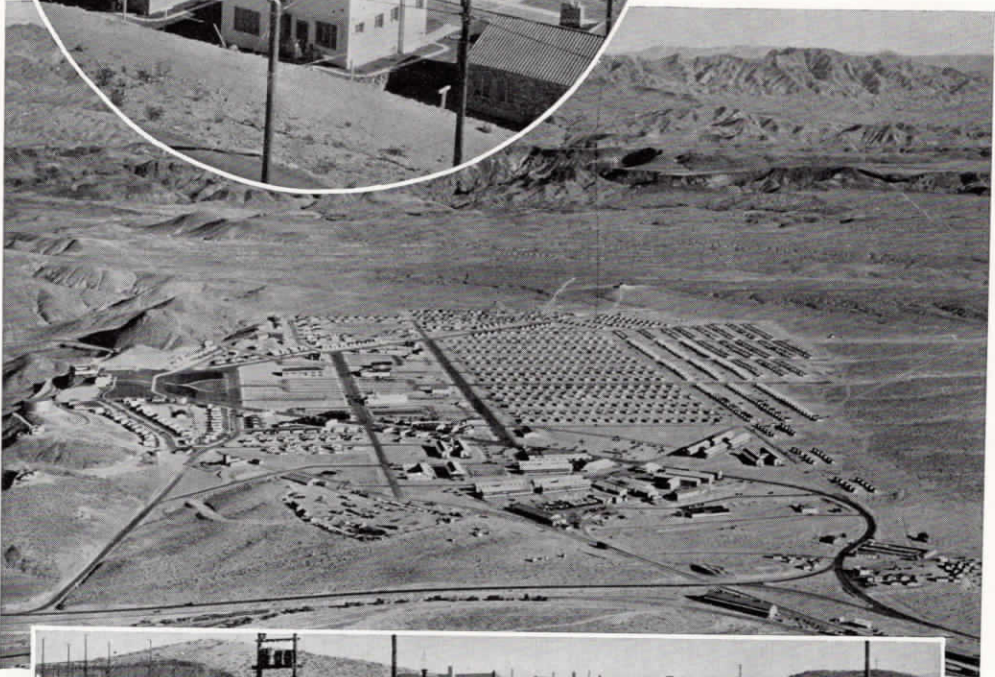


Removal of dirt presents one of the major problems at the dam. The military-like precision with which the trucks operate is disclosed in these photographs showing the trucks dumping into dirt trains.





Boulder City, the federally controlled home of the men working on Hoover Dam, is revealed as a model city in the accompanying photographs. In the circle are some of the homes, and in the middle distance are the school, city hall and hospital. The center photo is an air view of the city, while below are some of the new homes under construction.



## Throwing Light on Higher Learning

A 70-FOOT observation tower, topped by a 10-foot Neon "76" sign, visible for a radius of a mile or more, identifies the latest of the Union Service Stations, Inc., stations, completed at the close of March at Westwood, home of the University of California, Los Angeles. It is located at the corner of Westwood boulevard and Lindbrook drive, a half block north of Wilshire boulevard, the chief arterial from Los Angeles to Santa Monica and adjoining beach cities.

The station is architecturally Mediterranean, its appearance enhanced by a white stucco exterior and red-tiled roofs. Long canopies emanate in three directions from the base of the tower, covering two double drive-ins and the lubrication and accessory department. Floodlighting has been advantageously used to attract attention to the building at night. Supplementary air and water stands are spotted at strategic points in the yard, the surface of which is paved throughout with asphaltic concrete.

Chief among the features combined in the new unit are new type computing and recording pumps, lubricating

oil combination display and utility racks—installed at the pump islands, two hoists for lubrication work, glass enclosed specialty product display cases—built into the canopy supports (which innovation was first used by Union in its Hollywood station opened several months ago), built-in spark plug tester, "Rock-a-Car Jack" to assist in lubrication work, and a highly efficient arrangement in the station proper for displaying accessories, making change, recording credit sales, and maintaining records, etc. Disappearing water and air connections are located at both ends of the pump islands.

Something of a college atmosphere is maintained at the station that is quite in keeping with the surroundings. All of the operators are young and aggressive, and each has a college background. U.C.L.A., U.S.C., and Stanford are among the universities represented by the personnel.

New Westwood station, completed the latter part of March by Union Service Stations, Inc., as it looks at night.





Collegiate attendants who man new Westwood station. Left to right, R. E. "Bob" Spare, manager; John Morgan, assistant manager; C. V. McCarty, H. F. Gloysten, A. F. Van Order, J. C. Langley and Bill Merrill. Other attendants are Don Piper and Shelby Johns, neither of whom was present when the picture was taken.

### SERVICE PIN AWARDS

(Continued from Page 12)

Capt. Mogens Andreasen, now in command of the twin-screw Union Oil tanker Oleum, joined the company's fleet March 4, 1913, as third mate of the S.S. Whittier. He was raised through the ranks and appointed master of the Whittier in August, 1916. He has served as master aboard a number of ships in the company's deep-sea fleet.

While Albert Barton's period of continuous service with the company dates from March 13, 1913, his first work for the company was performed at the Oleum refinery in 1904, when he and seventeen other men comprised the complete manpower at the plant. His period of service was broken in 1912, but he returned in March, 1913, as asphalt handler, later working in the barrel cooperage shop and as pumper in the pump house. In 1926 he was appointed refinery foreman, the post which he now holds. His safety record since becoming foreman is an enviable one only one man having suffered an accident in that period.

Wreford Clark began his service with the company as an order clerk in the Seattle office. He has successfully filled virtually every position in the district office. In 1920 he was promoted to head bookkeeper, which position he has since occupied.

#### FIFTEEN YEARS

DeJarnette, R. H.....Mailing, Head Office  
Brown, Alvord E.....Transp., No. Div. P. P. L.

Foster, Robert W.....Sales, San Francisco  
McCloy, Melvin.....Mfg., Maltha Refinery  
McReynolds, J. W.....Mfg., Oleum Refinery  
Munger, Porter.....Gas, Northern Division  
Page, Emilius C.....Transp., Head Office  
Rinehardt, E. A.....Sales, Los Angeles  
Stull, Louis R.....Field, Santa Fe Springs  
Wilson, Claude.....Field, Santa Fe Springs

#### TEN YEARS

Arbogast, Mary M.....Compt., Head Office  
Bifford, Wm. J.....Mfg., Oleum Refinery  
Buchanan, Gordon.....Mfg., Los Angeles Ref.  
Cruver, Wm. F.....Field, Santa Fe Springs  
de Yeaza, Raul Jose Briceno.....Sales, Panama  
Domingues, C. A.....U.S.S. Inc., Los Angeles  
Fruechtemeyer, H. H.....Field, Santa Fe Springs  
Garrison, Chas.....Field, Santa Fe Springs  
Orval Gould.....Transp., No. Div. P.P.L.  
Hall, Wm. J.....Sales, San Diego  
Heathman, W. W.....Geol., Head Office  
Hoehman, Ed.....Transp., So. Div. L. A. P. L.  
Livingston, Chas. O.....Sales, No. Div. Garage  
Lorentz, Fred R.....Transp., No. Div. P. P. L.  
Mimosa, Antonio.....Mfg., Oleum Refinery  
Morin, Glen I.....Pur., Oleum  
Morton, Edward L.....Sales, Fresno  
Myer, Chas. S.....Sales, Portland  
Nissen, Otto C.....Sales, San Diego  
Parks, Chester L.....Pur., Santa Fe Springs  
Regallie, Peter.....Mfg., Oleum Refinery  
Rodrigues, Louis.....Mfg., Oleum Refinery  
Semonek, Emorek.....Mfg., Oleum Refinery  
Smillie, Wm. J.....Sales, Vancouver  
Springman, D. L.....Transp., Head Office  
Swan, Edward N.....Transp., So. Div. L. A. P. L.  
Toscano, Tony D.....Sales, Fresno  
Tye, George D.....Transp., So. Div. L. A. P. L.  
Wickham, Tom.....Transp., So. iv. L. A. P. L.  
Wilson, Ira D.....Transp., No. Div. P. P. L.

## Employees' Benefit Plan Report

THE present administrators of the Employees' Benefit Plan, whose names and positions are shown below, desire to publish the statement of the benefit fund from January 1st, 1932, to February 28th, 1933.

Balance in fund, Dec. 31, 1931...	\$ 26,609.48
Employees' contributions from Jan. 1, 1932, to Feb. 28, 1933.....	158,883.00
	\$185,492.48
Payments for medical attention (Less amount recovered from third parties) .....	142,711.28
	42,781.20
Interest income .....	1,838.56
	\$ 44,619.76

A. C. RUBEL, manager of field operations, chairman.

A. C. STEWART, manager of specialty sales, vice-chairman.

L. G. METCALF, manager of refineries.

GEO. F. PRUSSING, safety engineer.

GERALD G. BLUE, manager insurance and personnel.

J. P. Rockfellow is secretary of the Plan, and Hubert C. Ferry acts as legal advisor to the administrators.

It will be noted a substantial gain has been made in the balance during the past year, thereby increasing the reserve which is necessary to take care of any extra expense in case of a serious epidemic.

From January 1, 1932, to February 28, 1933, 7,394 authorizations for medical attention were issued to employee members. The average number of cases handled per month was 528.

The board of administrators, representing the employees of the company, welcome any suggestions concerning the administration of the Plan or will hear any complaint where the employee feels that his case has not been properly handled.

Each employee member should see that he receives a copy of the booklet describing the benefits to which he is entitled under the Plan, in order that he or she may be fully advised as to the Plan's policy in taking care of sick or injured employees.

## 17 Years of Co-operative Marketing

ORGANIZED in 1916 to meet an urgent need for a definite means of protecting its members against market fluctuations and price situations and to establish a medium for centralized and controlled distribution, the Skagit County Dairymen's Association of Washington in the past seventeen years has expanded into one of the largest industries of its kind on the West Coast, with annual shipments of milk and by-products amounting to 72,000,000 pounds valued in excess of \$2,000,000.

Prior to the inception of the Skagit County Dairymen's Association, dairymen in the area were dependent on privately owned creameries, condensaries, and other milk product plants for the sale of their commodities, and as a result were at the mercy of marketing situations which they found impossible to control or gauge. Decision to organize and market their own products was made early in 1916, and in December of that year, with 125 members, the association was launched as a co-operative marketing corporation.

In the past four years more than 300,000,000 pounds of milk have been handled by the association, all of which were shipped it by members. The present annual shipments, which aggregate 72,000,000 pounds, represents approximately 86 per cent of the total milk produced in Skagit county. The raw product is converted into 1,600,000 pounds of butter, 162,000 pounds of cheese, 2,400,000 pounds of powdered milk, and 265,000 cases of evaporated milk. These figures are based on annual output of the association.

Marketed under the trade name of "Darigold" products, commodities of the Skagit County Dairymen's Association have won national recognition for quality, Darigold butter having a score of 93. Darigold cheese and ice cream enjoy equal fame. Darigold and Federal evaporated milk are shipped by the association to all parts of the world.

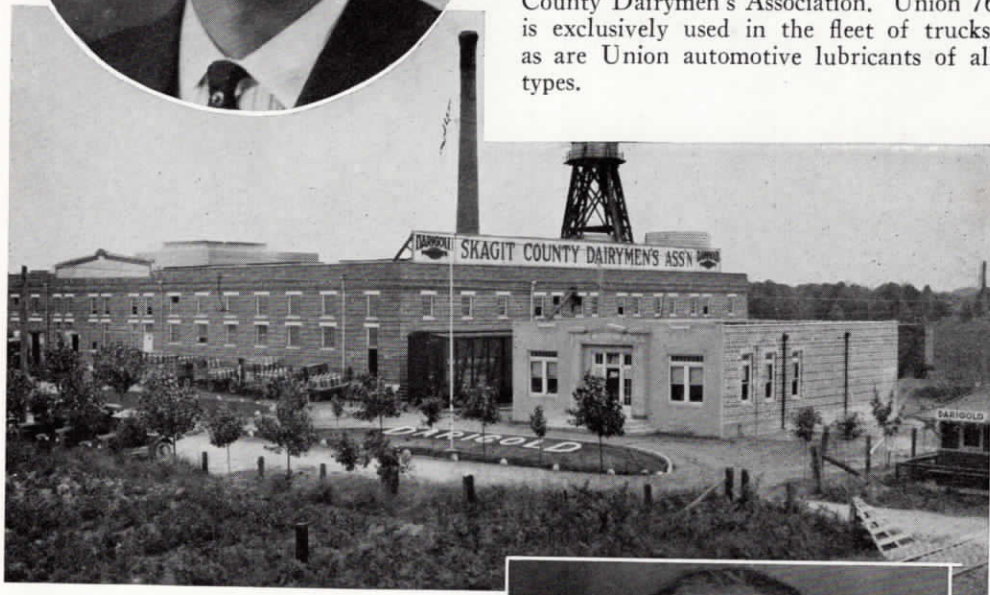
The two modern plants operated at Burlington and Mount Vernon represent an investment of \$500,000. Butter churns,

evaporated milk fillers, milk powder plant, ice cream plant, and other units are included in the equipment. A fleet of 31 trucks is maintained for delivering the commodities to wholesale and retail trade.

county's most successful dairy farmers, he is, in addition to his office in the association, a member of the board of directors of the Consolidated Dairy Products' Company, a state-wide organization operated by the larger dairy associations for the purpose of handling sale and shipment of dairy products. He is regarded as an authority on the problems which confront the dairy farmer and has concertedly devoted his energies to their solution.

As manager of the association for the past year, P. A. Cornelius has established an impressive record. The board of directors of the association includes W. J. Knutzen, Silas Butler, George Green, John Wiley, and Emil Wersen.

Union Oil Company products play an integral part in the operation of the Skagit County Dairymen's Association. Union 76 is exclusively used in the fleet of trucks, as are Union automotive lubricants of all types.

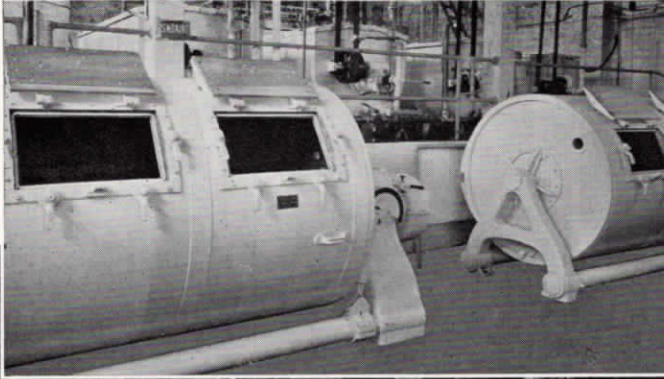


The Burlington, Wash., plant of the Skagit County Dairymen's Association is shown above, and in the circle is W. J. Knutzen, president of the association, and at the right is P. A. Cornelius, manager.

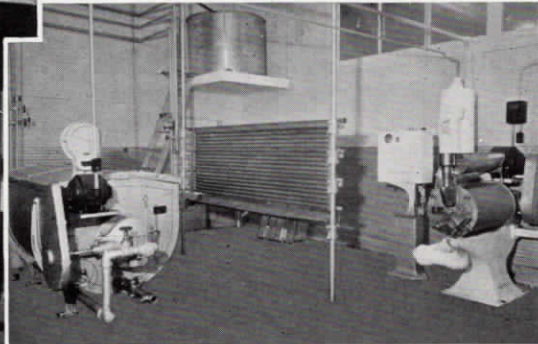
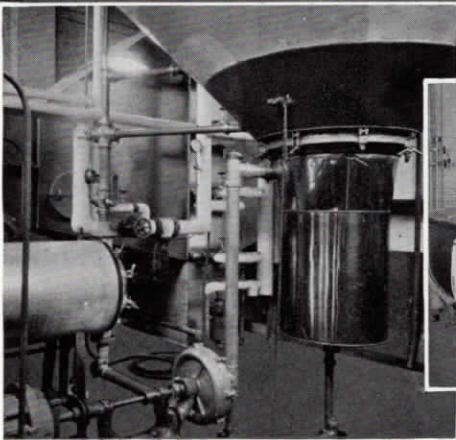
Despite the current slackness in business, the Skagit County Dairymen's Association has maintained its sound financial position and has recorded only a proportionately small decline in sales.

W. J. Knutzen, president of the Skagit County Dairymen's Association, has played a prominent part in the activities of the body since its inception. One of Skagit





Where "Darigold" products are handled. At the left is one of newest type butter churns. Each of the evaporated milk machines in center photograph fills 100 to 130 cans per minute.





### Runs Without Cash



Bank holidays and the curtailed circulation of cash proved no serious hindrance to business transactions of the A. R. (Pioneer Trading Post) service station in Sacramento, where gas is swapped for geese; grease for grunts; kerosene for kraut, or any other petroleum product or automobile accessory for any commodity or service of value.

Typical trades are: One hundred pounds of dried apricots for one Ford tire; two quarts of milk for one gallon of gasoline; one set of golf clubs for 150 gallons of gasoline; one pint of hair tonic for two gallons of gasoline.

### Creates Town Slogan

When Frank Heuschkel, agent at Lodi, adopted the slogan—"Watch Lodi!"—as a challenge to other agencies in the Sacramento district, he created a town slogan that has been picked up enthusiastically by the business and civic leaders of the city.



The Lodi News giving a banner line story to the slogan relates how it originated and the enthusiasm that is now behind it. Heuschkel is quoted as saying—"It is impossible for us to help ourselves without helping every business man in Lodi. Although we started the slogan primarily to develop a friendly competition in our organization, it would be a fine thing if every business concern in Lodi could join in and adopt the slogan."

### Spokane Bowlers Win

Spokane came through with a new record high series of 2853 to win the seventh annual company telegraphic bowling tournament.

By bogging down in their last game, the Los Angeles Refinery came in second with 2728 total pins.

The high individual series bowling ball, presented by Gerald G. Blue, goes to Geo. R. Guter of Spokane, whose high score was 660.

The high game was won by W. T. Lee of

Phoenix with a 234, while E. Green of Santa Fe Springs was second with 232.

The final results of the play-off are as follows:

Spokane	968	934	951—2853
Los Angeles Refinery	917	962	849—2828
Oleum Refinery	942	898	839—2679
L.A. District Sales	894	859	882—2635
Santa Fe Springs	867	891	867—2625
Seattle	811	833	942—2586
Phoenix	840	807	915—2562
Union Serv. Sta., Inc., L.A.	865	842	806—2513
Dominugez	859	807	839—2505
Head Office	778	737	831—2346
San Diego	754	674	781—2209

### Best Oil Salesmen



The combined sales of lubricating oil and greases to new accounts by five men in the Northern Special Agency of the Fresno District won first place for the special agency in the district lubrication test. A. L. Clawson, agent at Firebaugh, a one-man station, individually sold 4,290 pounds of grease and 308 gallons of oil to new accounts during the month of January. The sales of the five men in the special agency for the month totaled five-one-half tons of grease and 3,687 gallons of lubricating oil, all of which represents new business.

The five cup winners in the top photograph, from left to right, are: A. L. Clawson, agent, Firebaugh; A. J. DeGregori, tank truck salesman, Newman; P. H. Goodwin, special agent, Northern Special Agency; C. G. Griesner, tank truck salesman, Oakdale, and B. C. Lewis, assistant agent, Madera. In the lower photograph O. I. Wooldridge, assistant district manager sales, right, is shown presenting cup to Mr. Goodwin.

# REFINED AND CRUDE

By RICHARD SNEDDON

A German scientist has startled the world with an announcement to the effect that worms can sing. But, shucks, we knew it all the time. There's one next door that sings in the bathtub every morning at 6:30.

*Another expert tells us that the best ten years of a woman's life lie between the ages of 28 and 30.*

And if there is any truth in the assertion that our California earthquakes are caused by faults, somebody must have pulled a tremendous boner on March 10.

However, be that as it may, to the first movie director who produces an earthquake picture, we shall be happy to donate our recently composed theme song—"Just a Jiggle O."

*The movie business could do with a shake-up anyway, if we are to believe Will Hayes.*

And we understand that the repeal of the Eighteenth Amendment is to be broadcast over the entire country by means of a national hic-up.

Which recalls the absent-minded bootlegger who walked all the way to a drug store to get some poison to kill his cat.

*This fellow, Columbus, surnamed Ohio, who was the first to discover America, curiously enough was also the first to do tricks with eggs. Now almost any grocer can fool you with them.*

Says the hopeful applicant, as he bounced into the manager's office, "Have you an opening for a real smart young fellow?" "Yes" was the cool reply, "and you might close it softly as you go out."

Then there was the lady who wrote the Department of Agriculture as follows: "Dear Sirs:—Something is wrong with my chickens. Every morning when I go out I find two or three lying cold and stiff with their legs up in the air. Can you tell me what is the matter?" A few days later she received this brief reply: "Madam. Your chickens are dead."

*When we arrived home the other evening after another day of arduous toil, we were much cheered by Junior's enthusiastic exclamation—"Good boy, dad, you got a 'C' in arithmetic today."*

All of which goes to show that we still have plenty to be thankful for. With the depression over we are really feeling like a two-year-old—financially.

If, however, you are one of these birds who think America's trouble is due to lack of law enforcement, we suggest that you try parking your car beside a fire hydrant.

*The fellow who claims eternity is too vast for any human being to understand, never bought a home with a small down-payment and the rest like rent.*

In spite of all that, everything would be fine if people would only realize that nature endowed them with nostrils so they might comfortably close their mouths part of the time.

Then there wouldn't be so many fugitives from the chin gangs.

*An unusually stout gentleman emerged from the Union Depot and enquired "What is the quickest way to the Union Oil Building?" and a fresh porter cracked "Lie down and roll over twice."*

The same gentleman later in the day was being measured for a suit of clothes. The tailor, in the act of taking his waist measurement, placed the end of the tape at his belt buckle and remarked, "Hold it there, big boy, and I'll be 'round in a minute."

An economic expert says the cost of your home should not exceed twice the amount of your assured annual income, and so we have all the papers drawn up for the purchase of a puppet.

*After all, there never was a time in our history when homes were so beautiful and people so seldom in them.*

Home being that institution to which our socially prominent people retire at intervals to eat corn on the cob.

A Chicago doctor asserts that radio music is beneficial in cases of deafness. And we had always thought it was just the other way around.

*We conclude with another bed-time story: "Once upon a time a man stooped to pick up a horse shoe for luck, and a car came along and knocked him over a fence into a field of four-leaf clovers."*

Newest addition  
to Union Oil  
Company's serv-  
ice stations, lo-  
cated at West-  
wood Village,  
West Los  
Angeles.



