

UNION
OIL
BULLETIN

NOVEMBER 1932



An Opening Night

Embodying the latest refinements in service station construction, the new Franklin and Beachwood Drive, Hollywood, station of Union Service Stations, Inc., was opened with Klieg and arc lights and music October 15. It is declared to be one of the most attractive and finest stations on the Pacific Coast.



UNION OIL BULLETIN

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VOLUME XIII

NOVEMBER

BULLETIN No. 11

Thirteenth Annual Meeting of A. P. I.

TEN representatives of the Union Oil Company will attend the thirteenth annual meeting of the American Petroleum Institute to be held at the Rice Hotel, Houston, Tex., November 15, 16 and 17. Those making the trip are President L. P. St. Clair, Executive Vice President R. D. Matthews, Vice Presidents W. W. Orcutt, P. N. Boggs and W. L. Stewart, Jr., V. H. Kelly, director of sales, F. F. Hill, director of manufacturing, Philip Subkow, patent counsel, and A. H. Hand, assistant to the comptroller.

The tentative program of the Institute, prepared by W. R. Boyd, Jr., executive vice president, and the secretaries of the Divisions of Production, Refining and Marketing, provides for no less than forty technical papers to be presented before the various groups in addition to the three general sessions. The principal speakers before

the general sessions will be Sir John Cadman, chairman of the board of the Anglo-Persian Oil Company, Ltd., who will come from London to be the guest of the Institute; Henry I. Harriman of Boston, president of the Chamber of Commerce of the United States, and Amos L. Beaty, president of the Institute.

The Institute's statistical sub-committee has been at work for several weeks, and has worked out a new plan to be recommended to the main committee under which forecasts of the industry will be made for six-month periods, instead of nine, as has been the custom for the past two years. It is contemplated also that provision shall be made for quarterly revision of the figures so that a continuous study will be made of the elements governing consumption demand for motor fuels.

The Division of Marketing will discuss

economic outlets for petroleum products, including natural gasoline and liquefied petroleum gases, furnace oil, fuel oil and petroleum coke. The Division of Production will consider such problems as well spacing, hydrodynamics of reservoir drainage to well spacing, comparative yields with varying well spacings, pressure maintenance, free gas control in maximum oil recovery, sub-surface economies in drilling

practice, recent developments in drilling technique, deep well completions, tubing and pumping units.

In addition to the meetings of forty working committees and general sessions, the Institute Board of Directors, composed of seventy-two oil men, representative of all branches of the industry and all sections of the country, will hold separate sessions.

High Standard Set by New Station

THERE is as much difference between the newly completed Union Service Stations, Inc., station at Franklin and Beachwood Drive, Hollywood, and the service stations of a few years ago, as there is between the modern tiled kitchen, with its multitude of conveniences, and the kitchen of mother's day, with its coal or wood-burning stove.

Comfort of the customers, speed and efficiency of service, equipment, display of products—nothing has been overlooked. Air and water hose on reels sunk in the pump island make it possible to fill the radiator and service the tires while a car is taking on a tank of gasoline. Oil containers (sealed glass bottles with nozzles attached) stand in neat array on shelves built into the supporting columns of the canopy alongside the gasoline pumps and within an arm's reach of the attendant. The gasoline gauges are continuous, permitting the delivery of any desired amount of fuel without a halt. There are two separate pump islands which permit the servicing of several cars at one time.

The station also is provided with complete lubrication facilities, battery and spark plug testing machines, equipment for servicing tires and a waiting room for customers who bring their cars to the station and desire to remain until the work is finished.

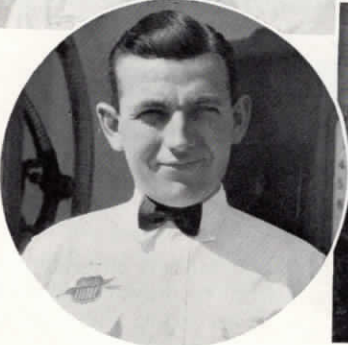
In appearance it is the most impressive station the company has yet built. Architecturally it conforms to the style (Modernized California Spanish) inaugurated a year ago, although it differs in many details from the other stations. Its construction is primarily reinforced concrete and brick. The surface is white stucco, made from white sand obtained near Corona, California. The tower, which is one of the identifying features of the new type stations, is finished with orange tile. To further increase the attractiveness of the station the entire lot is paved with asphaltic concrete.

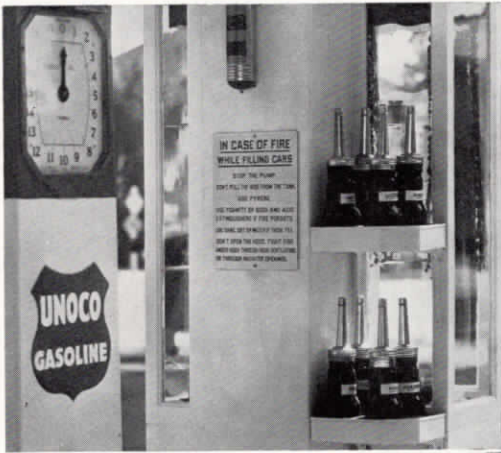
It is in one of the older sections of Hollywood, and palm and other California shade trees that have been planted generously around the neighboring homes and along the parkways form an ideal background for the white stucco structure. Particular attention has also been given to landscaping the station. The trees that occupied the lot before the structure was erected have been preserved.

From the standpoint of business the station is also ideally located. It is the only one in the neighborhood it serves and is the first one reached by the residents of the exclusive Hollywoodland district and those who reside on Beachwood Drive, north of Franklin, on their way to down-town Hollywood or down-town Los Angeles.

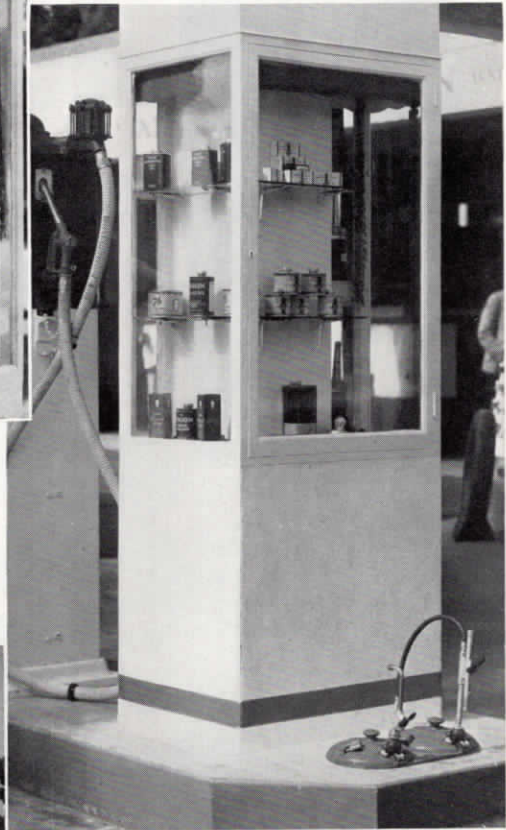
One of the features of the station that

The new Franklin and Beachwood Drive, Hollywood, service station is one of the most attractively landscaped stations on the Pacific Coast. The photograph at the left shows the manner in which the trees were preserved. Another view of the landscaping appears at the bottom of the page. The men whose genial and efficient service is helping to build a record gallonage for the station are shown in the strip, from left to right—Kelly Walker, Ed Read, Luke Riggs, John Morgan and Harry Abelsen. In the circle is L. M. Evans, manager.





Convenience, utility and beauty are combined in the new Franklin and Beachwood Drive service station. Above is shown the arrangement for displaying lubricating oil at the pump island. At the right is one of the display cases which has been built into each of the supporting columns of the canopy. The lubricating facilities are shown below.



is likely to be widely copied is the method of displaying specialties and automobile accessories. Glass show cases have been built

into the supporting columns on either side of the pump island to display accessories and specialties. This places these articles

invitingly before the motorists when they drive in for gasoline or oil. Men experienced in service station merchandising methods agree that this method of displaying accessories and household specialties is the best that has yet been developed, and will prove to be a solution to the problem, which has long vexed those in charge of service station sales, as to how to most effectively stimulate sales of these articles at the service station.



Three of the new type service stations that preceded the Franklin and Beachwood station are shown on this page. In the circle is the first of the trio, located at Sixth and Westlake, Los Angeles. In the center is the Van Ness and Greenwich, San Francisco, station opened in July, and, at the left, the Wilshire and Wilton, Los Angeles, station, opened last February.

New Stabilization Unit To Improve Cracked Gasoline

Construction of a new pressure distillate stabilizing plant, which will be used to increase the production of the valuable fractions of cracked gasoline and still further improve the quality of the motor fuels being manufactured by the Union Oil Company was started in October at the Los Angeles refinery.

The new stabilizer will supplement the

natural gasoline stabilizing plant constructed and placed in operation more than a year ago.

A total of \$108,000, \$50,000 of which will be expended for steel and the remainder on labor and miscellaneous materials, has been allotted to build the new plant.

Approximately three months will be required to complete the project.

Probing Our Geological Past

By EARL B. NOBLE

Assistant Chief Geologist



NATURALLY we cannot go down in an oil well to examine the formations we have drilled through, but we can literally take out the inside of the hole and look at it. In other words, in order to get an accurate sample and to see the formation exactly as it is underground, we make use of a hollow bit called a core barrel. This is run on the end of the drill pipe and the resulting core is somewhat analogous to the little piece of dough we cut out of the center of a doughnut.

Practically all of the wells drilled in California in the last ten or twelve years have cored certain portions of the hole, and many of them have cored continuously from top to bottom. The number of cores to be taken in a well naturally depends on the amount of information desired. In new areas it is usually advisable to obtain a rather complete set of cores, but in an area where underground conditions are already rather well known, as in a proven oil field, a few cores may be all that are necessary. In this case they may be used

as a check on preliminary calculations or to supplement previously gathered data.

Cores are usually examined in considerable detail, first with a hand-lens and later under a microscope. Coarse and fine sands, clays, shales, limestones, and conglomerates are readily differentiated, and the larger fossils, fish scales, wood fragments, etc., easily recognized. However, quite often the cores contain an abundance of smaller fossils that look like tiny white pin points to the naked eye. With the aid of a hand-lens these may be recognized as fossil shells, but usually cannot be definitely determined as to genera and species unless they are washed out of the core, mounted on slides and examined under a microscope. Figure 1 shows sketches of some of these tiny fossils greatly

The large photograph shows core being forced from core barrel under pressure. In the small picture, E. C. Eggelston, petroleum engineering, is shown examining one of the cores.



enlarged. Figure 2 shows some well preserved large fossils just as they appear in the core.

Fossils are one of the criteria used in determining the age of the beds drilled through. The tiny microscopic fossils are quite as useful in this way as the larger ones. The different periods in the earth's history have been given definite names and the chart shown in Figure 3 is inserted here to give an idea of the enormous time interval represented by these various periods. This chart has not been carried back further than one hundred and twenty million years, since as far as California is concerned no oil in commercial quantities has ever been found in the Jurassic or older rocks. However, in Texas, Oklahoma, and many other



parts of the world, oil is obtained from beds many millions of years older than any known producing oil horizon in California. Very little oil has been found in California as low as the upper Cretaceous. The majority of our supply comes from the Pliocene and Miocene, with smaller amounts from the Oligocene and Eocene. The fossils shown in Figure 2 are known as *Turritella andersoni* and they indicate that the horizon in which they were found is of Eocene age. Even older than *Turritella andersoni*, however, is the ammonite shown in Figure 4, which was found in a shale core from 3,500 feet in a well drilled in the northern part of the state. Since ammonites completely died out at the end of Cretaceous time, this fossil establishes the fact that the well was unquestionably in Cretaceous shale at this depth. Perhaps an even more interesting fact about this fossil is that the shell still retains its bright pearly luster and beautiful iridescent colors, and looks as fresh as when it was a living organism on the floor of the Cretaceous sea some sixty million years ago.

Many interesting things besides shells are found as fossils in cores. In some California wells fish scales, sea-urchin spines, wood fragments, and pieces of lignite coal occur in great abundance, while shark teeth, crab claws, worm borings, and fossil fish are occasionally found. Figure 5 shows the backbone of a small fish and the tail fin of a much larger fish. Both of these samples were obtained from a Union Oil Company well in the Santa Maria field. Even ripple marks, mud cracks, rain marks, in mud, etc., are often so well preserved as to be easily recognized in the core samples.

In order to carry on the search for oil successfully or to develop an oil field efficiently, it is necessary to know the relationship between various wells in the area. In the majority of cases this relationship is found by assuming sea level as the datum plane and then measuring the vertical distance above or below sea level to a bed that can be recognized in the various wells. Sometimes this "marker" bed is the top of the oil zone or it may be a shale having a distinctive color, a sand with a definite assemblage of heavy minerals, a thin hard limestone, a definite fossil horizon, or even several beds with no characteristic differences in themselves but quite distinct when the entire sequence is considered. When several wells have been drilled in a new

ESTIMATES OF GEOLOGIC TIME
(taken from figures published by Barrell)

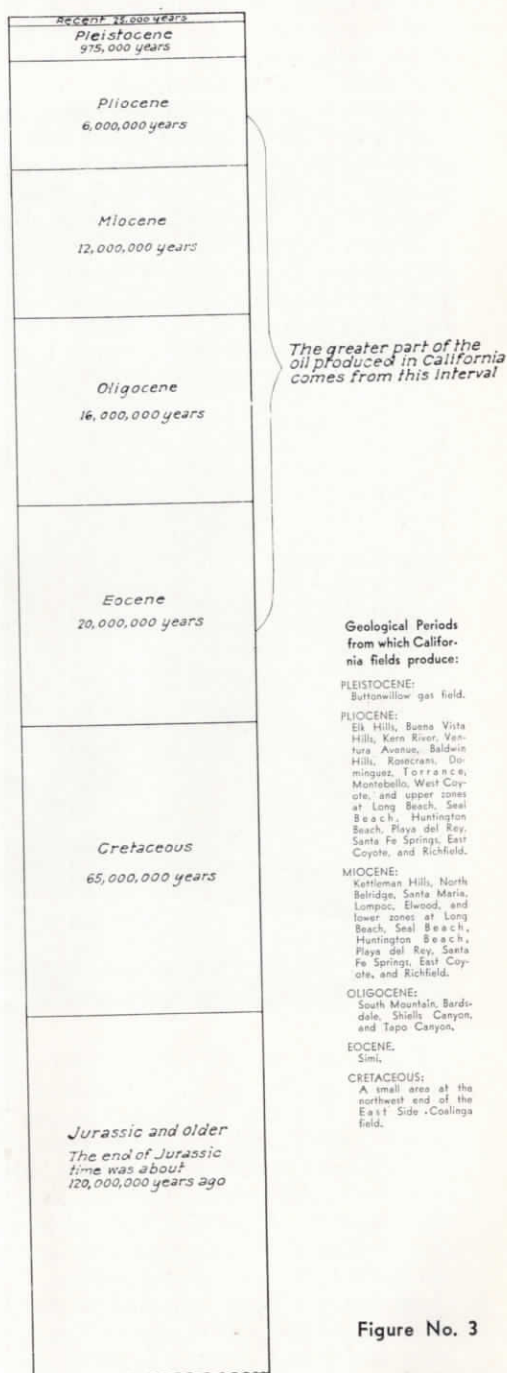


Figure No. 3

The above estimates are based on the invariable rate of disintegration of the radioactive substances, such as uranium, thorium, radium and actinium.

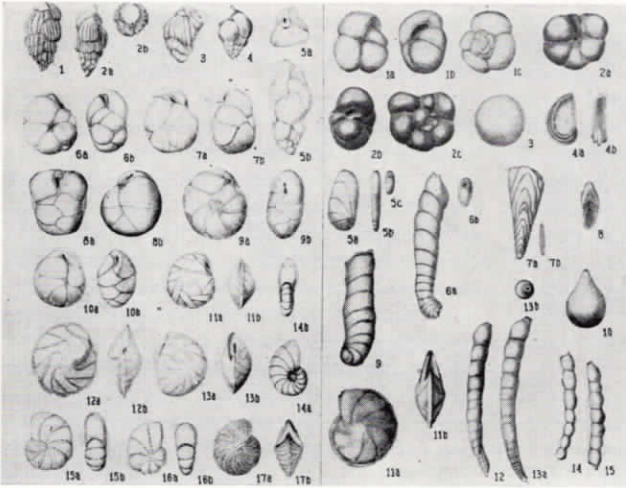


FIGURE No. 1

Foraminifera, greatly enlarged, which assist in identifying various geological formations. They appear as tiny specks in the cores.

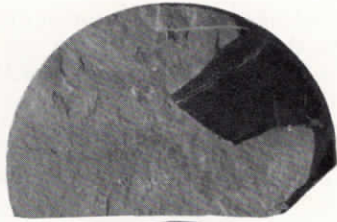


FIGURE No. 5

Backbone of a fish and portion of a tail fin in Miocene shale.



FIGURE No. 2

Turritella andersoni, from the Eocene, Ventura County.



FIGURE No. 4

Ammonite in Cretaceous shale.



FIGURE No. 6

Core containing an abundance of Amnocola.



FIGURE No. 7. A group of shale cores.

field, if enough information can be obtained to show the depth below sea level to the same bed in each of the wells, a subsurface contour map can be constructed which will show the approximate depth to this bed in any part of the field. From then on when a well is started in this field it should be easy by reference to this map to determine where to start coring in order to pick up this "marker." As soon as the driller is sure that he has reached this particular bed he knows exactly where to set his water string and just how much farther he must go to reach the oil sand.

In the Kettleman Hills field the top of the Brown Shale is one of the "markers." In the Belridge field the *Valvulineria californica* zone is an excellent "marker." This zone is recognized by the abundance of these tiny, almost microscopic, shells. To show what is meant by an abundance of fossils, reference is made to Figure 6. This small fossil is known as *Amnicola* and is quite common in some parts of the San Joaquin Valley but has too great a vertical range to be generally used as a "marker."

A few days ago a gas blow-out occurred in one of the wells in the Buttonwillow field. Many of the people watching the well were surprised to see perfect little shells appearing on the hats and shoulders of their neighbors. It literally was raining fossils. Apparently the well had penetrated an *Amnicola* zone and the gas was blowing these tiny shells high in the air. Another interesting occurrence of *Amnicola* is in the Cymric area where one of the producing oil zones is composed almost entirely of this fossil, the oil occupying the porous space between the shells.

Figure 7 shows several interesting shale samples. The small piece of core in the lower right hand corner came from a depth of 10,191 feet and yet it is not as old by many millions of years as the ammonite bearing shale from 3,500 feet (Figure 4). The core in the upper right hand corner is mounted so as to show it in a vertical position. The top, bottom, and thin light colored streak near the middle of this core all show clearly the dip of the bed. When this bed was originally deposited it was of course laid down practically horizontal, but through later movement it has been tilted and now stands at a fairly high angle. Occasionally one may see beds standing ab-

solutely on end, or even completely overturned so that older rocks actually overlie younger ones.

The core in the upper left hand corner and the one in the lower left hand corner (Figure 7) are both made up almost entirely of the siliceous skeletons of diatoms, tiny microscopic organisms that flourished in enormous abundance during Miocene time. In some parts of California beds composed almost entirely of the remains of these diatoms measure several thousand feet in thickness. It is quite probable that these tiny organisms are responsible for a large part of California's oil. The oil may have originated in these diatomaceous shales but has since migrated to the more porous sandy beds which make up the reservoir rock of our producing oil fields. Recent studies made on diatoms that live in certain parts of our oceans today show that these organisms secrete tiny drops of oil which they apparently use in supporting life. However, if conditions are such that the diatom is destroyed before it has lived its full span of life, these droplets of oil are released. When a living diatom comes into contact with fresh water it literally explodes. Perhaps this is what happened to millions upon millions of these tiny fellows in the ancient Miocene sea.

Most of the California oil is produced from sand or sandy beds. In some cases the producing zone is entirely sand. In other cases it may be made up of a series of alternating sands and shales, or of conglomerates, or even of hard flinty shale which has been fractured sufficiently to make it porous. In all cases, however, the oil simply occupies the porous space between the sand grains or particles.

When a well is drilling through an oil sand, gas and oil will often show on the circulation ditch, but in many cases no "showings" can be seen at the surface. Cores taken from the oil zone are easy to recognize as oil sands if they are from a zone which produces heavy oil. In this case they can hardly be mistaken for anything else since they have a brown to black color, a distinctive odor, and are usually so saturated with oil that the core will stain the hands when handled. In some of the lighter oil sands the presence of oil can be readily detected by putting a little of the sand into some solvent, such as ether,

(Continued on Page 15)

Madden Dam Project, Panama Canal

By R. C. Worsley

District Manager, Panama, C. Z.

FOR about two-thirds its length, the Panama Canal passes through Gatun Lake and reaches an elevation of 85 feet above sea level. The principal source of water supply for Gatun Lake is the Chagres River which has always been difficult to control during the flood season. Although Gatun Lake has an area of 164 square miles, the flood waters coming down from the Chagres have many times caused serious trouble at the Canal. On two occasions it became necessary to stop traffic in order to pass excessive flood water through the lock culverts, despite the fact the big spillway was open to capacity.

In Panama the rainy season covers a period of about eight months and the extremely dry season four months. During the dry season there is not sufficient water to handle heavy traffic in the Canal.

Engineers have, since the beginning, realized that to provide a sufficient supply of water for the locks during the dry season and to curb the flood waters of the Chagres during the rainy period it would be necessary to dam the river. Construction of this dam was made possible through a Congressional appropriation, which, in compliance with the recommendation of the government's engineers, provided for the building of twenty saddle dams, hydro-electric power plant, road connecting with the Canal highway system, in addition to the main dam across the Chagres. The entire project has been named for Congressman Madden, who fathered the appropriation bill in the House of Representatives.

This project, now underway, is the second largest job in progress in United States territory today, Hoover Dam being first. It will cost slightly less than one-sixth as much as Hoover Dam and will be about one-fourth as large.

The contract for this work was obtained by The W. E. Callahan Construction Company and Peterson, Shirley & Gunther, two

nationally known contractors who formed a partnership to handle the job. They have associated with them some of the best engineers and construction men in the United States. The project must, under the terms of the contract, be completed on or before June 15, 1935.

The dam is to be straight concrete gravity type. The maximum length between banks of the river is 950 feet, height above foundations,

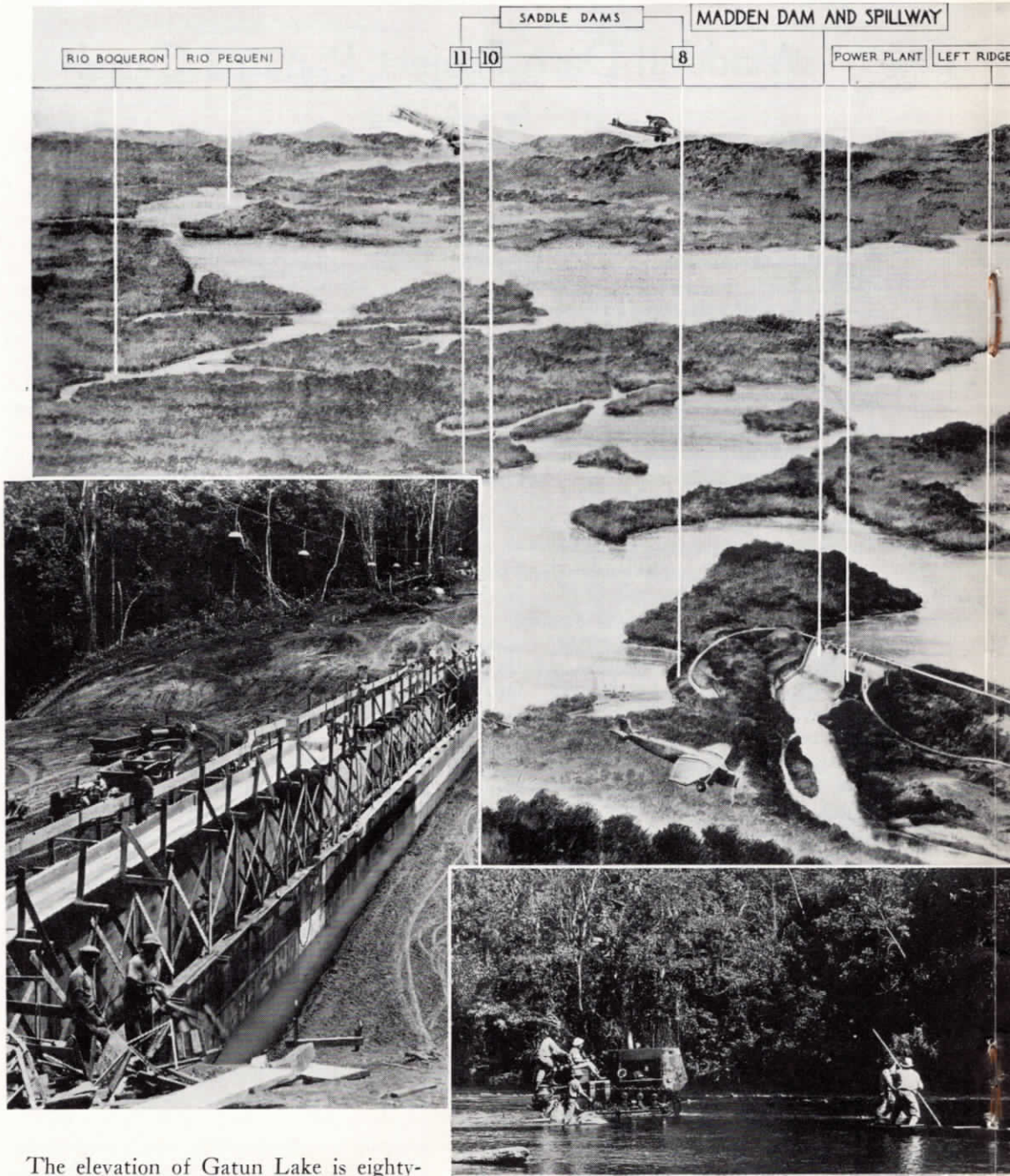
220 feet, maximum width or thickness, 16.43 feet. Approximately 502,000 cubic yards of concrete will be used in the construction of the dam proper. The spillway will discharge at flood elevation of 260 feet above sea level about 230,000 cubic feet of water per second, while maximum discharge through spillway, valves, and all other openings will reach 280,000 cubic feet per second. Normal water storage level will be 240 feet above sea level. A roadway, built over the crest of the dam will be 270 feet above sea level.

At an elevation of 240 feet above sea level, the lake formed by the dam will have an area of 17 square miles and have a normal storage capacity of 22,000,000,000 cubic feet or 506,000 acre feet of water. At maximum flood water level of 260 feet above sea level, the area of lake will be 21 square miles.

In order to provide for expansion and contraction of the large mass of concrete constituting the completed dam, the concrete will be poured in blocks or sections of about fifty-six feet. Also, pipes will be imbedded in the concrete with outlets at the joints for the purpose of cement grouting joints after settling and contraction has ceased.

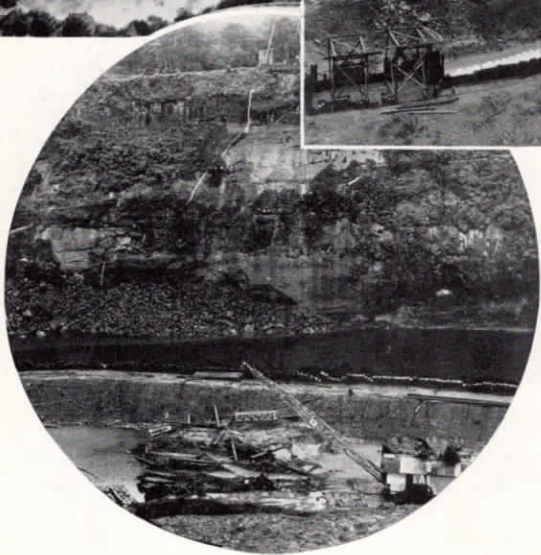
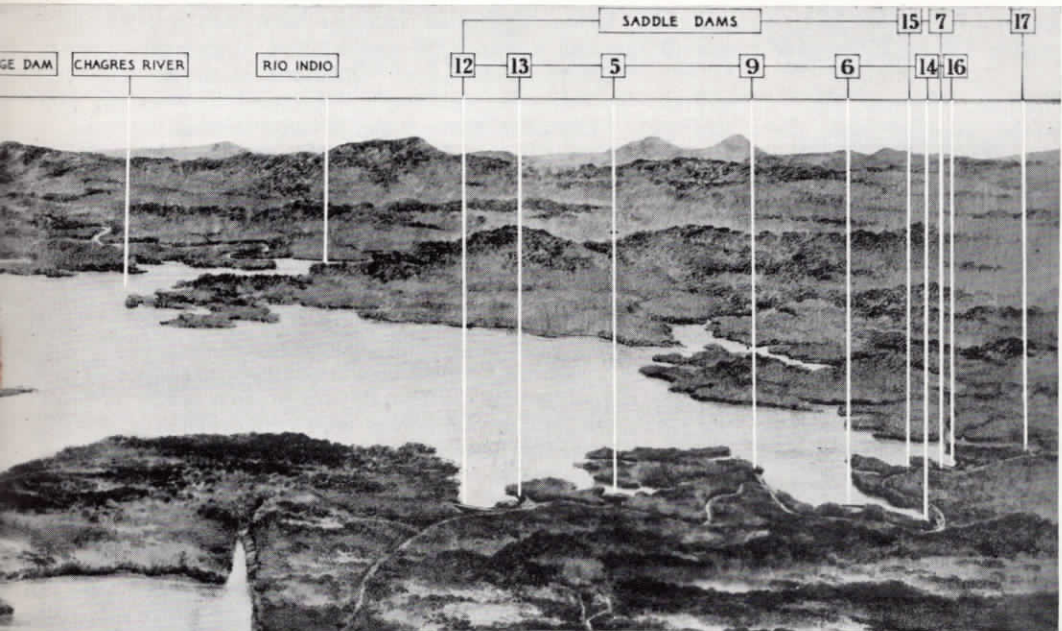
Diamond drilling tests developed that several subterranean caverns existed in the ridge forming the rim of the lake, and these were filled with clay and water mixture under pressure to provide against leakage in the future.

Editor's Note: Here is another great engineering project in which the Union Oil Company is keenly interested. Its products are helping to carry the job forward to completion.



The elevation of Gatun Lake is eighty-five feet above sea level, while the elevation of Madden Lake will be about 240 feet above sea level. This difference in elevation makes possible the development of considerable water power. A hydro-electric plant is being constructed at the foot of the dam which will develop about 33,600 horsepower, and will provide needed addi-

The above photographs and drawings disclose various phases of the Madden Dam project. The lake of water that will be formed by damming the Chagres River, location of the Madden Dam and the numerous saddle dams that control the flow of water from minor streams into the lake, are pictured in the drawing. The photographs on the right show work now being done at the dam site. At the left is one of the saddle dams under construction. Immediately above, tractor and men at work on the river b



Delivering Union gasoline and lubricants to contractors' headquarters at site of dam.

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tional current for use by the Panama Canal, and possibly for the cities of Panama and Colon.

At fourteen different places around the rim of the Madden Lake there are low spots or valleys which are being filled in with saddle dams, some of concrete and others of earth. The lowest sections of the rim of the lake will be more than ten feet above maximum high water.

A spillway and baffles are being constructed in such a manner that during floods the waters can be spilled down into Gatun Lake at a rate of flow that will not interfere with canal traffic. This spillway together with auxiliary valves will also serve the purpose of letting additional water supply from Madden Lake into Gatun Lake during the dry season to maintain the latter at a proper level to handle canal traffic. Water passing through the hydroelectric plant will also feed Gatun Lake.

A small town with modern facilities including water, lights, sewerage, clubhouse, etc., has been built up to comfortably house the men working on this project. Also, machine shops, air compressor plants, store-

houses, and other facilities have been provided to keep the plant and equipment operating efficiently. Included in the excavation equipment are fourteen ten-ton Caterpillar tractors and a large number of Caterpillar wagons used to transport dirt and rock.

The first concrete was placed in the dam in September, but it is not expected that the work will proceed very rapidly until January 1933, or the beginning of the dry season. The entire lake area is being cleared and all rubbish burned.

The contractors have been employing approximately 750 men on this project, while the Panama Canal has been employing another 350 men for work in connection with the clearing, inspection, engineering, etc.

After trying out several lubricants the contractors early in the development of their construction program decided to use Union products exclusively. The Panama District is supplying them with large quantities of the popular "76" gasoline, Motorite motor oils, fuel oil, greases, etc. There has not been a failure or complaint regarding the products since the work was started.

Second Union Kettleman Well Brought In

UNION Oil Company's second producer on its Amerada property in Kettleman Hills, King No. 2, was placed on production November 3 with an initial flow of slightly more than 12,000 barrels per day. The potential output of the well is believed to be considerably greater. Due to the fact the well must be held down to a comparatively small production in order to comply with the present curtailment schedule, production equipment was not installed at the well to handle a daily flow greater than 12,000 barrels.

The new well is approximately 1500 feet from King No. 1, which was brought in July 2, 1931, with a potential production estimated as high as 30,000 barrels a day. It was completed at a depth of 8500 feet and has 1051 feet of perforated casing in

the hole. The gravity of the oil, 38.5, is about the same as the gravity of King No. 1. The initial gas output is estimated at 45,000,000 cubic feet per day.

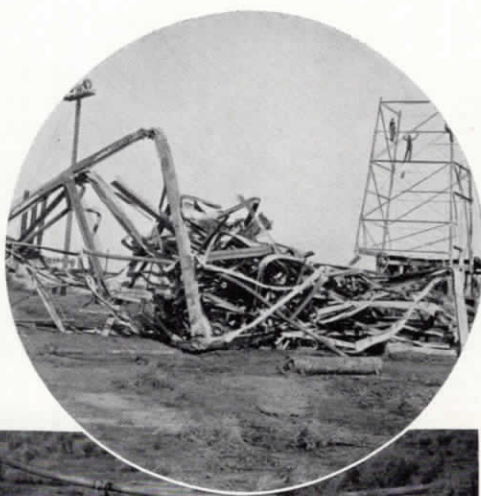
King No. 1 has flowed steadily, without a halt in the sixteen months that it has been on production. Shortly after it was brought in its output was reduced to 4,000 barrels a day to conform to the curtailment schedule, and in recent months its flow was reduced to 3700 barrels a day. However, it is believed that if it were opened up it would be capable of continuing a steady daily production of 20,000 barrels.

Under the existing curtailment schedule the production of both King No. 1 and No. 2 will be held down to 3700 barrels a day.

Gas Well Goes On "Bender"

A recent gas blowout, from a comparatively shallow depth, in a well in the Buttonwillow area, famed for its great gassers, reduced the steel derrick to a twisted mass of scrap iron, and catapulted the nine stands of drill pipe that remained in the hole, when the blowout occurred, high into the air, coiling it over the landscape like so much spaghetti.

The well caught fire from friction but the mud fluid blown from the hole put it



These photographs, taken by E. B. Noble, assistant chief geologist of the Union Oil Company, show what happens when a big gas well goes on a "bender." Stanley Wissler, paleontologist for the company, is examining the coiled drill pipe.

out. The flow of gas, coming through 8 $\frac{3}{4}$ -inch casing was estimated at 75,000,000 cubic feet a day.

A snub derrick has been erected to replace the one demolished by the gas blow out.

Probing Our Geological Past

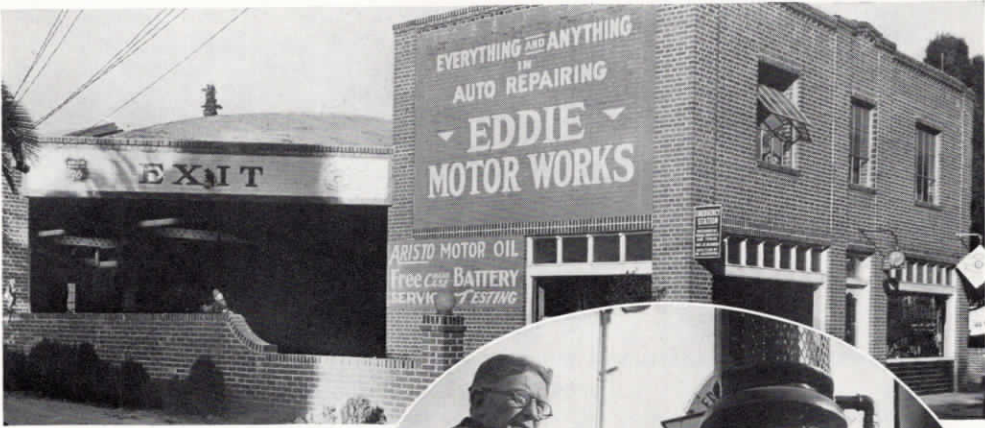
(Continued from Page 10)

chloroform, or carbon-tetrachloride, and if oil is present the liquid will take on a yellow to brown color, depending on the quality and quantity of the oil present. However, there are cores that will not even react to these tests and still they are from some of the most prolific producers in the State. For instance, the cores from the producing zone at Kettleman Hills and several other light gravity fields can hardly be recognized as oil sands except by the most delicate chemical tests. They are usually light gray in color, and while they often have a

faint gasoline odor when freshly cored, the odor soon disappears on exposure. This type of oil sand will not show a "cut" with ether, chloroform, or tetrachloride. However, when treated with acetone the presence of oil is usually indicated by a slight cloudiness in the acetone liquid.

The cores described above are part of a collection made by the author and presented to the Los Angeles Museum where they are on permanent exhibit in the Los Angeles County room, in the new building at Exposition Park.

Union Products His Choice for 22 Years



Eddie Motor Works, 55 Waverly Drive, and, in the inset, Edward Dobschutz, who has been using Union products in his garage for 22 years.

Few people in Pasadena, Calif., know Edward Dobschutz. In fact, Dobschutz says if he didn't have to sign checks at the end of the month he wouldn't be able to identify himself by that name.

But Eddie (christened Edward Dobschutz) of Eddie Motor Works, 55 Waverly Drive, is known the length and breadth of Pasadena. Eddie's been in the automotive repair business in that city for the past twenty-five years. Twenty-two years ago he purchased his first Union Oil Company products. For the past

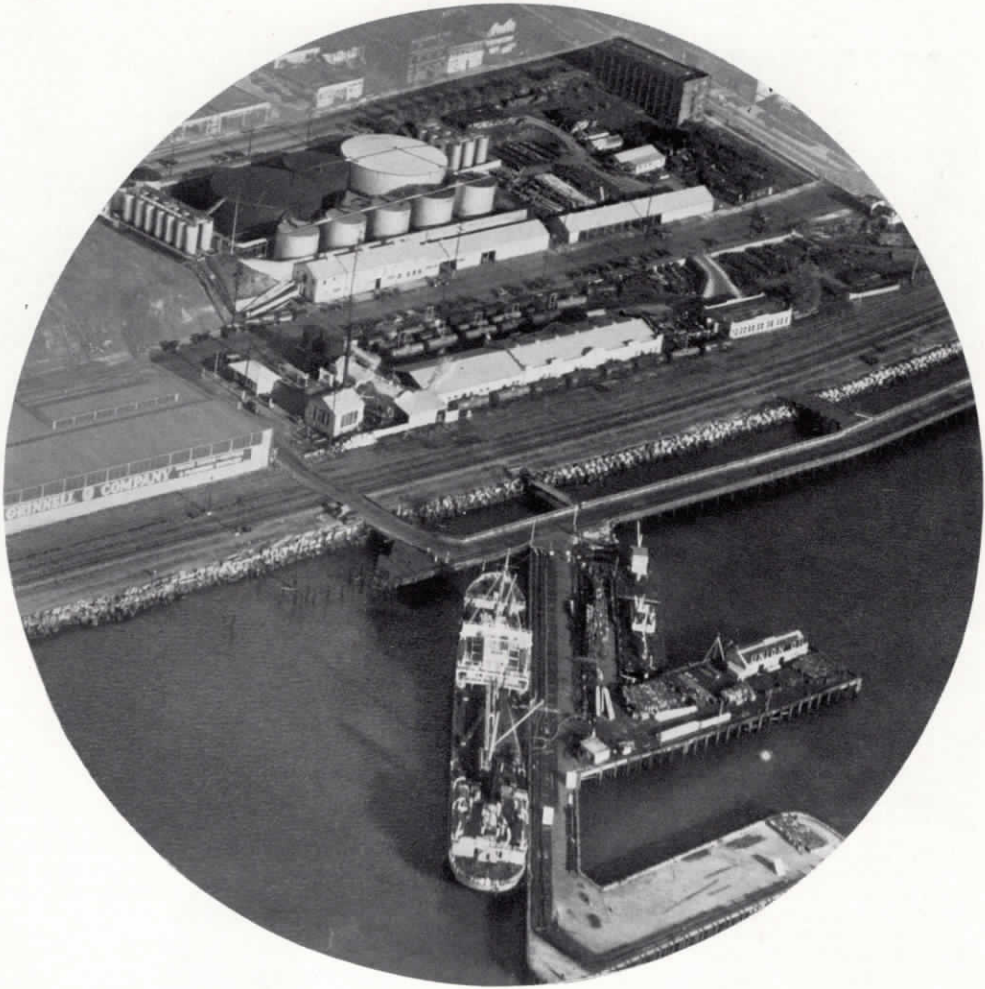
four years he hasn't bought a lubricant, grease, or gasoline that wasn't manufactured by Union. Until 1928 Eddie's garage was located at 300 South Fair Oaks avenue. It was then that he moved to a fine new building on Waverly Drive, which he has since occupied. He maintains night and day service, has towing facilities, and is an authorized Automobile Club of Southern California representative.

Bay City Gas Sales Over Million Mark

Gasoline sales in the San Francisco district under W. A. Newhoff, district manager, the first nine months of this year exceeded the sales for the entire year of 1931. In establishing this exceptional record, the sales for the city of San Francisco were boosted above one million gallons for a thirty day period. In the above photograph Mr. Newhoff and his assistants are shown beside a sale's thermometer which indicates that their quota had been exceeded.



New Seattle Wharf Completed



This airplane view of Union Oil Company main station, Seattle, shows \$75,000 extension to wharf accommodations which has just been completed. Union tanker SS Warwick and Union barges Nos. 3 and 1920 are shown tied up at dock.

Under construction for the past five months, a new \$75,000 dock which adjoins and supplements one still in service and by means of which wharfage facilities have been increased approximately 100 per cent, last month was completed by the Union Oil Company at its Seattle main-station.

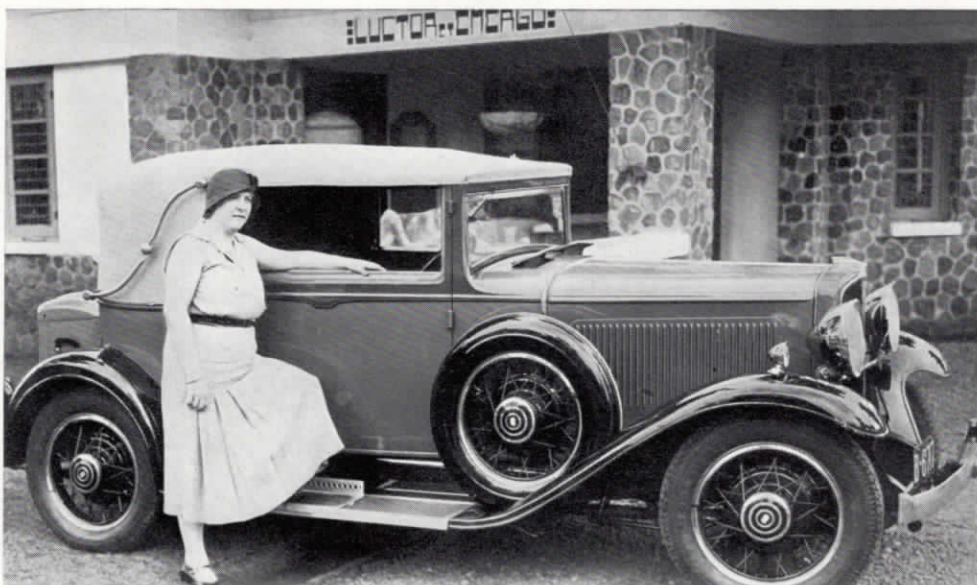
Building of the new wharf makes possible simultaneously the unloading of either bulk or package shipments from company tankers, and the bunkering of barges and commercial vessels. Minimum depth of the water at the face of the wharf is 40 feet, enough to accommodate

even heavily loaded tankers and freighters.

The new wharf extends into Elliott Bay 460 feet from the shoreline, with a 30-foot wide approach over which pipelines and truck runways extend to the end of the structure. The wharf itself is 60 feet wide and 260 feet long and parallels the older dock. The latter, shoreward from the new dock, is 65 feet wide and 240 feet long.

Construction work involved dredging the location, building of the wharf, and laying pipelines from the end of the wharf to storage tanks within the plant.

Javan Reliability Test Won With Motorite



Mrs. S. B. H. Gopner, wife of V. R. Vick and Co. salesman in Java, and the 1932 Nash with which she won second prize in West Java Nighttime Reliability Tour.

Launched in the middle of the night over a rough course with which none of the drivers of the 86 automobiles and 15 motorcycles participating were familiar, the first annual West Javan Nighttime Reliability Tour was staged September 3-4 over a 200-mile route in the vicinity of Batavia.

Mrs. S. B. H. Gopner, wife of the well known sales representative in the employ of V. R. Vick and Company, Union Oil Company agents, at the wheel of a new 8-cylinder Nash convertible sedan, clung to the leaders throughout the route and won second prize among the women competitors. Her car, Mrs. Gopner said, ran as punctually as a chronometer with Motorite in the crankcase.

The start of the test run was made shortly after midnight Sept. 3, when the contestants were given a map with instruction to drive to Buitenzorg, first control post, where another map was issued identifying the route to be followed to Djasinga, at which point the third map outlining the specified highway to Rangkas-Betoeng was issued. The latter part of the course proved to be the most difficult, due to heavy rains which had fallen shortly before, and the sudden bends and turns. At Rangkas-Betoeng the first stop for coffee and motor fuel was made, and then the caravan streaked to Pendegland, thence to Serang, and finished the course at Batavia early the next morning. Driving limitations were placed on the contestants in accordance with road conditions.

Kobe Representative Swings Hefty Club

The fact that W. W. Baer, Union Oil Company representative in Kobe, Japan, packs a wallop in the baseball bat which he occasionally wields is evidenced in the box score printed in the Japan Chronicle of Sept. 25, 1932, in which Baer is credited with



W. W. Baer.

at bat, for two of the games, consisted of two homers, one three-base hit, and two singles. Baer states in a letter that he's played ball only four times during the past year, but apparently the intermittent periods of inactivity have not taken the edge off his batting eye.

Station's Attractive Setting Stimulates Business



Top photograph shows general view of Billiken Service Station, Ontario, Calif. The photo on right attests to picturesque setting of station.

That the owner of the Billiken Service Station at B and Lemon Avenue, Ontario, Calif., believes an attractive setting is a distinct adjunct to business, and has a definite relation to the type of clientele that it attracts, is attested to by a single look at the station.

Shrubbery surround the grounds. A miniature sunken garden adjoining the portable pump island, the neatness of the grounds, and the fresh appearance of the buildings combine to make this super service unit outstanding in its community.

Billiken guarantees the lubrication jobs performed at the station. He has made a definite stand against flat prices and special price offers, basing his charge upon the amount of work required to properly lubricate each car, plus the



retail value of the lubricants. Union 76 gasoline and a full line of Union products are stocked at Billiken's station.

Army Trucks Refueled with Union 76



Army supply trucks being refueled with Union 76 gasoline during halt at Bakersfield fair grounds.

Sales Increase With Union Lubricants



The Arlington garage, Madison street near First avenue, Seattle, since the installation of complete Union Specialized Lubrication system, including the latest types of guns and special greases, has registered a 30 per cent increase in lubricating oil sales and a 50 per cent jump in greasing business. To this sales achievement, O. K. Jones, manager, shown in inset, attributes the use of the proper equipment and a full line of Union lubricants.

Union Products for This 500-acre Ranch



Union Oil Company products have been used exclusively on R. F. Schmeiser's 5000-acre grain ranch in the Tulare Lake bed near Angiola for the past six years. Union truck is shown above arriving to fuel some of the harvesting equipment.

Speed Boat Racing Popular With Arizonans

Motor boat racing is becoming a popular sport at Canyon Lake, 30 miles east of Mesa, Arizona, on the Apache Trail, and Union-fueled boats are among the leading contenders.

Cecil May of Phoenix who pilots "Little Shot," a boat made in Phoenix by O. W. Wilson, Jr., is out in front most of the time. In one of the recent regattas on the lake he placed first in the time trials, first in the 10-mile free-for-all. "Red" Owens of Phoenix and Seth Smith, proprietor of the Smith Boat Works of Mesa, are

two other race pilots who are using Union gasoline in their speed boats.



Canyon Lake, Arizona, and two of the speed boat pilots, who are making out-board racing one of the favorite sports. Above is "Red" Owens and on the left, in the foreground, is Cecil May. Both are from Phoenix.

"The Leader" in Action

Illustrative of "The Leader" advertising campaign emphasizing the leadership of Union 76 gasoline in the realm of motor fuels, W. E. Davenport, manager of the Fresno district, forwards the accompanying photograph. It was taken at the Visalia fair grounds where the circus was supplied with "76" gasoline. It shows a bull elephant being used in place of a tractor on the circus grounds. In his native haunts he is leader of the herd.



SAFETY IN THE UNION



Northern Division Accidents at New Low

Los Angeles, California,
October 17, 1932.

Lafe Todd, General Superintendent Northern Division, San Luis Obispo, California.

One can't help noticing that the Producers and Lompoc Pipe Lines, for the first nine months of 1932, have achieved an accident frequency of 2.0 as compared with 22.0 for last year. It is apparent also that the reason for this remarkable safety record is found in the fact that you have 300 men doing safety work on the pipe line.

In reading over the reports of the September safety meetings of your men, the question occurred to me—what is your procedure with respect to specific recommendations made by the men and reported to you by the various secretaries in these minutes? We may do a little safety propaganda elsewhere, using your very successful scheme as a working example of the foremen's safety meeting idea, and this question is one that will immediately be asked by those who are skeptical of this method of promoting accident prevention. I know you must have some way of going at it but we do not happen to know whether you send back the minutes with notations on them to the secretaries, so that they can tell the men at the next meeting what you have done or intend to do, or use some other means of getting this information back to the men. How do you dispose of ideas which are not practical and which you must turn down for good and sufficient reasons?

The reports that your men are turning in are certainly interesting. We are all wondering why we didn't try this scheme five or six years ago but I guess the answer is that the time wasn't ripe. Certainly the safety situation for the entire company is better today than it has ever been in our history and there is less head office activity than there ever has been. We don't intend that as a back-hand compliment at the head office, either.

Yours very truly,
GEO. F. PRUSSING,
Safety Engineer.

San Luis Obispo, California,
October 25, 1932.

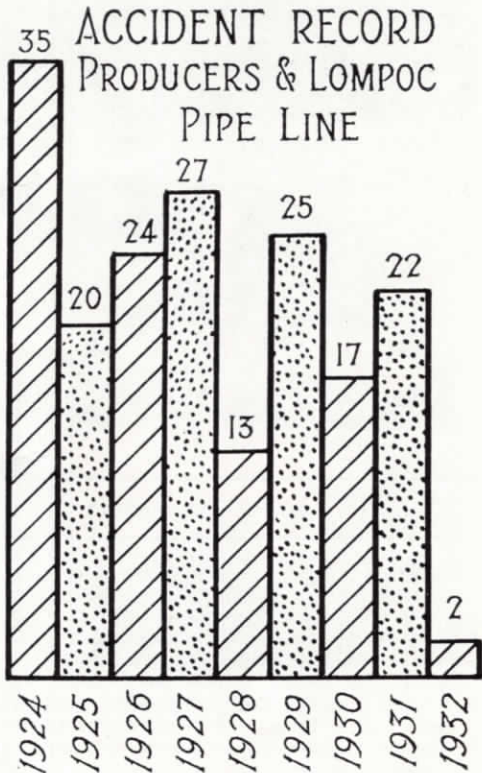
Geo. F. Prussing, Safety Engineer,
Los Angeles.

I cannot give you a perfectly sound and logical reason why our accident frequency has dropped as much as it has. I believe it is partly due to the fact that we are placing the burden

of Safety First directly upon the men who are performing the work in the fields rather than having it carried on by the superintendents and others.

I have never been very strong for the large meetings which we have held, as I do not believe the men are in the proper mental attitude to fully digest all of the thoughts that are presented to them by such speakers as are furnished by the management.

Replying to your questions: after the minutes of the monthly meetings have been prepared in due form, together with the "Days Worked since last Lost-time Accidents" have all been put in proper form, we then go over the reports with Mr. Yackey and proceed to discuss the various



recommendations made by the men. In the field department work this is discussed with Mr. Miles. Then at the next regular monthly foremen's meeting these problems are again discussed. Where the foreman has not already been talked to by his direct superior and been given authority to go ahead and remedy the same, instructions are issued at the meeting to the various foremen to proceed with those changes and recommendations which we believe to be essential and necessary for safety. The ideas which are not practical are also discussed at the meetings and our reasons given for turning them down.

Several months ago Mr. Miles and I were

discussing the matter of safety and we realized we were not getting anywhere with the old system. The idea of these monthly safety meetings was then advanced by Mr. Miles. This was discussed to some extent and enlarged upon until we have the present system. We believe we still have a long road to travel before we can reach the point we wish to attain, which is, *No lost-time accidents* in all departments of the northern division.

Yours very truly,

LAFE TODD,

*General Superintendent
Northern Division.*

76 Solves Problem for Bulk Haulers



One of eight truck and trailer units which the Service Transfer Company, Fresno, Calif., operates exclusively on 76 gasoline.

"In introducing Union 76 gasoline to the motoring public the Union Oil Company solved one of the toughest problems facing the trucking companies," is the opinion of B. O. Thomas, representative of the Service Transfer Company, Fresno, Calif.

According to Thomas, his company had for several years considered the feasibility of shaving down the heads of the motors of the trucks which it operates in order to gain the added performance found in high compression motors. While this would necessitate the use of premium fuel, it was felt that the added cost would be compensated by increased efficiency of the motors, better gasoline mileage, and a material reduction in repair costs.

The matter was still under serious consideration when Union 76 was announced. "Our problem," Thomas said, "was solved for us without the expenditure of one extra cent. Our mechanics and drivers are unanimous in their praise of this new gasoline and the trucks are performing with such added efficiency that we have dismissed the thought of using premium motor fuel."

The Service Transfer Company owns and operates a fleet of tank trucks and trailers throughout the San Joaquin valley. Hauls are also made from San Francisco to coast and inland points. The fleet of trucks traverse an average of 36,000 miles per month. The company operates a leased station at Delano where Union Oil Company products are exclusively sold. Another privately owned unit is maintained on the Golden State highway five miles north of Fresno. At both locations the demand for 76 substantiates the findings of the company in its own use of the fuel.

A. A. P. G. ELECT TEMPLETON

E. C. Templeton, Union Oil Company geologist, was elected secretary-treasurer of the Pacific Coast Section, American Association of Petroleum Geologists, at the annual meeting held recently in Los Angeles. Mr. Templeton has been with the company since 1925. For a greater portion of that time he carried on geological exploration work in South America, mostly in Venezuela. He is at present on the geological staff operating from the head office.

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REFINED AND CRUDE

By RICHARD SNEDDON

It's hard to believe that the sweet girl who used to blush and hesitate over the acceptance of a box of candies before marriage, is the same one who now grabs your pay check the minute you enter the house on the twenty-sixth.

After all, a woman is known by the company she keeps waiting.

Which reminds us: A husband in India was informed by a group of wildly gesticulating neighbors that his wife was being pursued by a Bengal tiger. Very casually he remarked, "Well, why should I protect a Bengal tiger?"

Bill Nye, one of our earliest wise-crackers, used to tell how as a boy he was a frequent victim of somnambulism. The peculiar thing about it was that he always woke up in his neighbor's melon patch. Fortunately, before the affliction became chronic, the neighbor bought a dog that was also a somnambulist, and Bill's attacks ceased "almost immediately."

Then there was the unfortunate driver who lost the ignition key and was obliged to ride home in the rumble seat.

Still, nothing has done more to keep things moving in these dark days of depression than the "No Parking" signs.

By the way, the young man who said he would get the job or know the reason why, didn't get the job, but he knows the reason why.

An expert informs us that there are fish that can travel as fast as an express train. There are others who just think they can.

A tourist, incidentally, is a guy who travels 2000 miles in order to have his photo taken standing by his car.

And another thing that never turns out the way you expect it, is the car ahead.

From a Scotch customer the local butcher received a note this morning reading, "Please don't send the penny's worth of liver today; the cat has caught a mouse."

A budding Ripley has determined that when a golf club hits a teed ball the head of the club is traveling at approximately an hundred miles an hour. This explains why the ball is usually driven so far into the ground.

And no one has yet been able to find a satisfactory use for guest towels.

Johnny: "Mother says she wants to be cremated."

Dad: "O. K. Tell her to put her hat on and we'll go now."

A large group of Union Oilers left for the north last Friday night on a big game hunt. Their destination was the Stanford stadium.

And we overheard Junior explaining very carefully to his little sister that a refugee was a guy who kept order at a football match.

The story is of an old Kentuckian, who had a family of seventeen boys, and as they came of age, they all voted the Democratic ticket, but one. When asked the reason for this break from the ranks, the old fellow shook his head and replied: "Wal, I dunno. I brought them thar boys up as curfully as any father could. I taught 'em to fear the Lord, and made good Democrats out of 'em all but John, the ornery cuss, he took to readin'."

And we still wonder how some of these banks can summon all their vice presidents to a directors meeting without giving the impression that there is a run on the bank.

On the subject of high finance, we might explain to our readers that a debtor is a man who owes money, and a creditor is the bird who thinks he's going to get it.

Also, it seems now to be definitely established by our medical authorities that drafts either do or do not cause colds.

And, that even in prohibition times, many brewers became malty millionaires.

Reporter: "I represent the Daily Scandal. When exactly did Mr. Blank die?"

Informant: "Mr. Blank is not yet dead."

Reporter: "All right. I'll just wait."

Says the first salesman: "Gee, I got some swell contacts today."

Says the second one: "I didn't make any sales either."

Then there is the story of the two co-eds in the parked car:

Betty: "Is anyone looking?"

Letty: "No."

Betty: "Good. Then we don't have to smoke."

In conclusion we would remind you, there is still ample opportunity for the chap who is ambitious. For instance; a fortune awaits the first man who can invent a box lunch with no apple pie in it.



The photographer with this picture, taken at the company's new Franklin and Beachwood station, Hollywood, proves there is artistry in a service station pump.

