

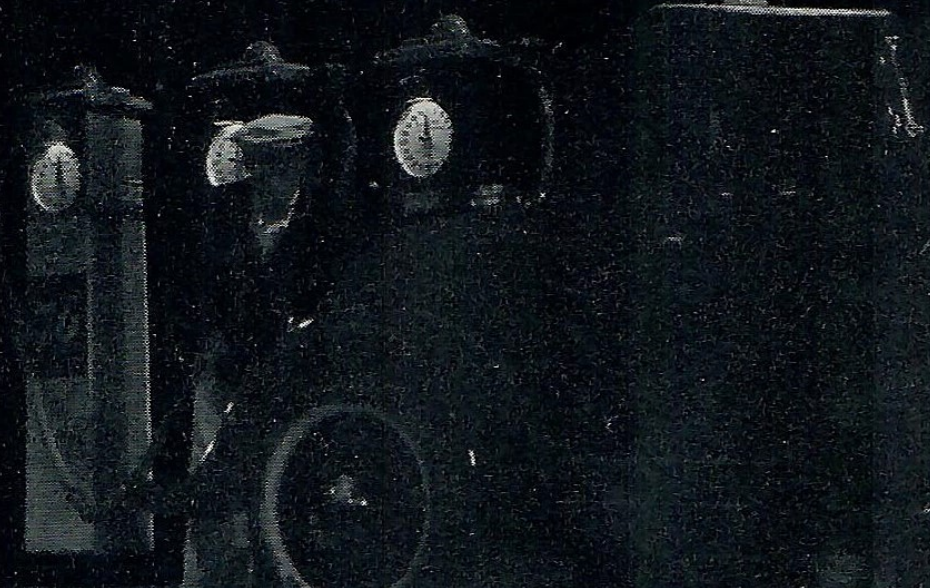
# UNION OIL BULLETIN

*The*  
**LEADER**  
**76**  
**GASOLINE**

UNION SERVICE STATIONS INC.



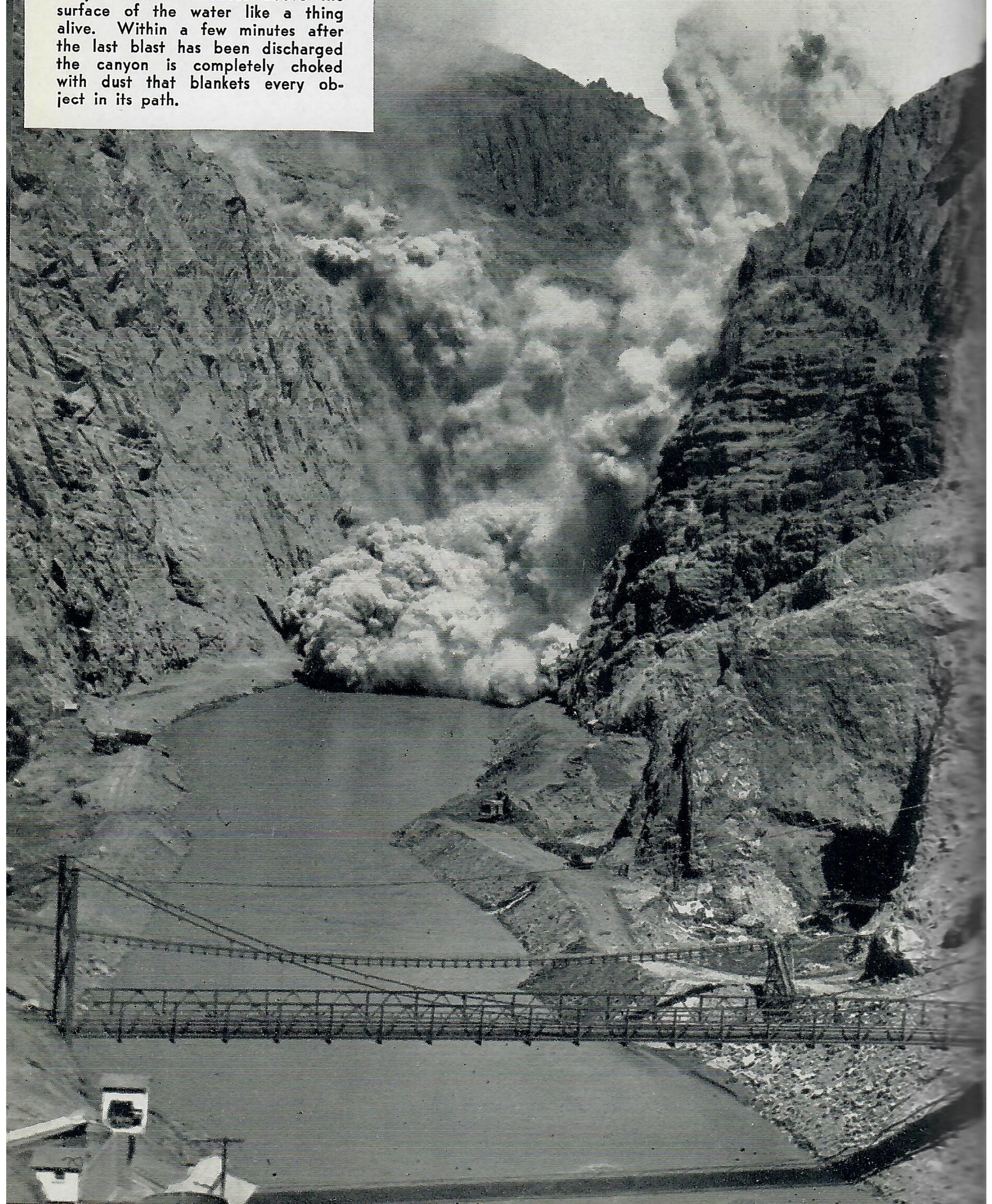
UNION OIL PRODUCTS



OCTOBER 1932

## Dynamite Dust

**B**LASTING time at Hoover Dam, 11:30 a. m., daily, produces one of the project's most impressive spectacles. Like distant drumfire, the sound of the first dynamite blast rolls down the canyon. Before the echo has died on the rocky walls, a second and louder blast shakes the ground under foot, followed in rapid succession by others that grow in intensity and volume, shooting high into the air swirling masses of yellow fog-like dust that tumbles down the canyon walls and races above the surface of the water like a thing alive. Within a few minutes after the last blast has been discharged the canyon is completely choked with dust that blankets every object in its path.





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Published Monthly by the UNION OIL COMPANY OF CALIFORNIA for the information of its employees and stockholders.

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## Third Quarter Earnings

THE Board of Directors of the Union Oil Company of California October 6 declared a dividend of 25 cents a share, payable November 10 to stockholders of record October 17. Union Associates declared a similar dividend carrying the same dates. The company's transfer books will not be closed.

Showing the favorable effects of generally improved conditions in the petroleum industry on the Pacific Coast and a continued stringent program of economy, Union Oil Company's net earnings for the third quarter, for the first time this year, more than covered quarterly dividend requirements. Net earnings for the quarter, ended September 30, after all charges, including provision for depletion, depreciation and drilling expenditures, general expenses, taxes, interest, etc., amounted to \$1,250,000, equivalent to 29 cents a share on 4,386,070 shares outstanding. This

compares with \$550,000, or 12 cents a share, earned during the second three months of this year, and \$1,300,000, or 30 cents a share, for the third quarter of 1931.

Net earnings, after similar charges, for the nine months to September 30 amounted to \$2,750,000, equivalent to 63 cents a share, as compared with the \$3,200,000, or 73 cents a share, earned in the nine months last year.

Profits, subject to depreciation, etc., for the first three quarters of this year were \$8,100,000, as compared with \$8,600,000 for the 1931 period. For the quarter just ended, however, profits before depreciation charges amounted to \$3,000,000, as compared with \$3,100,000 earned during the same period last year. Provision for depletion, depreciation and drilling expenditures was \$5,350,000 for the nine months this year, as compared with \$5,400,000 for

the like period in 1931. This was equivalent to 66.1 per cent of the \$1.85 per share earned before depreciation for the nine months of 1932, being slightly higher than the 62.8 per cent of the \$1.96 per share gross profit in 1931, thus indicating the continued conservativeness on the part of the company with respect to depreciation charges.

Sales for the first nine months of this year amounted to \$43,850,000, a decrease of \$4,450,000 from the \$48,300,000 for the first three quarters last year. The volume of sales likewise declined to 22,850,000 barrels of products, being 3,400,000 less than the 26,250,000 barrels reported in 1931.

For the quarter just ended, sales value declined less than 1 per cent from the second three months, which latter period recorded the same sales value as for the third quarter of 1931. Volume of sales during the quarter ended September 30, 1932, gained 7.2 per cent over the previous three months, and 5.1 per cent over the third quarter of last year.

Production, subject to royalty, of crude and natural gasoline for the nine months approximated 11,800,000 barrels, as compared with 11,200,000 barrels during the 1931 period. In the third quarter this year, however, production totaled 3,800,000 barrels, a drop of 200,000 barrels from the corresponding period in 1931.

Capital expenditures for the nine months amounted to \$4,750,000, including \$1,684,000 of purchase obligation notes. This outlay consisted principally of expenditures for oil territory, marketing facilities, additional refinery equipment and field development. During the same period last year, capital outlay approximated \$4,400,000, mainly for marketing facilities, additional refinery equipment, pipe lines and field development.

Maintaining its excellent position, sustained throughout the trying period of the last two years, the company's current ratio September 30 was 10.8 to 1. Current assets approximated \$51,350,000, including cash resources of \$14,800,000, receivables—less reserve for possible losses, oil inventories, valued as of December 31, despite the increase in crude oil prices last June, and materials and supplies. Current liabilities were about \$4,750,000, being only

32.1 per cent of cash resources. December 31, 1931, cash resources were \$16,763,600; current assets, \$52,634,800 and current liabilities, \$4,959,300.

During the nine months of this year, the company reduced bonded indebtedness by \$1,366,000 and paid purchase notes totaling \$1,300,000. Adding the \$1,775,000 purchase notes issued during the period, the net reduction in total funded indebtedness was \$891,000. Total indebtedness of the company decreased \$1,112,000 from December 31.

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### Union Awarded Crude Oil Contract

Approximately 300,000 barrels of Kettleman Hills crude were sold last month by the Union Oil Company to the Nissho Company for delivery to the Imperial Japanese Navy. The first delivery of oil was made to the tanker Teiyo Maru at Port San Luis Sept. 30. The second will be made the 17th of this month.

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### Union Tanker Runs Aground

The Union Oil Company tanker Cathwood, under command of Capt. O. Phillipson, sustained damages to bottom plates on the forward part of the ship when she was grounded on Montausa Island, 260 miles from Balboa, C. Z., in a heavy rain squall Oct. 10. She freed herself six hours later at high tide and, although badly punctured, steamed for Balboa, arriving safely the afternoon of Oct. 11. Her refined oil cargo, consigned to Baltimore, will be transferred to another vessel for delivery to destination.

Wm. Groundwater, director of transportation, left Oct. 15 on the S. S. Talamanca to inspect the Cathwood and determine whether she can be returned in ballast to San Pedro for repairs.

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### Mr. Matthews on Trip East

R. D. Matthews, executive vice president, left Los Angeles October 1 on a combined business and vacation trip to New York. He will return on one of the boats routed through the Panama Canal, arriving home the 29th inst.

## One Year Ahead of Schedule at Hoover Dam



Dynamite speeds work at Hoover Dam

**T**HE first work on the bed of the Colorado River, from which will rise the 730-foot Hoover Dam, was begun September 20, when excavation was started on the 75-foot upstream cofferdam that will divert the river through the four diversion tunnels while construction of the big dam is in progress.

A rock fill thrown around a portion of the river bed has created a barrier behind which the construction of the cofferdam is being carried on. Mechanical shovels, tractors, trucks and a small army of men are at work on the river bed that is being bared to the sunshine for the first time since the Colorado began to knife its 1700-mile course through the heart of the western empire to the sea. This initial barrier to the river is located 100 feet down stream from the intake of the tunnels. It will be rock filled and faced with concrete which will tie into steel sheet piling driven at the upstream toe.

Two other similar dams will be erected below the site of the main dam. One, entirely rock filled, will be about 40 feet high, and the other, gravel filled and faced with rock will be approximately 50 feet high. The former will be 100 feet upstream from the lower portals of the diversion tunnels. The two dams will prevent the water from backing up into the excavation in the river bed for the big dam.

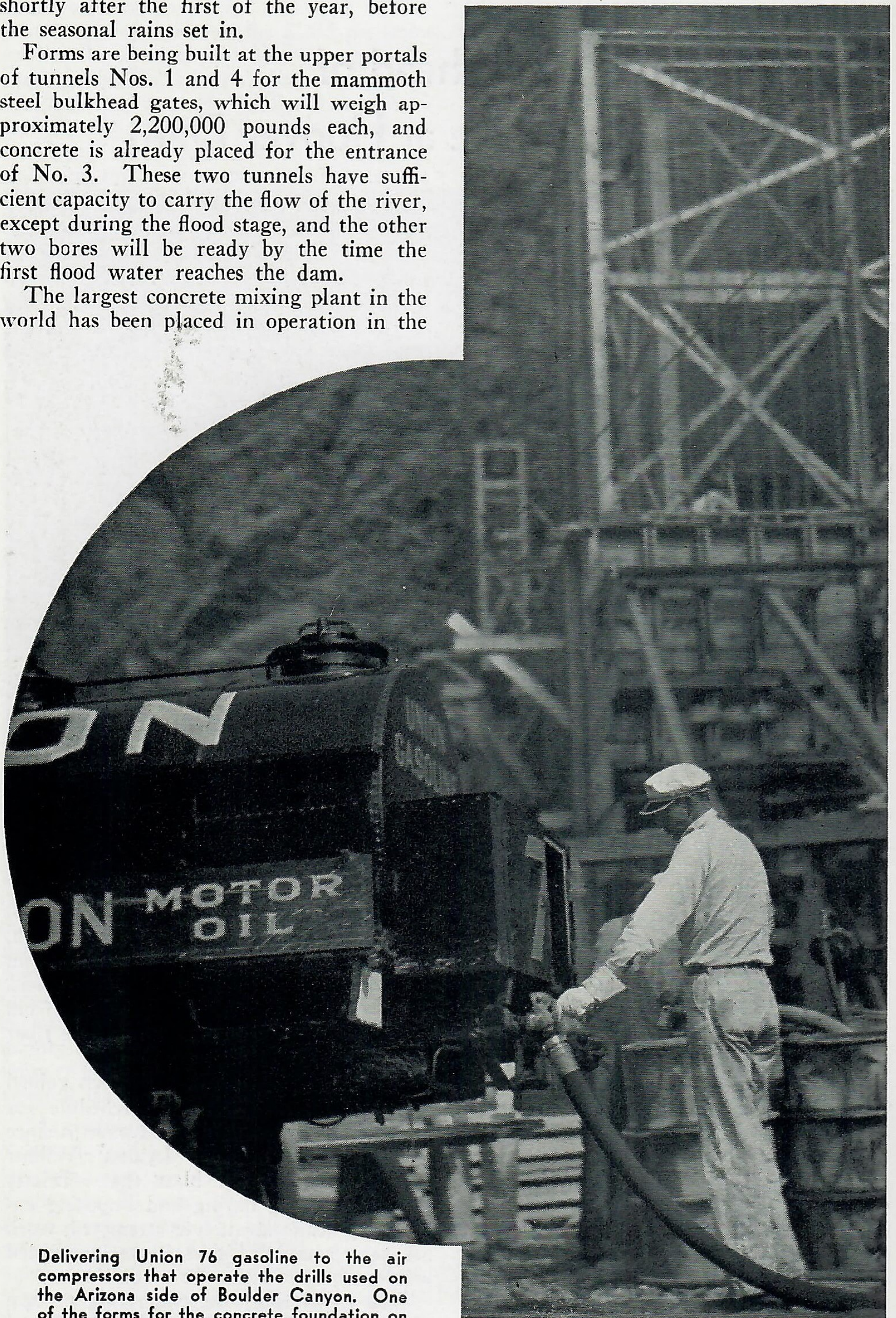
Approximately one year has been gained on the original construction schedule for the entire project. In the 18 months since Secretary of Interior Lyman Wilbur touched off the first blast that officially started the most daring and imposing engineering achievement ever attempted, work has been completed that it was estimated would require 30 months to finish.

Late in October the concreting of two of the 50-foot circular tunnels, Nos. 3 and 4, will be completed. The concrete lining for tunnels Nos. 1 and 2 will be in place

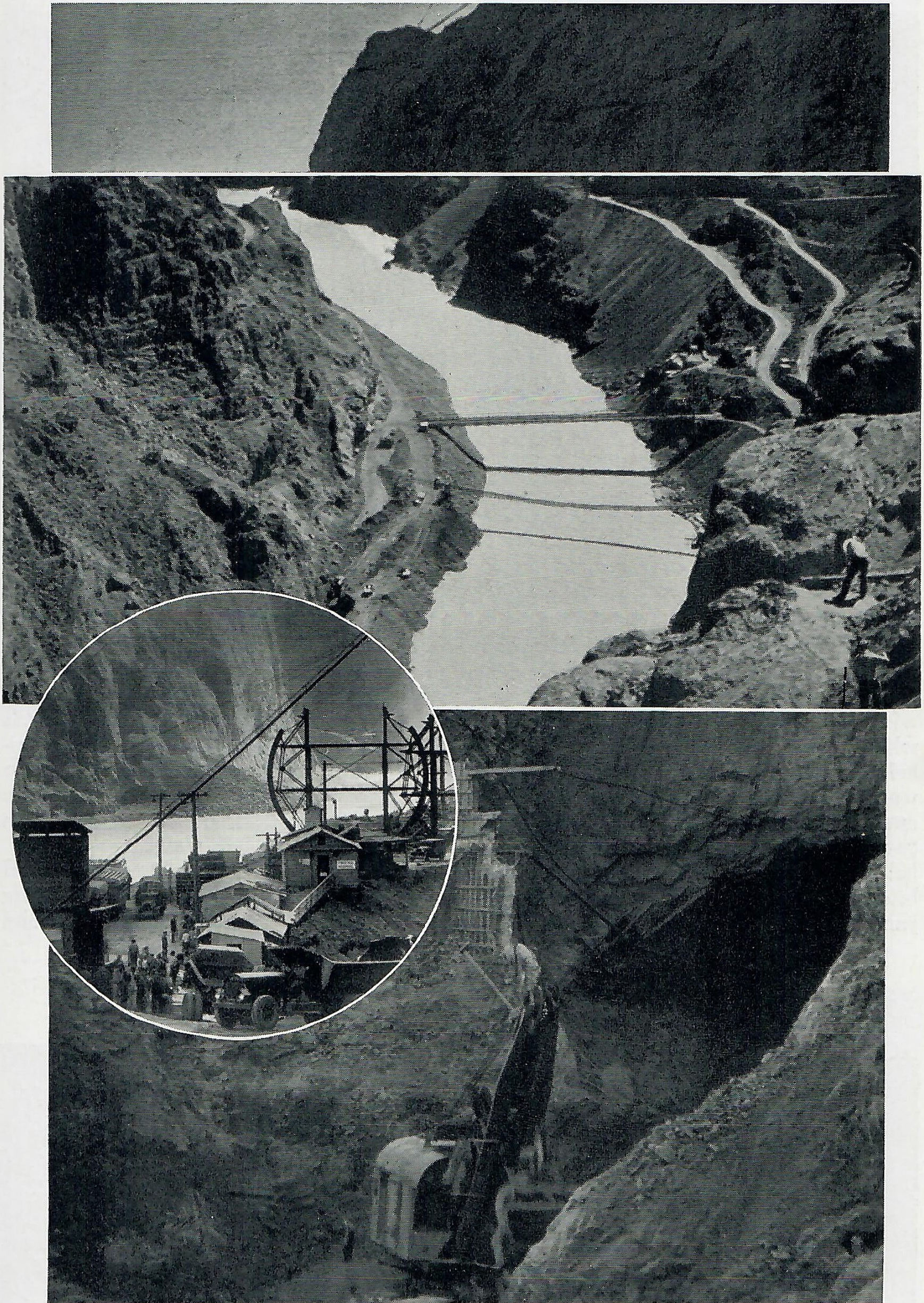
shortly after the first of the year, before the seasonal rains set in.

Forms are being built at the upper portals of tunnels Nos. 1 and 4 for the mammoth steel bulkhead gates, which will weigh approximately 2,200,000 pounds each, and concrete is already placed for the entrance of No. 3. These two tunnels have sufficient capacity to carry the flow of the river, except during the flood stage, and the other two bores will be ready by the time the first flood water reaches the dam.

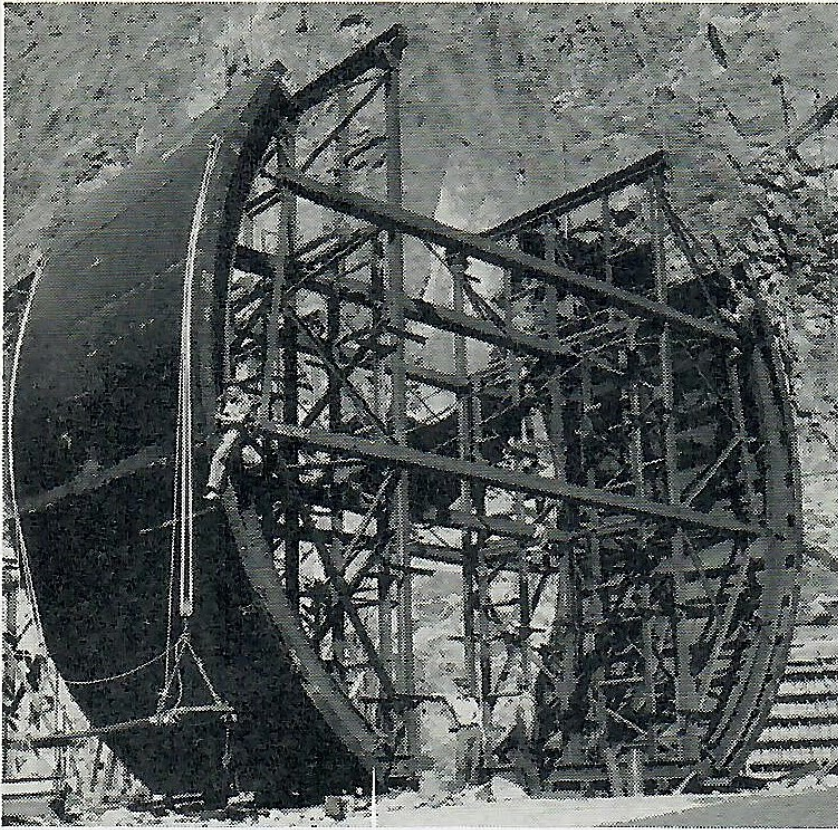
The largest concrete mixing plant in the world has been placed in operation in the



Delivering Union 76 gasoline to the air compressors that operate the drills used on the Arizona side of Boulder Canyon. One of the forms for the concrete foundation on which the 2,200,000-pound diversion tunnel intake gate will be hung is shown beyond the tank truck operator.



Some idea of the massiveness of the project is obtained from these photographs. The large one shows the 50-foot entrance to one of the diversion tunnels, while the inset at the top is a view of the dam operations from a high point on the cliffs overlooking the dam site. In the circle is one of the steel forms used in casting the three-foot thick lining for the diversion tunnels.



Close-up view of steel form used in concreting diversion tunnels. Frame is brought in via rail and after being assembled on the outside is moved into place in the tunnels.

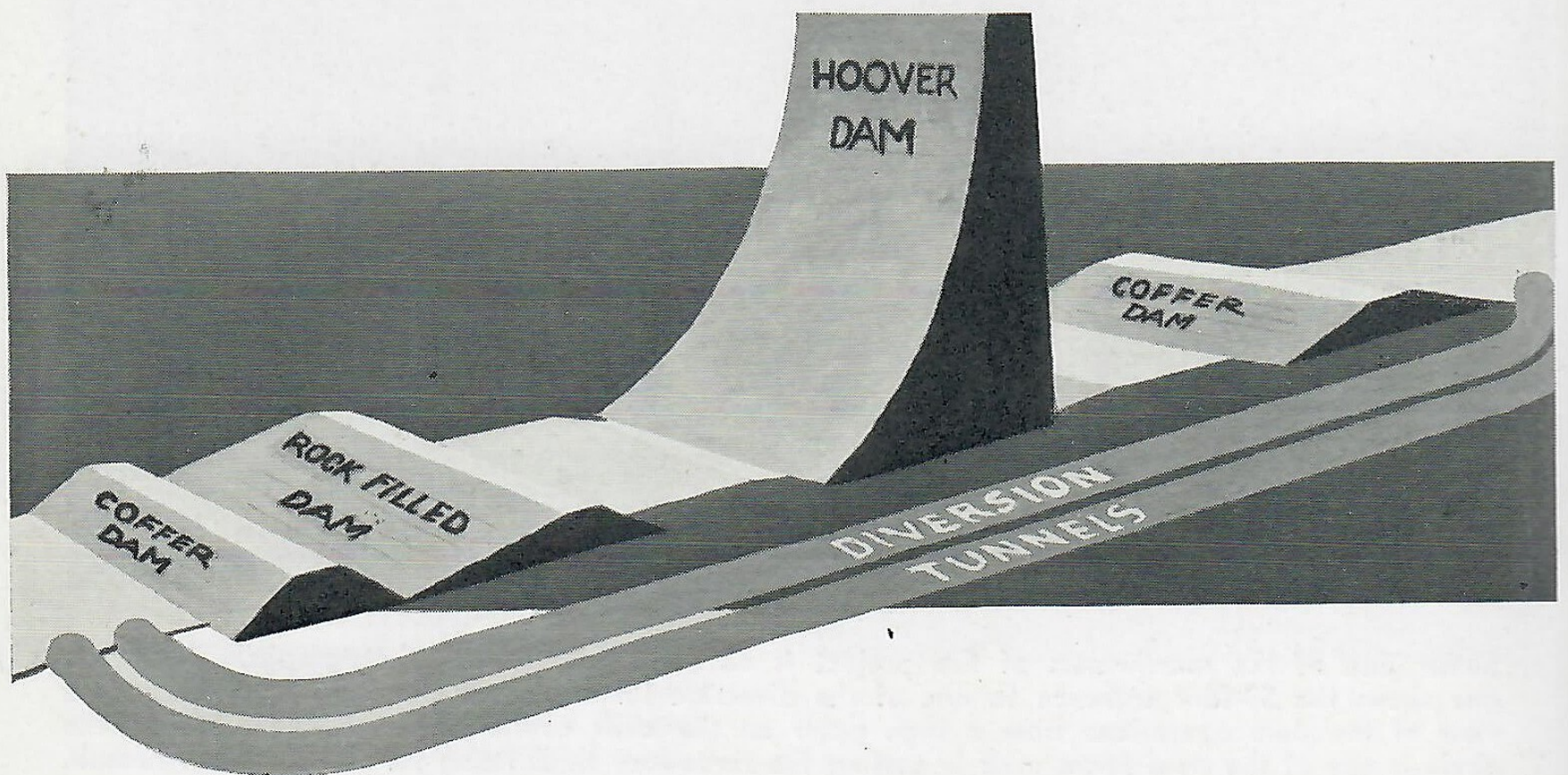


Completed end of diversion tunnel No. 3. Elevated roadway carries concrete and muck trucks back to other end of tunnel. Size of the circular bore, through which waters of Colorado will run during construction of dam proper, can be appreciated when compared to the men standing on the runway.

canyon about 2000 feet above the upper portals of the tunnels. A single track railroad line extends from Boulder City, base of supplies, and the sand and gravel plant four miles away, to the mixing plant and within 400 yards of the upper portals, which is double tracked for the two and a half miles along the river. To facilitate working conditions, a river camp has been established about a mile above the upper portals with dormitories for the men, mess-hall, and canteen. Steel span suspension bridges, anchored into the walls of the canyon, have been thrown across the river at

both portals. A wooden structure supplements the upper portal span. Cableways swing across the canyon at both ends of the project; the longest, more than one-half mile across, handles equipment weighing as much as twenty-five tons. Electric shovels dig into areas where excavation is necessary. Air compressors send a constant stream of power through a web of hose to drills operated from precarious ledges on the face of the canyon walls.

Caterpillars crawl up a dirt fill; level off a new road being built, shove a laboring truck up a steep incline. The muck and





concrete agitator trucks lumber from one part of the job to another, the brute motors, under protective steel-plate hoods, drone a monotone of power. Light delivery trucks, dwarfed to insignificance by the size of other equipment on the job, scoot in and out of tunnels loaded with electricians and supplies. The daily blasting, each morning at 11:30 o'clock, sharp, hurls tons of rock into the river, loosens tons more which are catapulted into the stream as workmen clean the sides of the canyon.

Not discernible to the physical eye, but overshadowing all else is the predominantly important human factor; the hard driving efficiency of the men, the quiet intent with which each task, large or small, is done, the feeling of being an important cog on the job with which all are imbued. A "mucker" shuffles by, his smile like his clothes creased with the red-yellow grime which seems to pervade even the atmosphere of the project; Frank Crowe, general superintendent of Six Companies, Inc., builder of Boulder Dam, drives into the canyon viewing work with the engineer's capacity for assimilating details. A Bureau of Reclamation man watches amused while a Caterpillar responds to the touch of a man who thinks and acts simultaneously as he levels a dump on a new roadway, sends his charge up an embankment so nearly perpendicular that any vehicle less leech-like would somersault backwards.

The major portion of the work since the first break-through in drilling tunnel No 3, which occurred February 7, 1932, has been devoted to completing the other three tunnels and lining them with the three-foot thick shell of concrete. The 50-

foot circular bores, the combined length of the four of which is three miles, will all be completed and ready for service before the Colorado goes on its customary spring rampage. The total maximum carrying capacity of the four bores is 205,000 cubic feet per second. High flood flow rate of the Colorado through Boulder Canyon has not exceeded 187,000 cubic feet per second for a number of years, so that should even unusual flood conditions arise, work going forward on the dam proper will not be hampered.

The problem of building forms for the concrete lining and providing a means of pouring the concrete, has been met with a type of ingenious equipment built on the job in a manner that is rapidly becoming traditional with Six Companies. Steel form sections, built on the outside are hauled into the tunnel, then fitted into the curvature of the excavation, with three feet remaining between the tunnel walls and the inside of the forms. An overhead crane, electrically operated, is installed on track laid on a concrete shelf near the bottom of the tunnel and extends throughout the bore as the work progresses. The crane is equipped with two pouring buckets, hung on cable slings so that concrete can be poured in both sides of the forms alternately. Concrete mixed at the low level plant is conveyed by 4-cubic yard agitator trucks to points inside the tunnel, from where it is emptied into the pouring buckets operated from the crane, elevated to the various pouring levels along the side of the forms, and dumped into the troughs through



Refueling the gasoline motor driven dinky engine used to switch railroad cars at the concrete mixing plant.

which it tumbles down into the forms. Intake portals at the tunnels are poured in the same manner, except that the concrete agitator-conveyor is elevated to the top of the forms housing the mouth of the tunnel by a cableway strung across the canyon and emptied into the top of the forms. The superstructures on which the gates to the tunnel will be hung are being poured in the identical manner. Curing of the concrete in the tunnels is aided and speeded, after the forms have been removed, by the application of a special bituminous product.

Sept. 29, the first of four steel gates was completed in the Los Angeles plant of the Consolidated Steel Corporation, from where it will be transported—on 40 flat cars—to the damsite. Weighing more than 1100 tons the gate, three more of which are being built for hanging at the intake portals of Nos. 1 and 4 tunnels and cover portals of Nos. 2 and 3, are 50 feet high and 35 feet wide. They are constructed to withstand 58,000 tons water pressure. Steel girder units used in the building of the gates weigh 35 tons each. Upon the completion of the gates at the Los Angeles establishment they are dismantled, loaded aboard freight cars and sent to the site of the dam. There they are to be re-assembled and slid into place in front of the end of each tunnel. Upon completion of the dam, they will seal up the spillway tunnels at the upper end and be used to close off the penstock tunnels for periodic inspection.

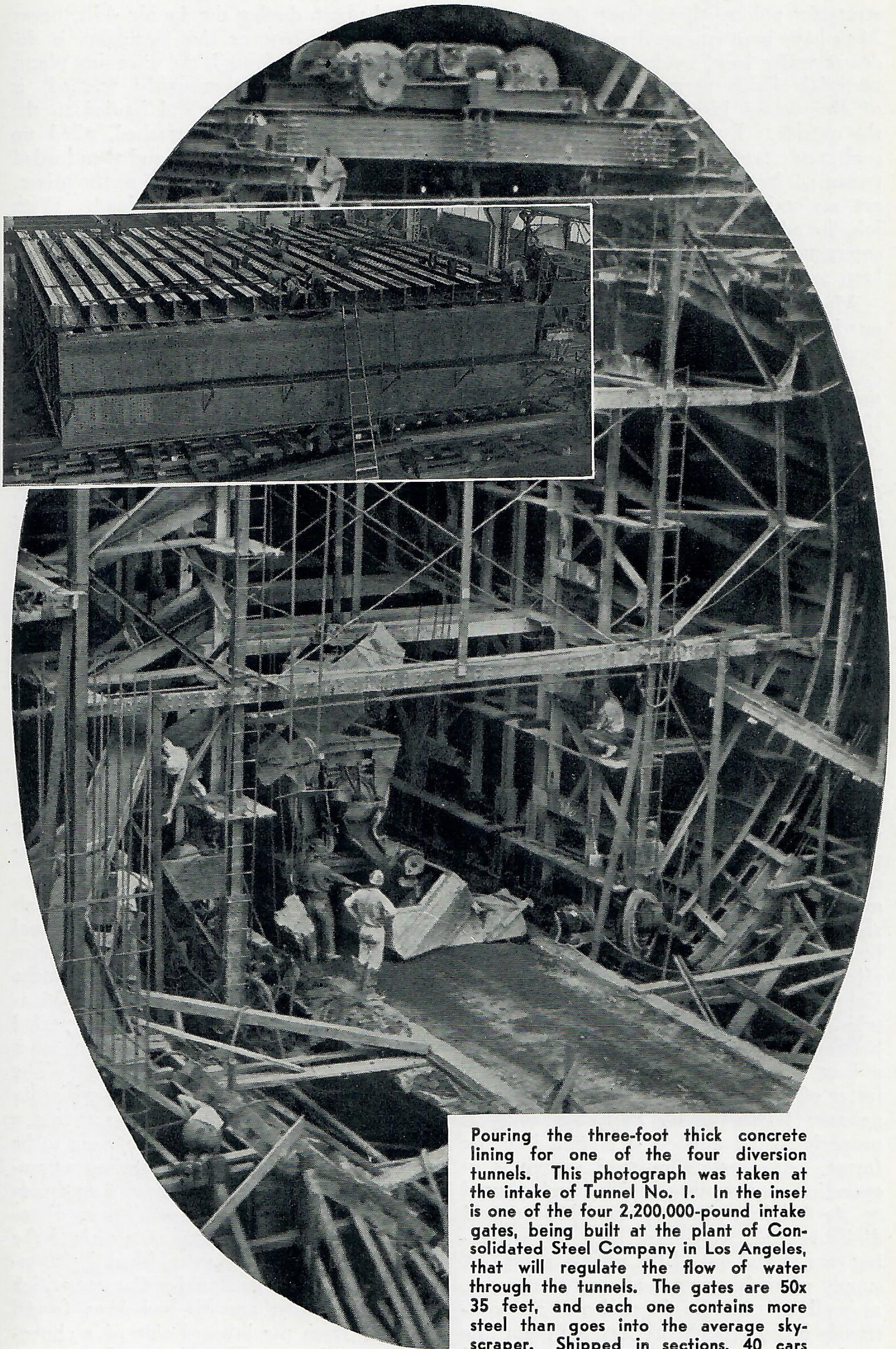
The lower level concrete mixing plant, the largest ever built, is likewise a monument to the builders' ability to adjust the work to the job. Towering four stories above the railroad lines over which supplies are brought in, it is equipped with conveyor belts by means of which sand and gravel are elevated to the mixing bins. Cement is brought in in bulk carload shipments and air-pumped from the cars through suction lines to the top of the mixing plant. To facilitate pouring at the dam and to expedite the process, a railroad line, for which a large amount of fill and boring through the Nevada side of the canyon wall are necessary, is now being built from the mixing plant to the damsite. With the mixing plant running at full capacity of approximately 4000 cubic yards daily, the train will shuttle between the plant and the pouring site, accomplishing the work of an

entire fleet of trucks. Another mixing plant, from which the upper portion of the dam will be poured, will eventually be built on top of the cliffs overlooking the canyon. The capacity of the two plants will be 6000 cubic yards of concrete per day.

For the past two months the walls of the canyon into which the dam proper will extend for attachments and foundations have been periodically blasted. Tons of rock clinging to the side of the walls are dynamited into the river with a daily charge. Men suspended from ropes, working with air hammers, loosen and send tons more into the river bed. Rock and muck which have been dumped into the floor of the canyon have already reduced the width of the river. Lookout Point, a former vantage location on top of the canyon, overlooking the work, from which visitors observed the project prior to last March, has been sacrificed to the job and blown into the canyon to make way for the cableways on the Nevada side. However, another point has been established, slightly lower in the canyon, to which sightseers may now drive and view the activity in the canyon below. A wide highway, which will eventually traverse the top of the dam, has been built to the crags overlooking the damsite on the Nevada side, and a similar roadway is going in at the present time on the Arizona side. The two will be connected by the dam.

The disposal of muck, which is dug out of excavations in the floor of the canyon, remains one of the most difficult problems confronting the contractors. Roadways have been cut from the lower portal to the top of the cliffs below Black Canyon proper. A road winds up through the ravines from the upper portal to the top of Black Canyon. Trucks loaded with muck and rock grind up these grades to dumps which have been spotted above and down the river from the center of activity. Actual time in loading and dumping amounts to a couple of minutes. In some instances 30 or more minutes are required to take a load to the top of the Arizona side of the canyon and return.

Working conditions at the damsite now are appreciably better than when the job was initiated. Prostrations from heat were materially reduced during the past season. Drinking water, cooled by electrical refrigeration, has been provided at many



Pouring the three-foot thick concrete lining for one of the four diversion tunnels. This photograph was taken at the intake of Tunnel No. 1. In the inset is one of the four 2,200,000-pound intake gates, being built at the plant of Consolidated Steel Company in Los Angeles, that will regulate the flow of water through the tunnels. The gates are 50x 35 feet, and each one contains more steel than goes into the average skyscraper. Shipped in sections, 40 cars will be required to transport each gate.

strategic points throughout the canyon. Men have been equipped with the familiar desert water bags, made of a heavy porous material which permits a small amount of the water inside to seep through to the outside. Evaporation keeps the water cool and fresh. The bags are highly treasured by the men. First aid stations are maintained at many locations on the job, in addition to ambulance service for emergency cases where serious injuries have been received in accidents.

More than 3500 men are now working on the Hoover Dam project. Within the next three months, with completion of the diversion tunnels and commencement of the work of draining the water from the river bed and the starting of the excavation for the dam proper, approximately 4000 men will be employed. Officials of Six Companies, Inc., warn, however, that there is already an ample number of men available to complete the increased payroll, and that all employment is handled by the Department of Labor. Stress is placed on the fact that no one should come to Boulder City in the hope of securing employment at Hoover Dam. Housing conditions in both Boulder City and Las Vegas, 22 miles distant, while ample for the present will not permit an influx of job seekers, Six Companies men state.

Equipment on the job is maintained in excellent condition. Garages, where automotive troubles are remedied, are in operation at both the upper and lower portals, and are amply personneled with competent mechanics. Blacksmith, machine, carpenter, and tool dressing shops, as well as store houses for electrical and mechanical supplies, hum with activity 24 hours a day. Equipment at the dam consists of 9 electrically operated  $3\frac{1}{2}$  cubic yard shovels, a battery of air compressors, pile-drivers, and a fleet of muck and concrete trucks, the latter of which are built with 4-cubic yard agitator bodies which keep the concrete properly mixed until it is poured into the forms. A complete railroad system is in operation continuously, and is supplemented at the mixing plant by gasoline-operated dinky engines which are used for switching cars in and out of the mixing plant. A supply of tools, parts, and new equipment, as well as concrete ingredients, are constantly being brought in over the main line to the damsite. Activity at the rock and

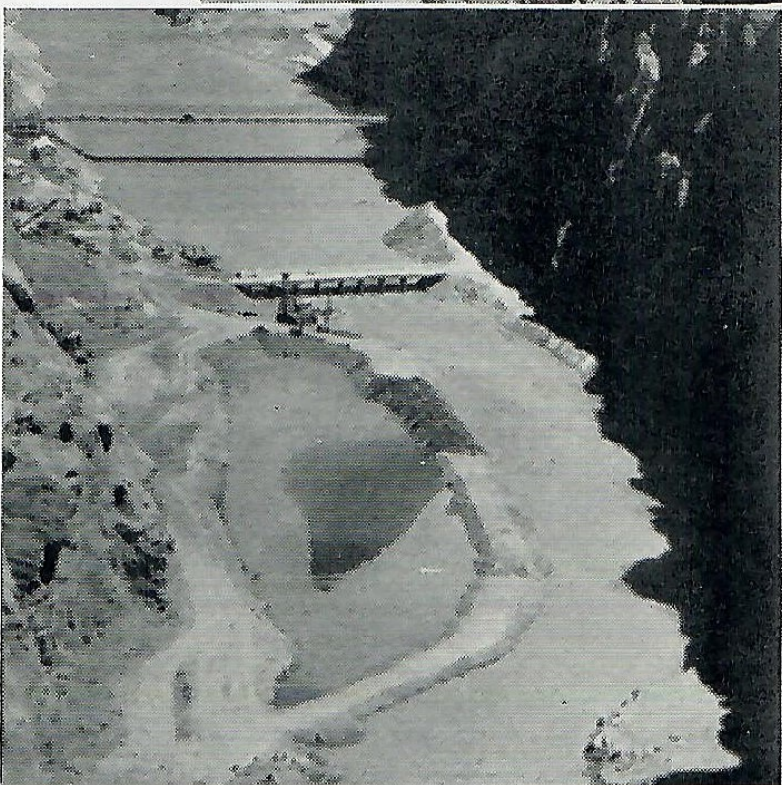
gravel plant, during the double shift, never slackens. Whatever size aggregate is desired is ground through the screening plant, and, after being thoroughly washed, is dumped into rock cars and hauled to the mixing plant. Sand is washed, piled up by means of conveyor belts, and then loaded by crane into cars and hauled to the mixer. Cement is sent in by the carload. With three shifts at work, all activity except that at the gravel plant is carried on 24 hours a day. Viewed from a vantage point at night, the floor of Boulder Canyon, illuminated by thousands of lights hung across the canyon and along the roadways, has all the appearance of a fantastic Hollywood miniature movie set.

Boulder City in the eighteen months that work has been progressing on the dam project has sprung into a model city. Under the direction of Walker R. Young, construction engineer, and Sims Ely, Boulder City manager, appointed by the Bureau of Reclamation, streets have been ideally laid out and paved, sewage system completed, a large number of persons and corporations granted concessions to operate business enterprises on the reservation, and new school, religious and recreational facilities provided. A number of modish homes, set in green lawns and flowers, and fronting on paved streets, have been built within the past few months and are now occupied by workers. A new theatre plays feature pictures nightly. Tennis courts and other sports recreational equipment have been incorporated into the development program.

With the builders reporting work already one year ahead of schedule, actual construction of the 730-foot Hoover Dam will start shortly after the middle of the coming year, instead of December, 1934 as originally planned. The ten-year period allotted to complete the enterprise may, as a result, be considerably shortened. The government has fully cooperated with Six Companies, and although Congress for a time disputed the means which were to be utilized in providing the necessary appropriations to continue the work, no funds have been delayed or expenditures disapproved. Secretary Wilbur on a visit to the project last month was whisked by automobile into areas in Boulder Canyon which eighteen months ago he had been forced to view from the inboard side of a churning motorboat. He expressed extreme

satisfaction with the progress being made and marveled at the change which had come over Boulder Canyon since April 20, 1931, when he officially set the construction wheels in motion.

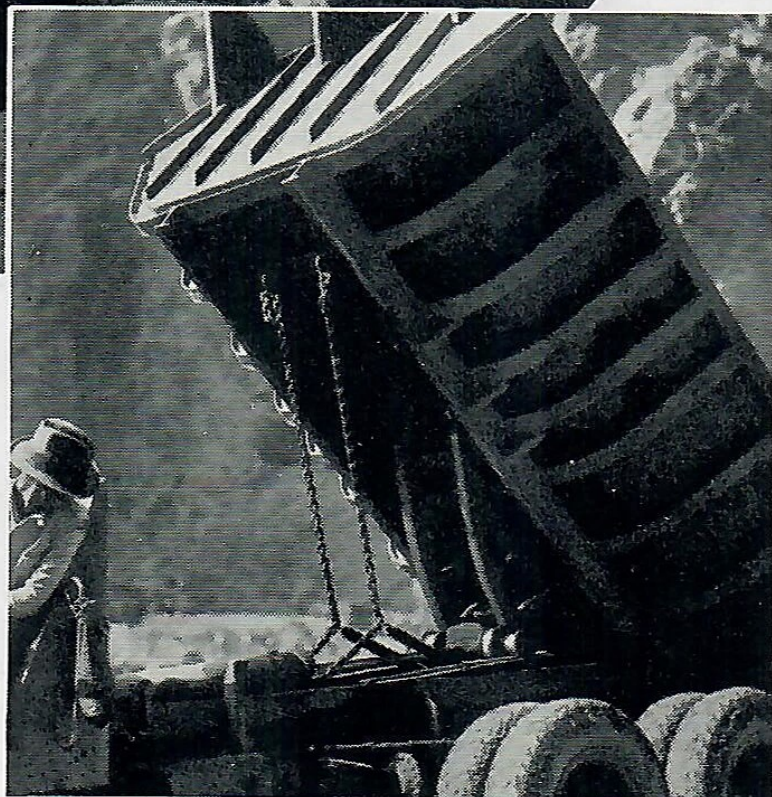
Basic plans have been formulated for the construction of the All-American Canal and the Metropolitan Water District of Southern California aqueduct. To provide immediate funds for beginning the work on



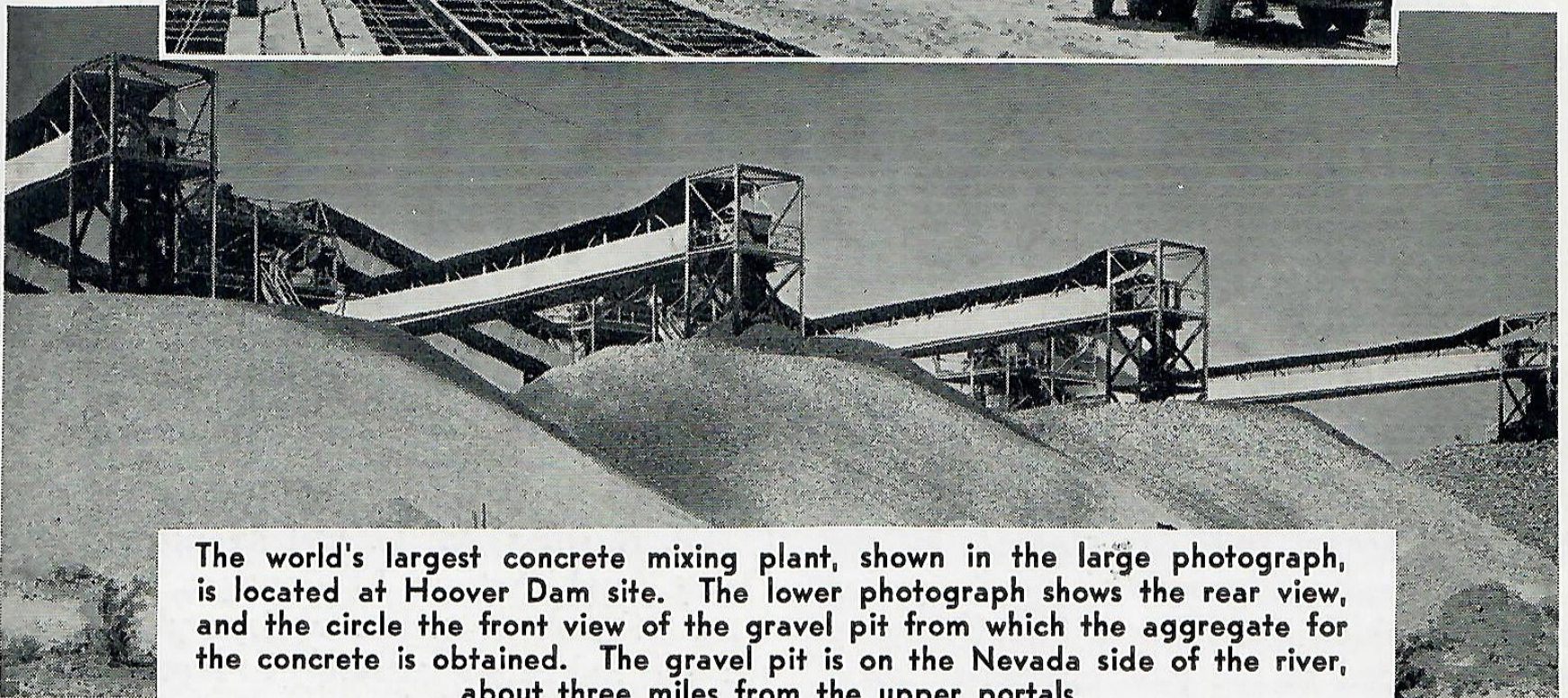
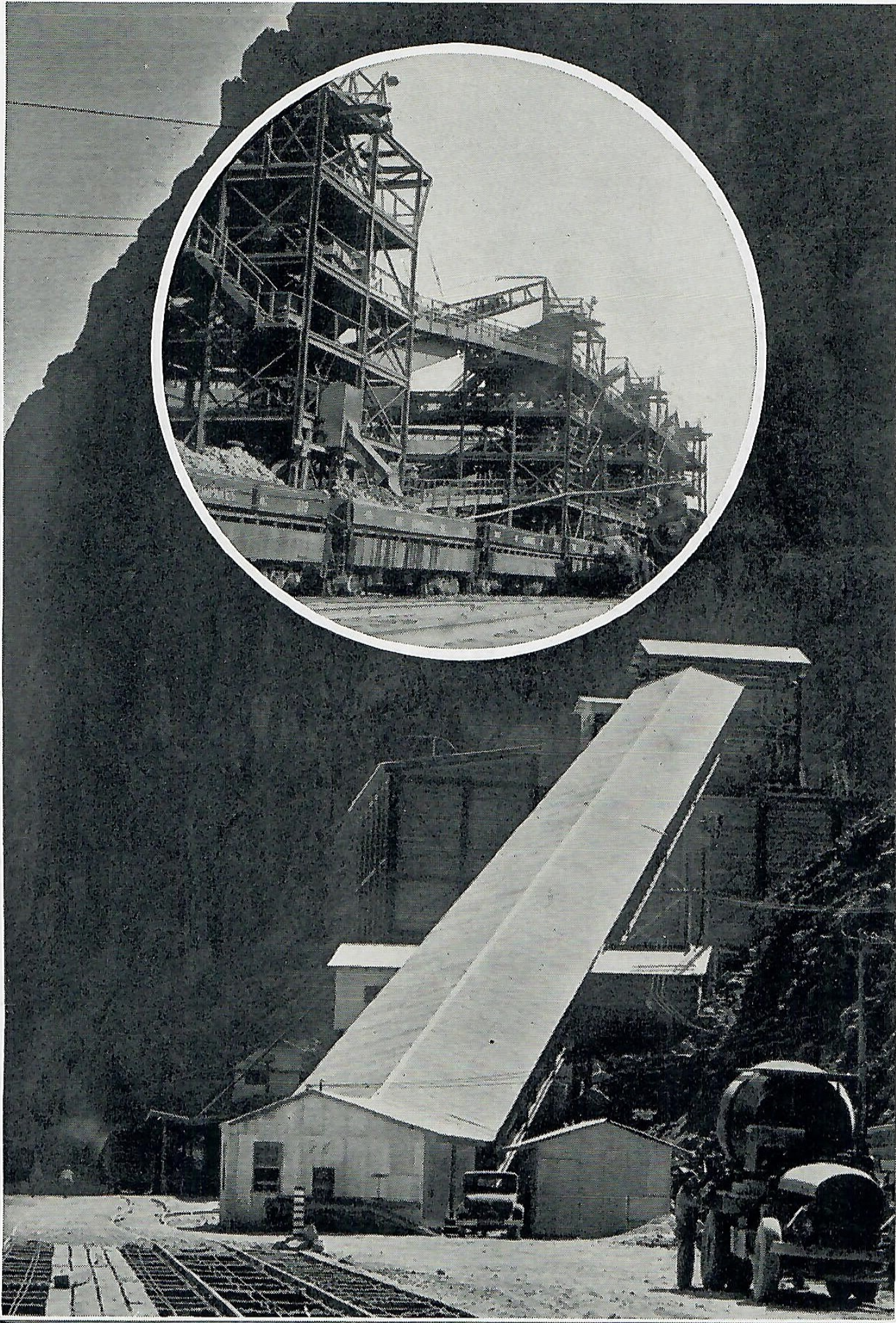
Construction of the 75-foot cofferdam that will turn the Colorado River from its age-old course and into the four diversion tunnels was started Sept. 20. The photograph in the circle shows work in progress on the coffer dam, while the lower picture shows the rock fill that has been extended part way across the river preparatory to building the dam.



The truck plays a heroic part in the work at Hoover Dam. Here are a couple caught in action. In the inset is one of the "76" pumps from which trucks are fueled.



the aqueduct, the Reconstruction Finance Corporation recently granted a loan of \$40,000,000 to the district. As quickly as possible work is to be started so that a number of men may be given employment and that the aqueduct will be ready for use when Hoover Dam is completed.



The world's largest concrete mixing plant, shown in the large photograph, is located at Hoover Dam site. The lower photograph shows the rear view, and the circle the front view of the gravel pit from which the aggregate for the concrete is obtained. The gravel pit is on the Nevada side of the river, about three miles from the upper portals.



Arthur O'Flanagan

C. W. Burtless

M. L. Del Monte



J. M. Geary

25 Years



# Service Emblem Awards



H. C. McMaster

20 Years



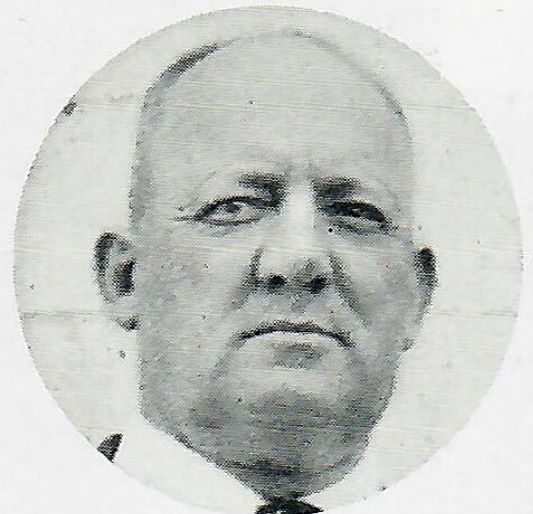
H. M. Brubaker



J. C. Rector



C. E. Ransom



A. M. McDonald

**W**ITNESSES and participants in the extensive "growing pain" period through which the Union Oil Company has developed in the past quarter-century,

C. W. Burtless, M. L. Del Monte, J. M. Geary, and Arthur O'Flanagan, in the work of each of whom various phases of the oil industry's activity is represented,



last month completed 25-year periods of continuous service with the company.

After being on the Isthmus in the employ of the Canal Commission long enough to qualify for one of the medals given by President Roosevelt for two years' service, C. W. Burtless joined forces with the Union Oil Company on September 5, 1907, as cashier of the Panama office. The Panama pipe line had just been completed and deliveries of oil for canal work started. Burtless, in addition to his duties as cashier, did the stenographic work, paid the men, and for a time was relief gauger. He particularly relished the outside work since excavation for the cut was then at its height and monthly yardage records were being consistently broken. After three years in Panama, Burtless was transferred to California and placed in charge of clerical work during erection of the Brea refinery. There he remained for ten years. September, 1921 he was moved to Santa Paula as superintendent of the refinery, the position which he now holds.

Born in Rodeo, but a short distance from Oleum, "Mike" Del Monte as a boy saw ground broken for the Oleum refinery. He first received employment from the company in 1898 as a teamster and later worked as fireman on the four 200-barrel "batch type" stills, which equipment constituted the capacity of the Oleum plant at that time. After a few years out of service, Del Monte returned in 1907 as yard foreman. His continuous service dates from that year. Two years later he started in the pipefitting gang and worked to the post of fitter foreman in 1919. F. P. Doughty, head lube oil treater, is the only employee at Oleum whose service antedates that of Del Monte. Both recall when the payroll at the refinery listed but 20 men. In the thirteen years Del Monte has been pipe fitter foreman he has been on continuous call whenever trouble developed within the plant.

There are few men in the United States who have been selling petroleum products longer than J. M. "Jack" Geary, manager of refined oil sales of the company since 1918. He started at the age of 15 with Standard of New Jersey at Baltimore, Md. Three years later he shifted to San Francisco to work for the predecessor of Standard of California, Standard of Iowa. The Union Oil Company, fighting its way

to Pacific Coastwide recognition, caught his attention and he enrolled in its service as a salesman in the San Francisco district in 1907. Two years later he was transferred to the Seattle district. He was one of two salesmen covering the entire state. At the time but one station was maintained in Seattle. It required two weeks by train to cover his territory. Geary made all of his own collections and regards with pleasure the fact that despite occasional droughts which hit the farming areas, he didn't lose a collection or a customer. After four years in Seattle he was transferred to San Francisco to handle asphalt sales, and in 1914 was assigned to San Jose as district manager. Two years later he was shifted to Los Angeles as district manager, and in 1918 was promoted to manager of refined oil sales, which position he had held, under a variety of titles, since then.

There are only two or three men in the company who have served in the sales department longer than "Jack" Geary, and none whose connection with the oil business antedates his. He has seen the backbone of petroleum sales shift from kerosene to a formerly despised by-product, gasoline.

Joining the employ of the company as first assistant engineer on the SS Lansing on September 20, 1907, Arthur O'Flanagan two years later was made chief engineer. August, 1909, he was transferred to the SS Washtenaw as chief engineer and remained in that capacity until April, 1916, when he was assigned to duty on the SS Coalinga. During the period of construction of the SS Montebello and the SS La Placentia he served in the capacity of inspector of the boiler construction on both vessels and later went to sea again as chief engineer of the La Placentia. August, 1922, O'Flanagan was transferred to duty on the SS Santa Maria where he remained for approximately two years. Following a period of seven years' service as chief engineer of the La Placentia, he recently was temporarily listed for duty on the SS Oleum. O'Flanagan holds both American and British chief engineer's papers.

H. M. Brubaker, A. M. McDonald, H. C. McMaster, C. E. Ransom, and J. C. Rector all completed a 20-year tenure of employment with the company last month. Brubaker drove a tank wagon from the Covina station in Southern California as his first job. Business developed so rapid-

ly that a larger, three-horse wagon was put in service, only to be soon replaced by an Alco truck. A driver came with the truck, to help bucket the products, since hose was then unknown. The territory of Pomona and Ontario was then covered from the Covina plant. Brubaker was soon afterward appointed agent at Covina. His sales territory now enjoys a substantial business.

Born in Arkansas, A. L. McDonald came to California in 1908 and joined forces with the Union Oil Company four years later at the San Pedro sales office. Only nine men were in the sales crew at the time. Two years after his employment, McDonald began driving a tank wagon in the San Pedro, Wilmington, and Torrance territories, the first wagon to be put in service in the area. McDonald acted as salesman, credit man and collector. Union Oil, McDonald says, was the first to adopt motor delivery service in the harbor area. He served as tank truck salesman until January, 1928, when he was transferred to the Manufacturing Department, in which he is still employed.

H. C. McMaster was first employed in the Field Department as a roustabout on the Stearns lease. Two years later he became tool dresser and derrickman. In 1918 he was transferred to the stores division as warehouseman, serving at the Graham and Loftus, Stearns, and Brea warehouses. When the Santa Fe Springs field was discovered he was placed in charge of the warehouse opened to serve that field. In 1930, McMaster was appointed superintendent of salvage and made responsible for the disposal of obsolete equipment and material, in which capacity he is now working.

During the first year of his employment with the company C. E. Ransom drove a four-horse team, making tank wagon deliveries of fuel oil in Los Angeles. He was transferred to the Los Angeles lubricating division in 1914 when it became a part of the manufacturing department. Previously he took over the job of stake truck driver, delivering packaged products, such as refined and lubricating oils. May, 1929, he was assigned to the warehouse as assistant to the shipping foreman, and January, 1930, succeeded Mr. Winfield to the post of shipping foreman, in which capacity he is still serving.

J. C. Rector, superintendent gas opera-

tions, southern division, entered the company's service as an electrician in October, 1907, but left four years later. He was employed by the Pinal Dome Oil Company in 1912 as an electrician, and his service record begins with that year. Twelve months later he was elevated to the position of foreman of gas lines and gas distribution in the Orcutt field. When the Pinal Dome holdings were purchased by Union Oil in 1917, he was transferred to the Orcutt absorption plant as foreman of gas operations. June, 1918 he became superintendent gas operations, Orcutt. Late in 1924 he was shifted to the southern division and placed in charge of gas operations, the position he now holds.

#### Fifteen Years

Brainard, Arthur E., Southern Division  
Broadbent, Lester D., Los Angeles  
Brunk, Charles Chester, Head Office  
Burgess, Shoderick L., So. Div.-L.A.P.L.  
Craig, Cecil L., Head Office  
Doss, Ashley V., Southern Division  
Garrett, John W., Southern Division  
Hansen, Julius, No. Div.-P.P.L.  
Hatfield, Ray T., Southern Division  
Hoyt, Donald J., Head Office, Oleum  
Kansagrad, Nick, Oleum Refinery  
Knutsen, Lindsay, Head Office  
Moseley, Charles T., Southern Division  
Smith, Walter V., No. Div.-P.P.L.  
Teel, Benj. F., Southern Division

#### Ten Years

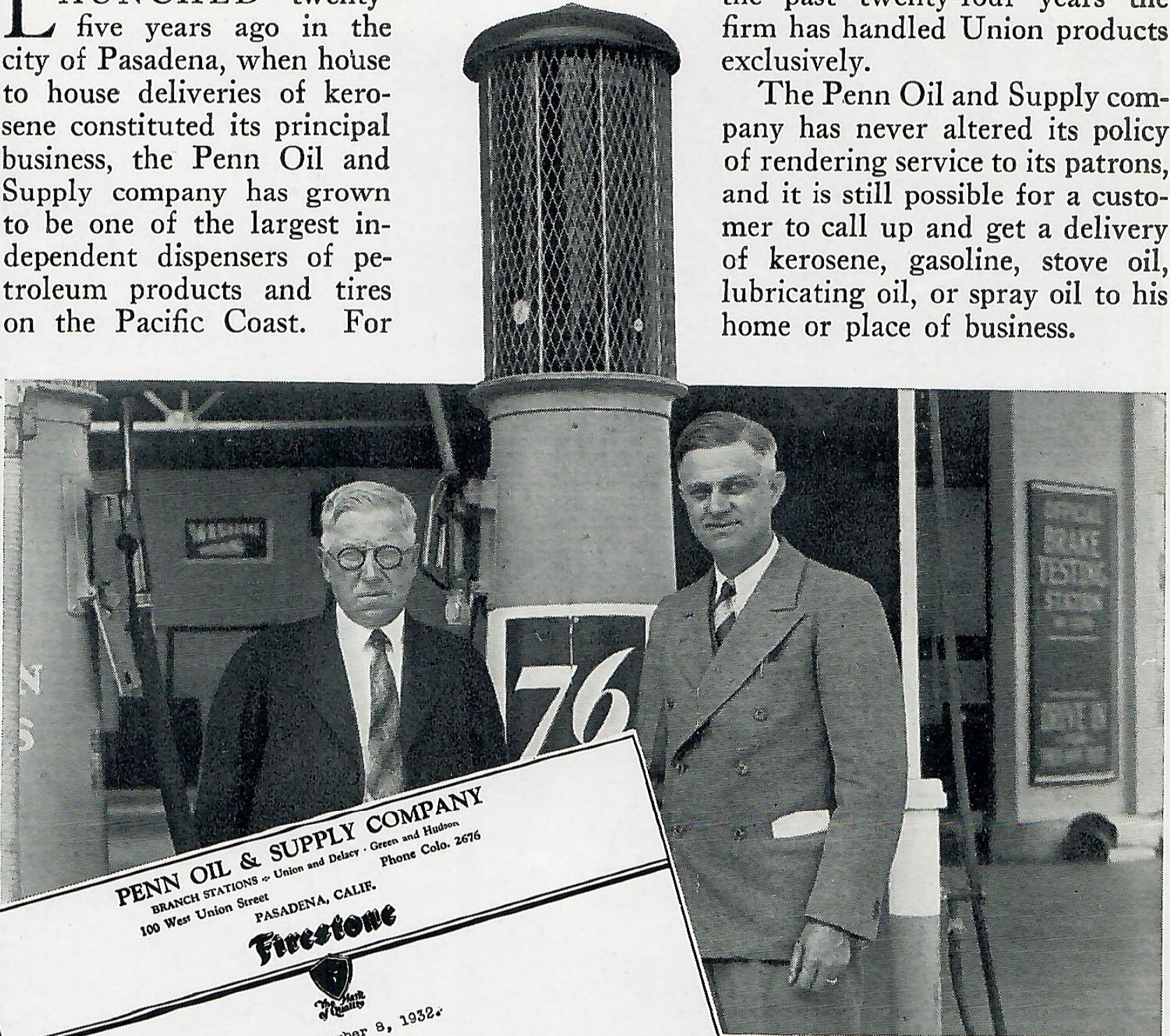
Carter, Willard D., Oleum Refinery  
Chavira, Santiago, Los Angeles Refinery  
Connolly, Coleman, Oleum Refinery  
Douglas, Jack A., San Francisco  
Dunstan, William R., Los Angeles Refinery  
Forbes, Frank W., Southern Division  
Garner, Kent O., Southern Division  
Gomez, Joe, Oleum Refinery  
Harris, Kenneth T., Seattle  
Henderson, George S., Oleum Refinery  
Hill, Levi E., Los Angeles Refinery  
King, Robert A., Northern Division  
Leonard, Anna H., Head Office  
MacKinnon, Alister, No. Div.-P.P.L.  
Orens, William H., So. Div.-L.A.P.L.  
Pickering, Jesse C., Seattle  
Plumb, Arthur G., Los Angeles Refinery  
Reynolds, Frank A., Sacramento  
Robero, Anthony J., Oleum Refinery  
Tull, Ray M., Oleum Refinery  
Turnbull, Thomas J., Oleum Refinery  
Mueller, Max A., Los Angeles  
Reynolds, Cecil C., Oakland

# Union's Oldest Independent Dealer

**L**AUNCHED twenty-five years ago in the city of Pasadena, when house to house deliveries of kerosene constituted its principal business, the Penn Oil and Supply company has grown to be one of the largest independent dispensers of petroleum products and tires on the Pacific Coast. For

the past twenty-four years the firm has handled Union products exclusively.

The Penn Oil and Supply company has never altered its policy of rendering service to its patrons, and it is still possible for a customer to call up and get a delivery of kerosene, gasoline, stove oil, lubricating oil, or spray oil to his home or place of business.



**PENN OIL & SUPPLY COMPANY**  
 BRANCH STATIONS - Union and Delacy - Green and Hudson  
 Pasadena, Calif. Phone Colo. 2676  
 100 West Union Street  
 PASADENA, CALIF.



September 8, 1932.

Henry F. Armour, Dist. Mgr.,  
 Union Oil Company of Calif.,  
 Pasadena, Calif.

Dear Mr. Armour:

As we observe our twenty-fifth anniversary in Pasadena as marketers of petroleum products and automotive supplies, there are two outstanding features which we make mention of. In 1908 we decided to cast our lot with The Union Oil Co. The same year we took on the Firestone Franchise for Pasadena. To date, these early connections remain unbroken, and it is quite significant to note how these two Great corporations have since become so closely affiliated. It also is interesting, after a careful check up on our dust worn records, that we have paid these two companies approximately four million dollars, in equal proportions, for their respective products.

Why we preferred The Union Oil Company is three-fold. We liked their aggressive personality. Their products were and are superior. Lastly, Union Oil Company has many stockholders in our city. This feature fitted in nicely with our slogan-- "Every dollar spent with us continues to serve and build Pasadena." In the meantime, Union stock owners have been loyal to us and we are very grateful.

We are proud of our quarters in Pasadena. They rank, we are told, with the finest in this country. Our success is your success and may our pleasant relations continue indefinitely. We know they will for you have, as in the past, a protective policy for the independent dealers that is sound and profitable.

Sincerely,  
*Roy G. Christensen*  
 Manager.  
 PENN OIL & SUPPLY CO.

RGC:RS

G. C. Christensen, left, Roy Christensen, and letter written by the latter on the 25th anniversary of Penn Oil and Supply company

G. C. Christensen, founder of the Penn Oil and Supply co., with his two sons, Ernest and Roy, manager, is still active in directing the organization's affairs. The friends and customers won when the company operated

Below are the exterior and interior views of the new \$130,000 home of the Penn Oil and Supply company, 100 West Union, Pasadena, and in the inset on the left is a photograph of the company's first place of business.



from a little one-story brick building, a half block from its present \$130,000 structure, have remained loyal.

In 1908, when Mr. Christensen selected Union products, he also put in his first stock of Firestone tires, and has never had occasion to change the brand of gasoline or tires carried.

Roy Christensen, the present manager of the company, started to work for his father

delivering kerosene and stove oil from house to house. At the same time, J. B. Williams, assistant manager of refined oil sales for the Union Oil Company, was driving a tank wagon at the company's Pasadena sub-station. An acquaintance made then has had much to do with the

*(Continued in 2nd Col., Page 19)*

## New Shield and New Paint

**T**O CALL attention of the public to the "76" base of Union Ethyl gasoline, a new shield is soon to make its appearance on all Union Ethyl pumps. Also the Ethyl pumps are being repainted to conform with the paint scheme for Unoco and 76 pumps, the upper halves of which are green and orange, respectively, and the lower halves



*The new 76 Ethyl pump sticker and new color paint scheme for Ethyl pumps are shown in these two photographs.*

white. The upper portion of the Ethyl pump will be painted red, and the lower portion a solid white, doing away with the stripes, which have heretofore identified the dispensers containing Union's premium fuel.

A recent "76 Ethyl" advertisement, emphasizing the fact that Union Ethyl gasoline is 76 plus Ethyl, proved a decided

stimulant to premium gasoline sales, demonstrating that the public has been thoroughly sold on the high quality of 76 gasoline.

## UNION'S OLDEST DEALER

*(Continued from Page 18)*

pleasant relationship between the two companies.

A letter written recently to H. F. Armour, special agent of the Union Oil Company at Pasadena, by Roy Christensen on the occasion of the company's twenty-fifth anniversary, commends Union on its aggressiveness and its policy toward the independent dealers. He points out that in 24 years his company has paid to Union and Firestone approximately \$4,000,000, divided equally between the two concerns.

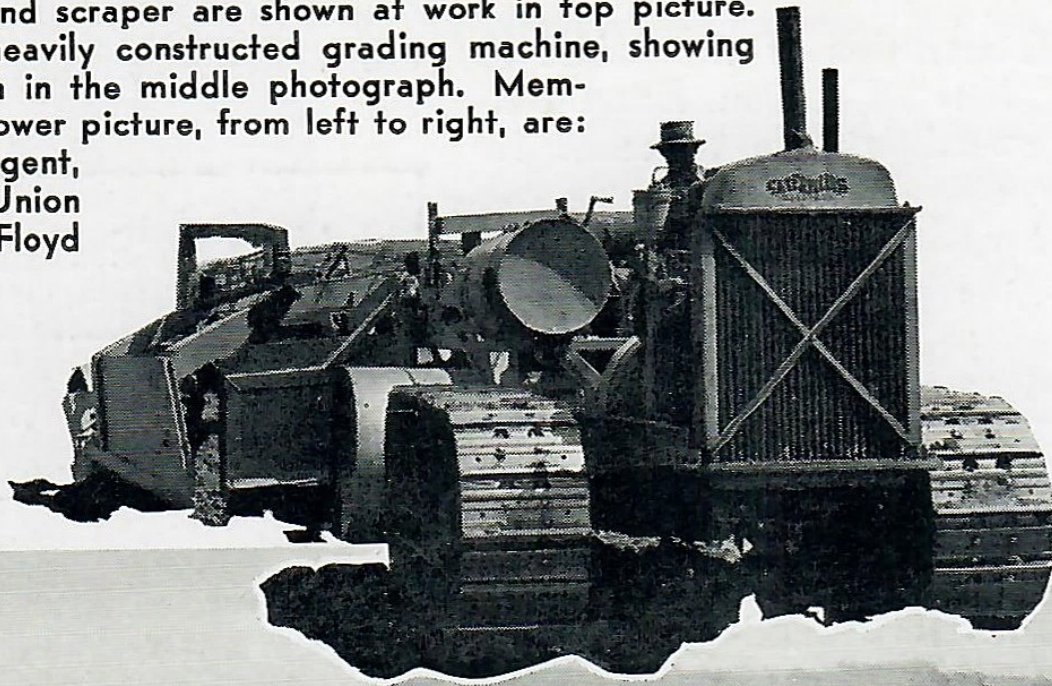
The present handsome structure occupied by Penn Oil and Supply company was built in 1930.

## REBUILDING SAN PABLO-CARQUINEZ HIGHWAY

**R**ECONSTRUCTION of the nearly 11 miles of highway in Contra Costa County, California, which joins San Pablo with the Carquinez Bridge, extensive structure spanning the Sacramento river near where its waters empty into the upper San Pablo Bay, was undertaken last month by the California State Highway Commission, with Basich Brothers, Torrance, California, road builders, being awarded the contract for the work.

Specifications written for the job call for grading and paving with asphaltic concrete and concrete 10.6 miles of highway at a cost of \$322,393.10. Constituting one of the major road improvements being made by the state highway commission at the present time, the building of the road is expected to require approximately five months to complete. Profitable employment will

Tractor-powered grader and scraper are shown at work in top picture. A close-up view of the heavily constructed grading machine, showing blades and rollers, is seen in the middle photograph. Members of the group in the lower picture, from left to right, are: P. E. Toups, Union agent, Oleum; John McGuire, Union special agent, Oakland; Floyd Hauser, foreman, grading job; Charles Neville, Basich Bros. representative, and A. B. Hauser, grading work contractor.



be granted to a substantial number of men during that period.

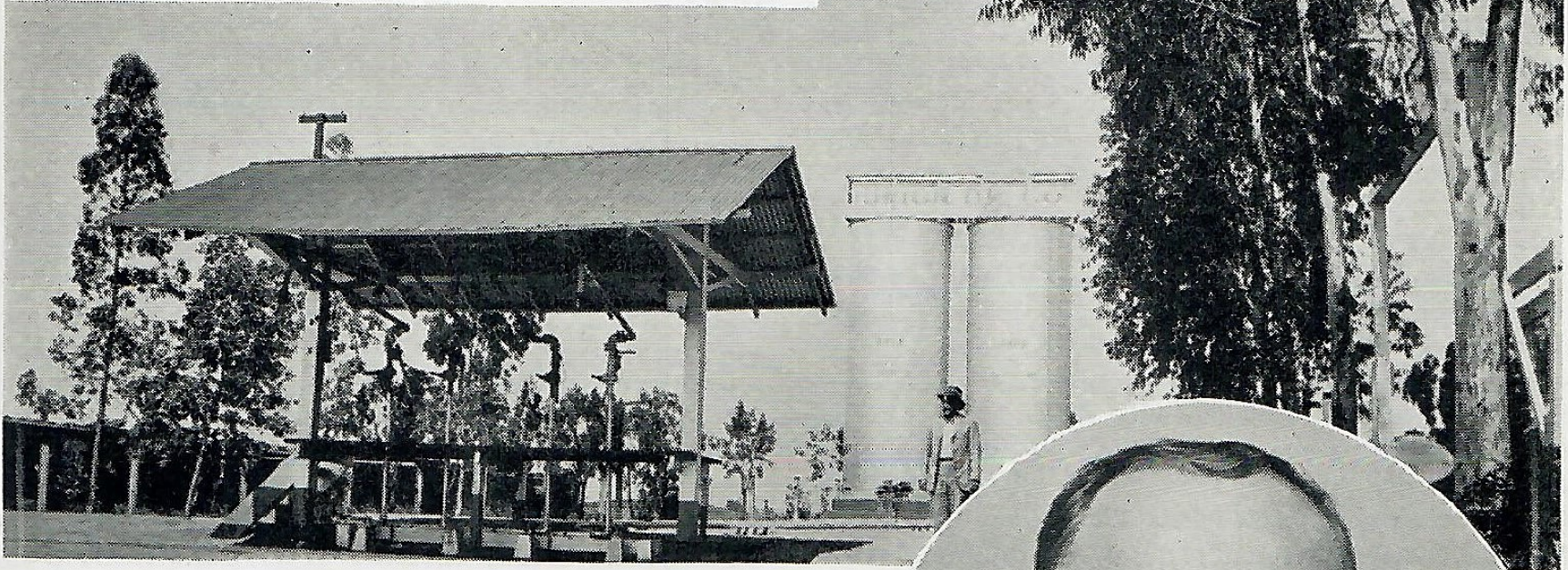
Basich Brothers, one of the largest road contractors operating within the state, has sublet the work of grading to the A. B. Hauser company. Hauser has brought to the job the latest and most modern type of scraping, leveling, and tamping equipment. Work is progressing on a three-shift, 21 hour day schedule. As much as 3000 cubic yards of dirt are handled daily.

The various pieces of equipment are be-

ing lubricated solely with Union Oil lubricants, and Union 76 is being exclusively used as motor fuel. When the actual paving work is launched, the Union Oil Company will furnish all asphalt to be used in laying the 10.6-mile stretch of highway.

**Successfully Combines Civic Service and Sales**

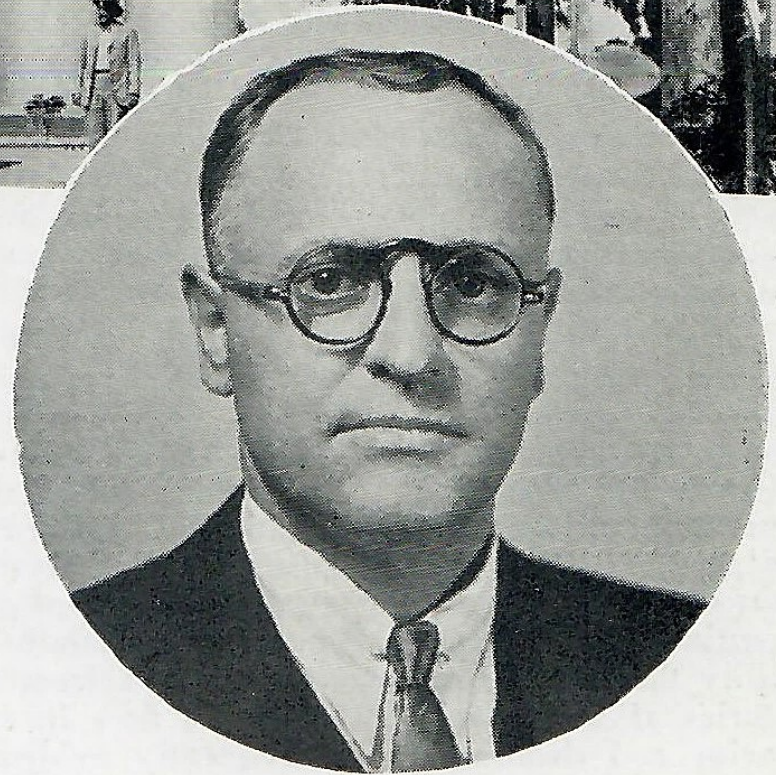
*Joseph E. Roberts, circle, and Beaumont sub-station operated under his jurisdiction.*



During the seventeen years Joseph E. Roberts has been agent of the Union Oil Company of California at Beaumont, he has won a high place for his company and for himself in San Gorgonio Pass and adjacent desert territory which he serves. While always alert to his company's interests, he has established an enviable record of civic achievement. He was born in Beaumont and, while spending a few years in the Northwest and in travel, he has centered his career in Riverside county.

As president of the school board for nine years, he was mainly responsible for the changes which placed the high school on the accredited list of the state, and to him goes credit for the building of the Olive grammar school and the new high school.

A charter member of the Rotary Club, he served three years as treasurer, as a director and as president, besides taking a leading part in its achievements, including the annual Community Christmas Tree. He has fully co-operated with Dr. Guy Bogart, founder of International Park and Bogart Bowl, in the World



Friendship program, which at the May Rotary conference in San Francisco brought the silver cup for the year's most outstanding service in the Second District.

Mr. Roberts has also served as Beaumont's mayor. His sales record shows that while he was giving much of his time to civic affairs of his community he was not neglecting the interest of the company.

**76 Selected for High School Bus Fleet**



*Part of the fleet of 36 busses operated by the Chaffey Union High School, Ontario, Calif., in which Union 76 gasoline and Union lubricants are used.*

# SAFETY IN THE UNION



## Four Fires

By GEO. F. PRUSSING

Four fires on oil company properties in widely separated cities of the West in the course of a few days have given fire prevention engineers some interesting data on which to judge the effectiveness of the preventive measures which they advocate. The public too might well be interested, particularly since legislation along fire safety lines is a matter of present public concern in several communities.

Much theory has been spun on the subject of oil fires, but the fact remains that they are so few in number that each one as it occurs is given most critical consideration by fire prevention men. Only in that way can preventive measures be tested. Fire fighting as applied to oil fires is sufficiently well understood to be well out of the experimental stage. It is in fire prevention with its large element of human fallibility that there is most to be learned from the stories of fires. For oil fires, like fires in factories and dwellings, are frequently evidences of human failure.

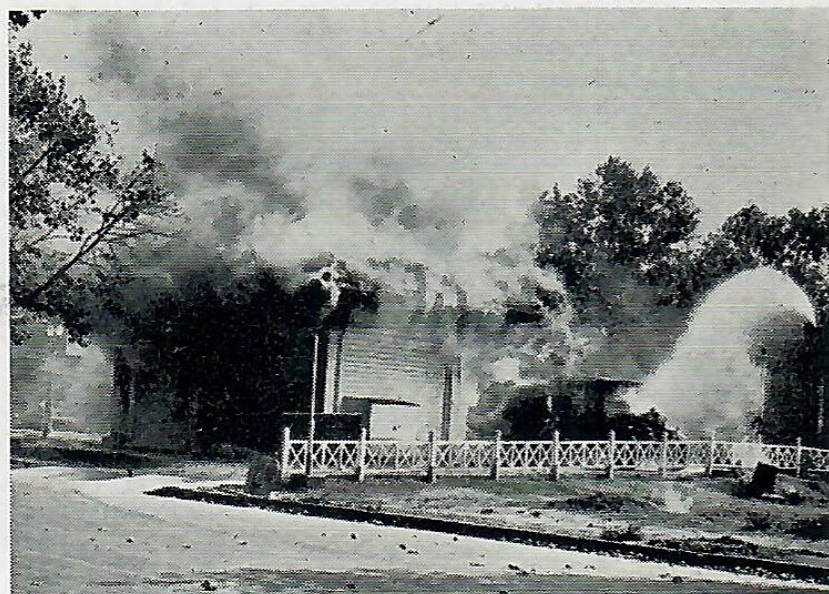
The first fire to be considered would until recently have been dismissed as an act of God. Lightning struck the roof of an oil reservoir. Fortunately the reservoir was empty, so that the destruction of the roof was the only loss. However, it was the fact that the reservoir was empty and had been for years that was responsible for the further fact that it was not protected by lightning towers. The interesting thing about this fire is not that a reservoir roof was struck by lightning; that has happened several times before in California. But since the great fires of 1926 the lightning hazard has been given intensive study and protection has been developed which has become standard equipment for those reservoirs still in service. While there is not yet enough evidence to prove that this protection is complete, still such a fire as that referred to above, where the lightning apparently skipped the protected reservoirs and singled out one that was unguarded, is tremendously interesting to the fire protection engineers and the insurance fraternity.

The second and third fires, while miles apart geographically, were very close in proximate cause. In both cases large amounts of gasoline were overflowed while tanks were being filled by means of electrically driven pumps. In each case the electrical apparatus was safe enough electrically but not safe enough to use where

there was likelihood of gasoline being spilled. (An open knife switch is satisfactory for some service, but not for stopping motors where gasoline vapor is present). Modern electrical apparatus designed for the oil business takes such contingencies into account. The important thing in both these fires, which by the way were costly in life and property, was the fact that spills occurred because of human failure. It must be constantly borne in mind by all who handle gasoline that it is safe only when housed in its proper containers. When spilled on the ground, it invites tragedy.

The last fire to be considered here occurred in an oil refinery. Through an error in outlining the exact sequence of operations, a stream of crude gasoline mixed with chemicals was sprayed into a small treating tank. A few minutes later the vapor in the tank exploded, throwing off the tank roof and setting fire to the gasoline in the tank. There were no personal injuries and the fire was promptly extinguished by the local operating men of the refinery.

The importance of this fire from the prevention standpoint lies in the probable cause of the explosion, static electricity. This little understood phenomenon is responsible for less than one per cent of the fires in oil plants, yet the mysterious way in which it behaves has given it an absurd importance. "Old man static" gets blamed for a lot of fires whose real cause is either unknown or for some reason would not look well in cold print. Consequently it is with



*Gasoline spills invite tragedy*



a good deal of temerity that fire prevention men use the term. In the case of the tank which blew up, all of the factors were present which are recognized as essential to a static ignition.

These factors may be stated as follows:

1. There must be a means of static generation.
2. There must be a place where the static charge can accumulate.
3. There must be a violent disruptive discharge of the static charge in the form of a spark.
4. This spark must pass through a mixture of gas and air in proper proportion.

From the practical standpoint if not from the strictly scientific, the mathematical chance of all four of these factors occurring simultaneously must be exceedingly remote. We know that static electricity is generated in many of the common operations of the oil industry. Consequently factor number one is frequently present. But factor number two is so difficult to find as to nearly always prevent factor three and consequently few static fires occur. Bond wires, drag chains and similar devices are used to insure against static accumulation. In the dry western regions atmospheric conditions (low humidity) make these necessary, while in the East they are seldom seen or needed. Factor number three cannot follow unless the charge has been generated and has accumulated to the degree necessary to produce a spark. If a metallic path is provided for the charge as it is generated it will not jump through the air and cause a spark.

Factor number four is interesting because the mixture of gas or flammable vapor with air must be about right, as in the carburetor of an

automobile, before a spark will cause ignition. Here again the mathematical chance is small, in spite of the fact that flammable vapors and gases are so prevalent in refining and other oil operations.

Analyzing the fire in question in the light of the foregoing criteria for static ignition, we find factor one right on the job. The spraying of a mixture of gasoline and water borne chemicals is in itself an excellent static generator. Secondly, the cloud of vapor created by this spray is a good accumulator, just as is a rain cloud in the sky. Third, a spark from such a vapor cloud to the shell of the tank or one of the roof supports would be a reasonably expected phenomenon. What of factor four? Normally tanks of this sort are entirely too "rich" in gasoline vapor to support combustion. In this case there was a violent explosion. Beyond any need of theorizing, this explosion is sufficient proof that at this particular time and in this particular tank there was enough air to yield the kind of mixture necessary to satisfy the conditions of factor four.

The error in operating technique had occurred scores of times during previous months without any fire or explosion, but at every one of these times one or more factors in the four necessary for static ignition must have been absent. Probably it was factor four. And since factor four cannot be controlled in every case, the cure for the situation is to eliminate factor one by changing the operation so there will be no more spraying.

Taking them all in all, the four fires discussed here were such as have been given study before and their prevention was in each case well within the control of those in charge.

## Spokane District Breaks In New Gasoline Truck



*Increase in sales of "76" gasoline in the Spokane District recently necessitated an addition to the trucking fleet. Above is a photograph of a new 900-gallon truck the day it was put into service. The young women, taking the first ride on the truck, are members of the Spokane District accounting department.*

# REFINED AND CRUDE

By RICHARD SNEDDON

It is quite true that man has emulated the bird in achieving the mastery of the air, but just the same, it will be a long time before he is able to take a bath in a saucer.

\* \* \*

You will agree, too, that there is a lot of truth in the school-boy statement, "the people of the United States are put to death by elocution."

\* \* \*

In reply to her boy's query "What becomes of an automobile when it gets too old to run?", a mother whispers: "Somebody sells it to your father, dear, for a used car as good as new."

\* \* \*

*And from the Pipe Line News we cull these classic definitions: An engineer is a man who knows a great deal about a very little, and who goes along knowing more and more about less, until finally he knows practically everything about nothing. A salesman, on the other hand, is a man who knows a very little about a great deal, and keeps knowing less and less about more, until finally he knows practically nothing about everything.*

\* \* \*

After staring at our somewhat prominent proboscis until we were almost embarrassed to death, the stranger apologized for his rudeness, and smilingly explained that he was merely trying to invent a door-knocker.

\* \* \*

Contrast that with the kindness of an elderly neighbor whose luxuriant whiskers, during the dark days of the depression, furnished many a destitute humming bird with a nesting place.

\* \* \*

*This old fellow, incidentally, used to recall vividly a happy day in his youth when he met and talked with Abraham Lincoln, but he recently joined the church and can't remember it any more.*

\* \* \*

Also, having listened to the radio remarks of a number of candidates, we are now in a position to tell you where all these senate comedies are produced.

\* \* \*

*A recent press report states that a saxophone player has been decorated by a foreign government. We have frequently been tempted to crown a couple of them right here at home.*

And, speaking of music, please remember, a mandolin is not a Chinese official.

\* \* \*

Horace Greeley always insisted that the word "news" was plural, until one day he wired a reporter: "Are there any news?", and received the reply: "Not a single new."

\* \* \*

*Which reminds us of a certain gentleman who is gifted with an unusually large vocabulary, and who now wishes he was single so he could use it.*

\* \* \*

This one we heard in a local cafe, while the world series was being played:

Customer: "Chicken croquettes, please."

Waiter: "Fowl ball!!!"

\* \* \*

Now that the series is over we can devote our attention more assiduously to the football games, and while we are looking forward to a good time on that account, still we can't help feeling sorry for the cheer leaders. These poor fellows certainly do get the rahs.

\* \* \*

And as an additional sports item, there is an aspiring pugilist in our neighborhood by the name of Kid March. After watching him perform a couple of times, the significance of the name begins to dawn. On both occasions he came in like a lion and went out like a lamb.

\* \* \*

Junior, by the way, quite candidly confesses that he has stopped saying his prayers every night, because there are some nights when he doesn't want anything.

\* \* \*

*However, he is going to have to be good for the next few days, at least. Mother, has injured her right hand, and can't spank him when he's naughty.*

\* \* \*

And as we draw near the end of the lesson we are constrained to bring once more to your attention the value of co-operation. Remember the banana—when he leaves the bunch he invariably gets skinned.

\* \* \*

Above all be guided by the advice of Dr. Wilbur and think with your brains, not with your glands.

### Interstate Truck Bridge

The steel span suspension bridge at the lower portals of Hoover Dam, looking from the Nevada to Arizona side of the Colorado River. This bridge, completed only a few months ago, is used in trucking supplies from the Nevada to the Arizona side of the river.

*Photo by E. M. Pratt*

