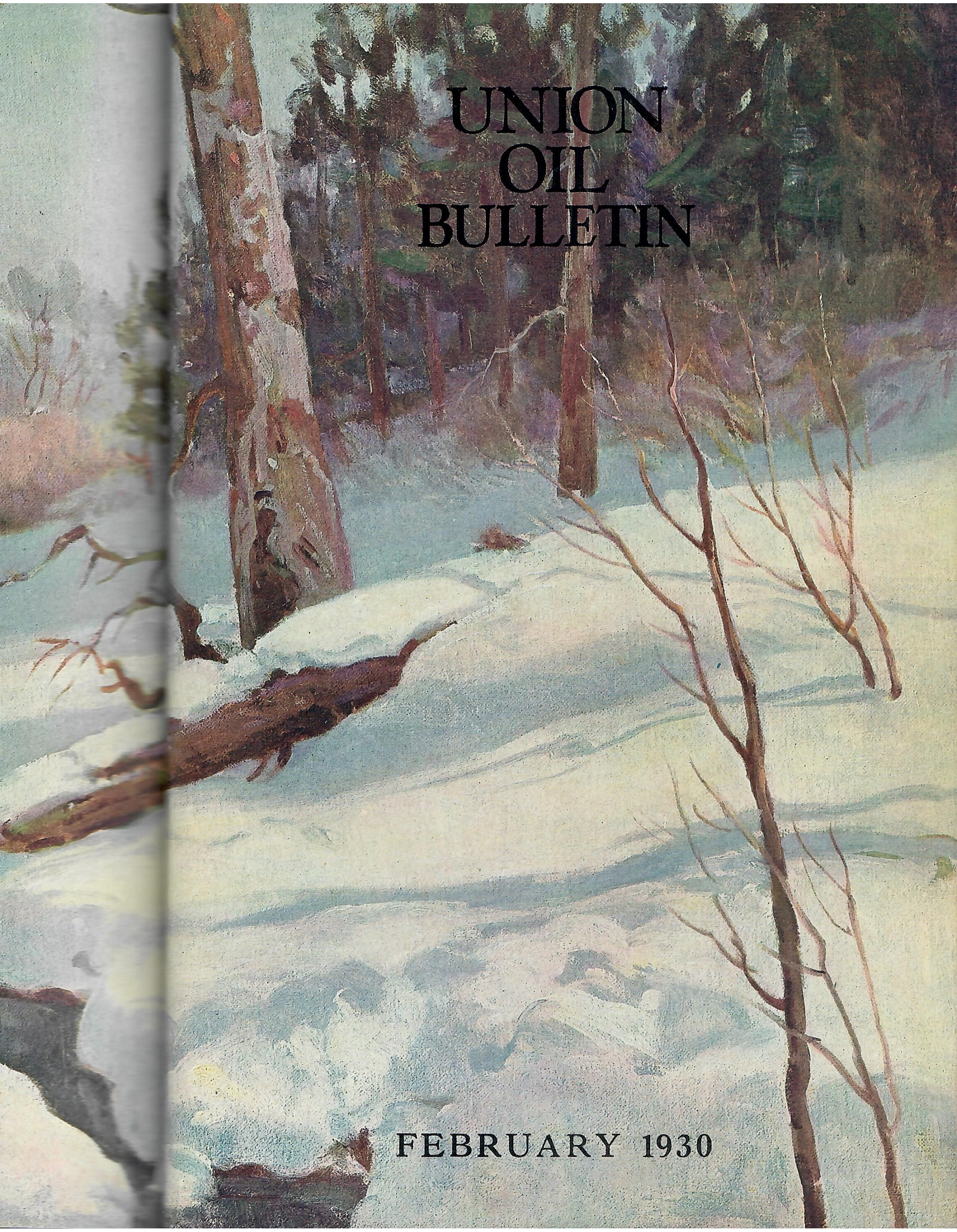
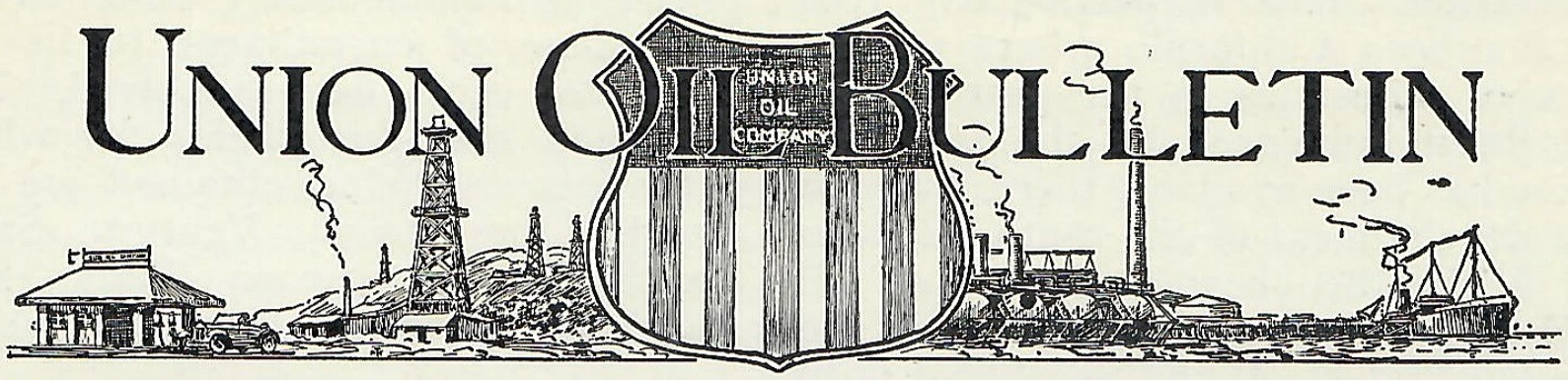

UNION
OIL
BULLETIN
FEBRUARY 1930

Photo by Will Connell

In the Steel-Derricked Forest

A picturesque view of Santa Fe Springs where spider-web-like steel rigs rise in clusters almost as thick as trees in a forest.

UNION OIL BULLETIN



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

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VOLUME XI FEBRUARY BULLETIN 2

Importance of Curtailment

CONFRONTED with the fact that California oil fields during 1929 added 44,000,000 barrels of crude oil to storage, already far in excess of the needs of the industry, and that present production practices can only continue the wasting of natural resources vital to the future development of the state, operators, both large and small, are backing a statewide curtailment program, that if carried out to completion, will guide the industry through a highly critical period.

It is apparent that for the first time the small independent operator has come to the full realization that the destiny of the oil industry within the state rests to a large degree in his hands and that he shares a major responsibility in assuring its future prosperity. The result has been that producers, who in the past had not fully appreciated the seriousness of the situation, are co-operating wholeheartedly with the general program. Civic organizations, as well as leaders in allied industries, are also lending their assistance.

Much that has been accomplished to date has been the result of the untiring effort of a number of independent operators who have assumed leadership in the curtailment movement. Among those who have rendered outstanding service are A. T. Jergins of the Jergins Trust Company at Long Beach, assisted by his son, A. Jergins; H. R. MacMillan of the MacMillan Oil Company, who although a new operator in California, has been quick to grasp the seriousness of the situation and for the past five months has devoted virtually his entire time to the cause; W. C. McDuffie of the Pacific Western Oil Company, and S. B. Mosher of the Signal Oil and Gas Company.

The attention given the problem of production in recent months has disclosed to the operators that they have a responsibility to the public as well as the industry to be taken into con-

sideration. This is particularly true in Southern California where the influx of industries in the past decade has been influenced by the fact that there has been available there, through the development of the southern basin oil fields, the cheapest fuel, both oil and gas, to be found any place in the United States. If the Southland is to continue to bid for major industries it must be in a position to assure those industries that its present cheap fuel supply will be available in the future. At the present rate of waste it is doubtful if Southern California can give such assurance. It is to the interest of the oil industry in California to bring large factories into the state, not only because they bring increased population and new users of petroleum products, but because the factories in themselves are major consumers of refined oils.

It is when oil men stop to consider these things that they come to the realization that their problem is twofold; that they must safeguard the prosperity of the industry for the present and at the same time provide for the future.

As a result of a survey conducted by the American Petroleum Institute it has been found that the amount of crude oil necessary to run to stills during 1930, in order to supply the estimated demand for petroleum products, is 609,000 barrels a day. At this writing the actual production is in the neighborhood of 700,000 barrels a day. The estimated potential production in excess of one million barrels a day.

To establish a fair basis for reducing the state's production of oil to 609,000 barrels, the potential production of each of the flush and semi-flush fields is being determined under an open flow test being conducted under the supervision of the chairman and umpire for each field. As soon as all flow tests have been completed, which is expected to be by February 19, a fact-finding committee, which is composed of fifteen technical executives, seven from the major companies and eight from independent operating companies, will immediately establish the percentage of curtailment to be applied to each field involved. The flush and semi-flush fields for which potentials are being obtained are Elwood, Long Beach, Ventura, Santa Fe Springs, Maricopa Flats, Seal Beach and Alamitos Heights.

The fact-finding committee is also studying the production in other than flush and semi-flush fields to determine to what extent the production in these fields can be curtailed. The data obtained by this committee and its recommendations as to the cuts to be applied to each field will be submitted to the General Committee on Curtailment of which P. N. Boggs, vice-president of the Union Oil Company in charge of production, is chairman. The other members of this committee are A. H. Bell, Continental Oil Company; W. H. Berg, Standard Oil Company; J. A. Bermingham, The Texas Company; J. A. Brown, General Petroleum Corporation; W. E. Dunlap, Richfield Oil Company; J. H. Jergins, Jergins Syndicate; H. R. MacMillan, H. R. MacMillan Oil Company; W. C. McDuffie, Pacific Western Oil Company; S. B. Mosher, Signal Oil and Gas Company; R. A. Sperry, General Petroleum Corporation and J. U. Stair, Shell Oil Company.

The umpire for the Long Beach district is Neal H. Anderson and for Santa Fe Springs, Ventura and Elwood, H. P. Grimm.

The fact-finding committee is composed of W. E. Dunlap, Richfield Oil Company; B. J. Parsons, General Petroleum Corporation; J. H. Menke, Standard Oil Company; T. B. Swigert, Shell Oil Company; Emile Kluth, Getty Oil Company; A. C. Rubel, Union Oil Company; J. Jensen, Associated Oil Company; R. R. Templeton, Pacific Western Oil Company; R. McCollom, Signal Oil and Gas Company; A. T. Jergins, Jergins Trust Company; E. T. Stanley, MacMillan Oil Company; B. C. Chandler, Dabney C. Johnston Oil Company; Don Weaver, Texas Oil Company; A. H. Bell, Continental Oil Company; F. W.

Fortine, Barnsdall Oil Company, and Edwin Higgins, California Oil and Gas Association.

When one stops to consider that there are three billion dollars invested in the petroleum industry in Pacific Coast states, that 320,000 persons in these states are actually employed by or are dependent on the oil industry for support, and that there are 500,000 persons whose capital is invested in oil stocks and securities, then one gets a fairly comprehensive picture of what the industry means to the people on the Coast and why its leaders are bending every effort to keep it in a prosperous, healthy condition.

The direct oil payroll—that is, persons employed by the major and independent companies—totals 80,000 at an average earning rate of $6.00 per day, or an annual payroll of $175,000,000. In the production departments of the oil companies alone 24,000 men are employed. Their annual payroll will total $43,800,000. Allied industries—those manufacturing oil well supplies, derricks, machinery, etc., employ 35,000 men with a total annual salary of $63,875,000.

The value of the petroleum products produced during 1929 is placed at $750,000,000, exceeding by $200,000,000 the value of the products of the lumber industry, which holds second place on the Coast.

American Petroleum Institute Executives

In the hands of these men has been placed the task of directing the effort of the American Petroleum Institute to bring about national conservation of petroleum resources and stabilization of the industry. Left to right: Vice President for Production, W. N. Davis, vice president of Phillips Petroleum Co.; Vice President for Refining, W. M. Irish, president of The Atlantic Refining Co.; President E. B. Reeser, president of Barnsdall Corp.; Vice President at Large, L. P. St. Clair, executive vice president of the Union Oil Company of California; Executive Vice President, W. R. Boyd, Jr.; Vice President for Marketing, H. M. Dawes, president of The Pure Oil Company.

Review of Production for 1929

According to figures collected by the American Petroleum Institute, Pacific Coast Office, the total production of Crude Oil in California for December amounted to 21,705,554 barrels, an average of 700,179 barrels per day. This is a decrease of 10,406 barrels per day under November production.

Total stocks in all Pacific Coast territory, as of January 1st, 1929, were 140,000,894 barrels; as of December 31st, 1929, they were 184,002,116 barrels, an increase of 44,001,222 barrels during the year.

Production for the year totaled 292,036,911 barrels, an increase of 60,054,314 barrels over 1928 production. 526 wells were abandoned during the year; of these, 212 were abandoned producers and 314 were abandoned drillers.

Below is shown the total production for the year and the daily average, also the well completions and initial daily output for the year, for each oilfield in the State:

DISTRICT	BARRELS PER YEAR	DAILY AVERAGE	WELLS COMPLETED	DAILY INITIAL OUTPUT
Kern River	6,089,344	16,683	40	8,390
Mount Poso	1,826,056	5,003	61	11,557
Fruitvale	594,498	1,629	16	8,671
Round Mountain	223,734	613	13	3,765
McKittrick	1,708,520	4,681	1	175
Midway-Sunset	25,310,976	69,345	86	41,816
Elk Hills	6,353,035	17,406	....	....
Lost Hills-Belridge	1,602,425	4,390	20	572
Coalinga	3,558,843	9,750	1	45
Kettleman Hills	1,951,786	5,348	3	8,015
Wheeler Ridge	250,156	685	....	....
Watsonville	22,762	62	....	....
Santa Maria	1,535,815	4,208	2	450
Capitan	2,795	8	1	150
Summerland	93,826	257	7	1,085
Elwood-Goleta	9,435,819	25,852	18	67,888
Santa Barbara	10,868	30	3	1,270
Rincon	1,192,237	3,266	8	1,965
Ventura Avenue	20,934,388	57,354	51	72,685
Ventura-Newhall	1,856,706	5,087	7	777
Los Angeles-Salt Lake	552,614	1,514	....	....
Whittier	563,790	1,545	....	....
Fullerton (Brea Olinda)	4,813,942	13,189	4	835
Coyote	4,176,035	11,441	3	375
Santa Fe Springs	76,477,464	209,527	276	869,276
Montebello	3,657,922	10,022	4	415
Richfield	5,776,258	15,825	25	5,995
Huntington Beach	16,007,030	43,855	20	2,682
Long Beach	60,495,555	165,741	192	162,609
Torrance	5,000,218	13,699	....	....
Dominguez	3,606,850	9,882	1	3,114
Rosecrans	2,463,808	6,750	6	3,853
Inglewood	8,768,101	24,022	5	1,735
Newport	15,330	42	....	....
Seal Beach	14,418,305	39,502	19	18,879
Potrero	271,446	744	10	3,650
Lawndale	392,533	1,075	6	2,552
Playa Del Rey	25,121	69	1	2,250
TOTAL	292,036,911	800,101	910	1,307,496

STOCKS

	Dec. 31, 1929	Nov. 30, 1929	Dec. Stock Increases	Dec. 31, 1928
Heavy Crude, heavier than 20° A.P.I., including all grades of fuel	113,421,316	111,886,479	1,534,837	100,249,993
Refinable Crude, 20° A.P.I., and lighter	41,469,458	42,255,303	785,845*	17,954,434
Gasoline	16,432,842	16,485,197	52,355*	10,766,410
Naphtha Distillates	3,327,035	3,275,219	51,816	1,541,414
All Other Stocks	9,351,465	9,846,252	494,787*	9,488,643
TOTAL ALL STOCKS	184,002,116	183,748,450	253,666	140,000,894

*Decrease.

New Colors for Union Stations

After the Painter Came, and Before

UNION Oil Company service stations throughout the Pacific Coast are blossoming forth in a new color scheme of orange, blue, and white, which, as shown above, is considerably enlivening their appearence as well as making them more readily visible and attractive to motorists. While not all the company's stations have as yet been garbed in the new colors, the work is going forward as rapidly as possible. The new color scheme specifies orange roof and foundation, blue band above the foundation, and a blue band from the top of window head line to four inches below the soffit, which is painted white. The body of the station is white. All other buildings on the lot are painted in the same manner. The word "Union," in wide, white letters on a blue background, has replaced "Union Gasoline," which formerly appeared on all Union stations.

Sea Hawks to Ride South

THE United States Navy's sky Armada of approximately 250 planes will go into action with the Pacific battle fleet and Atlantic scouting fleet during the annual winter tactical exercises to be held in the Panama Canal Zone area. In preparation for the cruise, which started the morning of Feb. 15 from San Diego and San Pedro harbors, barges of the Union Oil Company pumped approximately 350,000 gallons of gasoline into the storage tanks of the aircraft carriers Lexington, Saratoga, and Langley and the ships of the battle fleet which are carrying airplanes. In addition, 200,000 gallons of gasoline was taken aboard the navy tankers, Neches and Ramapo, at the company's loading dock at Wilmington.

The spectacular performance of the aircraft squadrons during the 1929 cruise, which was climaxed by the bombing of the Panama Canal by 85 planes, launched before dawn from the Saratoga 140 miles at sea, will be more than duplicated during this year's maneuvers. Longer range flying than has heretofore been attempted will be undertaken during the tactical exercises to demonstrate the enlarged sphere of aircraft as a weapon for attack and defense.

The regular complement of thirty-six Wasp-powered Boeing fighters used for combat and light bombing, twelve Wasp-powered Vought Corsairs, and eighteen Hornet-powered Martin bombers, carried by the Lexington and Saratoga, will be supplemented on the cruise by additional aircraft.

Launching of the planes from the carriers and battleships has reached such a high state of perfection that on signal all of the planes attached to the fleet, if combined in one unit, could take off from their respective ships in less time than thirty planes could leave the ground at any shore airport.

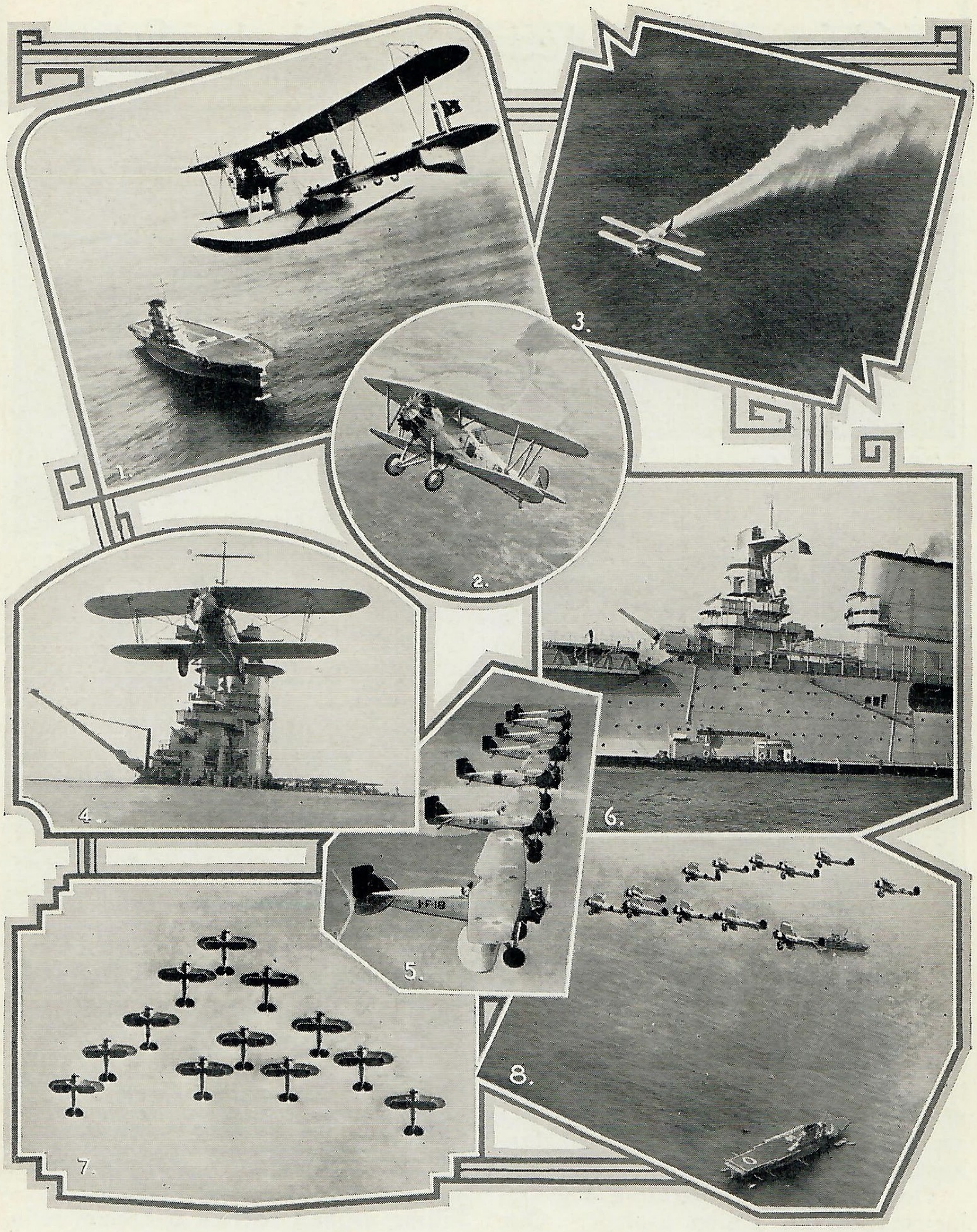
During the maneuvers the aircraft squadrons will operate under war conditions. They will go into action night or day, regardless of the weather, whenever the plan of battle calls for them to do so. The men of the squadrons have been prepared for the cruise through months of intensive flying. Last year, the planes participating in the winter maneuvers flew a total of 500,000 miles without serious mishap, and the squadron leaders hope to duplicate that record this year. It is considered likely that the total distance flown this year will exceed the 1929 mark.

The possibility of increasing the cruising range of the light airplanes by operating them as amphibians will be studied during this year's cruise.

The Vought Corsair, used as an observation plane, is equipped with pontoons, which prevent it from alighting on the flight deck of the carriers. If wheels can be successfully added to this type of plane its utility and effectiveness will be greatly increased.

From the time the battle fleet and carriers leave their California stations until they arrive at the Canal Zone, Feb. 28, they will engage in tactical exercises. From March 1-9, the battle fleet transits the Canal Zone. March 10-15 the scouting and battle fleet will participate in strategical problems in the Caribbean Sea. March 16-30, the two fleets will be concentrated at Guantanamo Bay, Cuba, and from March 31 to April 8 they will engage in force battle practice. Following strategical problems and visits to ports in West Indies, the battle and scouting fleets will proceed to New York, the battle fleet returning to Southern California waters June 21.

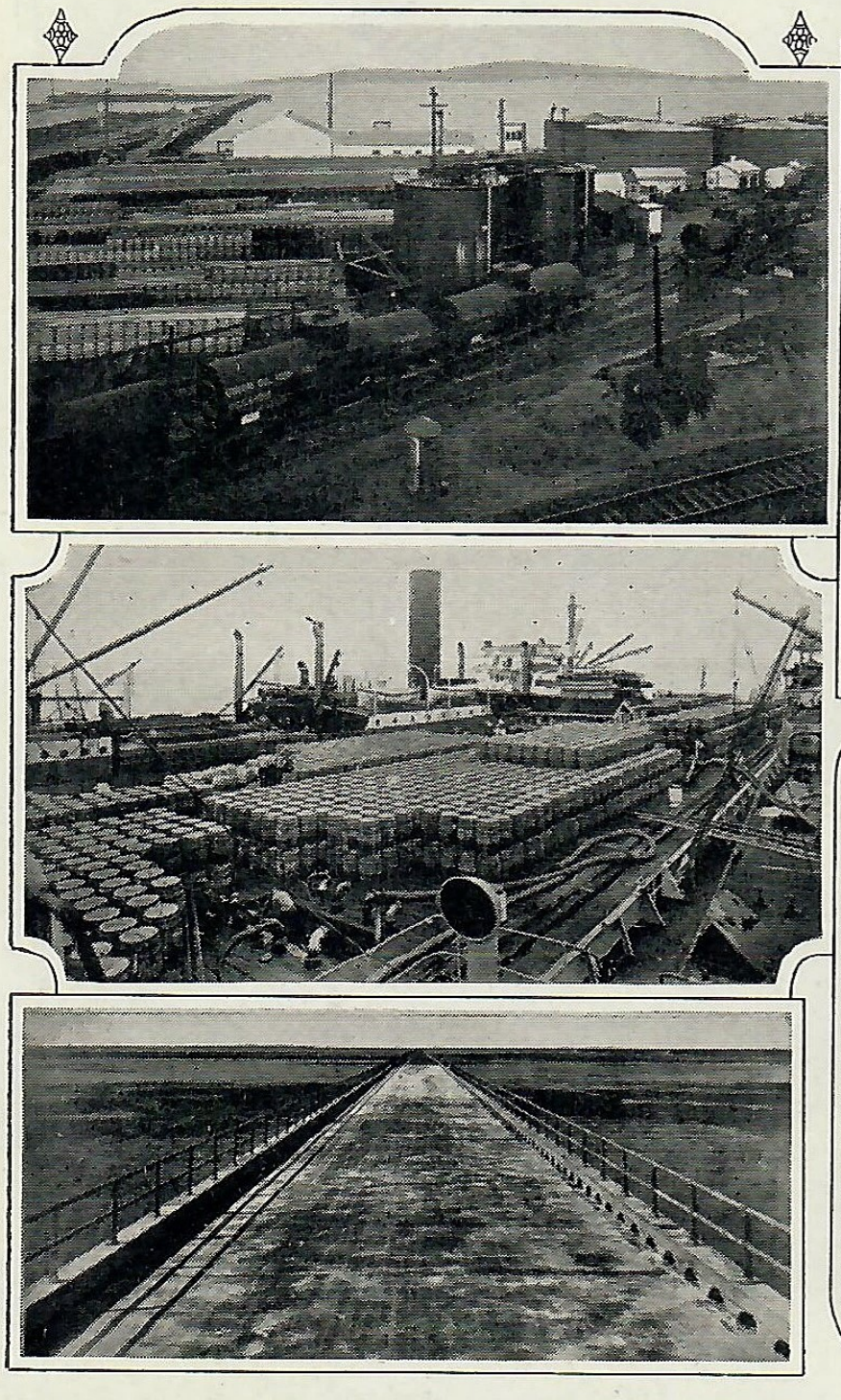
Admiral Lewis McC. Nulton, commander in chief of the battle fleet, will direct operations of the fleet, in the absence of Admiral William V. Pratt, commander in chief of the United States Fleet, who is in London attending the conference on naval limitations.

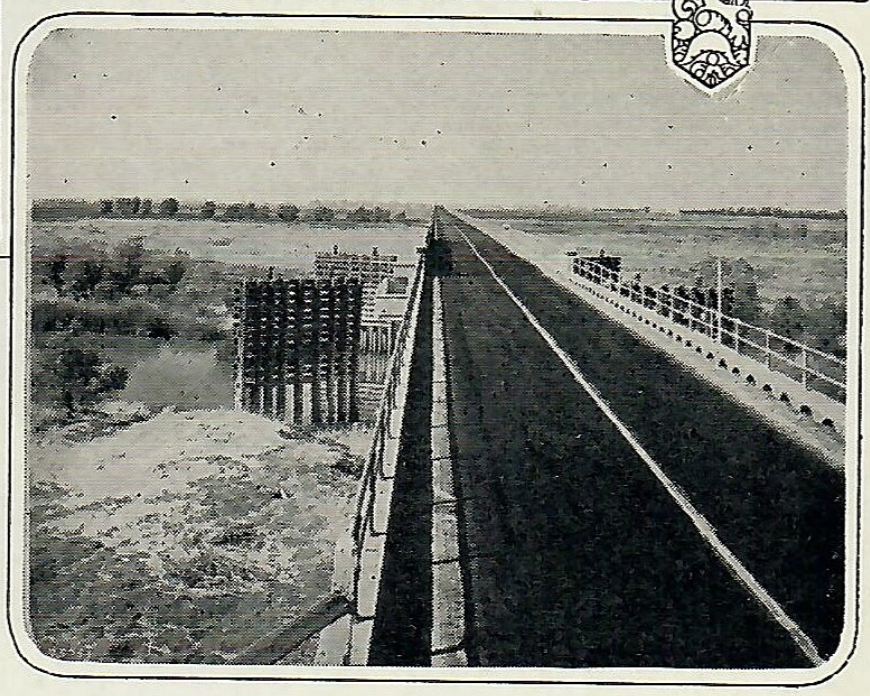


Navy Planes Drilling for Winter Cruise

The precision and skill of the flyers of the United States Navy is obtained through constant training and rigid discipline. The above aerial photographs were taken by official naval photographers. No. 1—Flagship plane of Rear Admiral H. M. Butler, commander of aircraft squadrons of the battle fleet, in air above U. S. S. Saratoga. No. 2—Boeing fighting plane in steep climb. No. 3—Light bomber laying down smoke screen. No. 4—Combat plane taking off from flight deck of U. S. S. Lexington. No. 5—Precision drill of combat planes. No. 6—Union Oil Company barge pumping gasoline aboard the Saratoga for winter cruise. No. 7—Squadron of fighting planes in close formation, photographed from below, and No. 8—the same squadron a few minutes later in a dive under full power on the Lexington and Saratoga.

Gains Recorded in Asphalt Sales

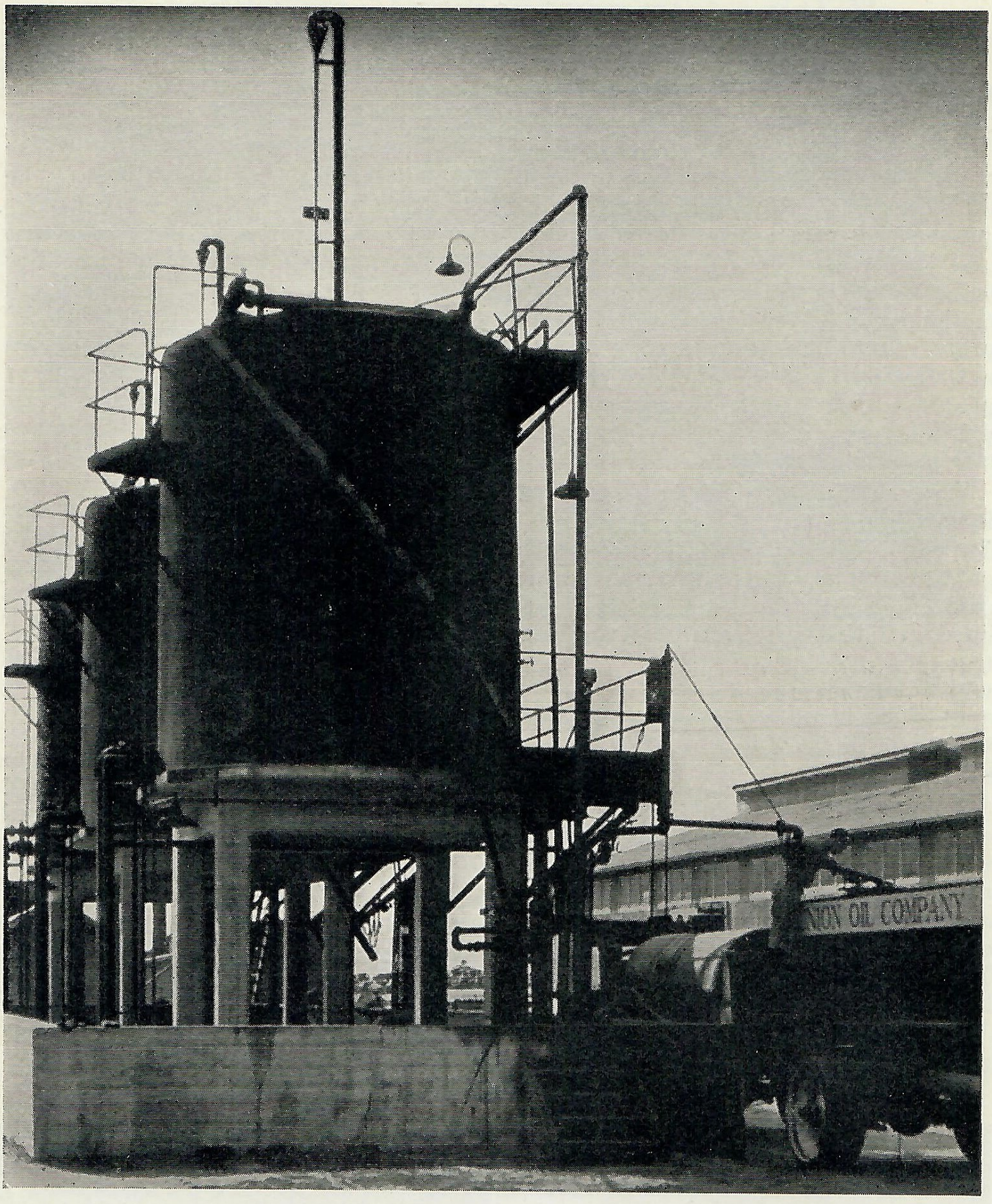




ASPHALT sales of Union Oil Company made substantial gains at home and abroad during 1929. To take care of the increased shipments over the various railroad lines the company has ordered forty new insulated asphalt tank cars to be delivered during March and April.

The Far East is providing a growing market for Union asphalt. Our product is particularly popular in the Strait Settlements where it is used extensively in highway construction. Numerous capacity shipments were made by boat to these points during the year just closed. South American jobbers are also importing Union asphalt.

Above are pictured shipping scenes at Union Oil Company's refinery at Oleum and the three-mile, asphalt-covered Yolo Causeway in Sacramento Valley. In the upper left photograph are shown asphalt tank cars waiting to be filled at Oleum. In the background are several thousand barrels of asphalt awaiting shipment by boat. Left center—Tankers loading asphalt and fuel oil for Orient. Upper right—Filling asphalt barrels at Oleum refinery. The barrels are manufactured in the cooperage plant on the floor above the loading room and are sent down by conveyors. Below, left—The Yolo causeway as it appeared just after it had been paved with Union asphalt in May, 1916, and right, how it looks today after nearly fourteen years of service. The white line was painted on the causeway in September, 1929.



Loading Asphalt from Insulated Tanks at Wilmington Refinery

A large quantity of the asphalt shipped to Southern California points from the Company's refinery at Wilmington is handled by trucks, because of the convenience in being able to transport it direct from the refinery to the road building projects. In the above photograph an asphalt truck is shown loading from the insulated tanks which keep the asphalt in a liquid state. The trucks are also insulated to keep the asphalt at the proper temperature for use on the roads.

20th Anniversary of Trucks

THE Sales Department, on the twentieth anniversary of the purchase of its first motor-driven truck, a high-seated, buggy-topped, four-"lunged" Packard, last month placed into operation the first of several new 2200-gallon, six-wheel Morelands to be added to the refined oil delivery equipment. When compared with its prototype of the vintage of 1909 this new six-wheeler clearly depicts the progress that had been made in the manufacture of heavy duty transportation equipment.

The new truck, which is being used for reseller deliveries in the Hollywood district, is painted a flaming red with gold trim. The single word "Union" is painted on the side in gold letters, outlined in black. A feature of the new truck is its gasoline meter system which enables the driver to make a double check on the amount of gasoline being dumped into reseller or consumer tanks.

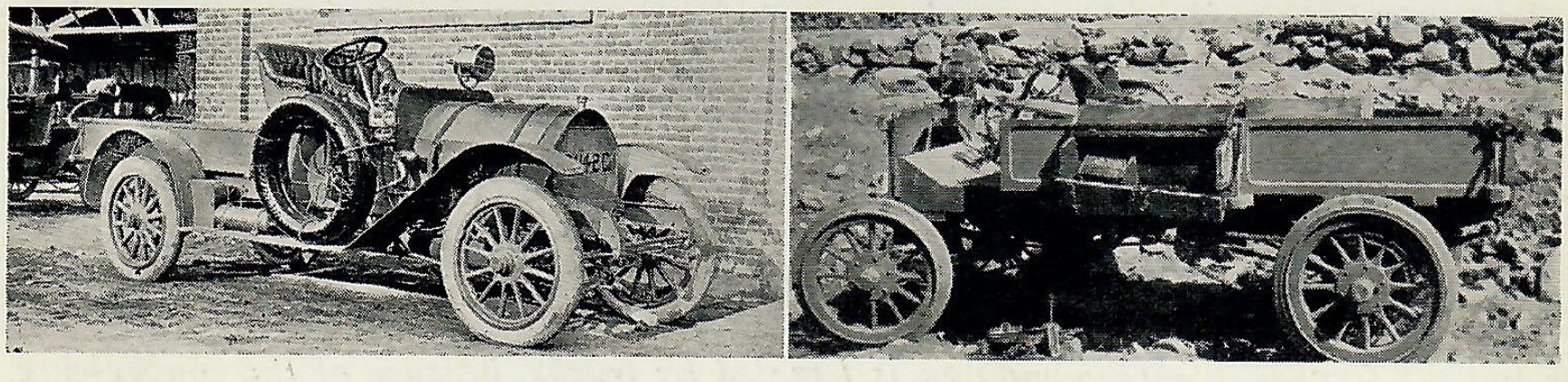
A six-wheel, 2500-gallon White fuel oil truck was also placed into service in the San Francisco district last month and is a forerunner of similar equipment of this character to be added to the company's delivery facilities. Trucks for all purposes now operated by the company total 1240.

While the four-cylinder Packard was the first truck used by the Sales Department, the first truck purchased by the company was put into service by the Field Department in 1908. It was a two-cylinder, one-ton Buick. The drivers who attempted to pilot it, having been accustomed to the slower and more dependable horse-drawn brand of transportation, found difficulty in keeping it on the road.

The transition from the horse-drawn truck to the motor truck was slow, as the records reveal. The second truck for the Sales Department was not put into service until a year after the first had been purchased. These two were supplemented with three Alco trucks obtained from an oil company in 1911; two of which were placed in operation in Los Angeles, the other going to the San Diego district.

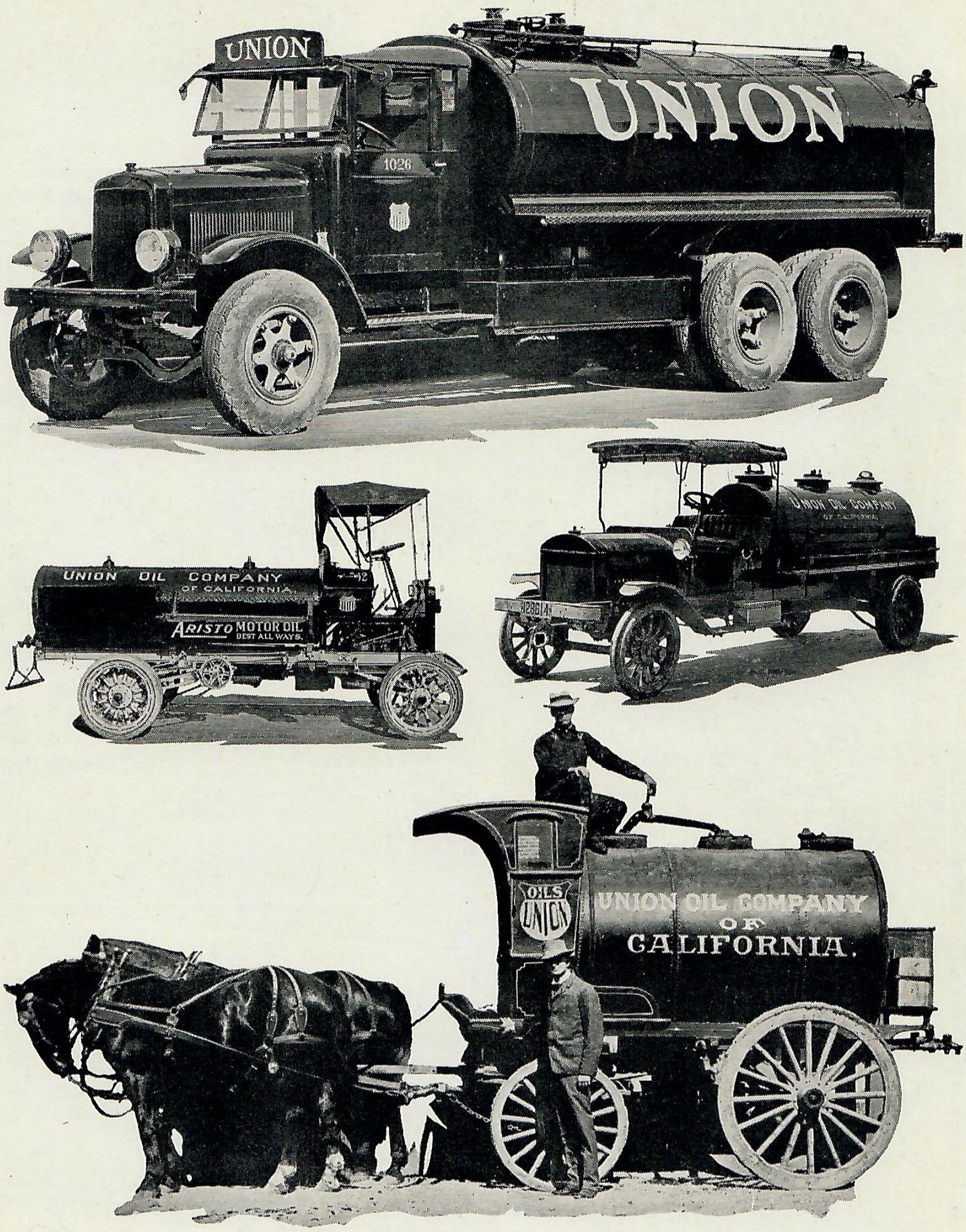
In 1913 the first Moreland, in addition to three more Alcos, were added to the fleet, and "Old Dobbin" began to get worried about his future in the oil industry. It is interesting to note that these three Alcos were obtained from the contractor who excavated ground for the Bible Institute of Los Angeles, a project sponsored by the late Lyman Stewart.

Later in the same year a one-ton Locomobile, which after surviving a fire, was rebuilt and converted into a Sales Department delivery truck, was the first truck in Los Angeles to be equipped with pneumatic tires.



Forbears of Modern Trucks

The machine on the left is a Locomobile, converted in 1913 *into a one-ton truck for use on Producers Pipe Line, and is believed to have been the forerunner of pneumatic-tired trucks. The machine on the right is a two-cylinder Buick, purchased in* 1908 *by the Field Department. It was the company's first truck. The photograph above was taken just after it had run off the road.*



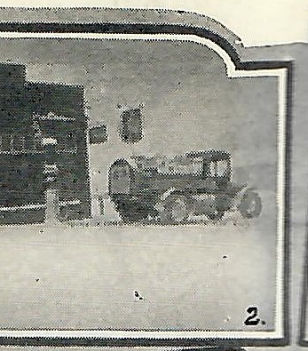
Evolution of Delivery Facilities

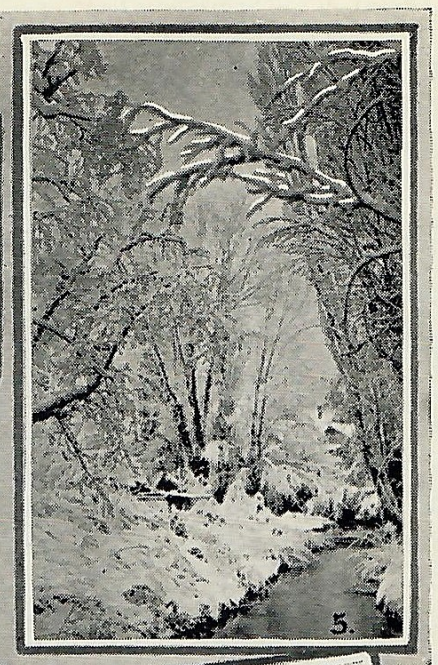
At the top is shown new, six-wheel, Moreland truck of 2200-gallon capacity, recently purchased for the Hollywood district. Middle, left—The first Moreland owned by the company and one of the first built by the Moreland concern. To the right, an old G. M. C. of the vintage of 1915, and below you are carried back to the dawn of the company's domestic refined oil distribution system. No one who has seen the photograph can identify the men in it. Can you?

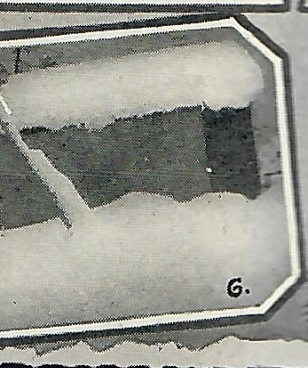
The replacement of horse-drawn vehicles was not accomplished overnight. As many as twenty-two horses were still in the Sales Department service until as late as 1918. They were employed chiefly in making short, light hauls and eventually passed entirely from delivery service equipment.

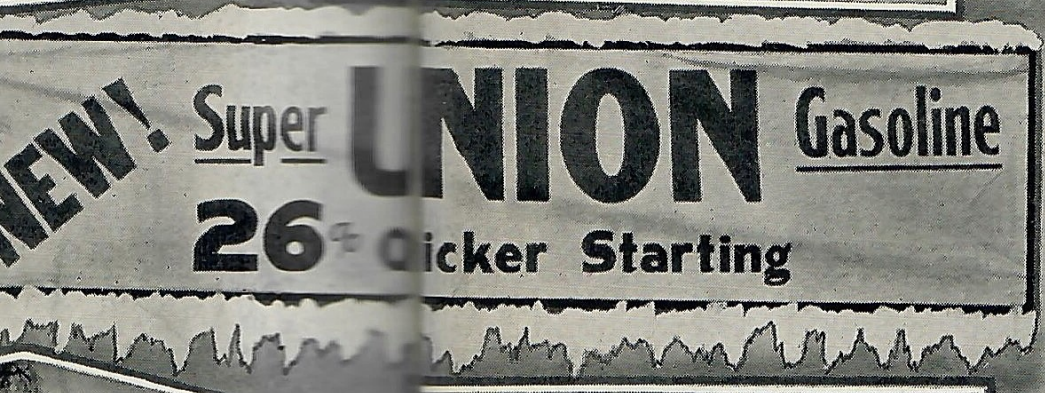
Bucking Snow Drifts With Super Union

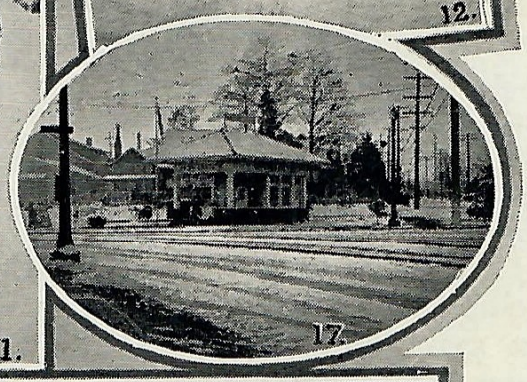
The visitation of Old Man Winter to many regions of the Pacific Coast during a series of unusual storms last month mad
1—Truck on highway near Beaumont, Calif. No. 2—LaPrairie Brothers' station, Chiloquin, Ore., gets winter gas. No. 3—
No. 4—Fresno visited by freak storm, the first snow in eighteen years. No. 5—Winter [illegible] near Auburn, Calif. No. 6—
of the heavy fall near Sonora. No. 10—Truck at office of Pickering Lumber Co., Alturas. No. 11—Bucking snow on the
winter business. No. 13—Dunsmuir station's driveway piled high with snow. No. 14—Dunsmuir special agent's car after
vicinity of Willits substation in the Santa Rosa agency. No. 16—Another arctic scene from Fresno. No. 17—Seattle reco
clearing highway in Kendall district near Portland. No. 19—Sonora substation digs out. No. 20—Truck brings gasoline to
near Oak Glen, Beaumont district.

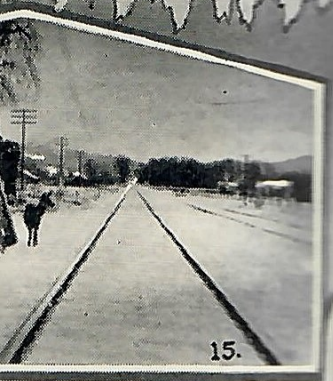


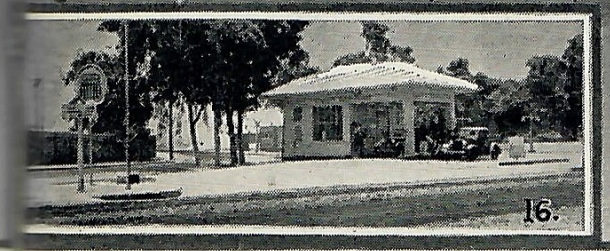












Bucking Snow Drifts With Super Union

Coast during a series of unusual storms last month made Union's quick starting cold weather fuel quite popular. No. others' station, Chiloquin, Ore., gets winter gas. No. 3—Delivery made to Goldendale, Wn., reseller, during storm. ars. No. 5—Winter [illegible] near Auburn, Calif. No. 6—The Dunsmuir substation is snowed in. Nos. 7, 8, 9—Views ng Lumber Co., Alturas. No. 11—Bucking snow on the road near Placerville. No. 12—Grass Valley station ready for with snow. No. 14—Dunsmuir special agent's car after standing one hour in the storm. No. 15—Snow drives deer to Another arctic scene from Fresno. No. 17—Seattle records fall of snow. No. 18—Truck fueling snow plow at work ra substation digs out. No. 20—Truck brings gasoline to Merryman's Camp during storm. No. 21—On the highway near Oak Glen, Beaumont district.

Testing New Aircraft Construction

A NEW type of aircraft construction is being developed by the Emsco Aircraft Corporation, progeny of the Emsco Derrick and Equipment Company, one of the pioneers of the steel oil well derrick, at its plant at Downey, California. Compared with some of the major aircraft manufacturing plants in the East it does not bulk up very large, but as yet only the ground work has been laid.

There has been no impatience on the part of this newest of airplane factories to rush into big production. Under the direction of Charles F. Rocheville, vice-president, general manager and designer, a former member of the Royal Flying Corps of Canada and the United States Navy air service, the Downey plant has focused its attention on the perfection of its various models, rather than on the volume of output.

Two types of planes have been developed to date, and a third and fourth, an amphibian and 35-place passenger liner, are in the making. The two being manufactured for distribution are an eight-place monoplane, designed to be powered with one, two or three motors, and the Emsco Cirrus, a two-place mid-wing monoplane, the last word in streamlining. The latter plane has a wing span of 35 feet and a fuselage length of 22 feet. Powered with a 95 horsepower American Cirrus motor it will make a top speed of 135 miles an hour, cruise at 100 m. p. h., and land at 38 m. p. h. Pyralin shields in the bottom of the cockpit afford the pilot a view of the ground directly under the wing.

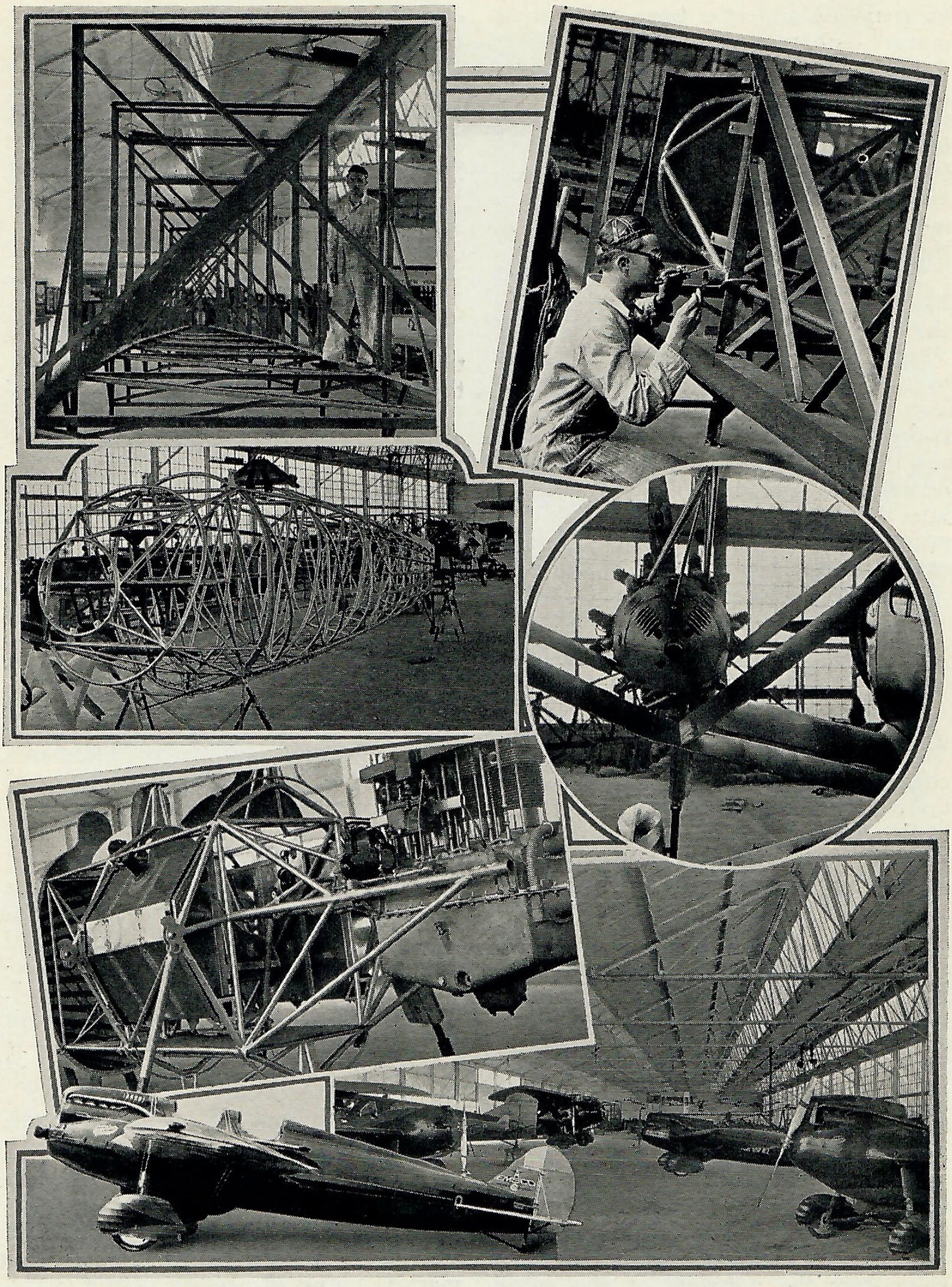
A load-lifting record of 41 pounds per horsepower has been established by the eight-place plane. It is streamlined throughout, even to the pants on the wheels, and the under-carriage and lifting struts present a broad flat surface that gives the plane extra lifting area and enables it to land under full load at a speed of 45 m. p. h. Its most effective power plant has been found to be two 300 horsepower motors, mounted under each wing. Once in the air the plane will fly readily on one motor.

A metal skin, which presents a smooth exterior and still has the strength of the corrugated metal, quite commonly used, materially reduces the surface friction and adds to the speed of the plane.

In the construction of the fuselage, in which chrome-molybdenum steel tubing is used, the Emsco manufacturers are utilizing years of steel structural experience to its fullest advantage and are obtaining a frame of exceptional strength. The welding process employed is also one of their own developments. As a safety factor the gasoline tanks on the mid-wing planes are built into the frame of the fuselage in such a way that they are protected in event of a crack up. This, it is believed by the designer, will reduce the fire hazard to the minimum, if not eliminate it entirely.

The various parts of the fuselage, rudder, flippers, and stabilizer are built up from steel tubing inside of small steel gigs to assure their accuracy of construction, and then welded together in the main gig.

At present, interest in the Emsco factory and outside of it is centered on the 35-place plane, the biggest yet put under construction on the Coast, and for wing spread—112 feet—the biggest yet built in the United States. The fuselage of the plane will be 78 feet long and will be ten feet high at its highest point. It will be a monoplane of mid-wing design, and will be powered with four 450 horsepower motors, mounted in pairs above the wings on tandem, demountable motor mounts. The pilots and radio operator will occupy the nose of the plane and will have an unobstructed view. By being able to remove the motor mounts it is pointed out that when the plane arrives at the airport where the motors are to be overhauled, the mounts can



Scenes in Emsco Factory at Downey, California

At the top, left—Looking down steel gig inside of which will be built 78-foot fuselage for Emsco's 35-place passenger liner. At the right—Welder at work on motor-mount for 35-place plane. Note the frame inside of which it is being constructed. Center, left—Frame for eight-place plane built of welded chrome-molybdenum steel tubing. Center, right—Showing special streamlined construction of under-carriage and lift struts. Lower, left, insert—Showing how fuel tank is built into steel fuselage as safety measure. Lower, right—Interior view of factory, with two-place Emsco Cirrus plane in foreground.

be removed and new ones, with their motors, substituted.

"We are making no boastful claims for our planes," said Mr. Rocheville at the factory the other day, "but we do feel we are following a type of construction that holds many possibilities, and we believe we are pioneering in methods that are sound and will aid in the advancement of aviation."

Mr. Rocheville was in the Royal Flying Corps of Canada at the time the United States entered the World War, and soon afterward transferred to the United States Navy air service. During most of his time in the Navy he was engaged in experimental and test work. In 1925, he was a member of the McMillan expedition into the Far North, during which Admiral Richard E. Byrd began his polar exploration career. In the latter part of 1926 he resigned from the Navy to enter commercial aviation.

He is convinced that in the future the big liners will be used in long distance passenger transportation. The smaller multiple-place planes, he believes, will be used for feeder lines and transportation of company officials on special missions.

Ted Lundgren, formerly identified with the aviation activities of the Union Oil Company, is now sales manager for the Emsco Aircraft Corporation.

Union Oil aero products are being used at the factory and are highly praised by the men operating the planes.

A private airport with oiled runways is operated in connection with the factory to permit the testing of the planes.

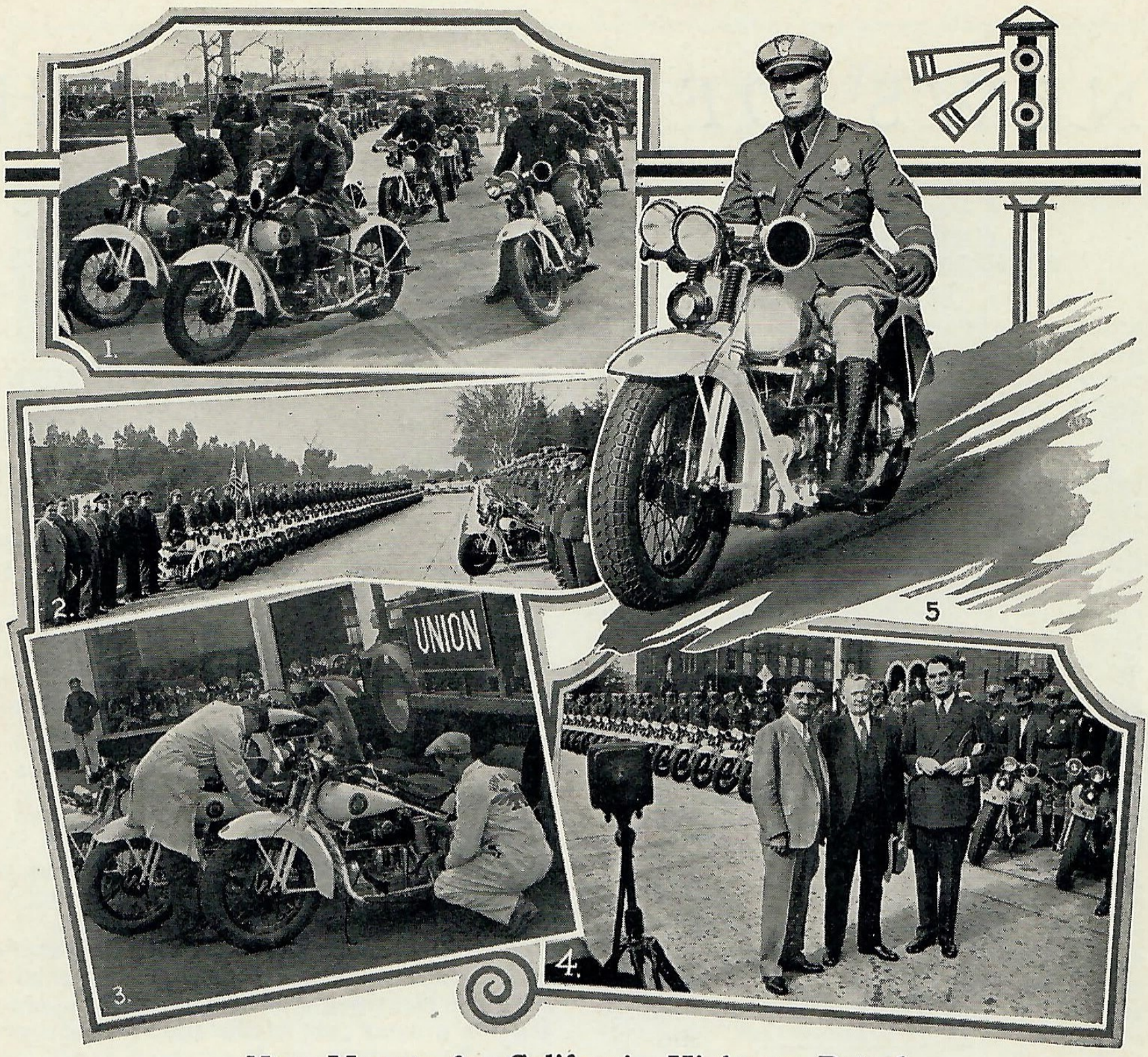
California's Highway Patrol

A HIGHWAY patrol that is destined to win national recognition for its efficiency and the character of its service is being built up in California under the direction of Eugene Biscailuz, superintendent. The old theory of the purpose of the motorcycle officer has been scrapped. A corps of splendidly trained men are now riding the highway to render service to the motorist, rather than to run up a high score of arrests, and to protect the careful driver from the reckless motorist whose disregard for safety endangers not only his own life but the lives of others on the highway as well.

To increase the efficiency of the patrol, the state during the latter part of January and early part of February put 190 new motorcycles and a number of new automobiles into service. Heretofore the members of the patrol have furnished their own machines, but under the new arrangement the motorcycles will be supplied and maintained by the state. The new machines are painted white to make them readily distinguishable. The motorcycles carry fire extinguishers, first aid kits, and flares. In case of accidents on the highway the officers will stop and render first aid to the injured. The flares will be used to light up the scenes of wrecks at night.

Many of the officers of the patrol received their preliminary first aid instruction from first aid experts of the Union Oil Company. Their future instruction along this line, and their duties in the patrol will be carried on under the direction of J. J. Borree, formerly adjutant general of the California National Guard, who is in charge of the educational work of the patrol.

At present there are about 400 officers in the patrol. They operate in all counties with the exception of San Francisco and Los Angeles. The presentation of the first eighty of the new motorcycles to the patrol, Jan. 29, was marked by an inspection of the patrol at Exposition Park, Los Angeles, by Gov. C. C. Young, Supt. Biscailuz, and other state and county officials. For the occasion the officers donned their new uniforms, which consist of forest green coats, buff breeches, black leather trappings, and buff caps with



New Mounts for California Highway Patrol

The first consignment of new motorcycles for the state patrol was placed in service following an inspection at Exposition Park by Gov. C. C. Young. No. 1—Off for highway duty. No. 2—Officers of patrol with their eighty new white mounts lined up for inspection. No. 3—Servicing new Henderson motorcycles with Union gasoline and oil. No. 4—Left to right, Supt. Eugene Biscailuz, Gov. Young and Bert B. Meek, Director of Public Works. No. 5—E. J. Weatherbie, state officer from Imperial County, demonstrating one of the new motorcycles.

gold and green cord across the base of the visor.

At the time of the inspection Supt. Biscailuz said:

"We want the law abiding motorist to feel that in the man astride the white state motorcycle he has a friend who is protecting the traveler on the highway against the wantonly careless driver. We can assure the motorist that members of the patrol will be the first to stop and render aid in case of accident or difficulty, and that the last thing they are desirous of doing is to make an arrest. We have a fine corps of selected men in whom we have great faith, and feel sure a closer and more pleasant relationship will be formed between the motoring public and the state patrol."

One hundred and fifty of the new motorcycles turned over to the patrol are four-cylinder Hendersons capable of developing a speed of 90 miles an hour. Their motors are of airplane type and design and are lubricated through a crankcase. The Union Oil Company was called upon by the Henderson Motorcycle Company to furnish gasoline and oil for the first consignment of motorcycles to the state, and as a result of their initial performance the company has been awarded the contract to supply gasoline and oil for the entire patrol.

NEWS *OF THE* MONTH

NEW LEASES ACQUIRED

The Union Oil Company early this month acquired three important leases, two in the newly discovered Venice, Calif., oil field, totaling approximately 770 acres, and an 132-acre tract in the north Belridge area adjacent to the Belridge deep test well.

The Venice leases comprise 600 acres held by the Del Rey Company and an adjoining 170 acres owned by the Vidor Syndicate. The two properties extend from the foot of the Del Rey hills approximately one mile northwest to the southern boundary of the Ohio Oil Company's Recreation Gun Club lease. Preparations to drill the first well in the far northwest corner of the Del Rey Company's property are now under way. No other wells will be started until the results of the first test are known, and all future drilling will be carried on in strict compliance with the statewide curtailment program.

The new Belridge property is owned by Herbert Fleishacker, San Francisco capitalist, and is in section 34, township 27 south, range 20 east. With this addition to leases and fee land previously acquired, the company now controls approximately 1200 acres adjacent to the Belridge deep test well.

THIS MONTH'S COVER

The cover for this issue of the Bulletin was painted by Jack Wilkinson Smith following a recent snow storm in the high Sierras in California. The spot depicted is near the Mammoth hotel at Mammoth Lake. The stream in the foreground is Mammoth creek. The title of the picture is "Winter Solitude." Copies, without the Union Oil Bulletin overprint, can be obtained by writing the editor of the Bulletin.

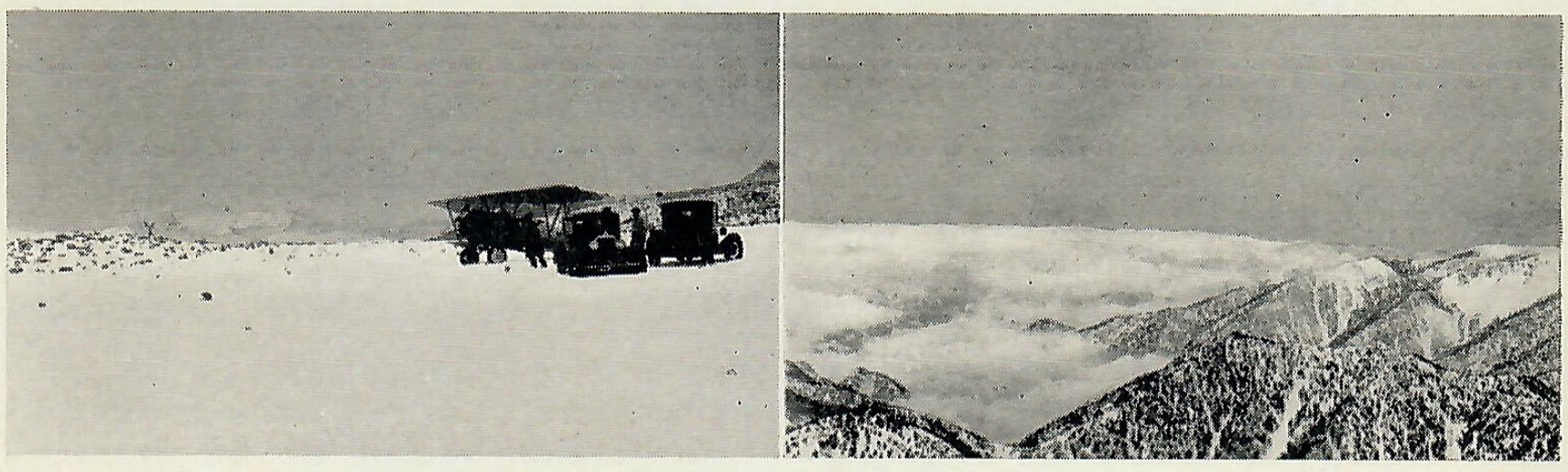
GIVEN AERIAL CLASSIFICATION

During the past month several requests have been received by the editor of The Bulletin to be placed on the mailing list of "your aeronautical house organ," It was not until a recent bulletin issued by the American Petroleum Institute, listing the Union Oil Bulletin, along with a score or more of publications published by air transportation companies and aircraft manufacturers, as an "aeronautic house organ," was received that we were able to explain the new classification in which The Bulletin has been placed.

R. W. PHELPS RESIGNS

R. W. Phelps, for the past twelve years a member of the geological department of the Union Oil Company, has tendered his resignation to take effect March 1, in order to enter into private practice.

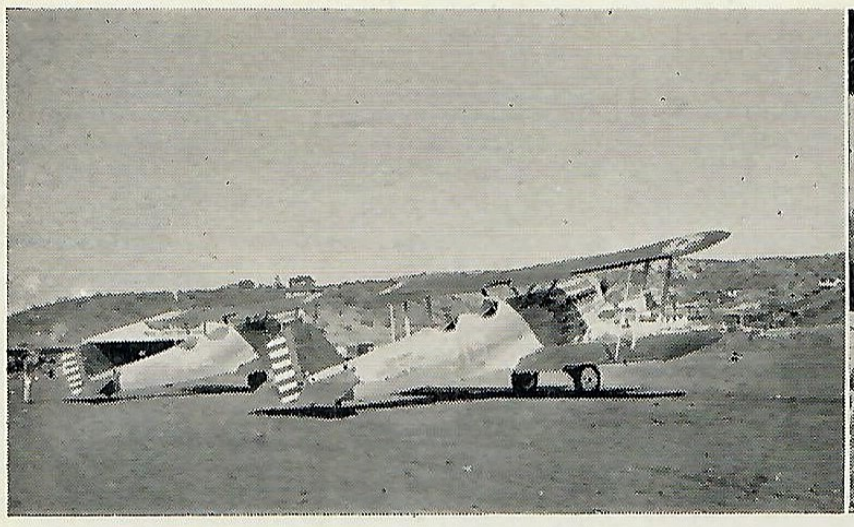
Phelps received his engineering training at the University of California, and has been engaged in geological work since 1911. During the greater part of the time he has been with the company he has served in the capacity of petroleum engineer in Orange County, with headquarters at Brea. He is co-author of the handbook, "Petroleum Engineering" (Phelps and Lake), which has had an extensive distribution. He is also author of several technical papers dealing with petroleum development and production.



Union Flyer Views Wintry Scenes

The photograph on the left was taken shortly after one of the company planes had landed at emergency field at Victorville in fourteen inches of snow during recent hunt for Maury Graham, lost Western Air Express pilot. On the right you see how mountains in vicinity of Mt. Baldy looked to Warren Carey follo wing snow storm in January.

Globe and Miami Dedicate Airport



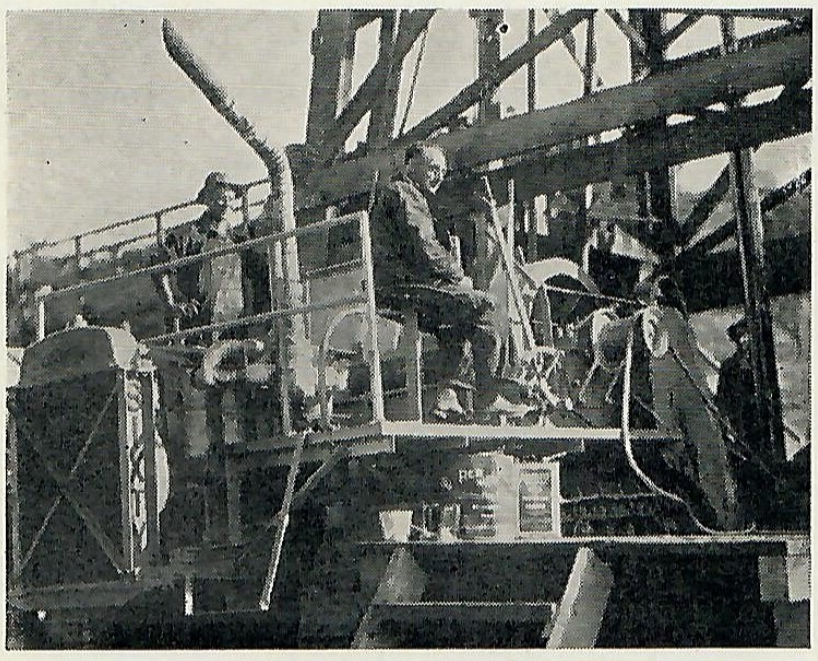
In a ceremony participated in by Governor Phillips of Arizona and Tal-Ka-Lai, well known centenarian Indian chief, virtually the only level patch of ground in the Globe-Miami territory was officially dedicated as the Globe-Miami Airport last month. The airport is located midway between Globe and Miami, and due to the scarcity of suitable land for an airport site in this mountainous region, will serve the needs of both cities.

The airport and equipment is owned and operated jointly by citizens of Miami and Globe and officials of the Miami Copper Company, the Inspiration Consolidated Copper Company, both of Miami, and the Old Dominion Copper Company of Globe. These concerns constitute the three largest copper interests in the world.

The airport has become the headquarters for the Apache Airlines, Inc., which operates tri-motored Kruetzer air coaches to Phoenix. At the dedication, E. W. Brewster, manager of the Arizona district, represented the Union Oil Company. The airport management has specified Union Oil aviation products for exclusive use at the field.

NEW USE FOR TRACTOR

A new use was found for the versatile tractor recently, when a Caterpillar "Sixty," one of the largest mobile power plants manufactured by the Caterpillar Company, was rigged up to supply power to operate hoist and rotary equipment in redrilling Hobbs No. 1 on the Hobbs lease near Orcutt.



Tractor Used as Oil Well Power Plant

While some minor adjustments were necessary in installing the new power plant, which replaces the steam engine, it is proving acceptable for reaming and hoist work, and even for shallow drilling. Due to the fact that the tractor can be readily moved under its own power from one location to another, it becomes doubly valuable for minor jobs in field department work, eliminating the time and expense of getting up steam for temporary operations.

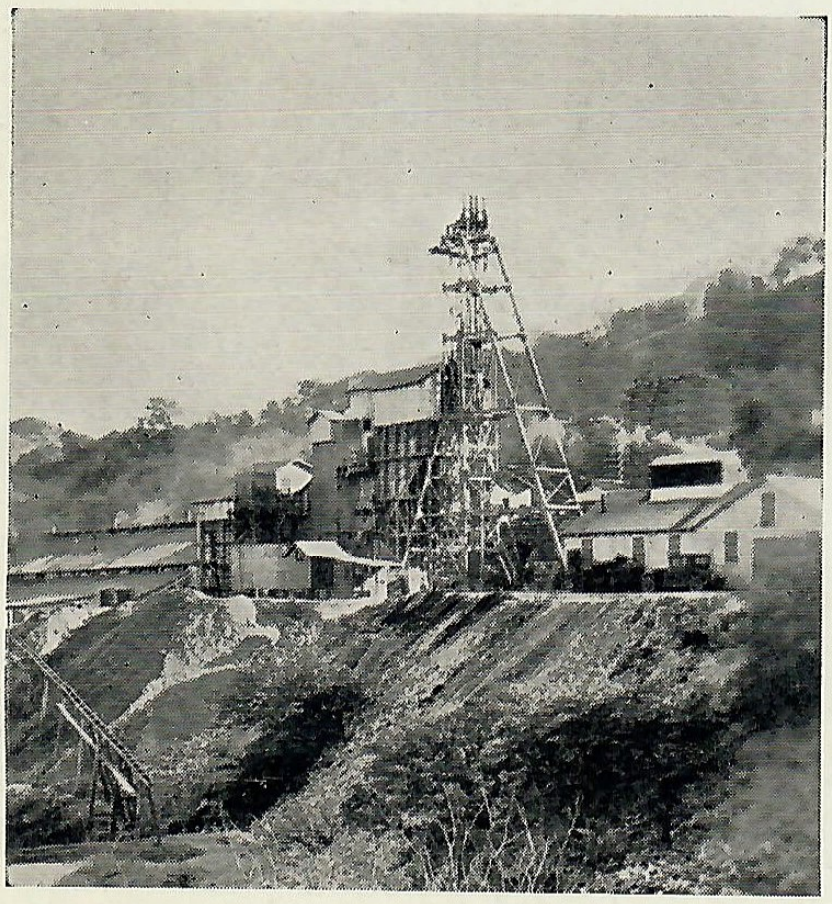
BAY CITY BOWLERS ACTIVE

The Union Oil Company bowling team in the San Francisco Industrial League is battling the leaders in the circuit for first place. In a match with the Holbrook Tay Company on Jan. 22, the boys rolled up 1021 points in one game, beating the Holbrook team by more than 300 points.

ARIZONA LEAD MINE

The Montana Mines, located at Ruby, Ariz., and owned by the Eagle Picher Lead Company of Joplin, Mo., is one of the largest concerns of its kind operating in Arizona and at the present time is producing seventy tons of lead and zinc concentrates per day with the view in mind of more than trebling this output in the near future.

The mine has more than 200 men listed on its payroll. The large amount of machinery incident to the operation and maintenance of the mine, and mill run in connection with it, is virtually all fueled and lubricated with Union Oil products. Diesel engines in the plant are alone consuming approximately 1000 gallons of Union diesel oil for fuel every month.



A unit of the Montana Mines at Ruby, Ariz.

OIL ORDERED FROM PARIS

The Union Oil Company agent at San Rafael, Calif., recently received a letter from a Corte Madera patron, Mrs. C. M. Luttrell, who is at present visiting in Paris, France, requesting the fuel oil tank in her residence be filled in anticipation of a return home this month. This is believed to be a record of some sort or other for a long distance fuel order.

SPOKANE SALES FORCE MEETS

Agents and salesmen in the Spokane territory gathered in Spokane on Jan. 9 and 10 for the annual sales meeting of the district. General operating and sales policies were discussed and the program for 1930 outlined. Under the chairmanship of C. C. Ireland, manager of the Spokane district, a number of interesting talks were given by departmental representatives and special agents. During the second day of the session, W. C. Parrish presented a talk on lubricating and spray oils. The conclave terminated with a dance in which all agents and salesmen, as well as employees of the Spokane main station, were in attendance.

EMPLOYEES' BENEFIT FUND

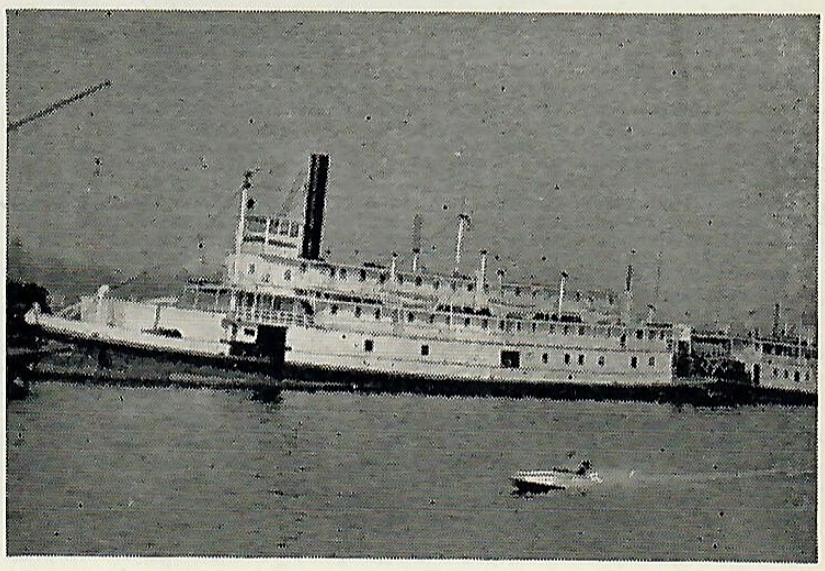
During the year 1929, twenty-nine death claims aggregating $109,000 were paid through the group insurance plan and twelve permanent disability claims were settled for a sum of $49,000, bringing the total death and disability claims for the year to 41 and involving imbursements to the amount of $158,000. Since the inception of the employees' benefit fund in 1925, settlement of 385 death and 39 permanent disability claims have been made, amounting to $740,500 and $134,750 respectively.

UNION OFFICIALS HONORED

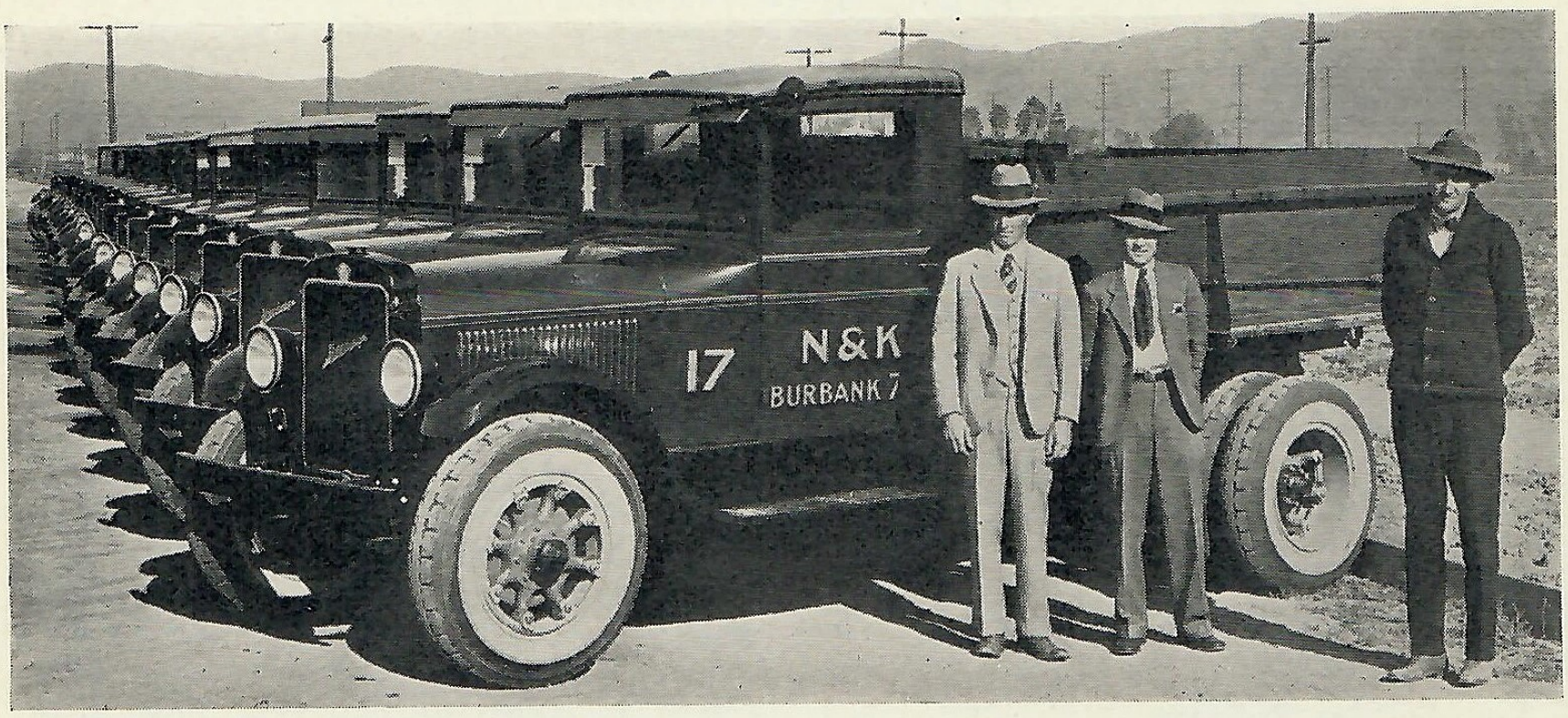
At the annual meeting of the Western Asphalt Association, which is composed of representatives from both producers and consumers of asphalt, held in the Quinby building, Los Angeles, Jan. 15, L. P. St. Clair, executive vice-president of the Union Oil Company, was elected to one of the vice-presidencies of the association; F. P. Smith, fuel oil department, was elected to the post of treasurer, and J. B. Arthur, manager fuel oil sales, was appointed on the board of directors of the association. All offices are for the year 1930.

VICTORIES SCORED WITH NEW GASOLINE

Below is shown Ray Brown, outboard motorboat enthusiast, and his C-177 racer, speeding down the course in one of his recent races on the Sacramento river. For the past year Brown has been busy churning up the river at Stockton and vicinity with his boat, which is powered with a 16 horsepower Evin Rude motor. He has entered twenty-five races and has placed high in a large number of these. In the Berkeley to Stockton outboard race for class C entries he covered the distance in 2 hours, 28 minutes to cop first place.

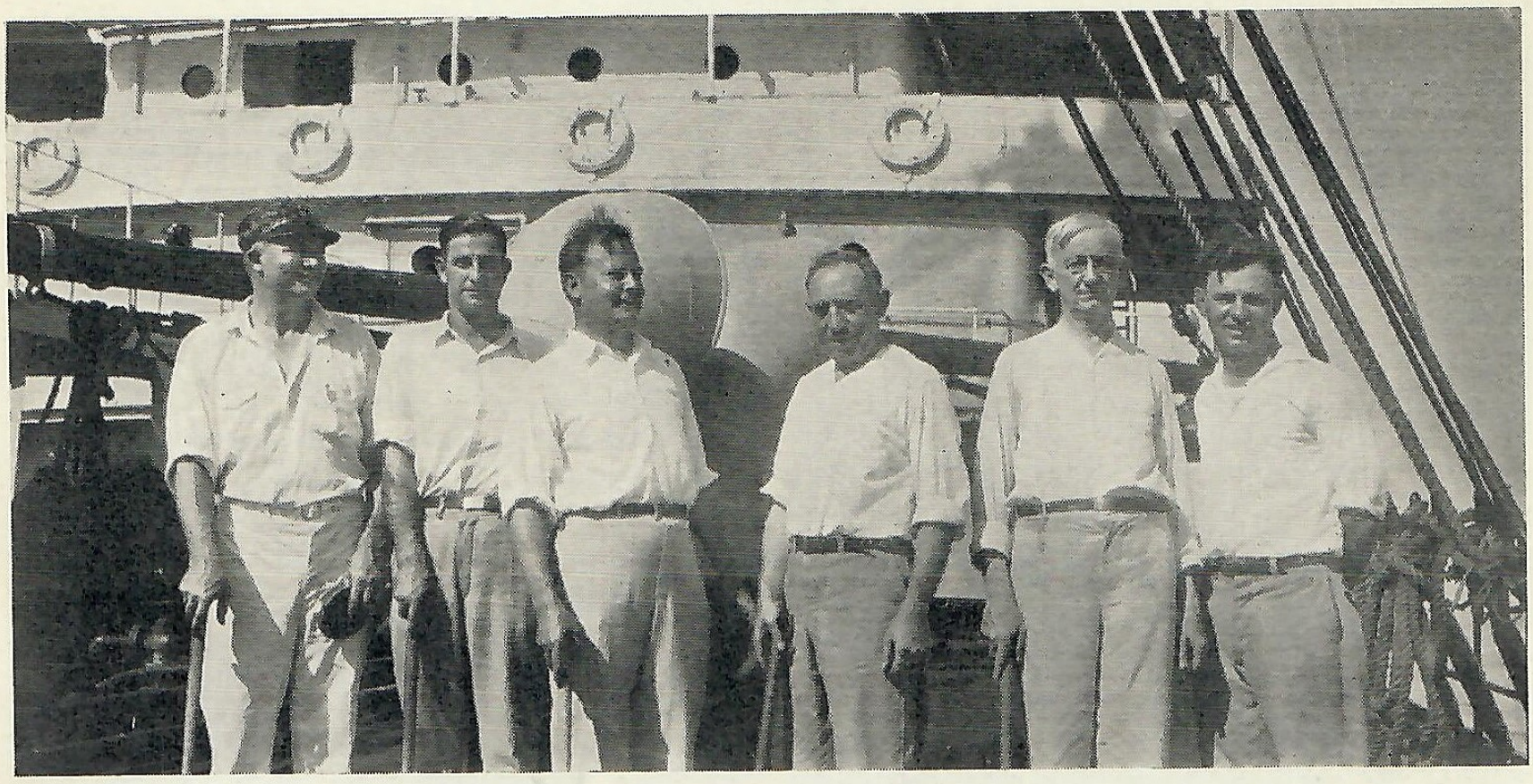


Trucking Concern Specifies Union Products



Trucking Company Specifies Union Products

The above picture shows a portion of the fleet of dump trucks operated by Nollenberger and Knapp, Burbank, Calif., contractors. This concern, one of the largest trucking companies in San Fernando Valley, has just completed a 90,000 ton asphalt mixture hauling job for the landing field of the new Boeing United Airport, Burbank. Nollenberger and Knapp have used Union Oil Company products for the past ten years and at present demand Union gasoline, motor oils, and greases for exclusive use in their equipment. Left to right, the men in the picture are: P. O. Nollenberger, Archie Gay, and Edward Knapp.



Play Deck Golf on Tanker

Deck golf served to wile away many hours on the long trip to Panama and return which T. A. Hayes, assistant to the executive vice-president of the Union Oil Company, accompanied by his wife and Mr. and Mrs. J. J. Zook, recently completed aboard the Union tanker La Placentia. Above is shown the two passengers on the trip and members of the crew after a putting game on the aft deck of the oil carrier. Left to right, H. Van Auken, radio operator, W. H. Peterman, first mate; J. J. Zook, J. H. Gunther, captain of the La Placentia, T. A. Hayes, and H. J. Kostowal, second mate.

SAFETY *IN THE* UNION

NATIONAL SAFETY CONTEST

Union Oil Company has again entered the safety contest of the Petroleum Section, National Safety Council. A new departure for the company is the entry of several of the departments by divisions. The policy heretofore has been to enter only by departments. The contest commenced Jan. 1 and will end June 30, 1930. The company entries are as follows:

Los Angeles Refinery
Oleum Refinery
Northern Sales Territory
Central Sales Territory
Southern Sales Territory
Field Operations (Drilling and Producing)
Natural Gas-Gasoline Operations
Los Angeles Pipe Line
Producers and Lompoc Pipe Line.
Marine Operations.

In the contest conducted in 1929 there were 180 entries by 38 companies. The standing of the companies was published under a code system which permitted each entrant to ascertain his own position. Union Oil Company's record was particularly good in one group, manufacturing, but entirely out of line in some of the others. It is therefore not in a spirit of pride but rather to stimulate more effort that the company's rating in the last contest is given below:

Manufacturing, fifth among 26 companies.
Marketing, eleventh among 15 companies.
Drilling and producing, fifteenth among 17 companies.
Natural Gas-Gasoline, twelfth among 14 companies.
Pipe lines, seventh among 11 companies.
Marine, third among 6 companies,

The actual basis for the contest is of course the accident frequency rate, by which it is possible to compare the relative safety records of organizations regardless of size. The great value that comes to any concern from entering such a contest is the stimulus which comes from realizing that others in the same line of work have been able to achieve even better results. That this is a very real benefit is evidenced by the fact that each year has shown a reduction in the average accident rate of those companies which have submitted their statistics for more than two years.

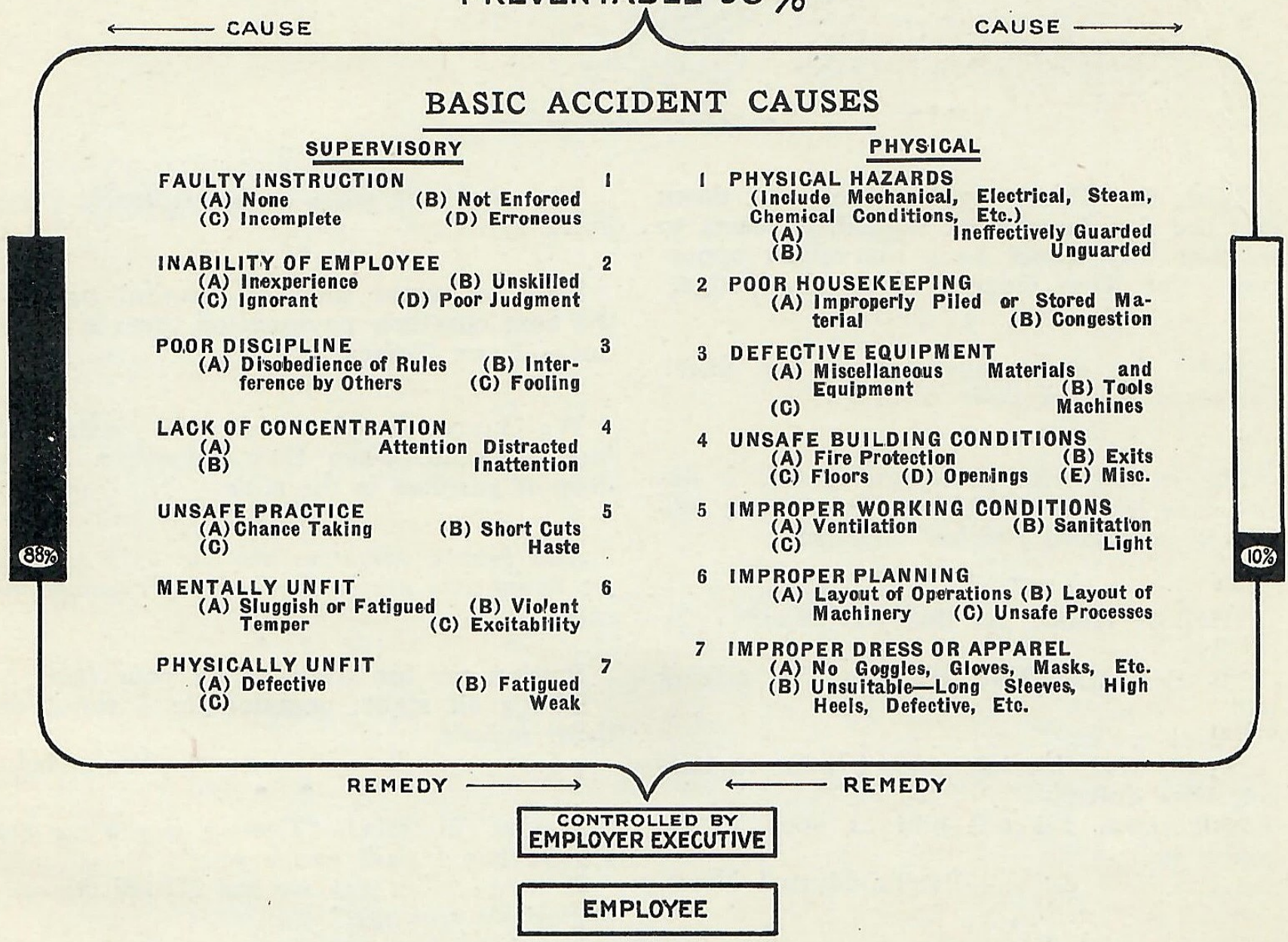
SALES SAFETY CAMPAIGN

The largest single activity of any oil company is the marketing of its products and so we find in our own sales activities a personnel of well over three thousand, all engaged in some phase of this important work. From the standpoint of individual hazard, the sale and distribution of our products would not seem to be nearly so serious as is the production, refining, and transportation. As a matter of fact, it should be and probably is the least dangerous work in the business, yet, due to the intensive educational safety work that other departments have been carrying on, the accident rate in the distribution group has become conspicuous by comparison. Here is the way it looks as of the end of Nov., 1929.

	Accident Frequency	
Dept.	U. O. Co.	Av. for U.S.
Refineries	6.1	17.3
Pur. Warehouses	7.5	not reported
Research & Dev.	15.0	" "
Pipe Lines	19.0	45.6
Marine	20.3	24.8
Marketing	22.8	10.8
Natural Gas	28.5	25.9
Drilling & Prod.	63.4	50.5

In order better to cope with this problem the company has authorized the employment of a full time safety supervisor for the marketing group and A. J. Martinson, formerly First Aid Trainer, has been assigned to this work, effective Feb. 1. Because of the great territory covered, all educational effort will have to be carried on through the usual channels of line organization. To develop the methods and technique of this work, the San Pedro, California, special agency will be used as a "laboratory." In his new position Martinson will report to V. H. Kelly, Manager Domestic Distribution.

INDUSTRIAL ACCIDENT CAUSE ANALYSIS



H. W. Heinrich of the Travellers Insurance Company analyzed some 75,000 industrial accidents before concluding that 98 per cent of them could be classified under the various headings of the foregoing chart. The useful purpose served by the analysis of any individual accident is to find the means of prevention. Mr. Heinrich in a recent article in the National Safety News, says:

1. Both supervisory and physical causes may be controlled by the employer. It is apparent that in the last analysis the employee also may avoid accidents, even though he is exposed to unsafe conditions.

2. Accidents due to mechanical or physical exposures should be assigned to causes in the supervisory group, where the foreman had authority to install or maintain guards. In such cases we consider that the chief cause is laxity in supervision. By following this line of reasoning, we arrived at the total of 10 per cent shown in the "physical" group. As ordinarily analyzed, we found the physical total to be 25 per cent.

3. The value of analysis by the causes listed in the chart, as compared to the existing method of allocation as slips and falls, eye injuries, and others, is apparent. It permits concentration upon the things that count. It directs attention to supervisory reponsibility or to physical hazards, both of which are controllable.

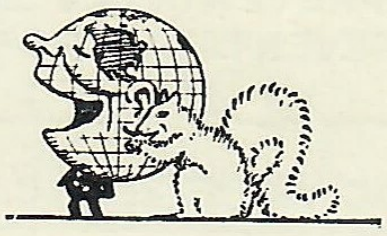
4. In supervisory item 2, we refer to *chronic* poor judgment, ignorance, and lack of skill, since *temporary* inability in these respects sometimes applies to properly qualified employees and would therefore be more likely to come under items 3, 4, or 5.

5. Terms, such as carelessness, poor supervision, and improper selection of employees, have deliberately been omitted because of ambiguity.

6. An unpreventable accident (one of the 2 per cent group) may actually be due to one of the causes listed in the chart, yet the circumstances may prohibit assignment as a preventable case.

7. Some of the causes appear to overlap (unskilled and ignorant, for example) yet there are occasions when an accident is clearly chargeable to only one of the items, consequently all causes have been included in the foregoing list. Contributory causes should be shown as of secondary importance.

REFINED AND CRUDE



With the Chicago police force cut down and the fire department unpaid, it seems to us that this would be a marvelous opportunity for King George to attack.—Judge.

* * *

Don't be discouraged, even the finest automobiles have their reverses.

* * *

The trouble with psittacosis is that it has come too late. It would have fitted nicely into lots of crossword puzzles.—Selected.

* * *

"Hello! Hello! Is this you Mac?"

"Aye."

"Is this Mac Mac Pherson I'm talking to?"

"Aye! spe'kin'."

"Well, Mac, it's like this: I want to borrow fifty dollars—"

"All right. I'll tell him as soon as he comes in."

—Pacific Mutual News.

* * *

When the steam shovel was sent out to Stewart Tank Farm, it was undoubtedly a big scoop for the Pipe Line boys.

* * *

Teacher—Johnny, give me a sentence with the word flippancy.

Johnny—Let's flippancy who'll pay for the drinks.

—Rowland Lyon.

* * *

An optimist has been defined as a person who, on falling from atop a thirty story building, murmurs confidently as he passes each floor: "All right so far."

* * *

"Look here, waitress, there isn't a particle of turtle in this turtle soup."

"Well, what of it? We have Cabinet pudding, but you wouldn't expect to find Andrew Mellon in it, would you?"

—Tit-Bits.

* * *

During Cal's Visit

"Use the word 'kelvinator' in a sentence."

"I've never seen a picture of Mrs. Coolidge without kelvinator side."

—George Kitendough, Jr.

The victim of fallen arches is surely going down in defeat.

* * *

Lives of great men oft remind us that the next quarterly payment on them is about due.—Town Topics.

* * *

We know people who will insist on buying bread, when they haven't a single drop of gasoline in the tank.

* * *

And beauty operators are the only persons we know who are assured of a permanent income.

* * *

Pardon me for standing on your feet.

That's all right; occasionally I stand on them myself.

—Wampus.

* * *

Mother (in train)—"Tommy, if you are not a good boy I shall smack you."

Tommy—"You slap me and I'll tell the conductor my real age."

* * *

Members of an Irish society cheered recently after one of their members toasted King George during a banquet. Another ancient prejudice removed—and toasting did it!

* * *

Ace of Cads

The correspondence detective school pupil who shot the postman because he wasn't promoted.

* * *

Home, by the way, is that blessed place where you needn't suffer in silence if you yearn to use a toothpick.

* * *

Some fellows get twenty to twenty-five thousand miles out of a set of tires; and others tell the truth.

* * *

According to Life:—When the cat's away the mice will play—but maybe the cat's not having such a rotten time either.

* * *

In conclusion don't forget that you may be able to get along at Christmas without holly, but you simply must have the berries.

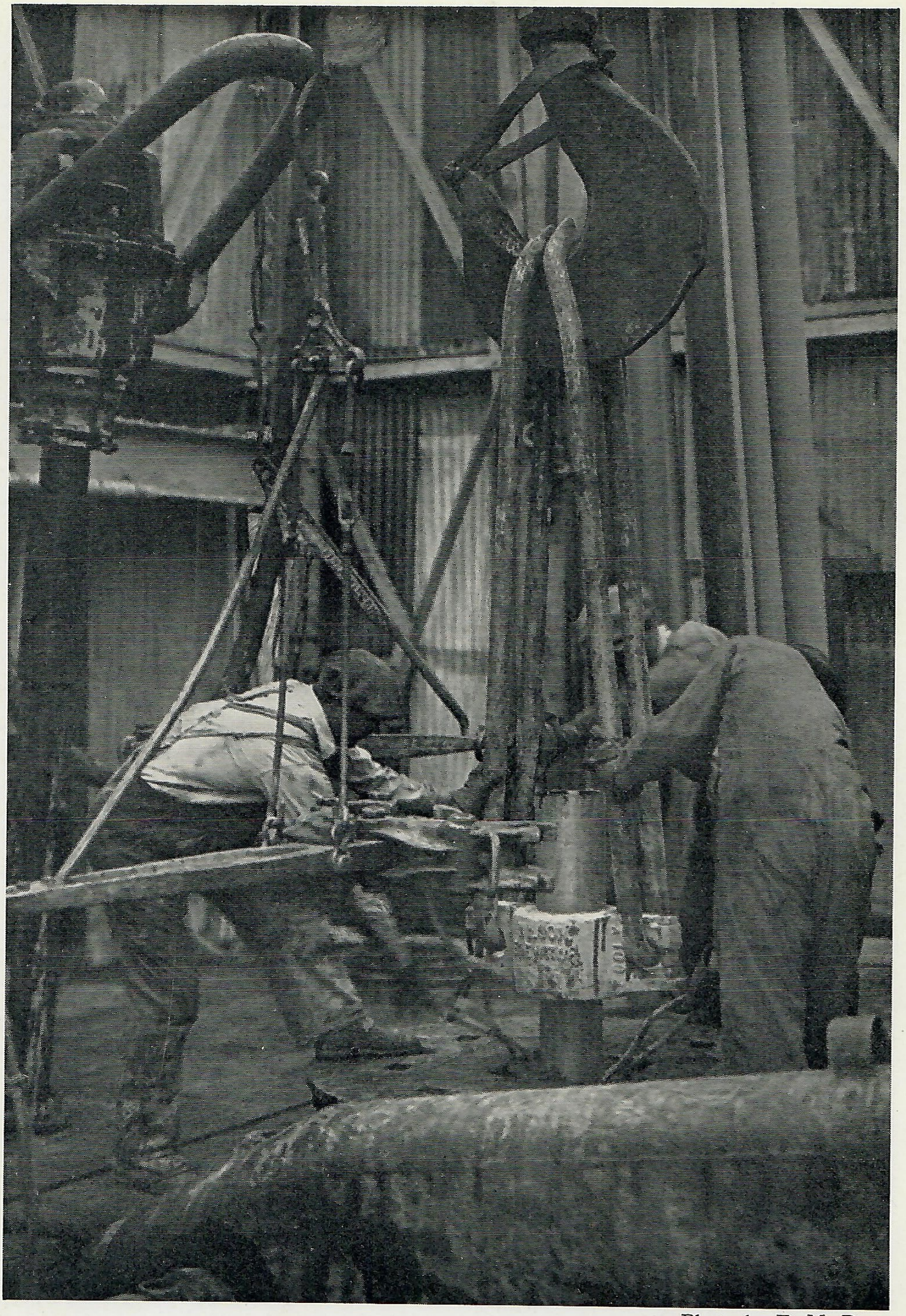


Photo by E. M. Pratt

Going Down for the Deep Sand

This unusual photograph graphically reveals the massive proportions of the equipment used in drilling to the deep sands at Santa Fe Springs.

PRINTED IN U. S. A.

WAYSIDE PRESS, LOS ANGELES