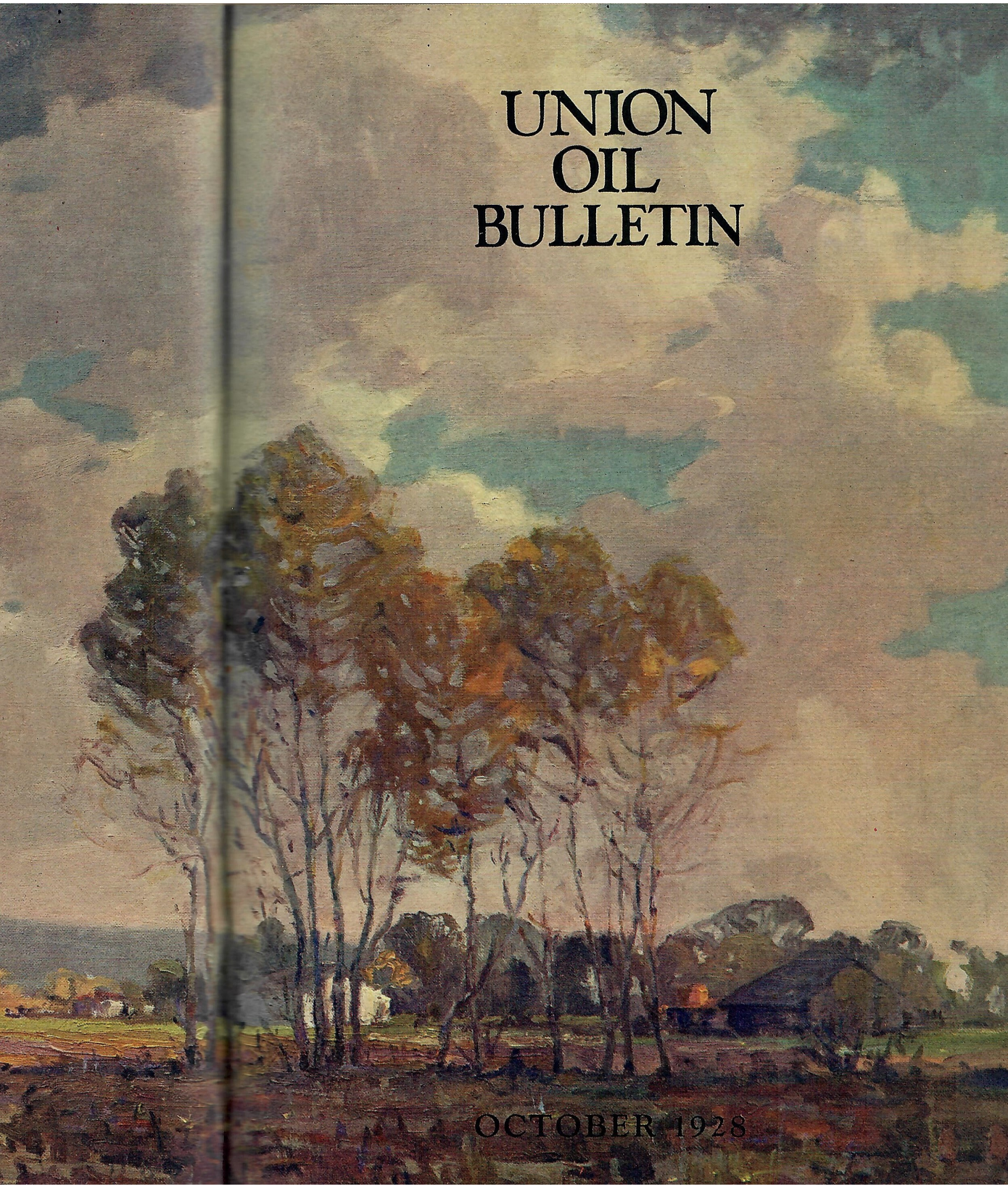
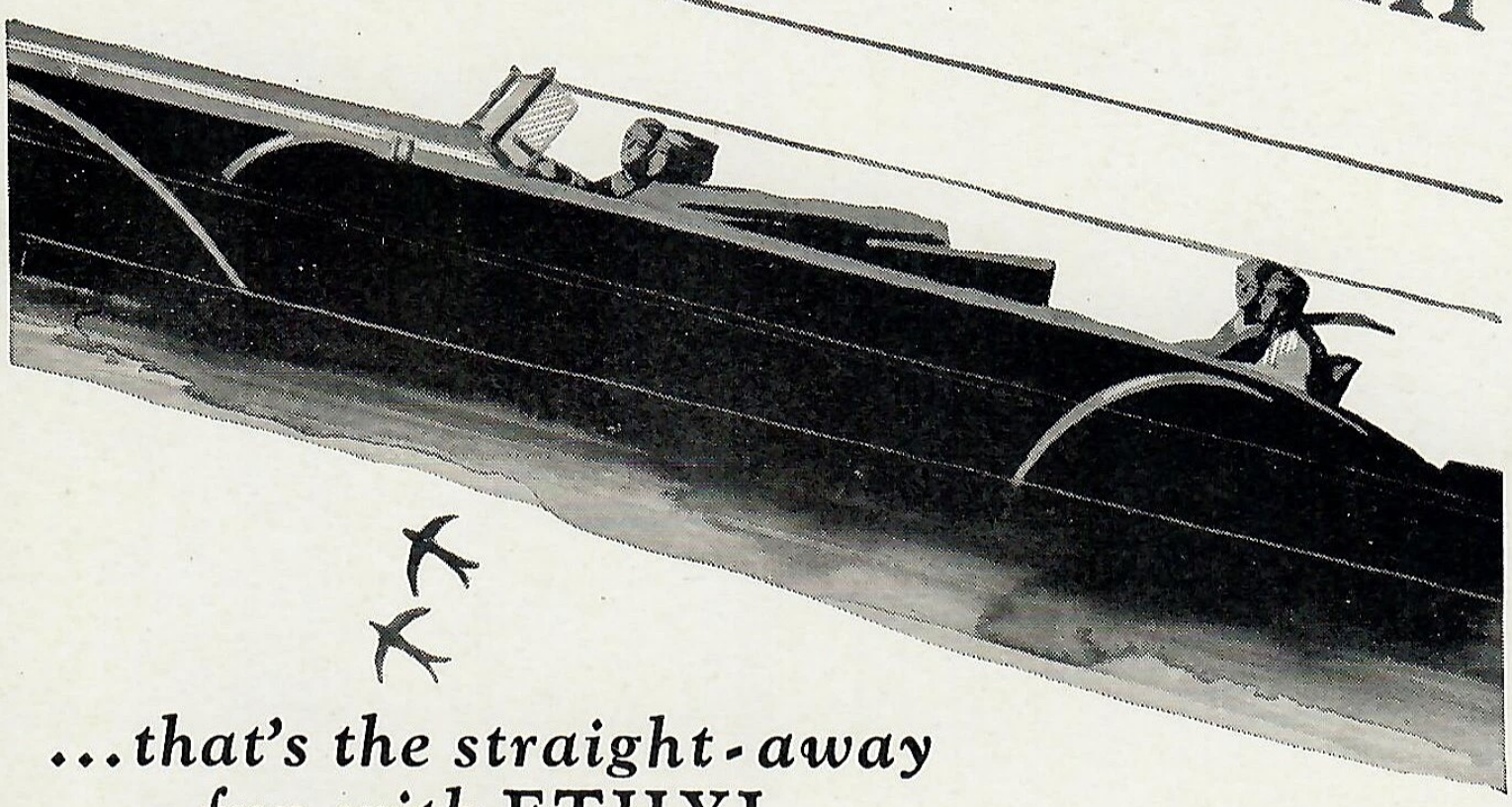
UNION OIL BULLETIN



OCTOBER 1928

Like driving down hill



...that's the straight-away fun with ETHYL

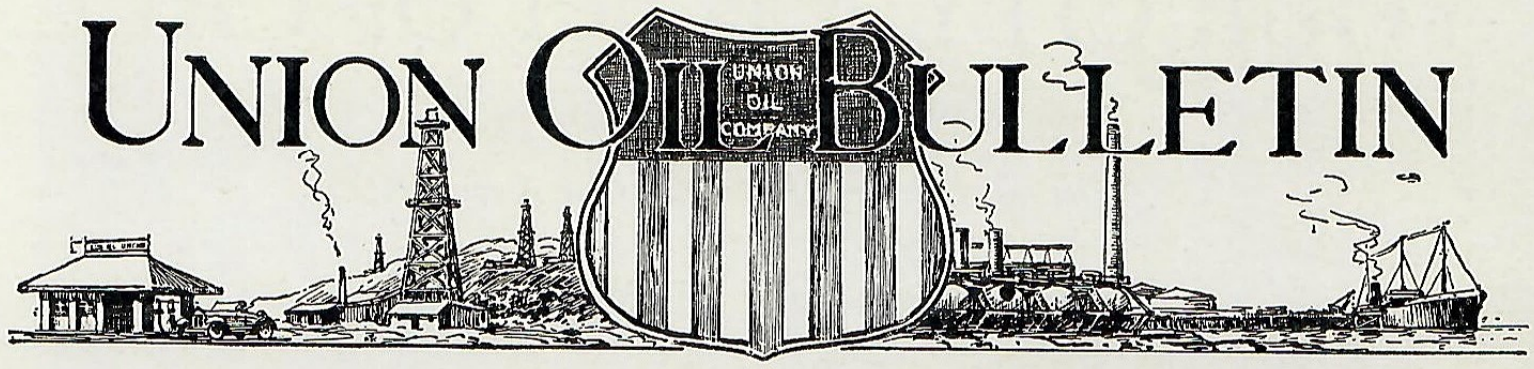
THERE'S a hushed quiet in the split-second pace of motoring today. There's more calm control at "fifty" now than there was at "ten" a few years ago. The element of doubt, the feeling of strain, the rattle, the chug and the bang are *all* gone... Today it's restrained hilarity of motion, a feeling of no end of speed... minus noise... just a companionable purr as smooth as white satin. Motors now seem to glide and stream along like things alive, happy in their power to unwind miles of boulevard in minutes. This is the gift of high compression to motor transportation... supported by an anti-knock gasoline especially designed for high compression cars.

UNION-ETHYL

UNION OIL COMPANY

STOP... anywhere you see a blue and white striped pump. ... It marks a friendly service for you.

UNION OIL BULLETIN



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Truth in Advertising

ADVERTISING is the handmaiden of modern merchandising. It has so permeated the business structure that it has become an indispensable part of it. In its relation to business success it is comparable to using the elevator rather than laboriously climbing the stairs—a quicker realization of the ultimate goal is assured.

Exercise of this powerful merchandising weapon imposes an obligation of moral responsibility on the advertiser to keep within the prescribed limits of truth in advertising. To step beyond this and indulge in exaggerations, and in the even more vicious evil, misrepresentation—abuses which those who tolerate them seek to justify as advertising license—is to run contra to the moral law of square dealing.

It is axiomatic of advertising that its value as a stimulant to sales is in ratio to the degree of faith in the advertised article which the written word creates in the mind of the reader. Destroy that faith and the reaction will be unfavorable.

Advertising must interpret the manufacturer's messages to the public in terms of fact, not suppositions; exactness, not exaggerations; truth, not misrepresentations.

To these tenets the Company always has subscribed and always will rigidly adhere in its advertising program.

YOUR CITY A PORT OF CALL

By Wm. P. MacCracken, Jr.

Assistant Secretary of Commerce for Aeronautics

THE necessity of airports is so well recognized today that only a few municipalities of any importance have delayed their plans for at least the first requisite—a landing area.

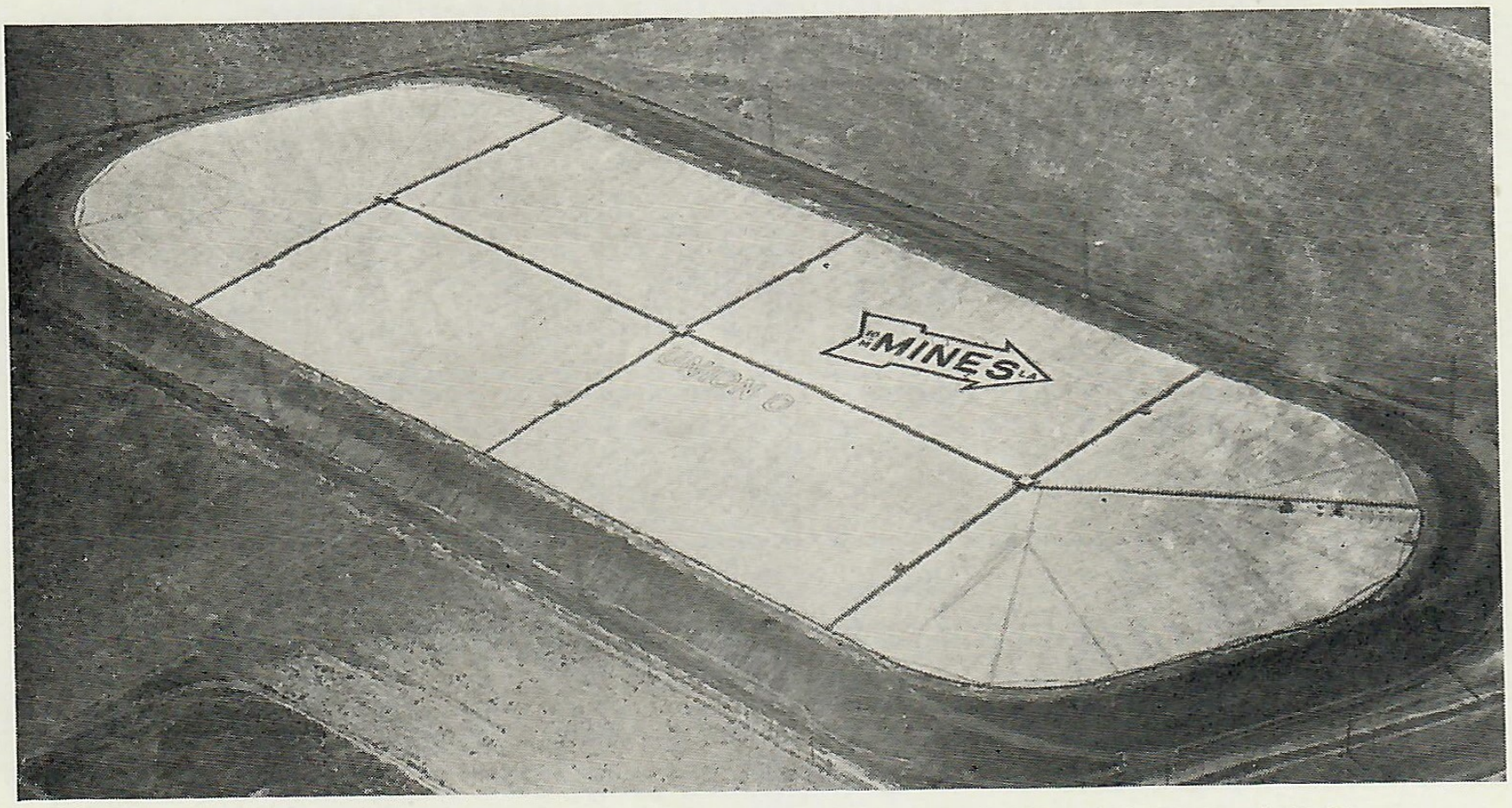
Construction of airports has usually been actuated by one or more of the several motives—a desire to place the city abreast of the rank of its neighbors if not in the lead; a real intention to provide the best facilities for airplanes and airmen; a realization of the importance of air transport to commerce; a vision of the possibilities of attracting some portion of the aircraft industry to the city; and sometimes just a fear that if an attempt is not made to build an airport the city will be "out-of-date."

The only factors that should be considered in planning the airport are those involving provisions for the best possible field and equipment to accommodate air traffic and the aircraft industry. The airport will automatically receive the highest possible Department of Commerce rating in such a case and will rank correspondingly with the ports of neighboring cities.

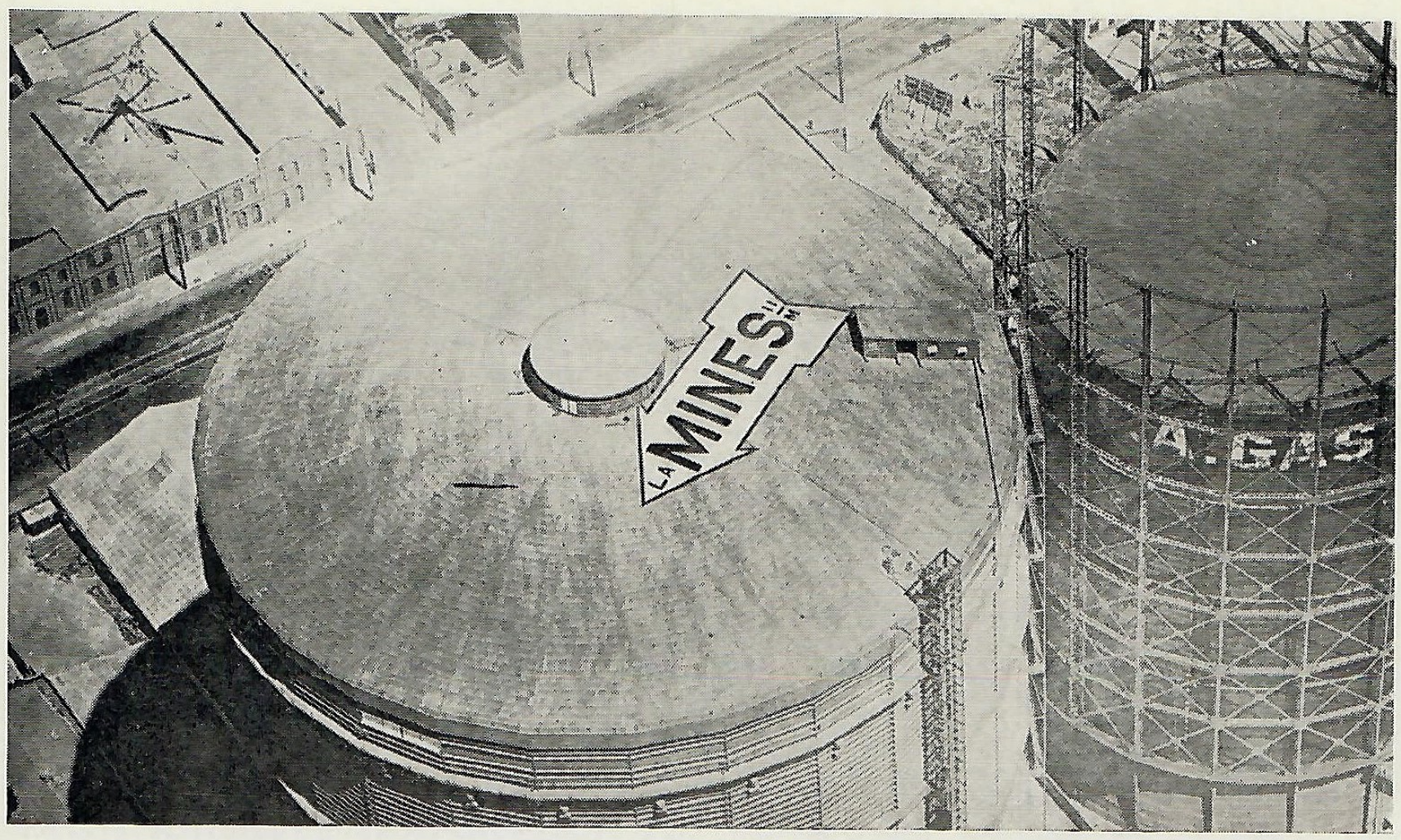
Admitting that competition is always helpful if not carried to extremes, it is believed that the slogan to be used might well be "As we serve aviation it will serve us," and not "Let's beat our neighbor."

Perhaps the best way to judge whether this idea has been carried out is to look at your airport through the eyes of a visiting pilot. There is no keener judge than the flyer who uses your field and who views it in the light of efficiency and service.

As the visiting pilot nears your city for the first time how does he know that he has reached his goal? Do the roofs of prominent buildings below him bear the name of the city with arrows pointing the direction to the airport and labeled with the distance in miles? Or must he search for his landing



Aerial marker painted on the top of the Union reservoir at Lomita, at the time of the National Air Races, to aid flyers in finding their way to Mines Field.



Another marker painted on the top of a tank of the L. A. Gas and Electric Corporation. Seven such signs were placed at strategic points throughout Southern California by the L. A. Junior Chamber of Commerce and the aviation department of the Union Oil Company.

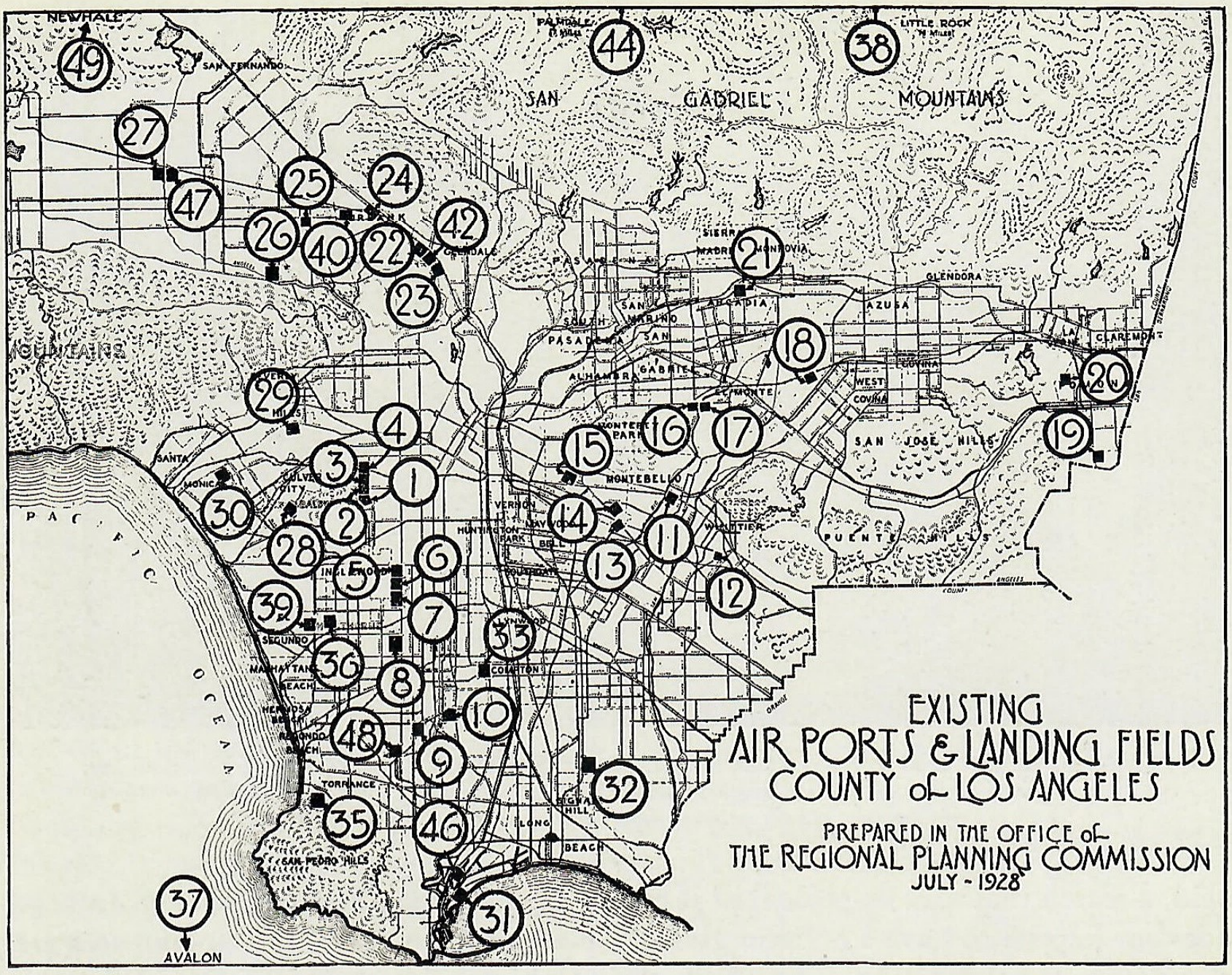
field, a search that may be prolonged if he does not happen to have a bulletin giving the necessary information. The effect of this first "air greeting" should not be underestimated—each city should have at least one such air marking.

When he reaches the airport itself does the visiting pilot recognize it immediately by the standard identification circle and the name of the airport either on the hangar roof or on the field? Are the approaches clear so that no matter from what direction the wind is blowing, he may glide in safely? Or must he circle several times to decide whether he will fly between tall buildings, side-slip over transmission wires or "S" in and out between other obstacles along the borders?

Is there a wind cone or other indicator which is quickly seen from above, or must the pilot look for the direction of the wind by inspection of smoke from chimneys or the movement of trees? Is the entire field shown to be available for landing or in the case of landing strips or runways is the effective landing area easily recognized?

As he approaches for landing do other planes remain out of the landing area giving him a clear field, or is he likely to be confronted with a local ship suddenly taking off in spite of the Air Traffic Rules and good practice? As he levels off does the pilot prepare to set his ship down with a minimum of effort on a smooth level surface or must he exert all of his skill to overcome all of the difficulties of rough uneven ground and ruts and hollows?

And finally, when he has landed and the ship has come to a stop, what kind of a reception is given him? Is there someone who is ready to signal him to a designated spot on the "line," or must he wait several minutes until someone chances to notice him? If he desires fuel will he receive rapid, efficient service so that he will not be delayed in resuming his flight, or will he have to taxi his plane to some out-of-the-way spot and wait for a mechanic to fill his tank? In other words, is there a tried and proven system of administration which will cover such details as repairs, hangar



1. Rogers' Airport, 3901 Angeles Mesa Drive. 2. American Aircraft Corp., 3809 Angeles Mesa Drive. 3. Lincoln Air Lines, 37— Angeles Mesa Drive. 4. Pacific Air Transport, 3717 Angeles Mesa Drive. 5. Los Angeles Airways, Inc., 91st St. & Western. 6. Master Aircraft Corp., 94th St. & Western. 7. Aero Corp. of Calif., 98th St. & Western. 8. Dycer's Airport, 136th St. & Western. 9. F. W. Barrett, 192nd St. & Vermont. 10. Short's Airport, 190th St. & Main. 11. Security Aero Service, Whittier Blvd., Pico. 12. Stoody Airport, Whittier Blvd., Pico. 13. Monarch Aero Corp., Telegraph Road (east of Vail Field). 14. Western Air Express, Vail Field, Telegraph Road. 15. California Airways Co., Telegraph Road(west of Vail Field). 16. Schober's Airport, Garvey Road, 1400 block east. 17. Callie's Airport, Garvey Road, southwest of El Monte. 18. San Gabriel Valley, El Monte Road, Baldwin Park. 19. John Burnley Airport, Pomona. 20. Rodgers Airport, W. K. Kellogg Ranch, Pomona. 21. Ross Field, Arcadia. 22. Glendale Airport, San Fernando Road, Glendale. 23. California National Guard, Griffith Park, Los Angeles. 24. Lockheed Airport, San Fernando Road, Burbank. 25. Hollywood Aero Corp., Tujunga & Victory Blvd. 26. Eagle Airport, Whitsett & Ventura Blvd. 27. Van Nuys Airport, Caddo Field, Balboa & Roscoe. 28. Frank Baker Airport, Jefferson & Centinella Blvds. 29. California Aerial Transport, 9800 W. Pico Blvd. 30. Santa Monica Municipal, Clover Field, National Blvd. 31. Allen Field (L. A. Harbor Com.), Terminal Island, Wilmington. 32. Long Beach Municipal, Cherry Street, Long Beach. 33. Compton Airport, Olive St., west of Compton. 35. Palos Verdes, Palos Verdes Estates. 36. Kelly Field, Hawthorne, Broadway & Inglewood. 37. Avalon, Catalina Island. 38. Lafayette Aircraft Corp., Little Rock. 39. Mines Field, Redondo Blvd., Inglewood. 40. Panorama Airport, Victory Blvd. at Evergreen. 42. Slate Aircraft Corp., San Fernando Road, Glendale. 44. Palmdale Airport, Palmdale. 46. Flying Boat Terminal, Los Angeles Harbor. 47. L. A. Metropolitan Airport, Woodley & Saticoy. 48. Torrance Chamber of Commerce, North of Llewellyn Iron Works, Torrance. 49. Newhall Airport, Newhall Road.

storage, and the other routine matters of an airport?

The attitude of the airport authorities will usually be the governing factor which will decide whether a pilot returns, or whether he crosses a city from his visiting list. At one field he will be given information as pleasantly and as quickly as possible. At others he will note an atmosphere of suspicion from local operators who may fear that he intends to take away part of their passenger and sight-seeing business.

When an emergency arises do the authorities of your local airport say "That's not in our line," or do they jump into the breach and go beyond what might reasonably be expected of them in an effort to give service so that they can truthfully say, "Pilots like our field—they come back"?

This will probably seem just sales talk applied to aviation but a good system of selling must be applied to almost any kind of business before it can succeed. Every progressive city is selling itself every day and aviation activity helps in the campaign.

Does the general system in effect at your airport leave the visiting pilot with a sense

At the Kansas City airport. Rapid service by the Union for contestants in the transcontinental derby.

of security when he goes into the city for a hurried business conference, or will he be left with a feeling of doubt as to the safety of his plane while he is absent?

Is there any favoritism shown the local operator? If so, this attitude will soon become well advertised throughout the industry as the word is passed on by visiting pilots.

When a passenger plane arrives for a brief stop-over, do the business men it carries have to worry about the details of their transportation to the city, or has there been effected a plan which covers this matter as well as the supply of food and shelter for transient flyers? This is particularly important where business men are concerned. The existence of a good food supply on or close to the airport, and availability of efficient transportation, will leave them with a pleasant memory when they again take to the air. A delay caused by neglect of either of these details will cause an entirely opposite effect with ultimate detriment to all operators in that section.

There are other points which can well be remembered. Have you sent all the information on your airport to those who keep the industry informed? Does the Department of Commerce have it listed with the latest equipment charges and services given? Do nearby airports have this information and also the aeronautical magazines which are always glad to carry such details? Briefly—is it well advertised?

Do you keep the airport in the condition which is described in governmental and other bulletins so that it will live up to its reputation or will it be like so many of the "vacation nooks" graphically and alluringly described but which fall far short of the picture drawn?

Do your local pilots and operators chafe under the reasonable regulations of government, state and city, or do they welcome these rules knowing that they are for the general good of all the industry and will be of direct benefit to the city? Are ordinary safety rules carried out and does the airport conform to accepted standards for fire fighting equipment and first aid? Are the weather reports and other information of value to pilots carried on a bulletin board which is easily accessible at the field station?

Do your airport authorities make an effort to have the latest details in regard to

neighboring cities, intermediate fields, and miscellaneous flying data which will be of assistance to strangers flying through your part of the country? Or is all of this handled just as the necessity arises, with a consequent lack of familiarity with conditions that will badly impress the visiting pilot?

Do local rules require that ships operating regularly from the airport be in safe condition and that pilots be experienced and also in physical condition for flying, or is there entire lack of intention to restrict the dangerous plane and the inexperienced or reckless pilot? Is inspection by the Department of Commerce inspectors made as easy as possible and is there an effort to cooperate with these or state officials, in case there are provisions for the latter? Are the Air Traffic Rules posted conspicuously in several places so that pilots will be unable to plead ignorance under any conditions, or is there merely a desire to scrape through within the law, but without any real intent to carry out its spirit?

Obviously, some of the questions and statements as to equipment will not apply to the smaller cities, but these should not be discouraged to the point of abandoning airport construction because of apparent lack of aviation activities. Naturally, the absence of even a good landing area will restrict the growth of air traffic and the cities which feel they would not be justified in establishing a large airport will not find it difficult to acquire a suitable field. Even though there may be no funds for the erection of a hangar, a marked operating area will be valued by the pilot in strange country. In most cases this can be developed, and equipped as the increase of business warrants.

Even where full equipment is not at first or even later possible the attitude of those in charge of the airport or landing field will go far toward making up for this. Provision such as a telephone at the unattended field which will bring some designated official to render capable and expeditious service will create a good name for the city concerned; probably increasing its air traffic to the point where additional expenditures will be justified.

The construction of an airport is not a simple matter. It should be planned and carried out carefully but even when it has been completed this is by no means the end of the problem. There should be a complete system of management worked out capable of practical execution with the number of employees available. The necessity for quick, efficient service should be emphasized as of primary importance so that every visitor from the air will be glad to have stopped if only for a few minutes and will take away with him a memory that will soon cause your city to be known as an excellent "port of call."

In this way you will be rendering service to aviation and in return aviation will render even greater service to your community. The airport will bring some or all of these three services to your city: the air mail, scheduled passenger service, and express and freight transportation. Business will be speeded up, salesmen traveling by air will add your city to their calling lists; banks will save thousands of dollars.

The establishment of the airport will also tend to draw aviation industries—a factor which should not be lightly dismissed. Less than three years ago aviation industry was established at a city which had just constructed an airport. Today this industry has written $9,000,000 worth of business onto its books. There are other inspiring examples of swift growth in this "infant industry."

The establishment of an airport will benefit the city concerned in several ways—in a general increase of business; in more satisfactory connections with the rest of the commercial world, and in the acquisition of a reputation for service that will be carried to all ports of the country by our visit to that city.

Handling Waste Water and Oil

By HUBERT C. FERRY
President, Waste Water Disposal Company

IN discussing the handling of waste water and oil, particularly with those not immediately associated with the oil industry, it is interesting to note that most people have little or no conception of this branch of the business; in fact, they do not even know that it exists. Their only association with waste oil comes from personal contact at the beaches, and then they are certain that the oil companies have done nothing to abate this nuisance.

On the contrary, the oil operators in Southern California have for the last three years been working out plans to handle all of the waste water and oil resulting from their operations in the fields, at their tank farms and refineries. Two major systems for collecting the waste water and oil, separating the oil from the water, and discharging the clean water into the Pacific Ocean, are in operation, and a third will soon be completed.

The Oil Operators Incorporated, serving Signal Hill, has been in operation two years; Waste Water Disposal Company, serving the Brea Canyon, Olinda, East Coyote and Richfield Districts, was placed in operation September 1, 1928; and the Santa Fe Springs Waste Water Disposal Company to serve the Montebello, Whittier, West Coyote and Santa Fe Springs fields, now under construction, will be placed in operation next spring.

These three systems, which aggregate a total of about one hundred miles of pipe line, with a main separating plant for each system to remove all of the oil from the water, will cost the oil operators approximately $1,000,000.00. The maintenance and operation will amount to $50,000.00 annually. The systems will handle 175,000 barrels of waste water per day. While a certain amount of oil will be reclaimed, it will have no gasoline content, due to exposure to the elements, and will be sold as road oil. It is not anticipated that this revenue will be sufficient to pay operating expenses.

Due to submarine seepage, oil will continue to be found on the ocean and beaches after the above-mentioned systems are in operation. The oil operators will, no doubt, continue to bear the brunt of the criticism for this condition from certain of the uninformed public, whom we would refer to the report of the Inter-Departmental Committee on Oil Pollution of Navigable Waters, convened by the Secretary of State, August 7, 1922. After a most exhaustive national and international investigation, this Committee reported to the Secretary of State, March 13, 1926, nearly four years later. Reference is made to submarine seepages along the Southern California coast as follows:

"Submarine seepages of oil and gas are to be found along the coast of Southern California from Santa Barbara south. . . . The earliest Spanish navigators of the Sixteenth Century recorded the presence of oil upon the ocean at points where it is known to exist today. . . . The largest seepage at the present time is about one and one-half miles off the City of Redondo. A careful observation was made of this seepage which occurs in a depth of about 450 feet of water. On a calm day bubbles of gas can be seen rising to the surface of the water and immediately upon disappearance of the bubble there will appear particles of heavy, black viscous oil ranging in amounts from a few drops to perhaps an ounce or two. At the time of the inspection an area estimated to be about 50 acres in extent was covered by a scum of this thick, black oil. It is obvious that with the existence of this oil so close

to the shore line that a southwest wind would drive the floating oil to the nearby beaches. No remedy can be suggested to control oil of submarine origin."

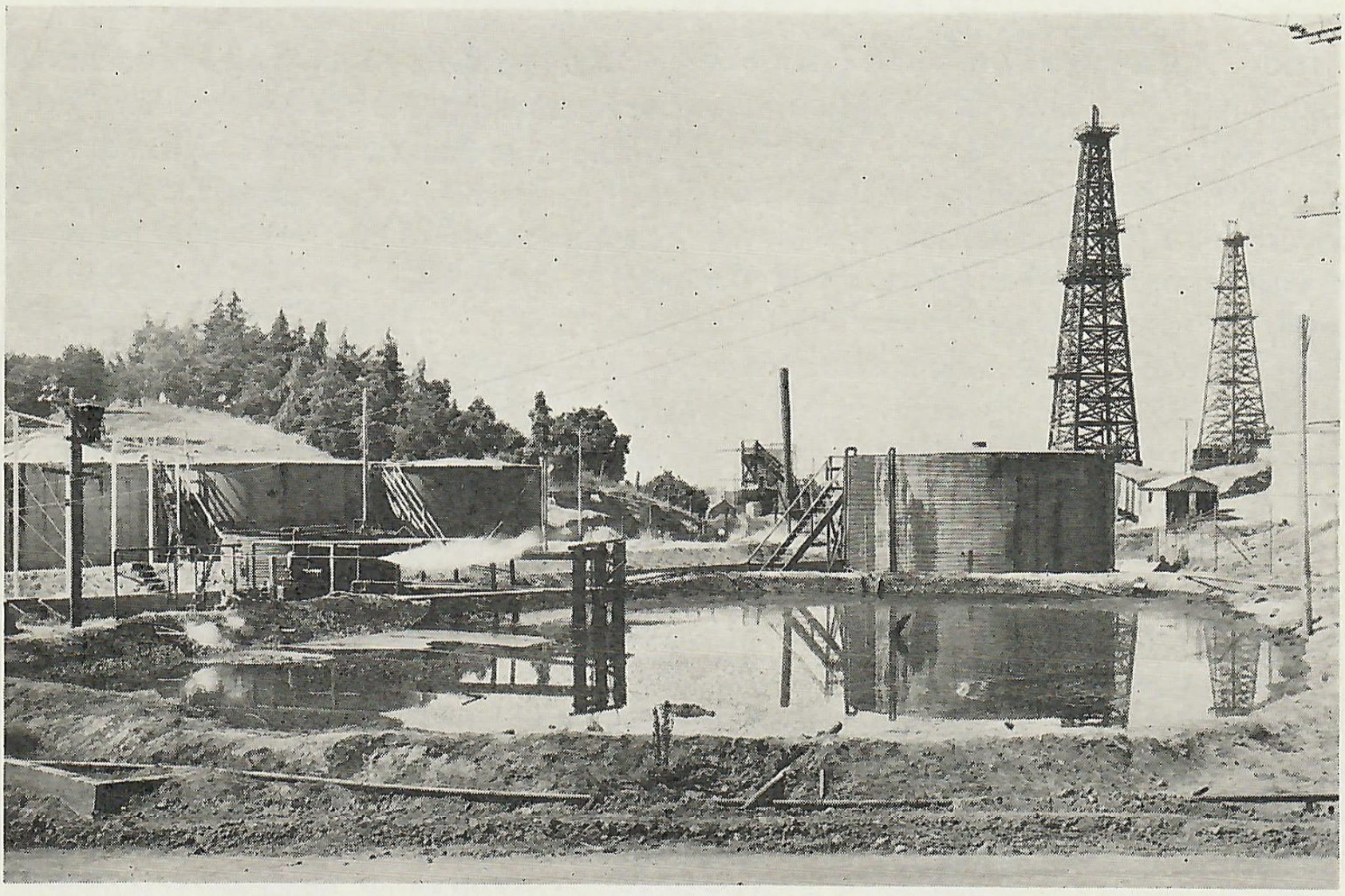
While one of the essential purposes of the waste water disposal companies is to prevent the discharge of waste oil upon the beaches or ocean because of nuisance to bathers and damage to property, other reasons present themselves as necessary for the proper handling not only of waste oil, but also of waste water.

A film of oil on the surface of lagoons, lakes or inlets adjacent to the ocean will prevent the oxygen from penetrating the water, and fish will suffocate. This is particularly true of shell fish such as clams, crabs, lobsters and oysters in the larval stage. Such a condition would be a severe detriment to the fishing industry.

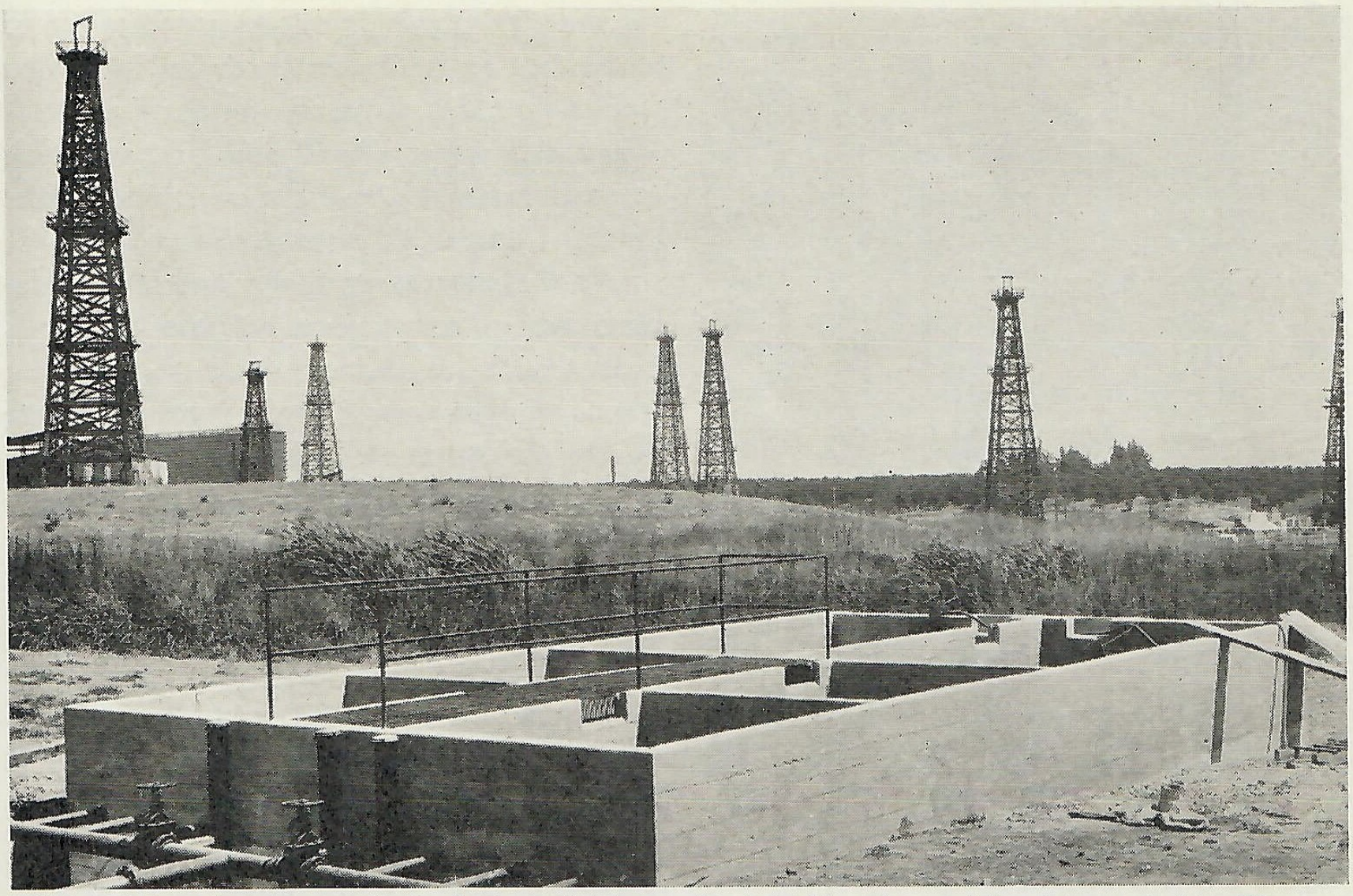
The rapid development of Southern California has brought subdivisions and the oil fields virtually onto one another's doorsteps. Many of the oil fields, also, are in the midst of highly developed citrus property. If the oil is permitted to escape from the fields or is washed away during a storm, it may lodge on adjacent property or highways and possibly result in damage.

The oil which comes from a well is emulsified with salt water. As the well ages the proportion of salt water often increases and it is not uncommon to find that a well which has been in operation for a number of years is producing as much or more water than oil.

In the intensive oil development of town lot areas in Southern California, water will appear sooner and in greater quantities than in fields where wells are spaced farther apart. The water from the wells has a salt content of approximately 8,000 parts per million, which is about one-fifth as salty as ocean water. If this water is allowed to seep into the ground or flow along the natural waterways from the oil fields, it may possibly contaminate fresh water wells or be deleterious to vegetation; therefore, after thoroughly removing the



One of the old sump holes where oil and water was collected; not only unsightly but also a fire hazard. During the rainy season the earth walls would break or the pond frequently overflow, causing damage to adjacent property.



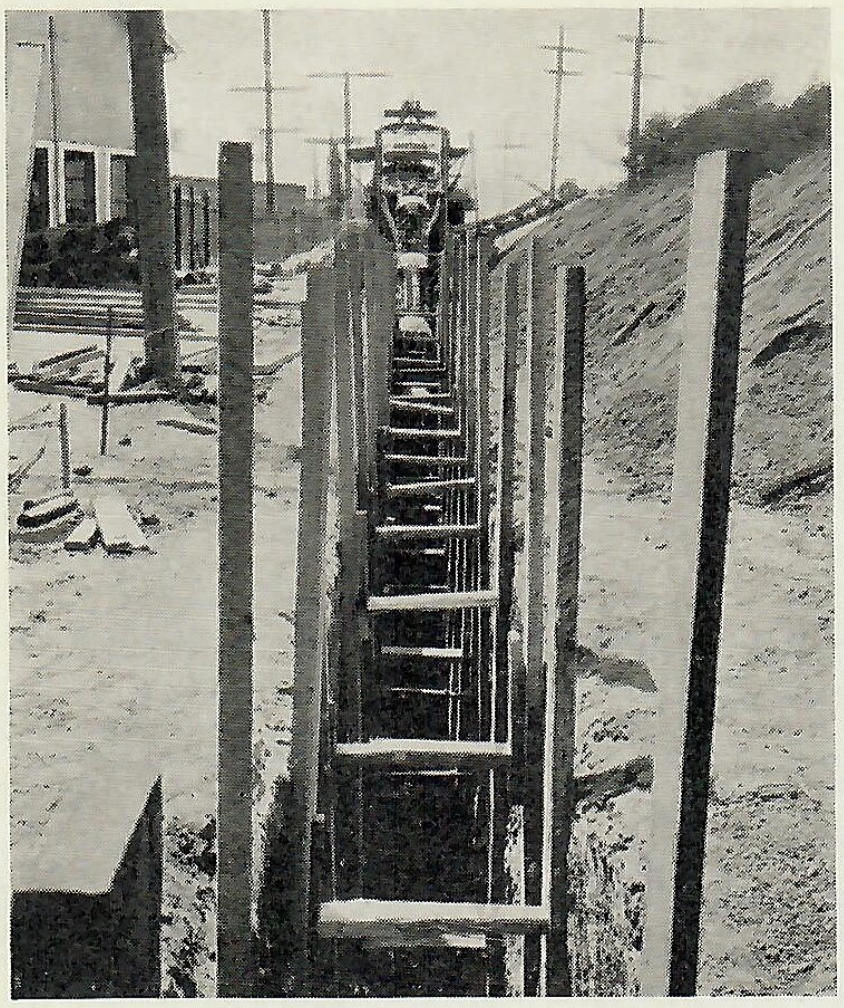
One of the modern concrete collecting basins, which have replaced the old earth sump holes shown on the left. These are built on the operators' property for the purpose of collecting the waste water and oil. After the bulk of the oil has been skimmed off, the water is discharged into the Waste Water Disposal Company's system. This picture was taken on the Union Oil Company's property in the Richfield District.

oil from the salt water, the water must be carried to the ocean.

Space will not permit a detailed discussion of the legal and financial organization or of engineering technicalities of the waste water companies. The Oil Operators Incorporated at Signal Hill was organized under different conditions than the Waste Water Disposal Company and the Santa Fe Springs Waste Water Disposal Company; generally, its purpose, organization and operation are similar. The latter two, however, are identical in their Articles of Incorporation and By-Laws, financing and operation—a discussion of the Waste Water Disposal Company will serve for both.

At a meeting of the oil operators in Orange County, held February, 1927, an engineering committee, composed of representatives from the various companies, was appointed to make the necessary surveys and prepare plans and specifications for a pipe line system serving the various fields, a plant for the separation of oil from the water, and a discharge line to the ocean. After several weeks of careful investigation the recommendations of the engineers were considered and adopted by the oil operators. These recommendations provided as follows:

The construction of about 20 miles of vitrified clay, gravity flow pipe lines from the various fields to a separating plant site about 2 miles southeast of the town of Fullerton. Vitrified clay, which will last indefinitely, is used to eliminate corrosion from the salt water, occurring in steel pipe lines. Gravity flow does away with costly pumping expenses which occur in the operation of pressure lines. Although gravity lines are necessarily longer, as they must follow the contours of the ground and are often laid in deep ditches through high ground to maintain a uniform grade, they are nevertheless more economical when operated over a period of years. Manholes are spaced not more than 300 feet apart to allow inspection and flushing and cleaning



Ditching one of the deepest portions of the Waste Water Disposal Company's System, 25 feet deep. The entire system is gravity flow and a uniform grade must be maintained, requiring deep ditches when cutting through high ground. Although the initial cost of a gravity line is greater than a pressure line, the former is more economical when operated over a period of years, due to elimination of pumping costs. The entire system is constructed of vitrified clay pipe and will last indefinitely.

of the pipe lines. Operators are required to construct at their own expense, basins or tanks on their respective properties to receive the waste water and oil, and also pipe lines from these tanks to the Waste Water Company's system.

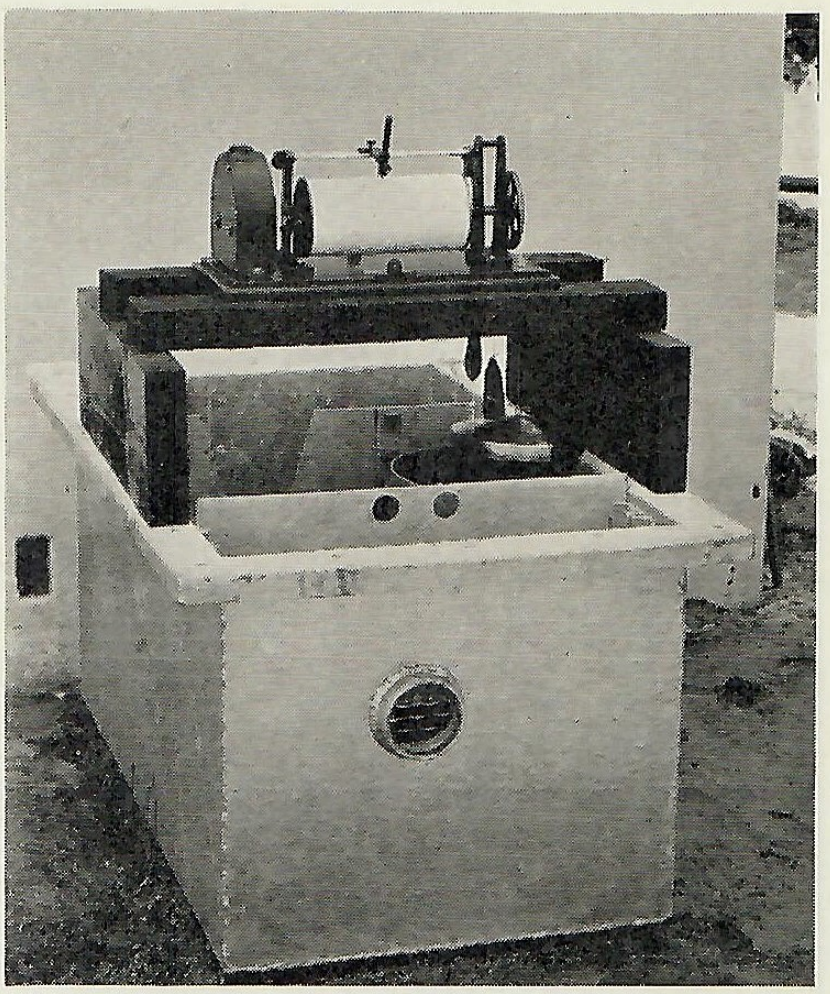
At the separating plant site it was determined to construct a settling reservoir, lined with reinforced concrete, with a capacity of 135,000 barrels. Here the waste water and oil is received and treated. The heavy mud and silt settles to the bottom and the lighter oils rise to the surface. After careful handling and skimming for about ten days, the water is finally discharged through filters, free from oil, the reclaimed oil is stored in tanks and removed by tank trucks. The clean water is turned into a discharge line, conveyed to the Orange County outfall sewer and thence carried to the ocean. This water, after leaving the separating plant, should not contain more than 25 parts of oil to each one million parts of water, which is practically nil.

The best available engineering advice

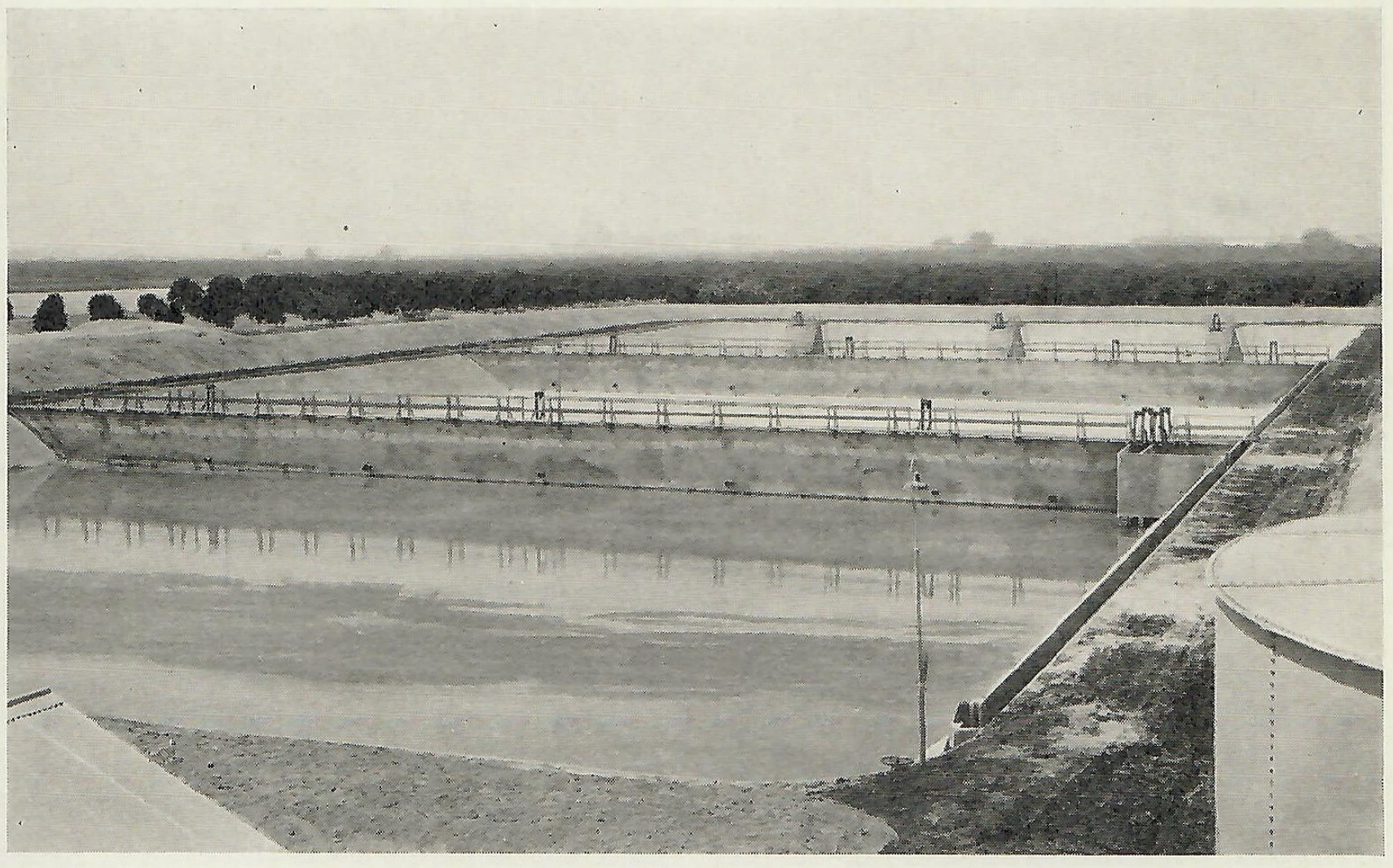
This picture indicates the method of applying concrete on the walls and floor of the separating reservoir. The concrete is shot on under heavy air pressure through a nozzle, becoming very dense and hard. At the left is the mixing chamber or carburetor where proper proportions of sand and cement are introduced.

was secured from all of the oil companies in designing the separating plants for the Waste Water Disposal Company and the Santa Fe Springs Company. Experiments were made over a period of months so that the most modern and efficient plants would be constructed. Tests were made with the use of chemicals, others by injecting air under pressure into a chamber filled with water and oil, thus creating violent turbulence; none proved economically practical. The design finally adopted embodies primarily the "settling and skimming" process with certain added features such as aerators, curtain walls and baffles, sedimentation chambers and filters.

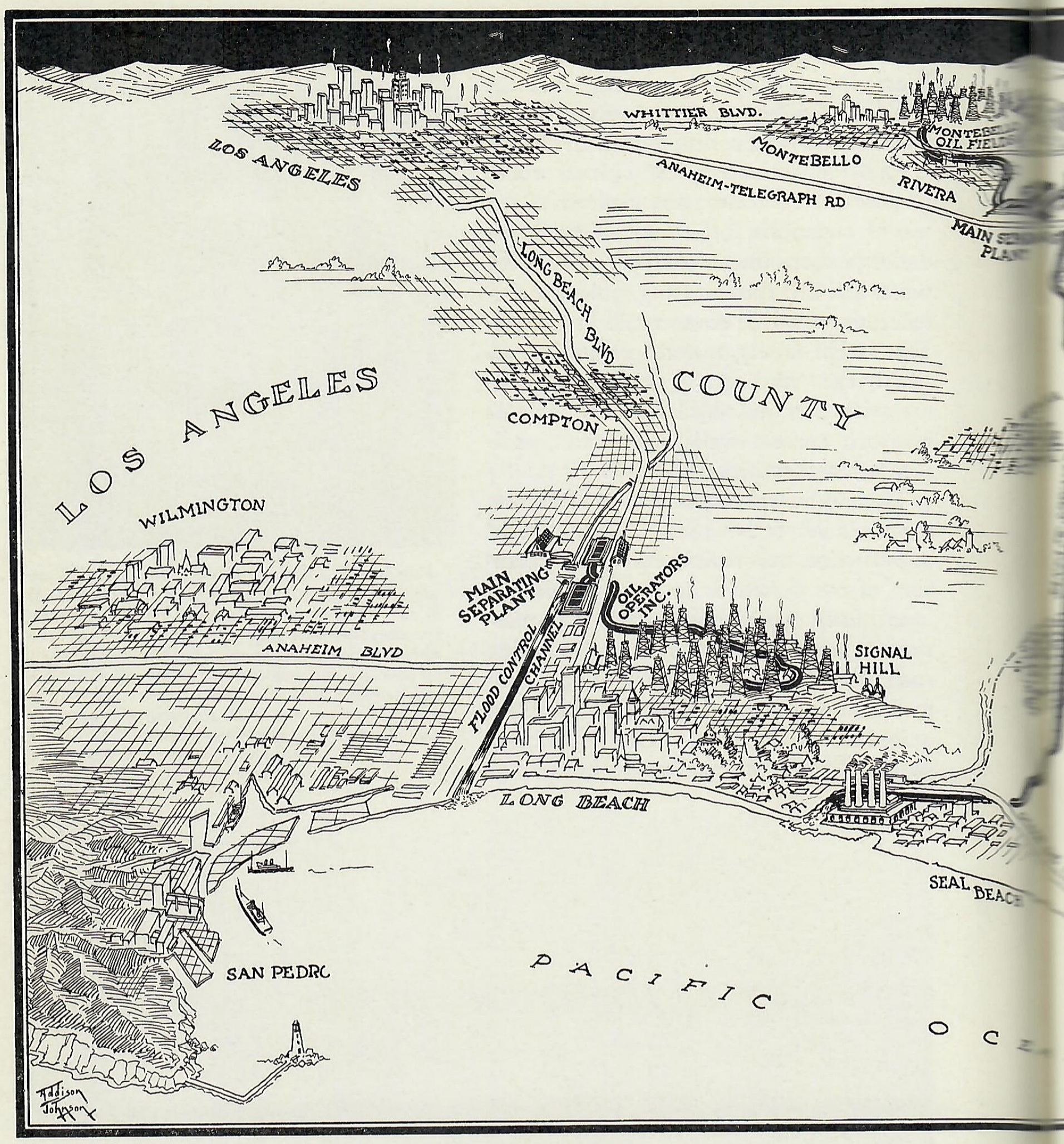
The method of assessing the operators for their respective share of the cost of construction and maintenance and operation of the system is interesting and unusual. Each operator is assessed in proportion to his use of the system. To define such use and provide a method of equitably transposing it into dollars and cents required much attention. "Use" could not be based upon the acreage or number of



Weir boxes and recording meters such as the above are placed at all connections of the operators' lines with the Waste Water Disposal Company's System, to measure the amount of water discharged into the system. The revolving cylinder and time clock at the top automatically record the amount of water passing through the weir box for a period of 7 days, without attention. So far as is known, this is the first time that meters of this character have been installed in oil fields. This type was selected after weeks of actual experimenting with many devices.

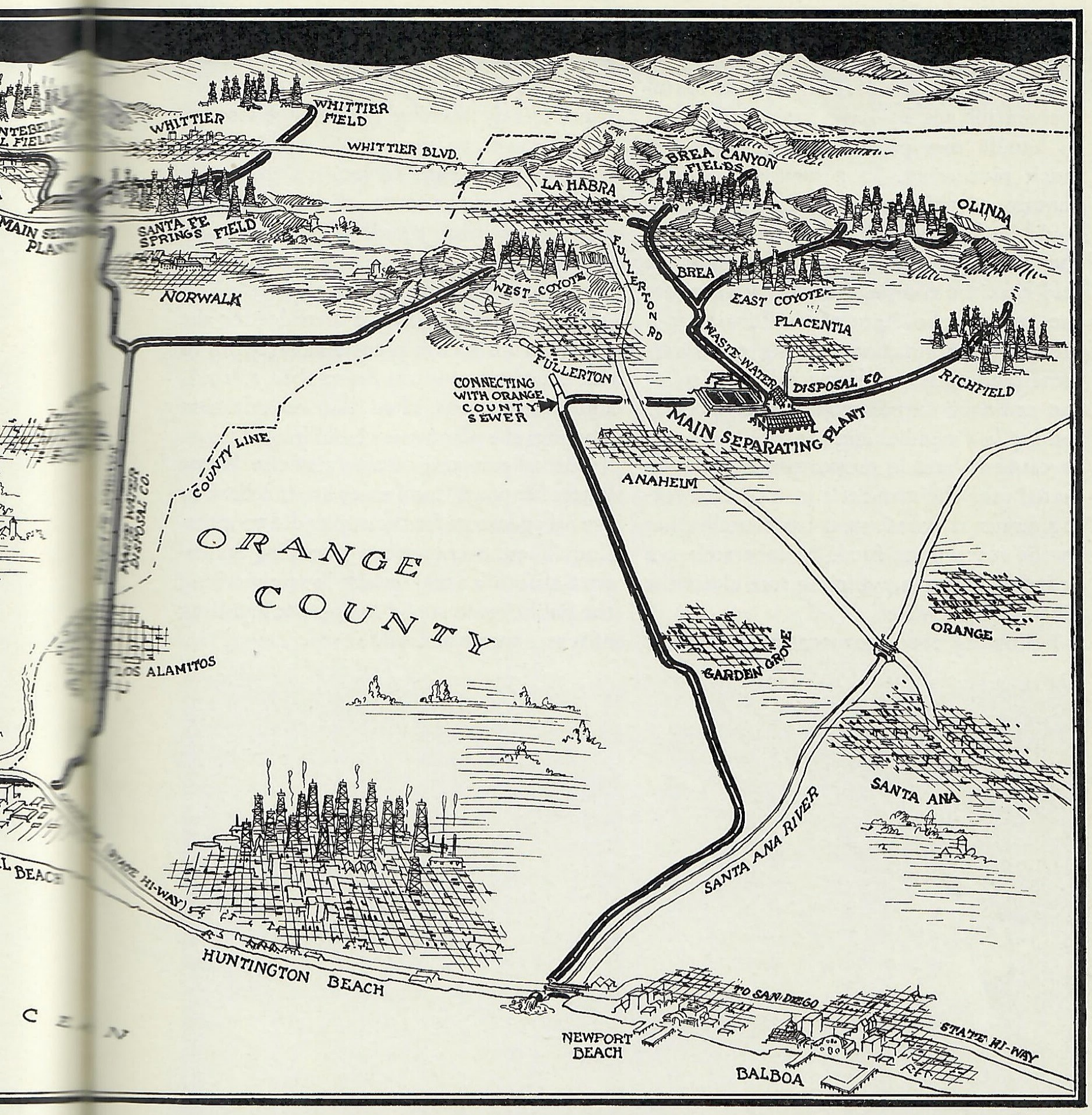


Main Separating Reservoirs of the Waste Water Disposal Company, 530 feet long and 260 feet wide, entirely lined with reinforced concrete, and having a capacity of 135,000 barrels.



Three major Waste Water Disposal Company Systems in Los Angeles and Orange … Santa Fe Springs Waste Water Disposal Company, under construction. Right, Waste … mately 100 miles of pipe line, with a main separating plant to remove all waste oil … $1,000,000.00 plus an annual operating cost of $50,000.00. T…

wells of the operator served by the system, because conditions might be such as to require one operator to develop all of his property or operate all of his wells, while another's were dormant or idle. It was decided that the operator should pay the proportion of the construction cost that the amount of water discharged and length of pipe line used by him, bore to the total amount of water discharged into the total length of the entire system. The initial payment is based upon the estimated use of each operator; one-fifth of the initial payment is adjusted annually for five years,



Orange [illegible] Left, Oil Operators, Incorporated, which has been in operation about two years. Center, Waste [illegible] Company, placed in operation September 1, 1928. These Systems aggregate approximately [illegible] waste oil [illegible] water for each system. They represent an investment by the oil operators of approximately [illegible]00.00. The [illegible] will handle about 175,000 barrels of waste water every day.

based upon the actual use of the operator during the preceding year. Annual maintenance and operating costs are based upon the actual use of the system during the preceding year. Details of computing these costs are too lengthy to discuss at this time.

This method of calculating costs required accurate measurement of all oil and water discharged by each operator into the Waste Water Disposal Company's system. After many actual tests of various meters, it was decided to use a "V" type Weir meter with a recording device, installing a meter at the connection of each operator's

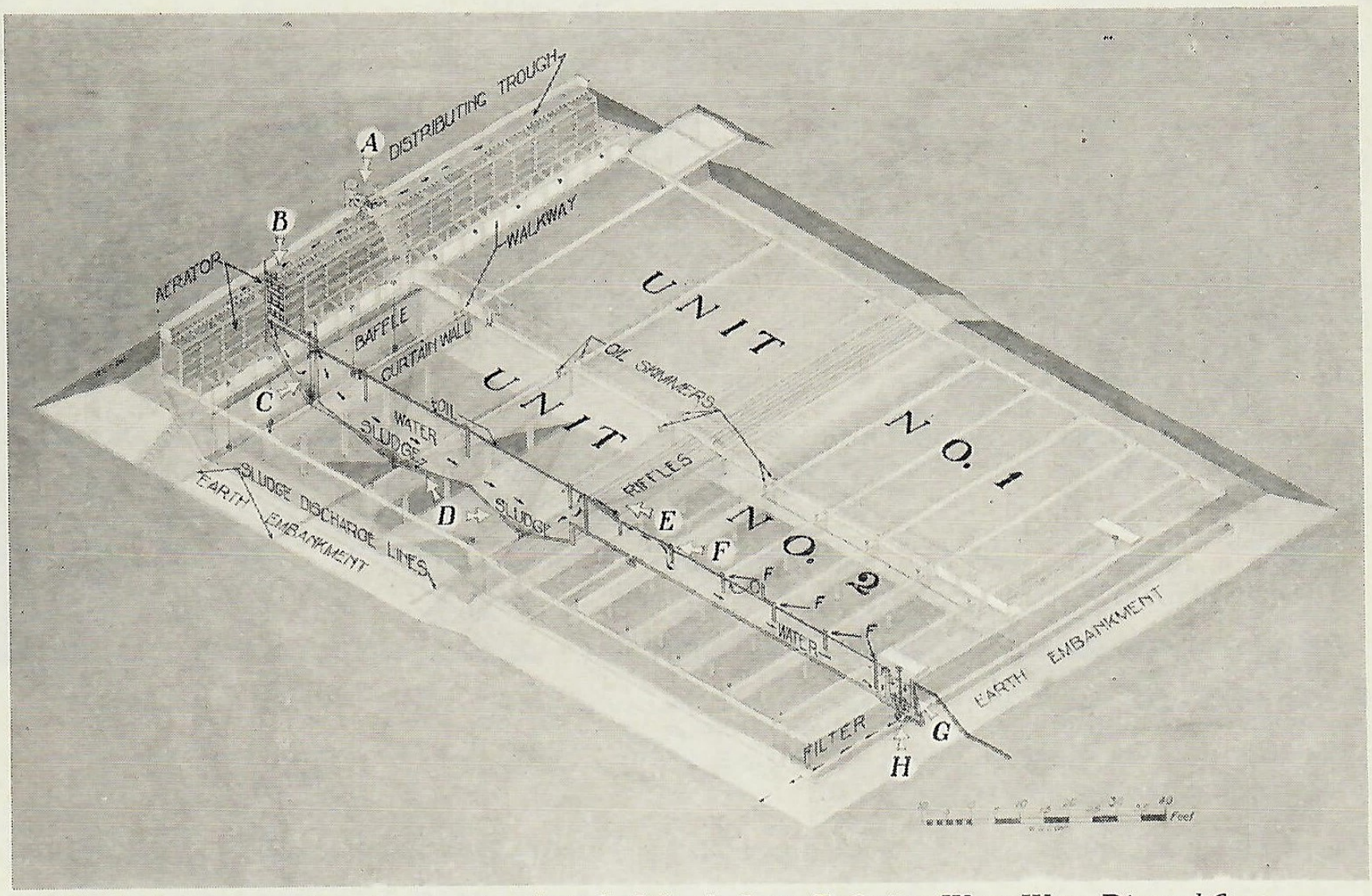
line with the Waste Water Disposal Company's system.

The preparation of the Articles of Incorporation and By-Laws for a corporation to handle this project was a subject of much pioneering. In a new and unique venture of this sort, no legal guidance could be found. To give just a glimpse at the corporate arrangement, it might be said that the company is organized under the laws of the State of California, as a non-profit corporation, having an investment fund corresponding to the capital of the ordinary corporation. Each operator joining is a member and contributes to the investment fund in proportion to his estimated use. The member's interest and voting power is based upon his contribution to the investment fund. Members elect a board of directors, which in turn elects the officers.

Following the incorporation, rights of way and franchises were secured, the plant site purchased, and an agreement entered into with the eight cities and sanitary districts jointly owning the Orange County outfall sewer, to use it to convey the waste water to the ocean. To secure a unanimity of opinion on the terms of this agreement and its execution by all of the cities and sanitary districts, was a feat requiring nearly a year of negotiation.

In due course contracts were let for the construction of the plant and facilities of the company, and on September 1, 1928, eighteen months after the organization meeting, the plant was placed in operation.

The officers and directors of the Waste Water Disposal Companies are indebted to the oil operators for their splendid cooperation. These operators are rendering Southern California a real service in safeguarding the public interests by the proper handling of waste water and oil.



Sketch of the most modern oil separating plant, built by the Santa Fe Springs Waste Water Disposal Company. Each unit, only 50 feet wide and 160 feet long, is expected to clean 30,000 barrels of waste water every twenty-four hours. The oil and water emulsion enters at "A" and is distributed through aerator "B" to break emulsion. The heavy mud and sand is caught at the preliminary sedimentation chamber "C." The water then flows over the baffle into a sludge basin "D" where the remainder of the sand and mud is removed. At this point about 95% of the oil is collected. The remaining oil passes with the water over the baffles and riffles "E" for a second aeration, after which it flows under the curtain walls "F," the oil rising to the surface being caught back of the walls. The water is then passed through filters "G" to insure the complete removal of any remaining particles of oil before discharging into the outlet line "H."

A CANADIAN TRAVELOGUE

By H. D. SEELEY

EXPANSION of distributing facilities in the Northwest, and the development of new sub-station sites, recently afforded the writer a most interesting trip into the British Columbia interior.

In the company of Mr. R. J. Kenmuir and Mr. K. B. Stevens, we left Vancouver early one evening—our destination Princeton, the center of an extensive mining district, serving the neighboring mines at Allenby and Copper Mountain. We found the site of our proposed sub-station there to be located directly opposite what is known as the "Cave," a natural formation which has capacity for seventeen carloads of produce, and is used for storage purposes by the city merchants.

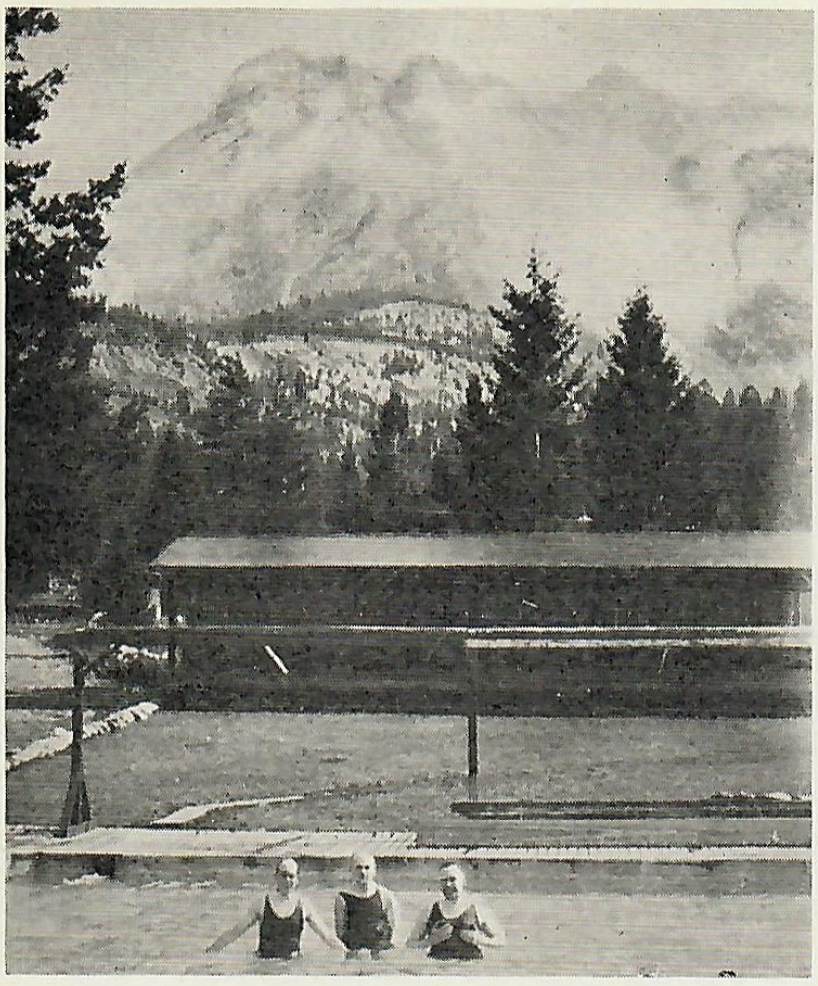
The morning following our arrival at Princeton, we motored to Penticton, a distance of seventy-five miles. Incidentally, this trip was made in a new Ford, offering features not afforded by the city demonstrations to which we had been accustomed. The road is mountainous and follows for many miles the Similkameen River.

Penticton on Lake Okanagan presents a very welcoming aspect. One is impressed by the spaciousness of the place and the picturesque outlook over the water—a seventy-five mile stretch of it, flanked on both sides by rolling hills, spotted with orchards. Penticton itself enjoys the distinction of having the finest fresh-water bathing beach in British Columbia.

Leaving the Okanagan Valley early in the morning via the Kettle Valley Railway to Grand Forks, we had a continuous view of the lake and city from even higher levels. Soon we were able to see Kelowna with all its surrounding orchards, the two cities seeming to stand as sentinels guarding the placid waters. Finally, forsaking the lake, the train rapidly ascended the divide. Here the atmosphere chilled with an abundance of snow on the ground.

From this point the Kettle Valley wound its way through the mountains, the track for the most part laid on shelves which have been cut out of the rocky mountain slopes. Now and then huge trestles support the road over mountain gullies. A few deserted mines are in evidence, some apparently having resumed operations after a long period of inactivity. Our destination on this particular afternoon was Grand Forks. The approach to this enterprising little city was most interesting, the railroad descending from a very high altitude down into the valley without the city itself being visible until the last corner was turned. Villages neighboring Grand Forks have seen better days, but the latter is built along quite progressive lines—supporting a well-improved golf course. Mountains surround the city, which lies at the junction of the Kettle River with the North Fork. The Rock Candy Fluorspar Mine—the largest deposit of fluorspar on the continent—is located there.

Leaving Grand Forks late in the afternoon, we arrived at Nelson in the evening. This trip was replete with scenery. Some of the mountains are great masses of distorted rock, and until darkness actually sets in, the tall peaks present a rather formidable aspect. Nelson is located on the shores of Lake Kootenay, where the Canadian Pacific Railway operates a lake steamer, connecting with the train. After taking a brisk walk through the main thoroughfares of Nelson, we retired for the night on the boat. The steamer, housing its drowsy cargo, moors at the Nelson dock all night, leaving early in the morning.



A warm bath—amid the snow caps.

The trip on Lake Kootenay, nestled among towering peaks, some snow-capped and some covered with virgin timber, is most enjoyable. The water is placid, and the reflection of the green mountain slopes gives the lake a color all its own.

At noon the boat arrives at Kootenay Landing, and from that point the train carries the traveler to Cranbrook.

The next day, getting an early start, we "Nashed" it to Windermere and Athalmer. The route traverses the famous Banff-Windermere Highway, and a most splendid view of the snow-capped Rockies was afforded at all times. At the time this trip was made, there was little travel on the highway, and about the only tourists encountered were Indians, with their usual bony horses and gay togs. At Radium we could not resist a plunge in the hot springs, and although this spot is hemmed in by snow-capped peaks, and though the dressing rooms were sans heating devices and the carpet between the dressing-room and pool consisted of snow and melting snow-water, the discomforts of exposure were well compensated for by the delightfulness of the radium water, which comes into the pool at a temperature of 92 degrees. After a shudder and a chatter or two, when we came out, we managed to don our clothes and resume the journey to Windermere, where we stopped for lunch. Our palates were well satisfied by the concoctions of the Chinese cook, who certainly knew his "shoup" and his "plie."

The road beyond Windermere was not open, but we understand this section from Windermere to Banff is the most scenic part of the highway, following for many miles the shores of Columbia Lake, headwaters of the Columbia River.

Cranbrook is headquarters for the present mining activity at Kimberly. At the latter town is located the huge concentrators of the Sullivan Mine, where it is claimed that there is enough ore tributary to the concentrator to last from one hundred to one hundred and fifty years. Connected with this concentrator is the large smelter at Trail. The activity of these institutions plays an important part in the development of interior British Columbia.

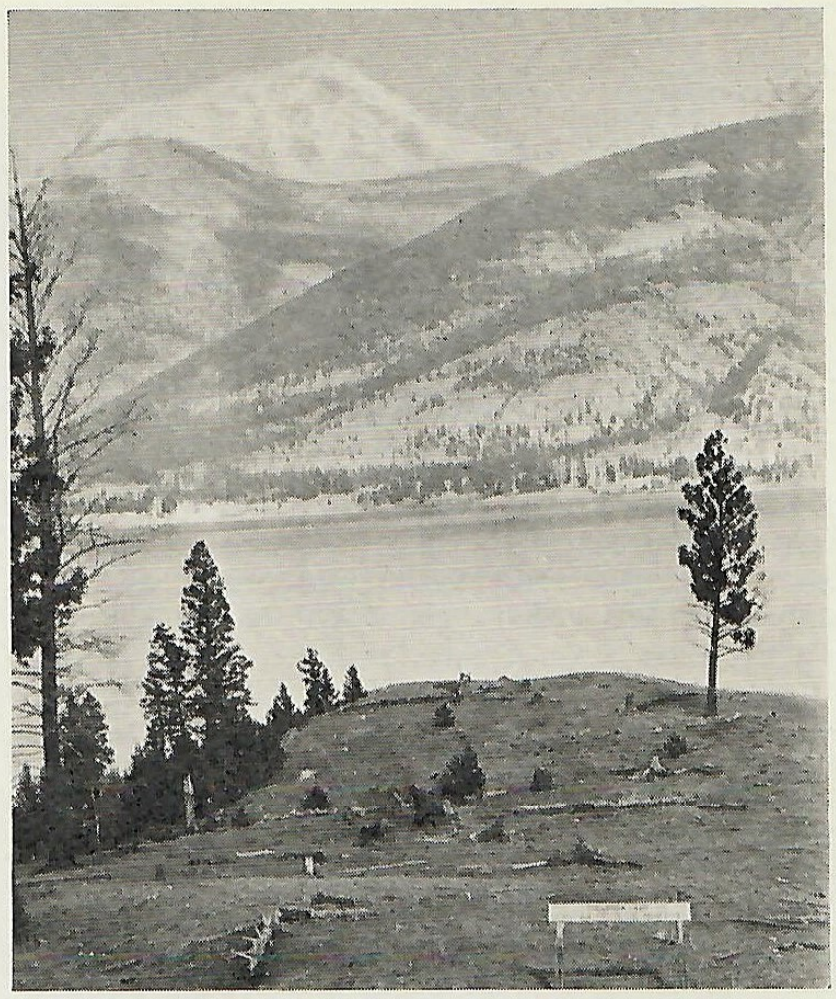
The trip from Cranbrook to Calgary through the Crows Nest Pass occupies one night, the level prairies of the Alberta country affording vision of what seems to be hundreds of miles. Calgary is so well known and presents so much of interest that we shall not do the city injustice by attempting to convey our impressions here.

To conserve time we drove from Calgary to Banff, a distance of seventy-five miles, in order that we might catch the evening train out of Banff for Vancouver. The Calgary-Banff highway seemed to be divided into two sections: the first a rolling road with a tremendous expanse of prairie on either side, with the Rockies straight ahead; the second winding through the mountains, all of which were snow-capped. In the heart of these very mountains there is a spot that is literally teeming with activity during the greater part of the year —Banff. There it is, a city built along most modern lines, nestled at the foot of the

towering peaks, and beckoning to tourists from everywhere. Unfortunately, we were not able to visit the Banff Springs Hotel, as the new wing was just being completed and no visitors were permitted. The Canadian Pacific Railway has spent millions in perfecting this hostelry, and this summer a golf course will be completed which promises to be second to none. Here, too, one may take a plunge in the hot sulphur pools. Facilities for enjoyment have been developed to a point where there is nothing more to be desired in the way of comfort or convenience.

Before the journey is resumed, mention should be made that the Union Oil is established at Banff, and nowhere has the company a sub-station situated in more picturesque surroundings.

Unfortunately the trip through the famed Canadian Rockies was made at night, but the next day, after leaving the lofty peaks, the railroad traversed the river canyon, first on one side and then the other, the jagged hills still giving us our mountain scenery. Eventually we reached the junction of the Thompson and Fraser rivers, where the canyon becomes narrower, with many rapids. It was difficult to realize that this turbulent stream was a part of the placid Fraser River as we had been accustomed to seeing it.



Headwaters of the Columbia River.

Soon we found ourselves nearing New Westminster and began to regret that so pleasant a trip was about to terminate. Catching the night boat at Vancouver, we arrived at Seattle in the morning.

The Banff-Windermere highway.

NEWS *OF THE* MONTH

UNION AT THE NATIONAL AIR RACES AND EXPOSITION

Serving as the broadcasting station for all events of the National Air Races and Aeronautical Exposition held at Mines Field, September 8 to 16, the Union Oil booth in the Exposition building connected with KFI and KPLA, Los Angeles, and KMIC, Inglewood, during the nine days of the Air Meet. The two Los Angeles stations were on the air each day from 1 p.m. to 4 p.m., while Inglewood broadcast from 10 a.m. to 10 p.m.

A microphone in the announcer's box before the grandstand received a continuous account of the progress of the races and air events, while many of the winning pilots and other air notables appeared to speak during the intermissions. Musical entertainment, broadcast from the Union booth, both through loudspeakers in the Exposition building, and by microphone to the three stations, completed the program.

A revolving, panoramic backdrop, before which a model airplane was represented as in flight, contributed the aviation note of the Company's exhibit in the booth itself, while one of the Company planes also appeared on display in the Exposition hall.

As an added advertisement for Union products, a Union Ethyl display provided another center of attention. This Ethyl demonstration involved the use of a Delco-lite engine which had been changed in compression ratio to correspond to the ratio of a high-compression automobile motor, the purpose being to show the difference in performance of the motor when using white gasoline, and when using Ethyl gasoline. This demonstration vied in popularity with the program at the broadcasting booth.

AIRPORT AT SAN LUIS OBISPO TANK FARM

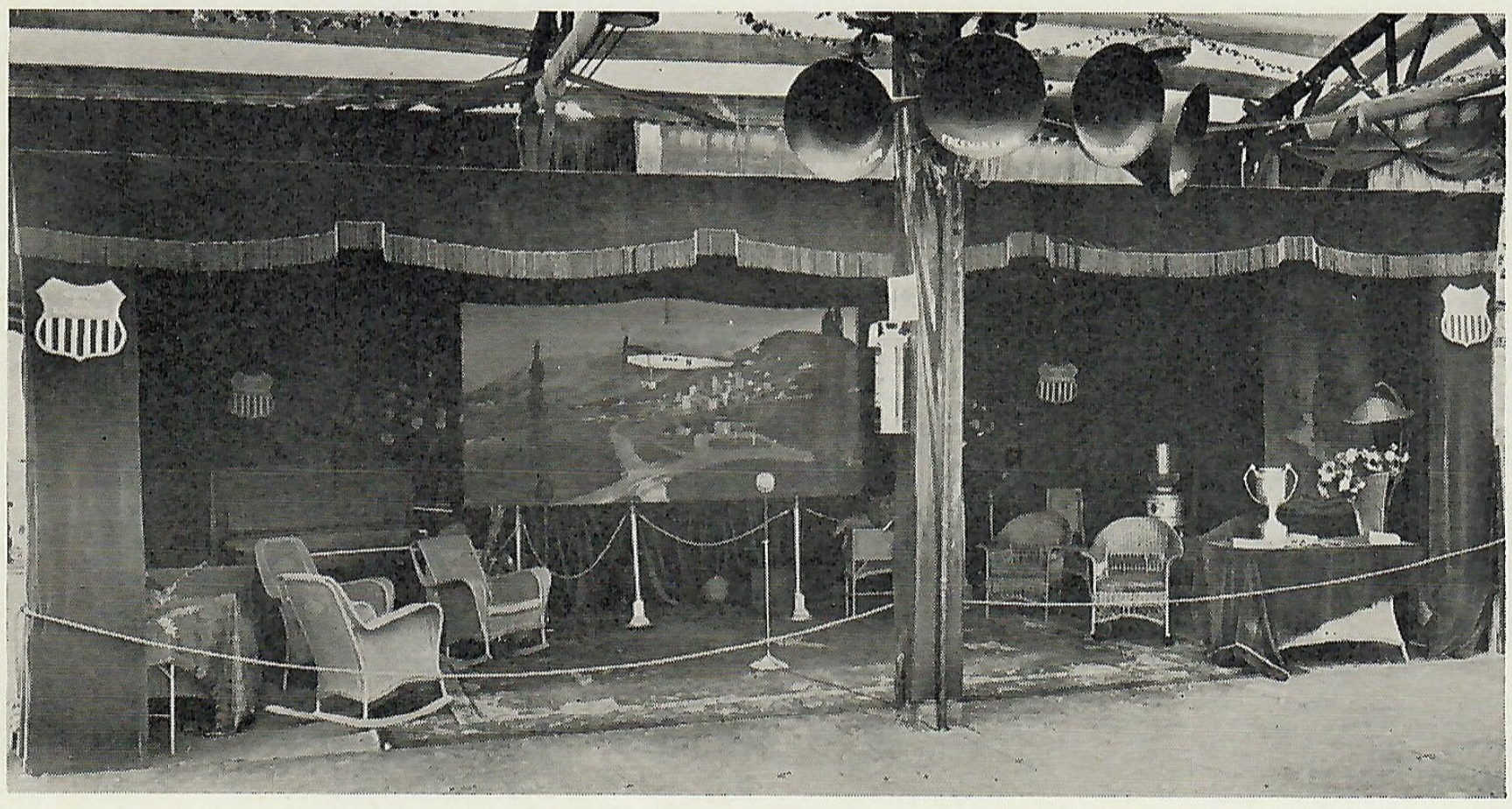
September 27 saw the official dedication of Clark Field, San Luis Obispo's new airport, located on the Company's tank farm. Named in honor of Vice-President E. W. Clark, himself a San Luis Obispo pioneer, the field was opened amid a civic aviation celebration and program, at which the Company was represented by W. L. Stewart, Jr., Paul S. Gregg, Roderick Burnham, William Groundwater, C. F. Lienesch, Gerald G. Blue, and Lafe Todd.

Early in August, the offer of the land was made by the Company to the Board of Superivisors of San Luis Obispo County, as a temporary field to be used until such time as a permanent airport should be established. The offer was accepted, and work on leveling and clearing the tract began immediately.

The field covers an area of about 60 acres, 2,000 feet long by approximately 1,200 feet wide. The drop of the land, and the available clear field to the west of the tank farm, which could be used for emergency landings, make the location ideal. For the guidance of airmen, two arrows have been painted on the roof of reservoir No. 4, one pointing north to San Francisco, with the direction "S. F. 242 miles" stenciled on it, and the other pointing to Los Angeles and stenciled "L. A. 212 miles."

UNION SPONSORS FOOTBALL BROADCAST

All of the major games to be played in the Los Angeles Coliseum this season will be broadcast over radio KNX, Hollywood, under the auspices of the Company. Glen Rice, celebrated football announcer, will have charge of the microphone in the Coliseum, giving a play by play report.



The Company's broadcasting booth.

AIR LAW COURSE AT BERKELEY

A series of six lectures on air law, the second series of its kind to be given on the Pacific Coast under the sponsorship of the Union Oil Company, was completed at the University of California during September by Dr. Otto H. Schreiber, of Koenigsberg University, Germany. Dr. Schreiber went to Berkeley after having delivered a similar course at the University of Southern California, where an exchange professorship with Koenigsberg has now been established.

PROMOTIONS

G. W. Keith, formerly Agent at Hollywood substation, has been appointed Service Station Superintendent, Los Angeles Main Station. C. C. Penrose succeeds Mr. Keith at Hollywood.

D. H. Hunsinger, transferred from the Portland District, has been appointed Assistant District Accountant, Los Angeles.

CALIFORNIA GASOLINE IN AUSTRALIA

Shipments of California gasoline to Atlantic Union Oil Company for the first nine months of this year have amounted to approximately nine million gallons. The Atlantic Union Oil Company of Australasia commenced active sales activities in early May of this year and its progress in the distribution of refined products has been satisfactory.

NEW SERVICE STATIONS

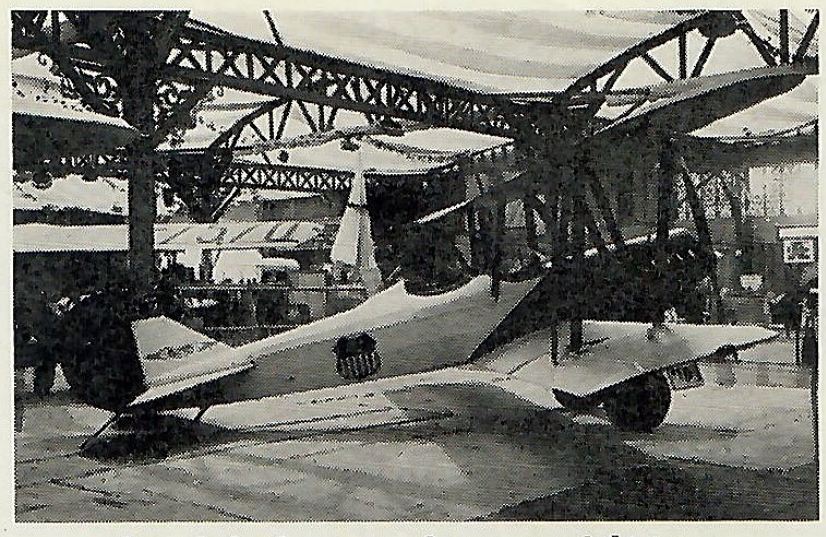
During September, station No. 531 was opened at Second and Madison streets, Portland, and station no. 501 at Ninth and J streets, Modesto.

Three new stations in the vicinity of Turlock, California, involving a building expenditure of some $20,000, are expected to be in operation early this month.

UNION REPRESENTED AT FOREIGN TRADE CONVENTION

At the annual convention of the Pacific Foreign Trade Council, which convened in Los Angeles during September, a paper by Mr. E. W. Clark was read, on the relation of the petroleum industry to Pacific foreign trade.

Union representatives at the Council convention were J. M. Geary, Wm. Groundwater, G. E. Jones, J. B. Arthur, C. J. McKeever, and J. D. Reardon.



One of the Company planes on exhibition.

NEW PRODUCTION

The following new wells were completed in the Rosecrans district during September: Barnsdall No. 8, recompleted, 445 barrels daily average; O'Dea No. 9, 180 barrels. In the Dominguez district, Callender No. 22 was brought in at 360 barrels, and in the Richfield district, Stearns No. 13, at 210 barrels.

THIS MONTH'S COVER

In contrast to the aviation cover of the September edition, this issue presents an autumn landscape from the brush of the same artist, George K. Brandriff.

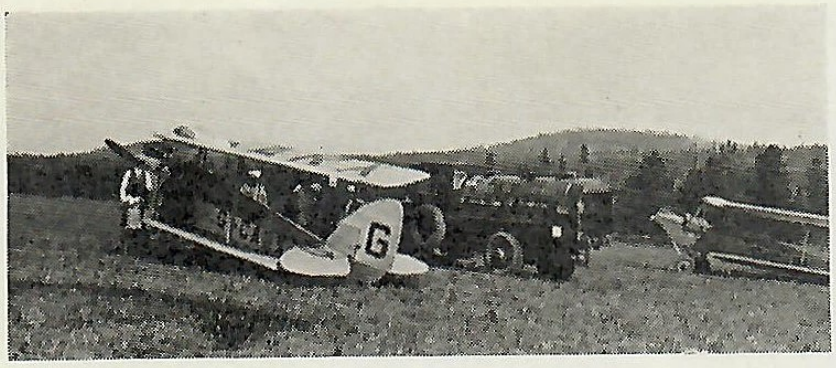
AUGUST CRUDE PRODUCTION

According to figures collected by the American Petroleum Institute, Pacific Coast Office, the total production of Crude Oil in California for August amounted to 19,444,899 barrels, an average of 627,255 barrels per day. This is a decrease of 9,986 barrels per day under July production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 957,459 barrels. The total stocks at the end of the month were 138,795,848 barrels. The total stock decrease for 1928, up to August 31, was 544,502 barrels. Comparative figures as of August 31, 1928, July 31, 1928, and August 31, 1927, are shown in detail on page 23.

Fifty-seven wells were completed during the month with an initial daily production of 30,058 barrels, compared with 57 wells completed during July with an initial production of 65,278 barrels.

Union Service at Mines Field.



CANADIAN PLANES FUELED

Two Moth planes, owned by the Calgary branch of Western Airways, Limited, and brought to the Cranbrook, B. C. annual fair during September, were supplied with Union fuel for their flights during the three days of the fair. The above picture shows Tank Truck No. 62 servicing the craft.

ANNUAL TENNIS TOURNEY

October 20 has been set as the date for the Tenth Annual Company Tennis Tournament, preliminary games of which will be played on the courts of the Los Angeles Tennis Club. The finals will be staged October 27. The President's Cup will be awarded to the winner of the men's singles event, the Geological and Land Department Cup to the winner of the ladies' singles, while additional prizes will be awarded to the winners and runners-up in both of these events and also in the men's doubles. C. M. Nelson, room 904, Head Office, will receive entry applications, accompanied by a fifty cent fee for each event in which the player participates. The entries close October 8.

APPOINTMENT TO SHIPPING BUREAU

Albert O. Pegg, superintending Engineer for the Company, has been appointed a member of the Committee on Engineering of the Technical Committee of the American Bureau of Shipping. The appointment dates from August 28 of this year.

ALASKAN DOCK DAMAGED BY ICEBERG

Carried by a strong tide in the Narrows within Prolewy Reef, Alaska, an iceberg as big as several houses threatened to plow through the approach to the Company dock at Petersburg, before it finally went aground after carrying away eight pilings.

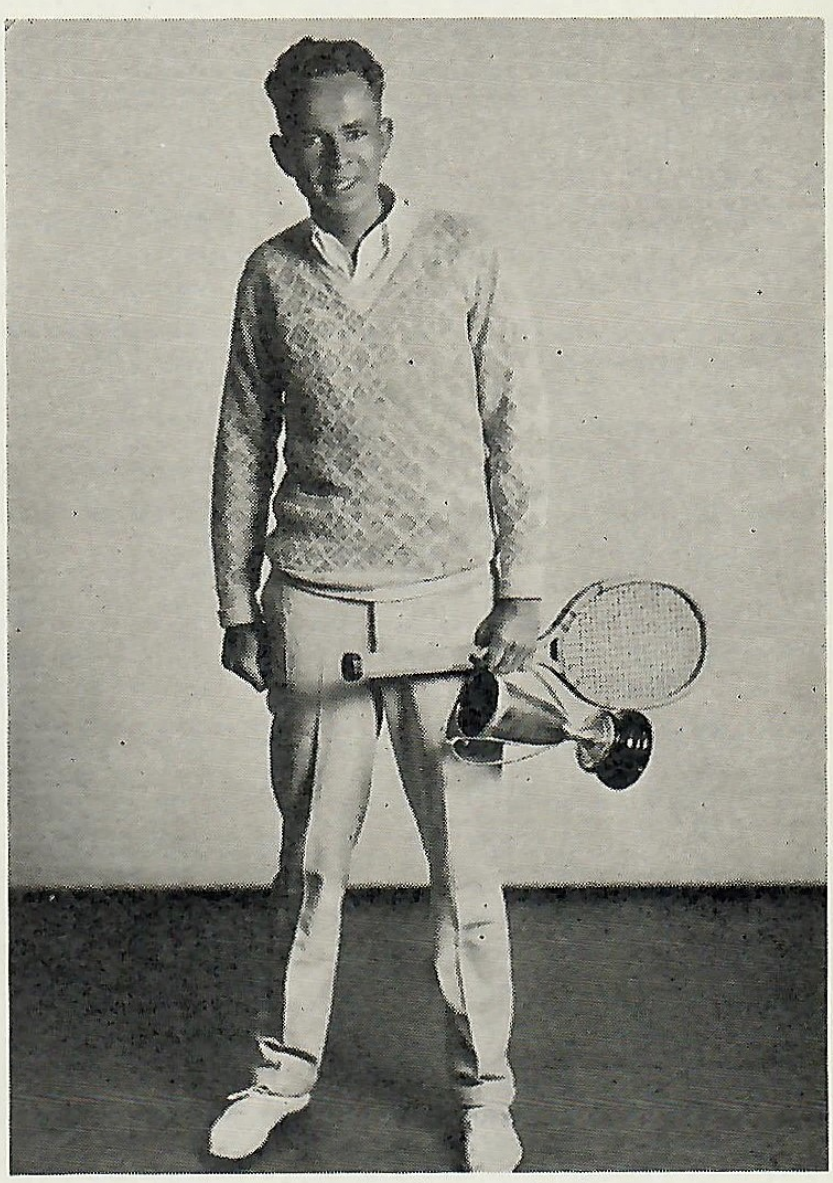
When Norman Sjursen, local agent, along with other watchers, saw the mass of ice bearing down on the dock, oil, gas, and water lines were immediately shut off at the shore end. With the change in the tide, however, the berg was carried off, to ground on the beach and break up, the fragments drifting away on the next tide without further damage. With the delivery lines uninjured, deliveries from the dock were continued as usual, and the pilings replaced the next day.

Part of the berg, as it hit the dock.

BASKETBALL UNDER WAY

With a turnout of practically all of last year's squad, plus several new contestants for positions, prospects look good this season for the best cage outfit which the Company has presented. Bill Paige, well-known coach of the Hollywood High School, has been secured to put the team through its paces, and the gym of that institution will see practice twice a week—Tuesday and Friday evenings from seven to nine.

Gerpheide, Christensen, Craig, Samaran, LeClerq and Medak remain from last year's team. This year's quintet, however, is by no means a closed proposition, and other material will be welcomed by W. H. Steele, manager. It is expected that the opening games will be held with the leading independent city teams and with local college teams, after which the quintet will be entered in the A.A.U. series.



LAINE WINS INDUSTRIAL NET TOURNEY

Playing under the colors of the Union Oil, Einor Laine, of the accounting department, San Francisco District office, won the tennis championship of the Industrial Athletic Association of San Francisco, August 26. In winning the title, Laine defeated Kurt Bendt of the Anglo-California Trust Company, defending champion, 6-1, 6-4, outplaying his opponent in every department of the game.

NEW DISTRIBUTING STATIONS

Three new distributing stations were opened in British Columbia during August: Tadanac on the 14th, Princeton on the 18th, and Ashcroft on the 27th.

The Lakeport, California, distributing station opened for business August 17, operating as a substation of the San Francisco district.

During September, construction started on a new marketing station at Needles, California, with completion scheduled for the 29th. October 1 was set as the date for construction of a new station at Kingman, Arizona, the remains of the old plant to be dismantled.

SAFETY *IN THE* UNION

FORT COLLINS WINS

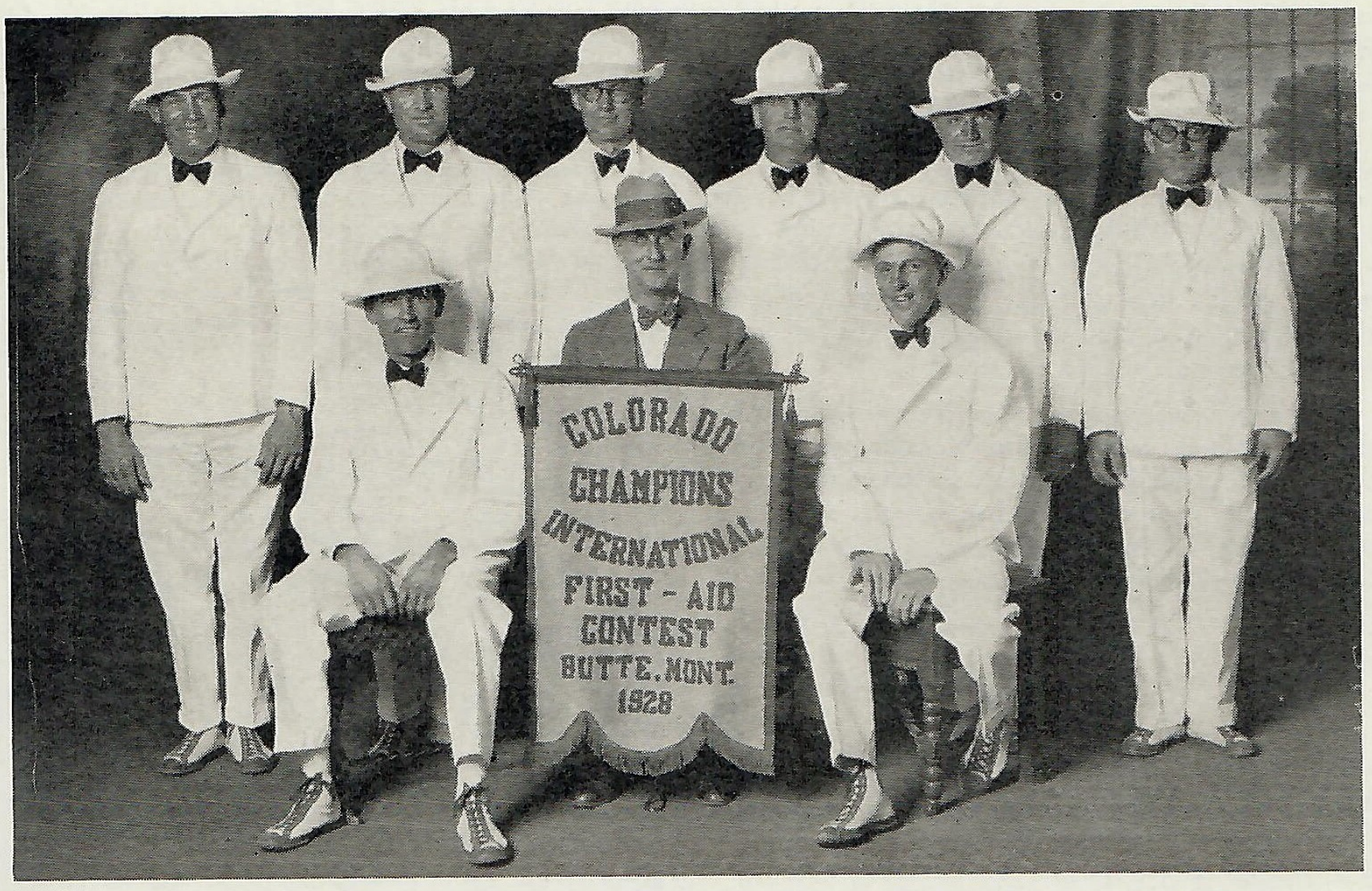
The state championship of Colorado was won by a team of first aid enthusiasts selected from among the men of the Fort Collins' fields. Competing against several score mining teams in the International Mine Rescue and First Aid Contest at Butte, Montana, on August 20, Mr. Sherman's boys took fourth place in the sweepstakes and first place among the representatives of their home state. Recognized for years as the leading first aid competition of the country, the meet at Butte drew the crack teams from the great mining properties of the Rocky Mountain states. Against such a field, the Fort Collins team with but thirty hours of intensive training by the Company's first aid instructor, came within less than two points of winning score.

PACIFIC COAST SAFETY CONFERENCE AND FIRST AID MEET

San Francisco will play host on October 17, 18 and 19 to the fifth Pacific Coast Safety Conference and sixth California Industrial First Aid Meet. Union Oil Company will be represented in the latter event by teams from Oleum and Los Angeles Refineries. Company teams have three times in the past taken prizes, once winning first place, once second and on another occasion lifting the special prize for proficiency in resuscitation. Martinson is putting the finishing touches on the teams with which Bartella and Lutz hope to bring home the bacon.

NATIONAL SAFETY CONGRESS

W. S. Grant, Hugh A. Matier, and G. F. Prussing, National Chairman of the Petroleum Section, are representing Union Oil Company at the National Safety Congress in New York City, October 1-5. The Petroleum Section of the National Safety Council is composed of most of the major operators in this country. During the past year, through the co-operation and support of the American Petroleum Institute, safe practice pamphlets have been published on "Pulling Wells," "Service Station Operation," and "Loading Gasoline Tank Cars." More than 20,000 copies of the first two have been sold to the member companies for the instruction of their men. Several similar pamphlets are in course of preparation and will be published within the coming year. In each case they represent the combined safety experience of many men in every part of the country.



Left to right standing: L. K. Butler, Captain; A. A. Anderson, C. P. Fleming, A. B. Baker, Charles Reece and George D. Tye, patients. Seated: D. R. Spawr, substitute; Charles Johnson, District Supervisor for Safety, Insurance and Personnel, Manager; and Leonard Tebbs, substitute.

FREE AIR

The small but indispensable air compressor and tank with which every service station is equipped, can, if neglected or improperly connected, develop homicidal tendencies. In a recent bulletin of the Sales Department attention is called to some of the common mistakes which can be made in piping these units, as well as to rules for their maintenance which experience has brought forth.

It is common knowledge that all air tanks, like steam boilers, should have safety valves. In the past, manufacturers have placed these valves at various points, most of which were quite satisfactory for preventing the compressor from building up excessive pressure within the tank. Unfortunately, most of these safety valves were not provided with any means for testing them. Inspection frequently found them stuck from internal corrosion or so covered with paint as to be inoperative. Therefore, one of the first corrections made in this equipment has been to provide safety valves which can and must be tested daily by the station salesman.

Next, it was found that if the safety valve was located between the compressor and the check valve, it could not be tested because there is not pressure at that point except when the compressor is operating. Globe valves and other shut-offs were found in the lines between compressor and tank, which if closed by accident or neglect or plugged by foreign matter, might easily result in the compressor blowing up. Two such accidents have happened on Company stations, one with serious injury. Because of this hazard, standard piping for air compressors at Company stations has no valves other than the check between compressor and tank. The safety valve is placed on the tank and instructions to service station salesmen require that it be tested daily.

Air when compressed deposits water, which accumulates in the tank. If not regularly drained, this water may get into the yard piping and cause trouble in filling tires. To prevent this a drain not less than a quarter inch in size is placed in the tank bottom and vented outside the building. Instructions read that this valve must be left open at night, so that all moisture in the system will escape.

Only one who has seen or heard an air compressor or tank explode can appreciate the seriousness of this hazard. To insure against such an accident requires only a little accurate knowledge and the exercise of ordinary care. This is well outlined in the instructions being given all service station salesmen.

DOMINGUEZ FIRST-AIDERS COMPETE

A three-cornered competition in "rough-neck" first aid was staged at the Dominguez barbecue on September 9, by the volunteer groups of men who had taken the regular course given by the Company first aid instructor, A. J. Martinson. There were no rules, no fancy uniforms and the materials furnished were merely the regular first aid boxes found in the drilling rigs, plus hammers, saws, nails, rags and boards for making emergency splints and stretchers. Teams were composed of five men each, one of whom acted as the victim of the accidents.

Taking the problems from actual experience, Marty had the boys busy for nearly an hour, while a goodly portion of the crowd watched and offered condolences to the "victims." The results of the work were judged entirely on practical standards. Discounts for technicalities which in no wise harm the "patient" were entirely omitted.

The quality of the work done by these men won the sincere admiration of the crowd and drew special commendation from Dr. Leland S. Chapman, of the Company's medical panel. The winners of the contest were:

W. J. Larson, Captain; T. R. Tinker, Walt Sala, M. E. Sims and A. B. Clinton.

Company first aid kits for automobiles were distributed to the winners by the Department Managers' Safety Committee.

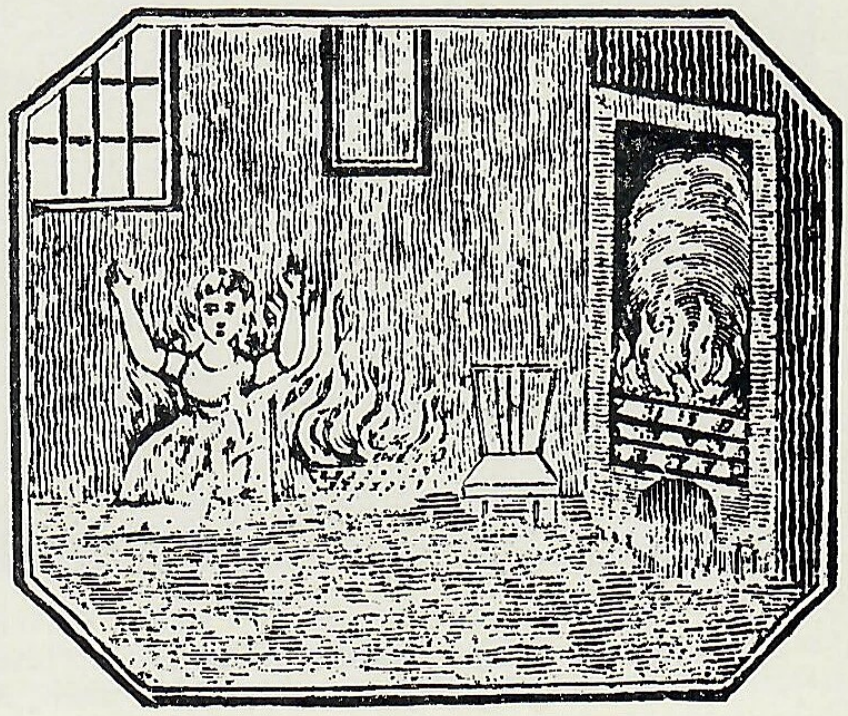
A HUNDRED YEARS AGO

"There is nothing new under the sun," one reads in ancient Scripture, and occasionally the editor of "Safety in the Union" finds his efforts have been anticipated by some writer long since gone to his reward, if any. What could be more touching or pertinent than the following excerpts from a New York magazine of a century ago?

A Little Girl on Fire

Alas! for this little girl! she seems to be all on fire! and calling for help! Who would not run to her assistance in such a sad state? But it is often too late; the fire burns her naked arms and face, and she dies in great distress!

Now we wish every little girl, who sees this picture, and reads this distressing tale, to be very careful never to play with fire, on any account whatever, either by lighting paper or sticks, or with a candle. Little girls, would you like to be in such a dreadful situation? Ah! no—I know you would not: then remember that many little innocents are burnt to death, by being so naughty as to play with fire, as you see in the case of this poor girl!



California Oil Statistics, August, 1928

Prepared by American Petroleum Institute, Pacific Coast Office

PRODUCTION

DISTRICT	BARRELS PER MONTH	DAILY AVERAGE Aug., 1928	July, 1928	Aug., 1927
Kern River	187,877	6,061	6,132	16,994
Mount Poso	8,494	274	389	38
Fruitvale	9,126	294	343	..
Round Mountain	3,842	124	50	..
McKittrick	159,132	5,133	4,834	5,062
Midway-Sunset	2,287,235	73,782	71,868	84,997
Elk Hills	669,405	21,594	21,622	24,914
Lost Hills-Belridge	126,060	4,066	4,290	3,928
Coalinga	329,357	10,624	10,535	10,229
Wheeler Ridge	27,422	885	918	1,026
Watsonville	1,937	62	64	58
Santa Maria	153,598	4,955	5,228	5,853
Summerland	3,758	121	121	136
Elwood-Goleta	71,631	2,311	410	337
Rincon	110,658	3,570	3,587	..
Ventura Avenue	1,574,597	50,793	53,645	45,845
Ventura-Newhall	176,920	5,707	5,774	5,949
Los Angeles-Salt Lake	46,514	1,500	1,557	1,753
Whittier	49,496	1,597	1,648	1,646
Fullerton (Brea Olinda)	453,628	14,633	14,740	18,352
Coyote	418,783	13,509	13,438	13,224
Santa Fe Springs	1,226,683	39,570	36,672	39,778
Montebello	369,656	11,924	11,862	14,118
Richfield	554,424	17,885	18,488	22,168
Huntington Beach	1,604,631	51,762	52,906	68,548
Long Beach	5,918,210	190,910	196,075	90,992
Torrance	535,311	17,268	18,083	22,045
Dominguez	342,052	11,034	11,590	15,180
Rosecrans	180,771	5,831	6,118	8,503
Inglewood	930,635	30,021	29,965	33,606
Newport	2,678	86	83	20
Seal Beach	898,262	28,976	33,772	57,607
Potrero	12,116	391	430	..
TOTAL	19,444,899	627,255	637,241	621,907
July	19,754,458	637,241		
Decrease	309,559	9,986		

STOCKS

	Aug. 31, 1928	July 31, 1928	Aug. Stock Decreases	Aug. 31, 1927
Heavy Crude, heavier than 20° A. P. I., including all grades offuel	95,810,506	96,418,224	607,718	94,589,976
Refinable Crude, 20° A. P. I., and lighter	19,412,315	19,041,594	*370,721	23,931,170
Gasoline	11,290,675	12,908,549	1,617,874	12,423,877
Naphtha Distillates	1,695,547	1,429,410	*266,137	3,104,755
All Other Stocks	10,586,805	9,955,530	*631,275	9,444,877
TOTAL ALL STOCKS	138,795,848	139,753,307	957,459	143,494,655

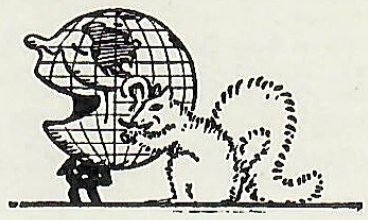
*Increase

DEVELOPMENT

	New Rigs Up	Active Drilling	Completed	Daily Initial Output	Active Producing	Abandoned Drillers	Abandoned Producers
Kern River	1	3	1	30	1,168	..	..
Mount Poso	3	7	4	750	6	1	..
Fruitvale	4	5	..	..	2	..	..
Round Mountain	1	2	1	25	2	1	..
McKittrick	1	..	..	..	289	..	..
Midway-Sunset	4	11	5	550	2,542	..	2
Elk Hills	..	1	..	..	220	..	..
Lost Hills-Belridge	..	3	2	88	303	..	..
Coalinga	..	1	2	9	797	..	1
Wheeler Ridge	..	1	..	..	33	..	..
Watsonville	..	..	..	..	7	..	..
Santa Maria	..	7	1	350	221	..	1
Summerland	..	1	..	..	89	..	..
Elwood-Goleta	1	1	..	..	4	..	..
Rincon	..	11	1	1,125	18	..	..
Ventura Avenue	2	28	4	5,100	124	1	..
Ventura-Newhall	6	28	..	..	513	..	..
Los Angeles-Salt Lake	..	..	..	..	323	..	..
Whittier	..	..	..	..	173	..	..
Fullerton	2	5	2	1,700	373	..	..
Coyote	..	1	..	..	209	..	1
Santa Fe Springs	73	36	1	255	294	..	6
Montebello	2	2	..	..	168	..	..
Richfield	3	8	3	495	269	..	..
Huntington Beach	5	9	5	1,715	567	2	5
Long Beach	33	160	22	16,960	785	5	1
Torrance	..	..	..	..	625	..	3
Dominguez	..	..	3	906	73	..	..
Rosecrans	1	2	..	..	104	..	..
Inglewood	1	2	..	..	222	..	..
Newport	..	2	..	..	3	..	..
Seal Beach	..	5	..	..	136	..	1
Potrero	..	3	..	..	1	..	..
Miscellaneous Drilling	6	123	..	..	..	7	1
August	149	468	57	30,058	10,663	17	21
July	76	446	57	65,278	10,643	16	12
Increase	73	22	..	35,220*	20	1	9
Average for year 1927	97	404	75	39,992	11,276	23	21
Average for year 1926	95	422	76	32,635	11,288	24	17
Average for year 1925	105	417	79	42,247	11,393	28	12
Average for year 1924	103	510	103	42,412	10,903	28	21
Average for year 1923	111	759	82	114,690	8,928	24	

*Decrease

REFINED *AND* CRUDE



The secret of success in any line of endeavor is application.

* * *

There are times, nevertheless, when a little "pull" is a distinct advantage.

* * *

For instance think what it would have meant to Cy Rubel's tug-o'-war team.

* * *

And what an asset it is to a dentist!

* * *

But, if you are really having difficulty in getting ahead by your own efforts, and wish to experience the power of genuine "pull"—try Union Ethyl.

* * *

That will certainly help you to make the grade.

* * *

However, we know one unsophisticated young man who has heard so much about gasoline consumption that he is a trifle nervous about approaching a service station.

* * *

We are also of the opinion that a certain measure of conceit is by no means a handicap in the battle of life.

* * *

And we can recommend the attitude of the college boy who stated "I don't really think I am popular, but what is my opinion against thousands of my friends."

* * *

In contrast to the utterance of the pessimist who declared, "If it rained soup, as sure as a gun, I'd be caught with a fork in my hand."

* * *

Perhaps you have heard of the fellow who named his dog Jason because he was continually searching for the fleece.

* * *

Which reminds us of the nigger mammy who called her three children Surely, Goodness and Mercy, so that they would follow her all the days of their life.

* * *

During the National Air Races one unfortunate incident occurred which, we believe, should be brought to the attention of the authorities. We understand that the sentry at Army Headquarters was relieved of his watch.

* * *

Most of the people out at Mines Field heaved a big sigh when the parachute jumpers finally got back to earth.

And yet there is no record of a jumper ever having complained that his parachute didn't open.

* * *

Don't forget this is the month of October, and the last night of the month is Halloween.

* * *

Every boy between the ages of six and thirty-six has waited and schemed a whole year to make things hot for you on that evening, so be on your guard, if you think it will help you any.

* * *

When it comes to thinking up crazy things to do on Halloween, the average schoolboy's mind is as fertile as Bermuda Grass.

* * *

Although, at all other seasons of the year, it may be as notionless as Lake Como.

* * *

And while it is not pleasant to have your property attached, we would advise that on this particular evening you have it attached—very securely—to something solid.

* * *

It is evident that the ladies can now buy their clothes by instalments. We saw one down town last week with the first instalment on.

* * *

Gertrude Ederle owes her success to the fact that she directed her efforts in the right channel.

* * *

"Have you no chivalry?" demanded the indignant female. "No, ma'am," replied the insulting male. "I traded it in on a Chrysler."

* * *

Then there was the young man whose girl left him without any reason.

* * *

The bowling season is about to open again, and this splendid exercise should be taken up by everyone who has the time to spare.

* * *

On the subject of sport, we are surprised to find so few of the Union Oil Company golfers listed among the fore hundred.

* * *

In conclusion—if we had to pay a notary four bits every time we wanted to swear, this would be a better world—for the notaries.

For I dipt into the future far as human eye
could see,

Saw the Vision of the world, and all the
wonder that would be;

Saw the heavens fill with commerce, argosies
of magic sails,

Pilots of the purple twilight, dropping down
with costly bales.

TENNYSON—"LOCKSLEY HALL," 1842

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