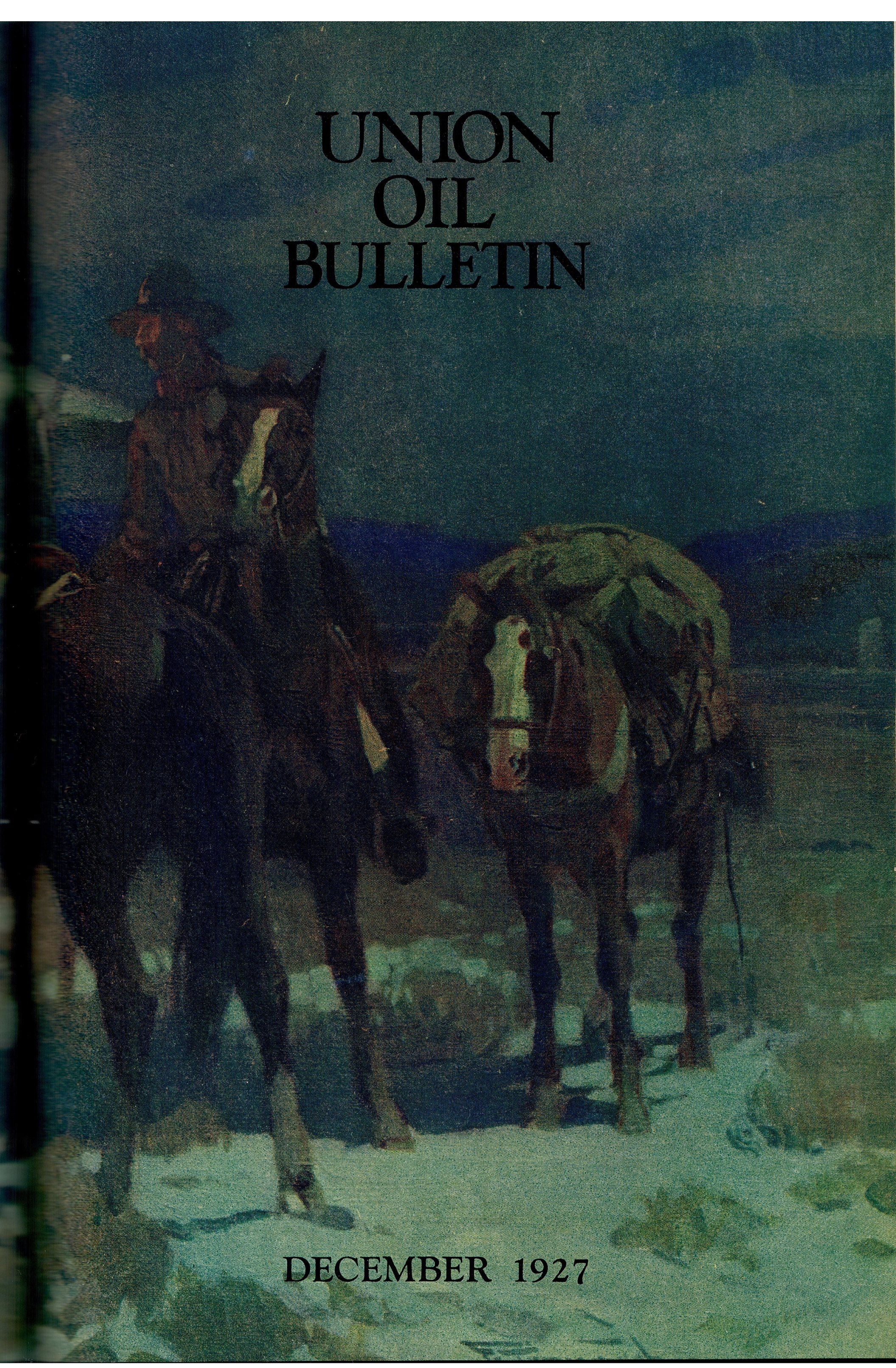
UNION OIL BULLETIN



DECEMBER 1927

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VOLUME VII DECEMBER, 1927 BULLETIN NO. 10

Australasian Enterprise

A HOLDING company known as Union Atlantic Company has been organized under the laws of the State of Delaware, the capital stock of which is owned by the Union Oil Company of California and the Atlantic Refining Company. An operating company has been organized in Australia known as the Atlantic Union Oil Company, Limited, the common stock of which will be owned by the Union Atlantic Company.

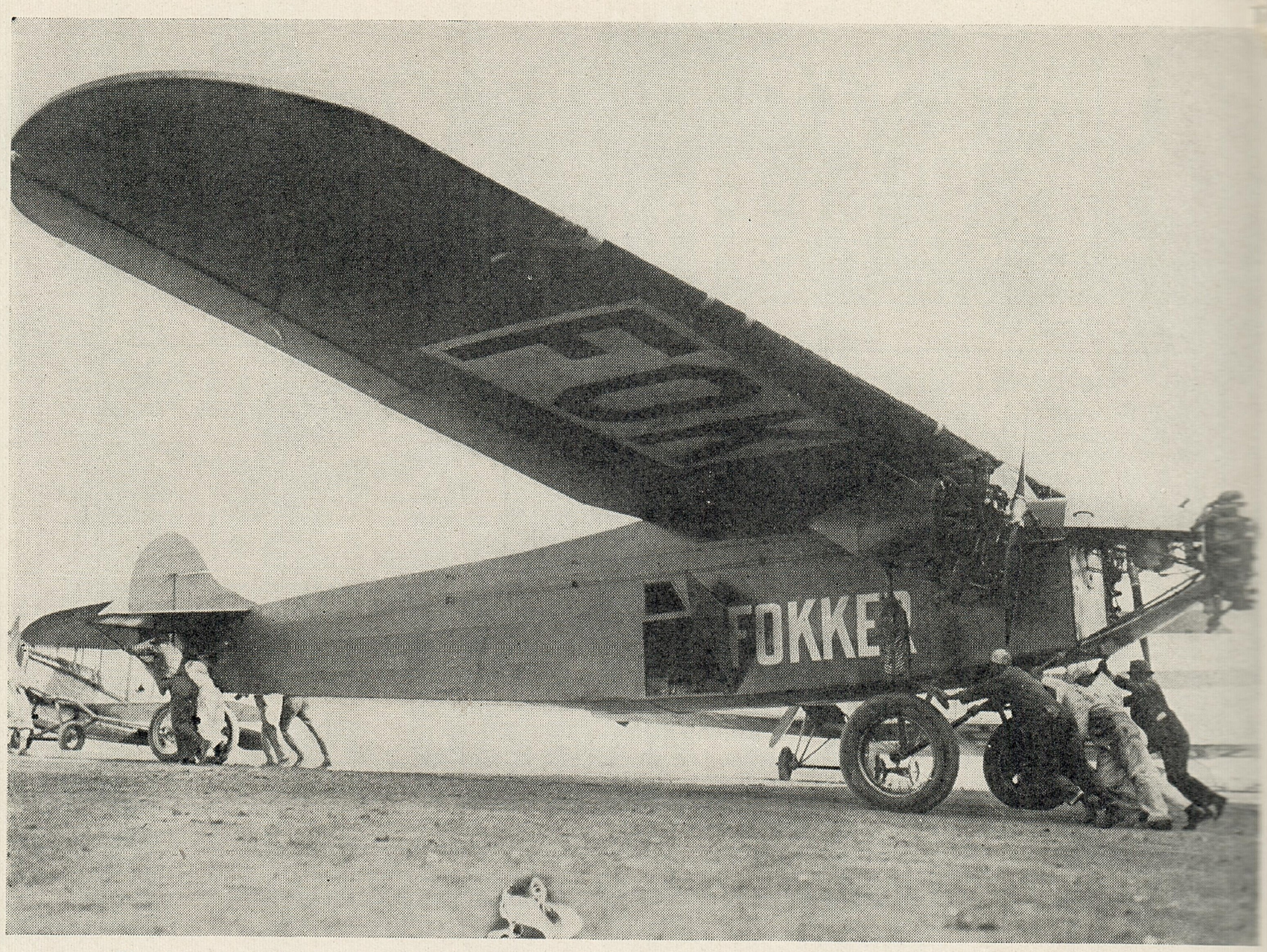
This operating company has already acquired valuable land sites for the erection of bulk storage facilities and terminals at the principal ports of entry to the Australian and New Zealand markets. Tank steamers will deliver cargoes to these terminals for distribution through customary channels to consumers; this method of handling will develop a larger and more economical distribution in Australia and New Zealand.

The proceeds of a $4,000,000 bond issue will be utilized by the Atlantic Union Oil Company, Limited, for the construction of these storage facilities and terminals. These bonds will be the direct obligation of Union Atlantic Company but guaranteed jointly and severally by Union Oil Company of California and Atlantic Refining Company.

The Commonwealth of Australia (including Tasmania) has an area of 2,974,581 square miles, or a little less than continental United States. Its population is slightly in excess of 5,200,000. Its principal cities are Sydney, Melbourne, Adelaide and Brisbane.

New Zealand is composed of a number of islands lying about 1,200 miles southeast of Australia. Its area is 105,800 square miles, and its population is nearly 1,200,000. The principal cities are Auckland and Wellington.

The Union Oil Company of California now markets its products through its own equipment in Mexico, Hawaiian Islands, Alaska, Canada, Panama Canal Zone and in California, Oregon, Washington, Nevada, Arizona and Idaho, and expects to obtain a fair share of business in the Australasian market.



The "Southern Cross," huge Fokker monoplane, being groomed at Mills Field, San Francisco, for her projected 9500-mile flight to Australia. She is motored with three Wright Whirlwinds and is similar to the planes flown by Byrd and Maitland

The Gasoline Engine Grows Wings

By C. C. Moore, Jr., *and*
M. S. Reynolds

THE traffic along Western Avenue was heavy. Mr. Buyer's brand new straight-eight was purring along contentedly in a high compression sort of way, but Mr. Buyer himself was about to boil over. Due to congested traffic, he had missed by a few minutes a final conference with a business associate who was leaving for the Orient, and now the return journey through increasingly heavy traffic didn't help matters.

A recent experience of his partner kept recurring to Mr. Buyer. Under somewhat similar conditions, Jim had chartered an airplane, gone to San Francisco, kept his appointment, and returned to Los Angeles in time for a dinner engagement that same evening. According to Jim, his trip had been a revelation to him; no dust, no tiresome driving or sitting in a Pullman, and arriving there in a period of time impossible by any other method. All on top of the fact that Jim had kept his appointment and Mr. Buyer had missed his own! At this point in his meditations, Mr. Buyer's attention was attracted by the droning roar of an airplane that swept over him, swerved, and prepared to land in a field a quarter of a mile down the road. A closer approach revealed the sign "Pacific Air Port" in huge letters, and acting on an impulse generated by his recent thoughts, Mr. Buyer turned his machine into the driveway and

parked beside a number of others that were drawn up at the edge of the field.

"I'll just take ten minutes to look this outfit over," was his unspoken thought. A group of men were crowded around the plane directly in front of him, and among them he noticed his new acquaintance, Motor Mike, talking with the pilot.

"Hello, Mike," said Mr. Buyer, "I didn't know that you were interested in airplanes. How come you're not on your regular job today?"

"Oh, this is just one part of the job that you didn't know about," answered Motor Mike with a grin. "Gasoline engines are used in automobiles, but they're also used in airplanes, and I am pretty apt to be around wherever you find a gasoline engine. Right now I am trying a special gasoline in this plane that they are grooming for the coming races, and our old friend Ethyl is going to take an airplane ride."

Motor Mike stepped in front of the plane and called "Off!"

"Off," repeated the pilot. Motor Mike then swung the propeller around a few times, adjusted it in a horizontal position, and after stepping back called "Contact!"

"Contact," repeated the pilot.

After an interval to make sure of no backkick, Motor Mike carefully balanced himself, and then gave the propeller a quick turn, at the same time stepping back. A few scattered explosions followed, quickly growing into the steady roar of a powerful engine. After the engine had warmed up for a few minutes, the front wheel blocks were removed, and the plane taxied out into the field and took off in a graceful curve.

"That's that," said Motor Mike, turning to Mr. Buyer, "and now I have to wait for an hour until he lands again."

"Fine," said Mr. Buyer. "While you're waiting let's look at some of these planes, and you tell me what it's all about."

"Well," said Motor Mike, "you brought it on yourself. You know I'm sort of a nut on aviation and aviation engines, and have been following the game ever since I was a kid. Over here is the very newest thing in commercial air transportation, a three-motored monoplane similar to the ship that Byrd flew to the North Pole and across the Atlantic. Let's look it over."

The plane in question seemed as large as a good sized house, but what impressed Mr. Buyer most was the passenger cabin, which, as he expressed it, "looked like a small section of a Pullman car." While they inspected the steering gear, navigating instruments, motors, etc., Motor Mike told of some of the commercial possibilities of air transportation, with especial emphasis on its time saving to business executives.

"Mike," said Mr. Buyer, "who is responsible for all of this development? I can remember back in 1910 when an airplane looked like a head-on collision between a couple of box kites, while this plane looks as if it could fly forever."

"My personal opinion is that my old friend the engine deserves most of the credit, although of course there has been a considerable advance during the last twenty years in the knowledge of aerodynamics. It so happens that when I was a kid, I lived in Washington, D.C., and some of the earliest developments of the heavier-than-air machines centered around that place. The earliest flight, or rather attempt at flight, that I ever saw was when Prof. Langley made his famous trial on the Potomac river in 1903. His failure to fly was due to a defect in his launching apparatus, and the subsequent public ridicule, as well as lack of funds, caused him to give up the attempt. In 1914, in connection with a patent litigation, Glenn Curtiss received permission from the Smithsonian Institute to try to fly the old Langley machine. After replacing the rotten canvas wing covering, and with only the substitution of a modern carburetor and radiator, he flew the machine in sustained flight. He then replaced the original engine with one of more mod-

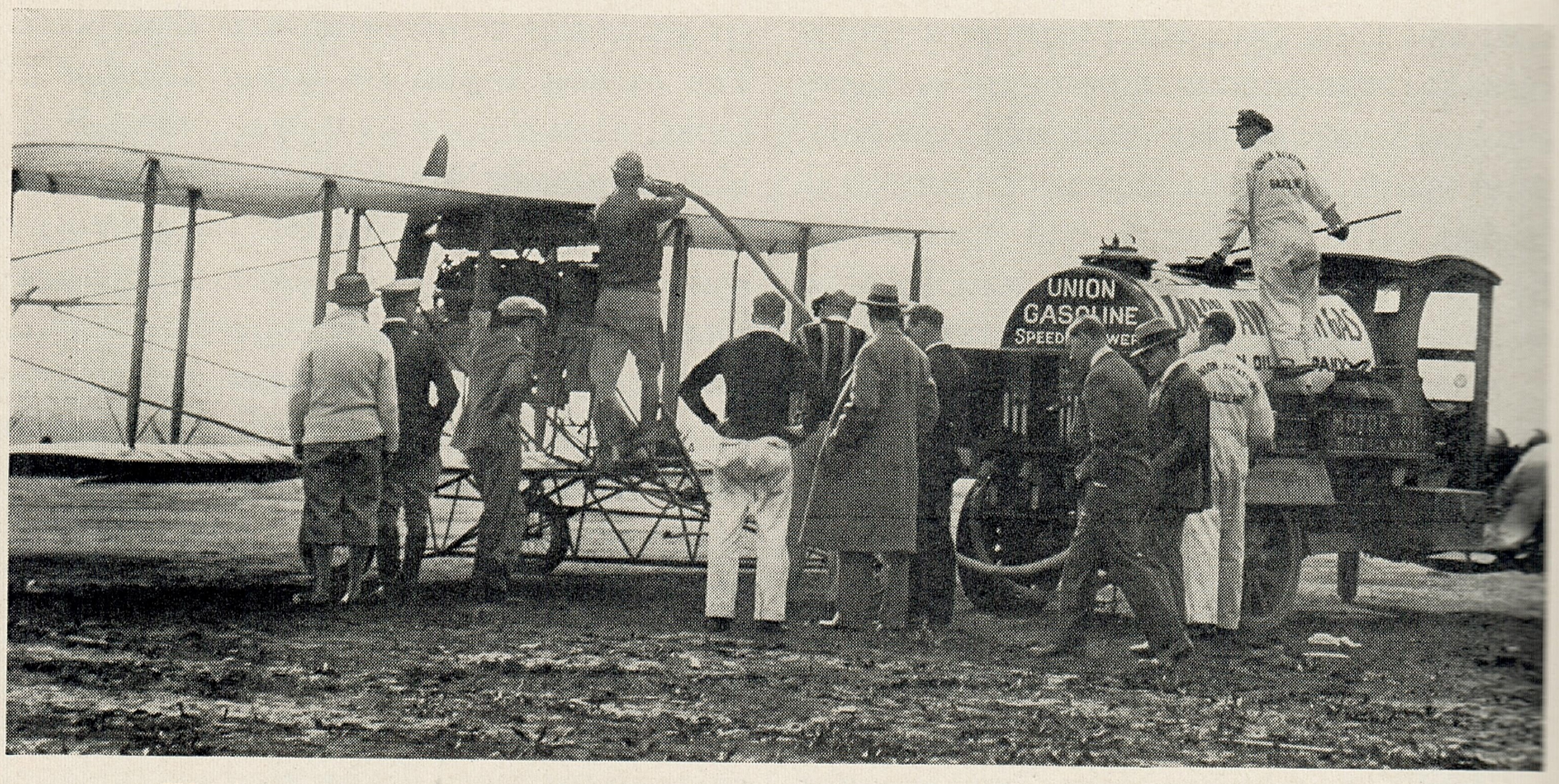
ern style, and proved conclusively that Langley's original design was practical."

"What about the Wright Brothers?" interjected Mr. Buyer.

"The Wright Brothers were the first really to put aviation across. They had become interested in flying, and had developed a very fine glider, or motorless airplane, and after attaining considerable skill in the flying of this glider, they realized that the next step was the development of some type of motive power. The gasoline engines of that day were considerably different from our present conception. They were very heavy, of low power, and extremely unreliable. After several years of experimentation, in 1908 they had developed a 25-horse-power motor of comparatively light weight, and they used this to drive two wooden propellers at the speed of 400 r.p.m. I can remember their demonstration flight for the Army at Fort Myer, Virginia, as though it were yesterday. After several hours of preliminary tinkering on the motor it finally ran to their satisfaction, and the plane was launched into the air by a large catapult. One of the Wright Brothers, I've forgotten which, flew for one hour and fourteen minutes, and this really marked the dawn of aviation.

"This flight inspired me with the idea of becoming an aviator, and after a good many months of hard work my chum and I constructed a glider somewhat after the type of the Wright machine. When it was all finished, I hitched the tow rope to my one-horse-power engine, and my chum started him off at a fast trot. The glider took to the air, the engine looked around and saw what was following him, and immediately decided that we were imposing upon a respectable horse. His decision resulted in a nice collection of wreckage and a badly sprained ankle for me.

"Progress in aviation kept right on in spite of my accident, and in 1910 I happened to be in Philadelphia when a Curtiss machine was flown in a non-stop flight from New York City to Philadelphia and return. Glenn Curtiss had been manufacturing light-weight motorcycle engines, and had developed them to such a point that he had set a world's record for speed on the beach at Daytona, Florida. He conceived the idea of placing one of these engines in a biplane of his own design, and the combination was so successful that in 1909 he won the Gordon Bennett Cup at the International meet at Rheims, France. His speed during this race was 47 miles per



Wright Model 1912 biplane flown by Al Wilson at the recent World Flight Commemoration meet at Clover Field, Santa Monica, being fuelled by one of the company's trucks

hour, and when you compare that to the recent record of over 280 miles an hour you get some idea of the development in aviation engines."

"That's a long jump," said Mr. Buyer. "There surely must have been intermediate stages of development."

"Yes," said Motor Mike, "there were. From 1903 to 1914 what might be called the first stage of the development took place. For example, in 1903 the average aviation engines weighed nearly 13 pounds for every horse-power, and in 1914 this figure had been reduced to about 4 pounds per horse-power. This reduction in weight was also accompanied by an increase in reliability, as shown by Wilbur Wright's initial flight of 18 seconds in 1903 and a flight of over 24 hours duration in 1914. The advent of the World War greatly stimulated the progress of aviation during what might be called the second period. The first outstanding development of this period, I believe, was the Curtiss OX-5 engine. This was an eight-cylinder, 90° V-type, and developed about 90 horse-power at full throttle. This motor was used extensively in our military training planes and became affectionately—or profanely, depending upon the circumstances—known as the 'Jenny' motor. The name, incidentally, was taken from the model JN-4 training planes, in which this motor was used. Although it was not much of a motor by present day standards, there are a great many in use today in low-powered, inexpensive planes that might be called "flivvers of the air." About this time the French developed a motor known as the Gnome, and were using it in their military planes. This motor was what is known as a rotary type, that is, the cylinders were arranged like the spokes in a wheel, and revolved around the crankshaft, which was stationary and bolted to the engine support. The propeller, of course, was fastened directly to the crankcase. The Gnome was one of the pioneer air-cooled engines, and was perfected to a high point. One model of this engine developed 125 horse-power, and with a total weight of less than 2 pounds per horse-power. These engines had only one valve, the exhaust, and were therefore familiarly known by the French name of 'monosoupape.' The gasoline-air mixture was drawn into the cylinders through ports in the walls that vented to the crankcase, and when 'taking off' the job of regulating the throttle, handling the control stick, and at the same time adjusting the fuel and oil pump with your left hand kept a pilot pretty busy."

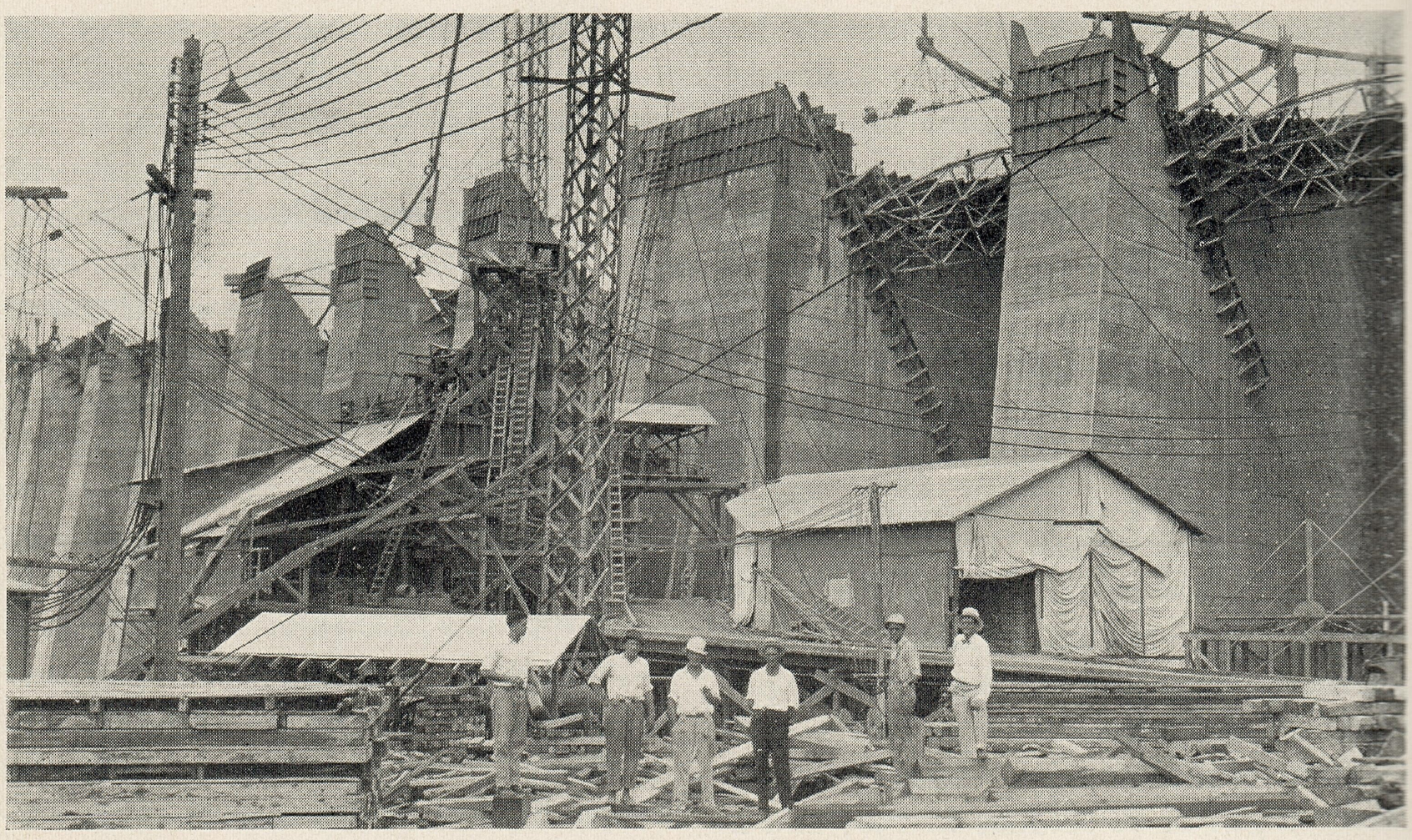
"What," said Mr. Buyer, "was the Liberty Motor we used to hear about during the war?"

"The Liberty motor was probably the most advanced aviation engine produced during the war," replied Motor Mike. "Its design was a composite of the best features of engines in use during 1917, and its efficiency may be judged from its weight of 1.8 pounds per horse-power developed. It developed, incidentally, slightly over 400 horse-power. It was a 12-cylinder, V-type engine, and designed principally for use in fast reconnaissance and pursuit planes."

"Are any of these engines in use today?"

"Yes, as well as several modifications of the war-time Liberty. "You see," went on Motor Mike, "it is of extreme importance that the pilot have an unobstructed vision, and the war time Liberties shut off a good portion of the pilot's view. In more recent times they have inverted the engine, so that only the crankcase obstructs the pilot's vision, while the cylinders project downward. With this type of arrangement, there is also less fire risk, as the carburetor and fuel lines are located in such a manner that any breakage or flooding will not drip gasoline over the hot motor parts."

(*Concluded in the January issue*)

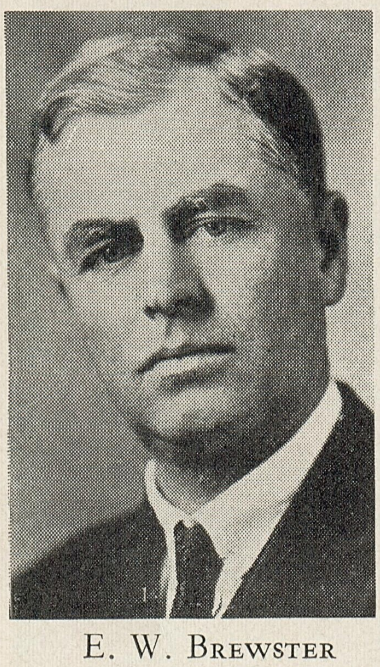


The completion of the Lake Pleasant Dam is being eagerly anticipated by residents of Arizona's Salt River Valley.

WATER AND WEALTH

By E. W. BREWSTER
District Sales Manager, Phoenix, Ariz.

WHEN Carl Pleasant, head of the engineering company bearing his name, was casting about for ways and means, men and materials, to make his organization function to maximum capacity in the work of building the huge dam across the Agua Fria River, that the dream of Beardsley, Sr., of a vast empire of productivity in the Salt River Valley might come true, the first thing he sought was power—smooth running, dependable power.

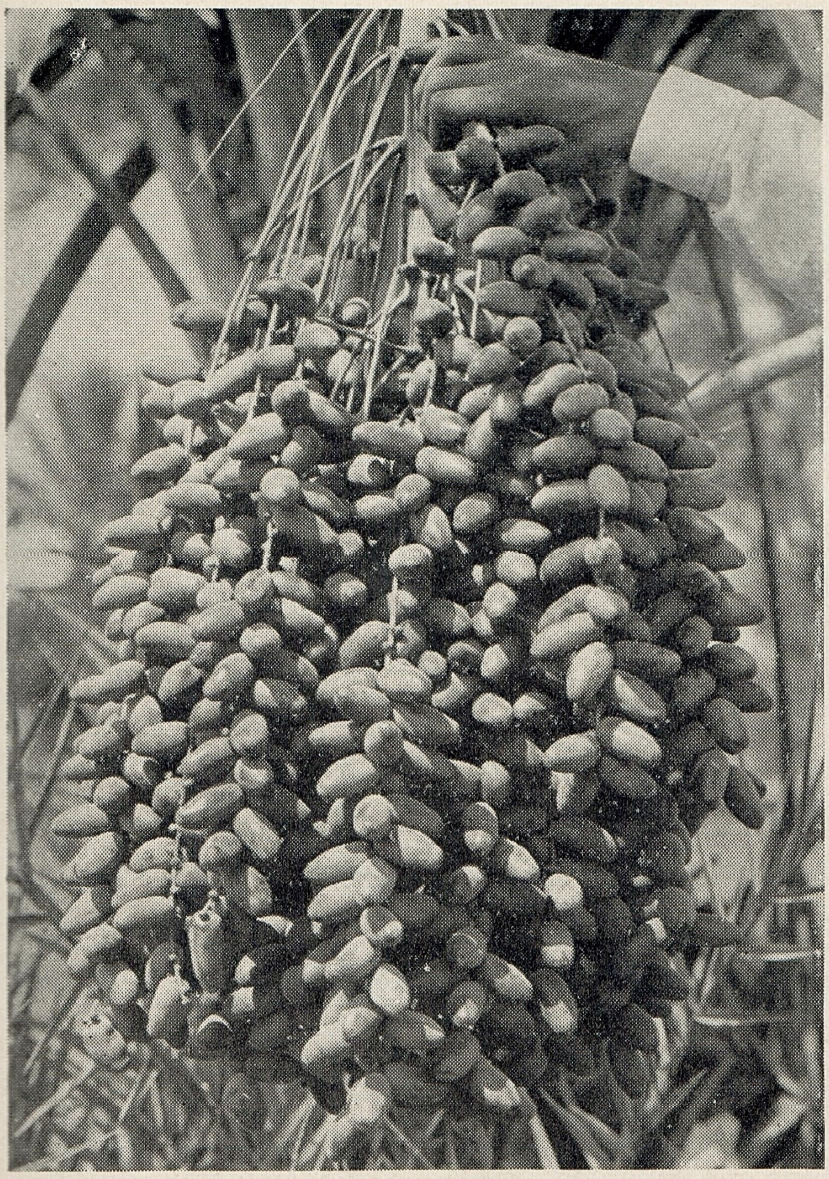


E. W. BREWSTER

Men were to be had, of course. Some would be hard-fisted, hard-working and hard-headed; their dependability to be established as the work progressed. Others would be shiftless, unsatisfactory or useless; their capacity, or lack of it, to be disclosed only in the natural course of events. That was a chance which the builders of the dam would have to take. It was something that only time and the process of elimination could correct.

The capable builder selects his chiefs, his superintendents, engineers, foremen and department heads, with some care. The selection of the pick-and-shovel men drops somewhat in the scale of importance, and is left to those who specialize in procuring the bone and sinew of construction jobs.

But machinery! Machinery is important—very important. Men may get tired and quit or be fired off the job and the job goes right on, for they can usually be speedily replaced. But machinery, doing the bulk of the work, is liable to stop the whole job should something go wrong. Perhaps there is a shortage of fuel—gasoline or fuel oil. Or, it may be, a bearing gets hot and sticks because of a lack of lubricating oil—good,



Date culture, new to the Salt River Valley, is rapidly becoming one of its principal industries

dependable lubricating oil, with plenty of viscosity and a low cold test.

A tied-up steam shovel, or a "cold" gas engine means a slowing down of the work and is costly to the contractor. No good construction superintendent would think of less than adequate machinery, nor would he consider having less than the best gasoline and oil to keep the machines functioning smoothly and dependably.

Mr. Pleasant not only knew his oil—he knew his gas as well, along with his lubricants and his cup greases, for nothing but the best products were used in the power plants having to do with the construction of the huge Lake Pleasant Dam across the Agua Fria River. He knew what he wanted, and he got it, and got it on time and in desired quantity. Though thirty-five miles from the source of supply, work was never held up for a minute through failure of service as to either quantity or quality of fuel or lubricants.

The Carl Pleasant Engineering Company is entitled to feel proud over the completion in record time of this great piece of construction—the largest multiple arch type dam in the world, and we of Union Oil Company may perhaps be pardoned if we share a little in this justifiable pride.

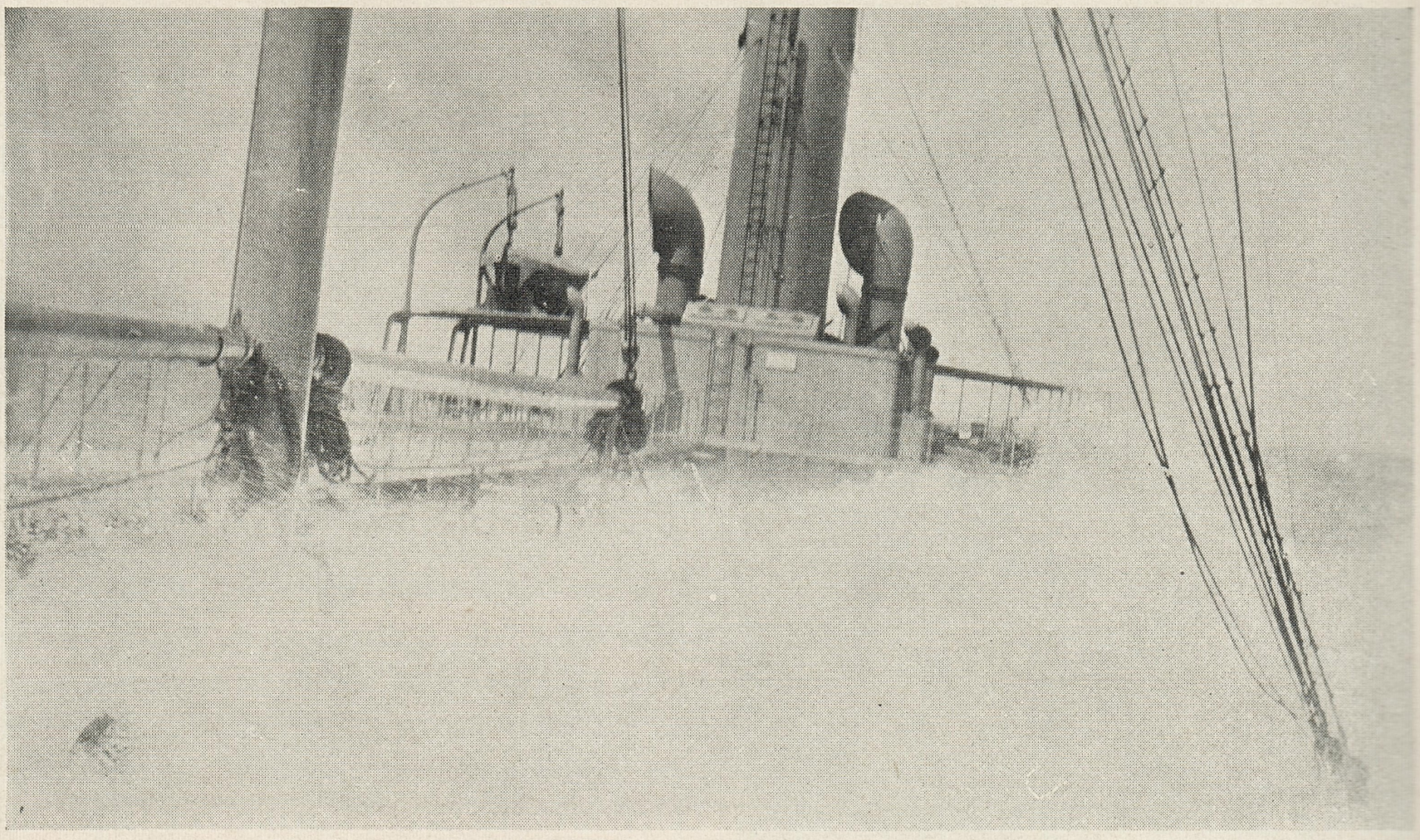
The dream of Mr. Beardsley—that the Salt River Valley become an empire composed of prosperous people in their own homes, living amid peace and plenty, teeming with life and luxury—is soon to come true.

That the Pacific Development Company of Los Angeles will play a large part in the future progress of the valley is gratifying to all who realize the possibilities. After the coming of water, assured by the completion of the Lake Pleasant Dam impounding 173,000 acre feet of "white liquid gold," all that was needed was an organization with the "know-how" and the wherewithal to carry the plan to successful consummation. All these requirements the Pacific Development Company, headed by Alexander Hursh, builder and developer, seems to have in abundance.

Plans of Mr. Hursh and his organization contemplate the planting of a tract of several thousand acres to seedless grapefruit in a portion of the valley protected from cold by the close proximity of the Bradshaw mountains.

The Santa Fe line already runs through the tract, and several loading stations have been constructed to handle the products of the acreage. The canal has been completed to the tract and the work of putting in the laterals is progressing.

Both the Santa Fe and the Southern Pacific propose to expend millions of dollars in new trackage to and through the Beardsley tract, which the Pacific Development Company has taken over, and a program of national advertising is already in the making to bring the charm and the attractiveness of the Salt River Valley before the world.



"Heavy seas were continually breaking over the decks"

Battling a Hurricane

By H. E. CATTERMOLE
Ship Dispatcher

DURING the course of a voyage of one of our tankers it is to be expected that bad weather is to be encountered to some degree. However, storms of hurricane force occur so seldom, and extensive damage to our vessels is so infrequent, that the recent trip of the tanker *Utacarbon*, Captain T. R. Fischer, from Los Angeles to Cristobal, Canal Zone and Port Limon, Costa Rica, is noteworthy.

The *Utacarbon* sailed from San Pedro Harbor on the 6th day of September with a cargo of fuel oil. Fine weather was had until the afternoon of September 9th when "Sparks," the radio operator, reported to the captain that a vessel approximately sixty-five miles to the south had broadcast a message that she was experiencing a wind with a velocity of better than 100 miles per hour. As the barometer indicated no change, the master of the *Utacarbon* presumed that an erroneous report had been broadcast by the radio. However, during the early evening of September 9th, the vessel encountered a strong easterly swell. At this time the *Utacarbon* was about fifteen miles northwest of Cape San Lucas and approximately an equal distance off shore. Between 8:00 and 10:00 P. M. the wind commenced blowing from the northwest and increased so rapidly in violence that at 10:20 P. M. it was blowing a strong gale with a very heavy sea and swell, in consequence of which the vessel was hove-to with the engines being worked as required. On the 10th of September the gale continued with a heavy sea, the decks were continually under water and the vessel was laboring and straining heavily. During the night considerable damage was done to the quarters and store rooms in the shelter deck

by the seas. At 7:00 A.M. September 10th, First Officer Morland endeavored to go below to make an inspection, and found that the quarters were more or less wrecked and stores and gear demolished. While below he sustained serious injury to his head by being washed off his feet and hurled against the hatchway by the heavy sea, his scalp being laid open. He was, therefore, incapacitated until given medical assistance at Manzanillo.

Soon afterwards the vessel was put about and ran before the wind and sea with the engines going slow ahead. At 8:00 A.M. a particularly heavy sea was shipped over the port side which stove in a life boat, forced up the boat deck, bent the stanchions, and damaged the side of the navigating bridge and pilot house. On account of the fact that the telemotor steering gear to the bridge would not control the vessel properly and also because there was a possibility of the bridge over the after deck carrying the telemotor pipes being carried away by the heavy seas, the steering was shifted to the steam hand-gear aft. This left only the injured first officer and the radio operator in the midship house, the entire balance of the crew now going aft, including the master and officers. Navigation thenceforth was done from the steering gear aft of the smoke stack. It was indeed a perilous trip for the crew from the midship house to the poop deck aft, over the flying bridge, which threatened any moment to be washed away by the mountainous seas. The accommodation ladder and the gangway had already been torn away from their fastenings on the bridge and had gone overboard.

The wind at this time was changing to the southwestward and had increased to hurricane force. By 9:20 A.M. it had veered to the south-southwest and was maintaining a velocity of 120 miles per hour. The vessel was laboring and straining in the heavy confused sea which was running. Conditions became so bad that about 10:00 A.M. the vessel was again hove-to. At 11:00 A.M. the caps of three cargo tanks carried away, allowing a large quantity of oil to be lost, and the vessel became more or less covered with oil. It was impossible to secure the tank top caps on account of the tremendous seas, from all directions, which were continuously breaking over the vessel. During the various changes in the wind the vessel had been kept hove-to up to the wind and sea, the engines being used as required. At 1:00 P.M. the wind moderated slightly and during the afternoon was blowing a strong gale; the sea, however, had not moderated and heavy seas were continually breaking over the decks, the vessel still laboring and straining heavily. The steering engine was continually being subjected to a very severe strain and was pounding on account of the heavy seas which were striking the after part of the vessel and the rudder. During the night similar conditions continued unabated. The vessel was kept hove-to up to the wind and sea.

On September 11th, between midnight and 4:00 A.M., while the vessel was hove-to with the engines turning over ahead dead slow, the heavy seas which were striking the vessel aft turned the propeller astern, or in the opposite direction, against the engines, several times, throwing a heavy strain on the engines. About 6:00 A.M. the wind again increased somewhat, the sea still being very high and breaking over the decks, the vessel still laboring and straining continuously. At 8:15 A.M. the vessel was put before the wind and sea in order to secure the tank caps which had worked loose and replace those which had been lost. During this time an apparent drift had been noticed, and as the water was of a different color, it was presumed that the vessel was nearing land, though the visibility was so poor on account of rain and the spray from the heavy seas that no observations of any kind could be taken.

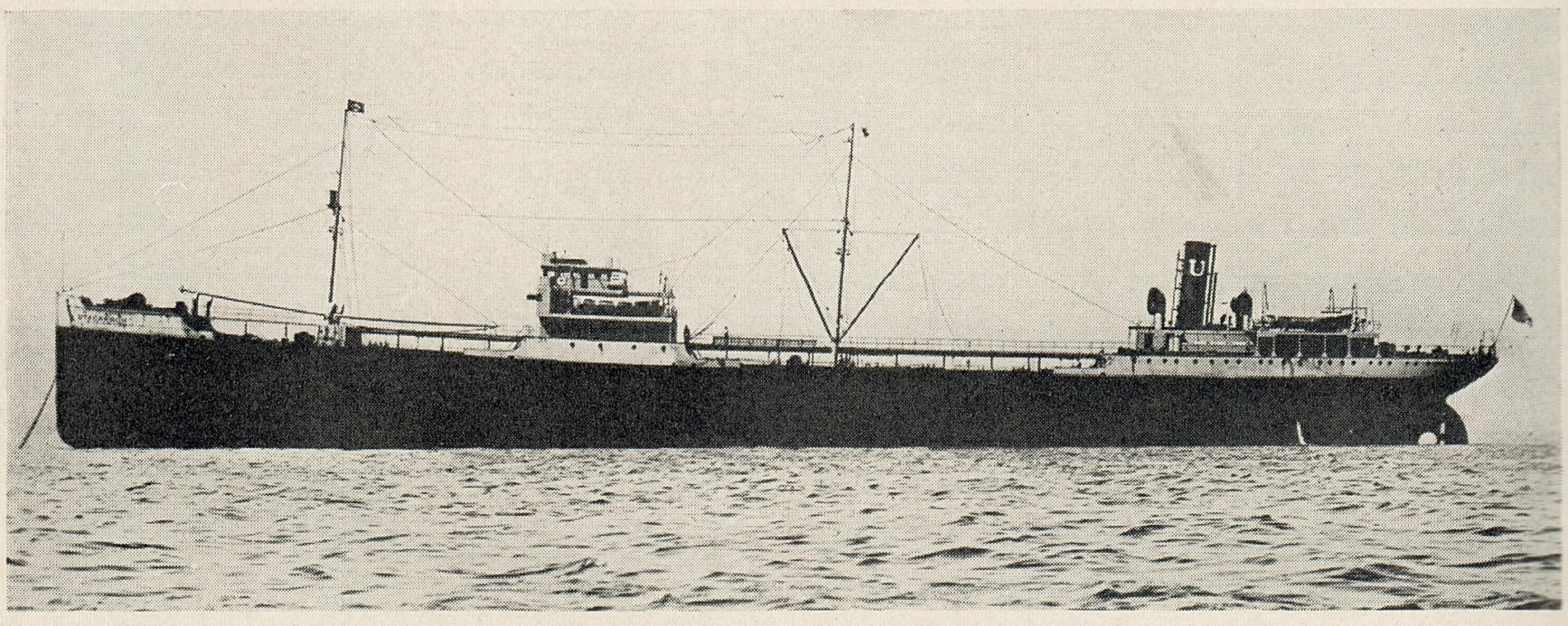
At 10:20 A.M. soundings indicated that the vessel was getting in towards the land

and the course was then altered and she stood off shore into the wind. In consequence of this heavy seas were again continually breaking over the vessel's decks and further attempts to secure the tank caps had to be abandoned. During the afternoon the wind moderated and the sea, which was still running high, commenced to go down. The remainder of the tank caps were secured, however, at great risk of life. During this lull, the crew went forward to the midship house and at 6:00 P.M. the steering was changed to the telemotor gear in the wheel house and the vessel was put on her regular course. The officers' quarters and the wheel house were filled with water from six inches to three feet deep, and the crew immediately set about to bail out the rooms and restore as much order as was possible under the circumstances.

It is interesting to note that during the first part of the storm, before the crew shifted from the midship house to the poop deck, the quartermaster, second mate and Captain Fischer were washed out of the wheel house and back into the chart room by one sea that came completely over the bridge.

A humorous incident occurred which caused a great deal of comment on the ship. An apprentice sailor, being thoroughly frightened at the condition of the wind and sea, had tied a heavy cord with a tag attached around his neck, and in a linen envelope had put other means of identification which he had made fast to his body. Upon being questioned afterwards by the master as to what his intention was, he replied that if he was lost at sea some other ship in the vicinity might pick him up and, if so, he wanted to be identified. Captain Fischer told him if he ever went overboard a shark would make a quick meal of him without looking at the tag.

The ship was then put on a course for Manzanillo, Mexico, where medical assistance was procured for the first officer and the boatswain, who was also injured during the storm. Prior to arrival at Manzanillo approximately four feet of water which had found its way into the pump room was pumped out, and the other quarters which had been flooded during the storm were put in order. The crew of the vessel had been without sleep for approximately thirty-six hours and without hot food, as cooking was made impossible, due to the tempestuous seas. However, after leaving Manzanillo fine weather was experienced and the vessel continued on the remainder of her voyage without further incident.

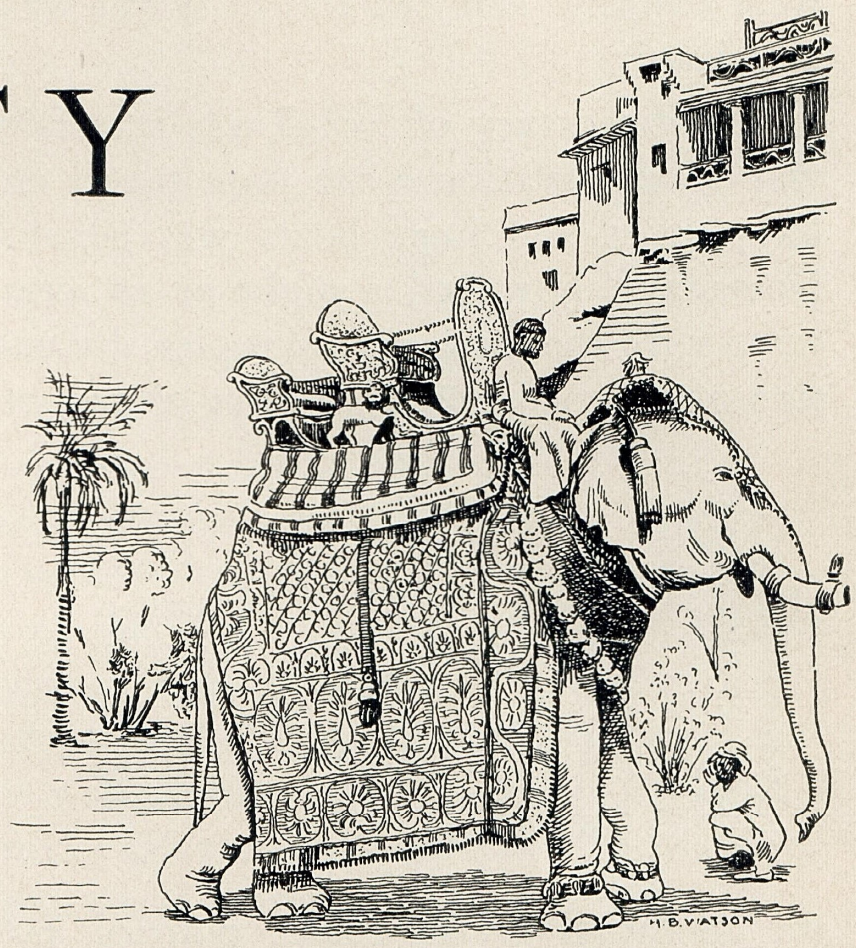


The Union tanker, Utacarbon, whose seaworthiness was demonstrated in her recent encounter with a hurricane

MOBILITY *and* MAN

By

HUGH A. MATIER



ONE of the most stupendous events in the world's history was the discovery of gold in California in 1849: it was the first time that representatives in large numbers of all the various nations of the world could leave their homeland and gather in one place in a very short time. This was made possible only by reason of the development of modern methods of transportation—the railway train and the steamship, each of which can carry a thousand passengers or more on a single trip.

HUGH A. MATIER

When the news of the discovery of gold at Sutter's Mill was flashed to the world it seemed as if humanity had been waiting at the tape, so instant was the response to this message.

Fifty thousand Chinese landed at San Francisco, Europeans of every type filled the steamers enroute for California—to their minds, the long-sought-for land of unlimited wealth. Spaniards, descendants from the conquest days, and the covered-wagon Americans met and intermingled heterogeneously with all these others.

Practically every race in the world met daily and interchanged ideas by sign language, or the newly invented *lingua franca* of the gold fields.

This liberation from the bonds of provincialism was the commencement of an era of increasing mobility and it may be interesting to study some phases of man's endeavor to get from place to place, individually or in small parties, and its record on the morale of the world; and how now we are returning to individual transportation, with the consequent freedom of choice of route instead of being compelled to stay with the crowd perforce as was the case on train or ship.

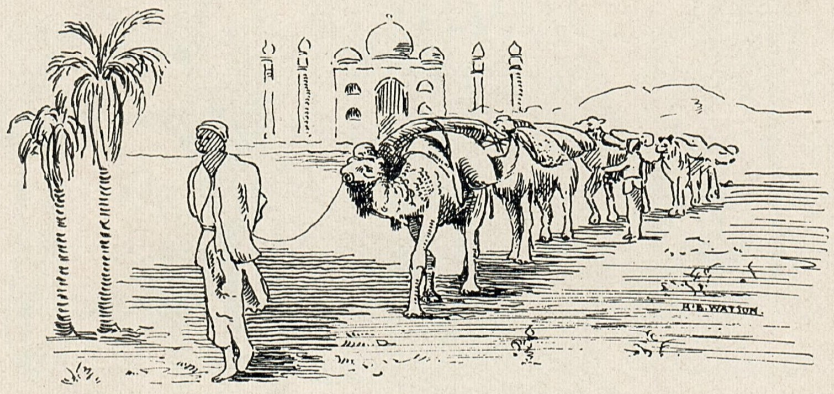
* * * * *

Since the earliest days the sole of the human foot has itched to travel—in the pursuit of trade, of the chase, of war or of visits to holy shrines.

The pilgrim, whatever his pursuit, be he Arab, Chinese, Hindu, Eskimo or one of Chaucer's Canterburians, was essentially an individualist in his travel, and his life was so much the richer for this. Traveling to his goal, each day bringing chance-met companions; staying the night at inns, khans or caravanseries where gossip was indulged in to all hours of the night, his days

were colorful and the toil of travel was alleviated.

This democracy of travel was in a fair way to obliteration when mass travel on long trains and huge boats was begun. Nowadays, however, a night at an auto camp with the thousands of topics, discussion of experiences, of the price of gas, of



the condition of the roads, politics, religion, etcetera, will at times laughably remind the auditor of the famous nights of story-telling by Chaucer's Canterbury pilgrims.

Of course the first thing to be settled is why you are driving the make of car you do. You are apologetic for it or else complacently superior, but the one great question is "How many miles to the gallon?" just as the Arabs a thousand years ago calculated at the end of the day how many parasangs their dromedary was giving them to the bale of hay and how far their camel would go without boiling dry.

The history of every nation shows the imprint on its character of its particular made of travel. In India, for instance, the elephant was chosen deliberately as a stately means of travel for the Maharajahs and Begums whose Aryan ancestors went to that country from the Central Asian plateaux as conquerors.

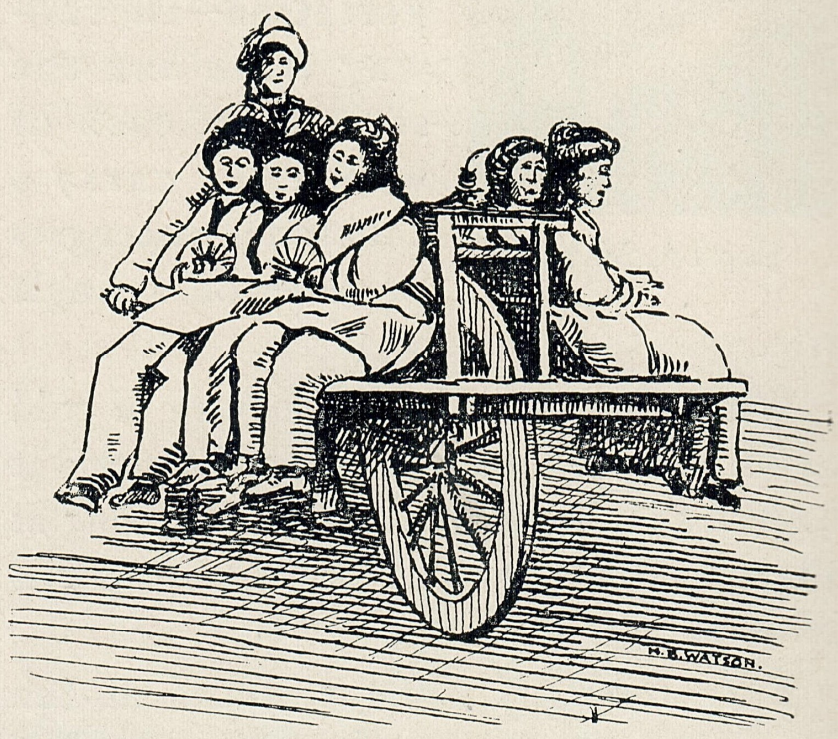
The great mass of the aboriginal Indians were reminded of their subjection and their spirit kept humble by witnessing the processions of these ponderous pachyderms, full panoplied in coat of mail with their tusks tipped with barbs of steel; and the rulers riding in their howdahs high above the grovelling crowd were correspondingly exalted in spirit and in course of time divine superiority became the Brahmanistic cult.

Much more democratic was the Arab with his camel. We know all about the "Arab's farewell to his steed," but the horse was a luxury for only a few, as he was unfit for desert travel and could only be kept where the owner was permanently settled, or else for military purposes at depots.

The camel was virtually the sole means of transport up to the last ten years, and the picturesque lines winding over the dunes silhouetted against the setting sun a common feature of desert landscape, with an oasis in the distance where the night was to be spent, and most important, where he could refill five of his eight stomachs.

Like the camel, the Arab became wiry, hardy, abstemious and able to make long journeys across terrible deserts. Beast and man were for long stretches of time alone and far from aid; and every passing century developed these traits.

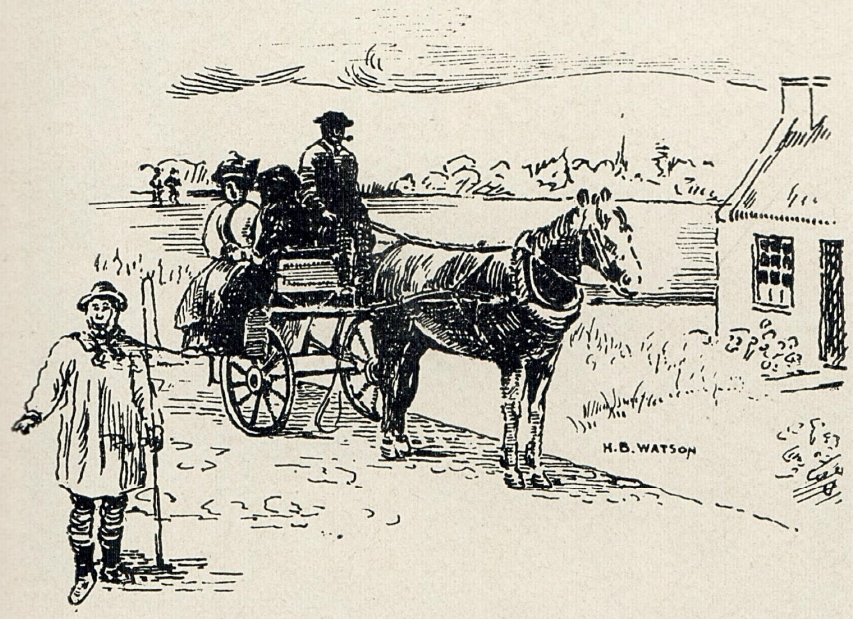
In China with its teeming millions, commodities and persons had only short distances to travel. Food was too precious to



waste on animals and agricultural land too limited to use for highways, so obeying the ancient saying of Confucius to "bear the daily burden courteously," man carried man in peculiar wheelbarrows over twelve-inch-wide roads. Resignation was the phil-

osophical and indeed the only possible mental refuge of the poverty stricken son of Han.

In many and obscure parts of our world has man sought out his mode of travel idiosyncratically: the Eskimo with his sled



and dog team; the Coast Siwash, a giant in frame down to the waist with legs of a pygmy (atrophied on account of age-long paddling through the tortuous Pacific fiords in his cedar log dugout); and these are only a few of the many interesting examples of human adaptation to environment.

What would all these patient plodders have thought if they had been able to look in the crystal and see the power of twenty horses at every man's command, of roads of a width and smoothness unbelievable, of rushing rivers spanned, of mountains tunneled, and travel across the dreaded desert cut to one-twentieth the time.

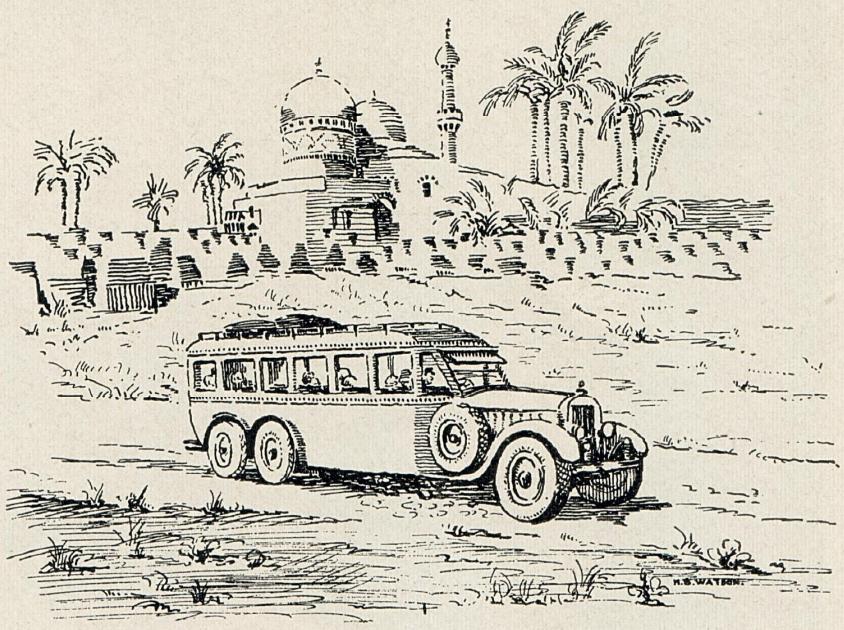
What a change there is now! Long ago Sir John Mandeville and Marco Polo brought home tales of the wonders of Ind and Far Cathay to be jeered and derided as liarly romancers. Today the traveler in the Orient who returns is almost in as much danger of being classed as a disciple of Ananias when he tells of deluxe motor bus service across the burning plains of Arabia, of the air mail taking a letter from Jerusalem to Persia in five hours where only a short time since it took a month or more, of the fellahin in Palestine going home from market in flivvers, of the bare-legged boys in Kashmir whizzing over narrow, dizzily hung mountain trails on motor bicycles carrying billets-doux from Sheik to Sheba, of the Irakian farmer chugging home up the Tigris River in his boat with outboard motor.

Verily, great is gasoline and wonderful is its effect on the genus homo.

It really seems as if this liquid will be the universal solvent, creating peace and concord amongst all men by extending their radius of communication so that they meet one another in far-off market places in amity, understanding and allowing for the slight prejudices which we all have and which abolish monotony and drabness and make up the many-colored kaleidoscopic panorama of our wonderful world.

If you wish to see the ancient modes of travel of the Orient, you had better hurry up or they will be only a memory.

Writing to a friend in Ireland to get a photograph of an Irish jaunting car, he replied: "I am sure I do not know where I would go to find such a thing. There may be one in the remote mountain parts of Galway, but you will stand a much better chance of finding one in Hollywood."



And so it may be with palanquins, sedans, kagos, jinrickshas, howdahs and all the glittering carriages of the East. They may finally be piled in Hollywood studios, where they will rest dreaming of bye-gone days and every now and then living for a brief hour in the magic of picturedom, a reflected scene of past glories.

TWO HUNDRED AND TWO YEARS

under the banner of Union Oil Company are credited the group of seven men pictured above. Reading from the left, they are: G. L. Armstrong, Albert Pelle, F. F. Hill, Carl O. Dahlgren, W. L. Stewart, Sr., Edward J. Brown and W. W. Orcutt. The photo was taken in the garden of Mr. Stewart's home in South Pasadena.

RUBIES AND REMINISCENCES

The Presentation Dinner at the Stewart home. Gold pins set with three rubies each and representing 25 to 30 years service were presented Messrs Orcutt, Hill, Pelle, E. J. Brown and Armstrong with President Stewart's personal congratulations and the approval of the entire executive committee. Mr. Dahlgren's 32-year record called for four rubies. The oldest "employee," W. L. Stewart, Sr., was presented a pin with four rubies by E. W. Clark, Executive Vice-President, in recognition of 33 years continuous service.

The Roll of Honor

EIGHT hundred and eighty-nine service emblems are now proudly displayed by as many employees in recognition of many years devoted to Union Oil Company. The awards were made on the occasion of the company's thirty-seventh anniversary, October 27, 1927.

Of these 889 "old timers," two have been associated with the company continuously for more than thirty years, five have been with the company over twenty-five years, sixty fall in the twenty-year class, 235 in the fifteen-year class and the balance of 587 are in the ten-year class.

Ten years ago there were 3571 men and women on the company's payroll. Approximately twenty-five per cent of this number have remained there. The present staff of employees numbers nearly 10,000, of which nine per cent have been with the company ten years or longer.

Following is the complete roster of those who received pins in the order of seniority with a brief sketch of the careers of the seven oldest men in point of service. The BULLETIN *takes this opportunity of congratulating each one of them.*

W. L. STEWART, SR.

W. L. Stewart, Sr., President, has been associated with the company continuously for thirty-three years. His first actual connection with the company began, however, in 1889, the year before the Torrey Canyon, Sespe and Hardison and Stewart Oil Companies were consolidated into the Union Oil Company of California. He has been a member of the Board of Directors since 1894, and has been practically the entire time the holder of one or more executive positions as well.

CARL O. DAHLGREN

Mr. Dahlgren, wharfinger at Oleum, is a thirty-two-year man. He was a member of the construction crew in the building of Oleum Refinery, and upon its completion he became a treater on the agitators. He was later transferred to the wharf at Oleum.

W. W. ORCUTT

W. W. Orcutt, Vice-President, has to his credit twenty-nine years of service with the company. Under his direction the Union Oil Company was the first on the Coast to organize a geological department for research work and the discovery of new oil fields. The success of this department under Mr. Orcutt's direction has probably been one of the greatest factors in inducing California oil men to recognize the value of geological work.

F. F. HILL

F. F. Hill, Manager Field Operations, with twenty-eight years of service, is considered one of the most practical oil men on the Pacific Coast today. Starting as a teamster in the Ventura field in 1899, he has been continuously associated with the development of the production end of the industry.

ALBERT PELLE

Albert Pelle, Master of the barge Santa Paula, has been affiliated with the Union Oil Company twenty-seven years. His connections began as a deck hand on the vessel he now commands.

G. L. ARMSTRONG

G. L. Armstrong, pumper at Ventura, is also a twenty-seven-year man. He still holds the same position he held when he first started with the company.

EDWARD J. BROWN

Edward J. Brown, Cashier at Oleum, entered the company's employ at Oleum in 1901, twenty-six years ago. He acted as Assistant Secretary and Transfer Agent when the principal offices of the company were at Oleum.

20 Years

Alston, E. W.
Amisto, Mattis
Bayley, F. W.
Bolton, T. M.
Burtless, C. W.
Coggins, Wm. F.
Datow, Fred
Del Monte, M. L.
Deniz, Manuel
Drake, Chas.
Ferguson, W. A.
Froom, Wesley U.
Gallagher, J. F.
Geary, J. M.
Gosline, W. H.
Grant, A. C.
Gregory, J.
Griffin, C. J.
Hanna, Wm. J.
Hare, C. B.
Hatfield, Guy D.
Hudson, C.
Jones, H. T.
Kassel, W. J.
Keown, R. J.
Klink, L. S.
Landreth, R. W.
McDonald, M.
McPeak, John
Miller, P., Jr.
Nelson, Andrew A.
O'Dea, Alice M.
O'Flanagan, Arthur
Orchard, J. F.
Pedrotta, C. F.
Pegg, A. O.
Peterman, C. L.
Piatt, C. M.
Pollock, C. H.
Powell, A. C.
Pressey, Fern O.
Rearden, J. D.
Reed, J. E.
Robertson, Wm. J.
Rosland, Oscar
Rust, J. M.
Sargent, H. I.
Shearer, F. S.
Silva, A. V.
Simpson, Geo. W.
Thompson, J. B.
Todd, Lafe
Tostevin, C. L.
Travers, T. F.
Upton, Roscoe E.
Vortman, Henry
Wallin, W. H.
Walmsley, James
Weller, H. B.
Whitfield, John

15 Years

Ainslie, C. M.
Albright, F. E.
Allcot, Sam A.
Allison, Grant
Ambrosier, C. S.
Ambrosier, H.
Anderson, A. W.
Anderson, Gust
Arthur, J. B.
Atwood, A. R.
Austin, Clarence R.
Avila, Mike
Barnes, Barney
Bayha, L. P.
Beck, J. C.
Beckert, F. E.
Behrje, J. D.
Beltz, F. E.
Bennett, J. W.
Blake, M. L.
Blanchard, B. F., Sr.
Boorey, L. T.
Botkin, C. W.
Bowie, A. B.
Bradley, John B.
Briggs, Spencer
Brown, A. H.
Brown, C. W.
Brown, R. G.
Brown, W. E.
Brownfield, John E.
Brubaker, H. M.
Bryant, Jeff
Bussey, C. G.
Butler, H. O.
Callaghan, M. J.
Cameron, Hugh M.
Canet, Earl H.
Cardoza, J. G.
Caskey, N. B.
Chaffee, Wm.
Chase, W. J.
Chittenden, Clyde
Clark, B. W.
Clark, E. W.
Clark, W. A.
Coggeshall, Clyde G.
Collins, P. J.
Cook, E. D.
Cooney, W. M. Judge
Conkling, V. E.
Correll, W. P.
Crang, F. L.
Crawford, W. W.
Critchlow, E. C.
Crowley, Bella S.
Curran, J. H.
Cynicki, John
Daggett, A. S.
Davidson, W. A.
Davis, Agnes F.
Dawes, J. E.
Debaro, W.
De Larm, V.
Del Monte, F. A.
Desmond, P. A.
Dickson, Martin
Dilker, F. L.
Donahue, R.
Doughty, F. P.
Douglass, John
Dwight, T. O.
Ehlers, Hans
Elder, G. W.
Elder, J. S.
Ely, Albert
Esplin, Wm.
Evans, J. E.
Farquhar, H. C.
Farran, Lora
Favors, J. D.
Fish, L. H.
Fisher, Ed.
Fiske, Dana
Flaegal, Wm.
Fleig, Joe
Foster, H. L.
Fowks, A. E.
Frazier, R. W.
Gant, Robert
Gaskell, C. A.
Gibbs, I. J.
Glover, S. M.
Gosline, G. W.
Gover, A. F.
Grant, F.
Grant, Robert
Grant, T. A.
Grim, G. P.
Groundwater, Wm.
Gunther, Johan H.
Hamilton, L. W.
Hamlin, F. H.
Hand, A. H.
Hanna, J. E.
Hanna, Simeon
Hannay, J. M.
Hansen, Casper
Harrington, J. E.
Harris, James
Hartman, J. H.
Hearle, J. R.
Heise, A. Roy
Herkner, S. D.
Higuera, F. M.
Hix, W. D.
Howe, S. T.
Hoxsie, K. A.
Hughes, J. B.
Humphreys, J. R.
Ireland, C. C.
Jeffries, James J.
Jensen, N.
Johnson, Chris
Johnson, G. L.
Johnson, J. E.
Kelly, Frank
Kendrick, P. R.
Kent, W. R.
Kerr, M. G.
Kinghorn, H. P.
Knudsen, Simon
Kramer, S. S.
Krebs, Carl
Krebs, J. R.
Kreeger, J. M.
Kueny, H. B.
Lakeman, J. A.
Lapp, Anna
Lawson, D. L.
Leonard, J. W.
Life, C. S.
Lindsey, H. W.
Litts, Cornelius H.
Lopez, Val.
McDonald, Alfred M.
McGinley, Neal
McKitrick, James L.
McMaster, H. C.
McVean, A. J.
Mann, Alberta
Marsh, A. O.
Marshall, J. G.
Matlock, W. L.
Maynard, E. E.
Montgomery, F. C.
Moore, L. B.
Muller, J.
Nickson, H. W.
Noble, Fred S.
Nulsen, W. A.
Olsen, Edw.
O'Neill, C. J.
O'Neill, W. J.
Osborne, J. P.
Owen, F. C.
Oxby, Grace
Page, A. U.
Parsons, G. W.
Paterson, A. H.
Pauter, J. M.
Pease, A. V.
Peavy, J. M.
Peck, C. W.
Penter, F. M.
Perry, M. L.
Petersen, A.
Pierce, Roy
Powell, Nettie S.
Raine, H. W.
Rank, Fred
Ransom, C. E.
Rector, J. C.
Reed, Ralph J.
Reid, C. E.
Reiley, G. F.
Reynolds, Norfolk
Rhyne, B. M.
Richards, W. H.
Roberts, Ed.
Robertson, M. F.
Ross, Ronald H.
Ross, D. W.
Rouse, C. H.
Rouse, F. L.
Ruddock, Fred
St. Clair, L. P.
Schmidt, J. E.
Shankie, R. H.
Sharp, S. V.
Sheehan, Thos.
Sheridan, J. I.
Smith, B. A.
Smith, F. M.
Smith, N. C.
Spencer, J. M.
Standard, W. L.
Steele, J. W.
Stives, J. W.
Stowman, Harry
Straley, W. K.
Sutphen, G. H.
Sutphen, M. S.
Swall, J. A.
Swendsen, Martin
Tatum, S. R.
Thomas, J. J., Sr.
Thompson, J. B.
Thompson, Robert B.
Thornton, H. B.
Trew, W. C.
Tubbs, E. E.
Van Harreveld, Joe
Varner, Milton
Walker, Grace L.
Wallace, R. B.
Watson, A. B.
Weir, George
Werling, F. C.
Whitten, Eugene A.
Wickersham, C. E.
Wierzbicky, T.
Williams, J. B.
Wolff, Lawrence
Woodhams, Geo. C.

10 Years

Adam, C. F.
Adams, E. J.
Adams, Jesse N.
Adams, L.
Alger, Harry
Amidon, H. B.
Andersen, O.
Anderson, Andrew
Anderson, Chas. A.
Anderson, George
Anderson, Geo. H.
Anderson, Guy L.
Anderson, John E.
Andreason, Mogens
Angle, R. W.
Armour, H. F.
Armstrong, L. C.
Ash, Thomas
Aston, H. E.
Babcock, Frances
Bailey, T. J.
Bailiff, R. E.
Baily, F. H.
Baird, M. E.
Bakeman, E. A.
Balkwill, F. L.
Barron, J. P.
Barton, A.
Belin, Erick G. E.
Bentley, L. A.
Berry, Earl D.
Berry, Edward H.
Berry, W. E.
Best, P. L.
Black, H. F.
Blake, J. W.
Blue, G. G.
Blum, Carl A.
Boggeman, C. M.
Bonham, Doris M.
Borden, W. H.
Botts, Wm. T.
Boughner, J. D.
Bowlen, Harry L.
Bowen, I. E.
Bowser, M. L.
Box, W. H.
Boyd, Frank C.
Boyd, T. F. G.
Brainard, A. E.
Brand, R. A.
Brewster, E. W.
Bridgman, L. M.
Broadbent, L. D.
Brooks, Ray
Brown, A. S.
Brown, F. A.
Brown, H. H.
Brown, LeRoy L.
Brown, W. A.
Brown, H. W.
Brown, Rhuben N.
Brownfield, H. J.
Brundige, C. A.
Brunk, C. C.
Brussow, W. H.
Bryan, Oliver

Bulger, V. A.
Bundy, L. A.
Burgess, S. L.
Burlingame, Marjorie P.
Burrows, H. A.
Byers, J. N.
Bryant, T. W.
Buckley, J. H.
Campbell, E. M.
Campbell, J. T.
Canet, Alice V.
Cargile, J. L.
Cariker, George
Cariker, Luther
Carlson, Oskar S.
Carroll, Helen G.
Castle, John N.
Cattermole, H. E.
Chadband, F.
Chambers, Arthur E.
Chandler, W. H.
Cheadle, H. T.
Chisholm, J. J.
Clark, Wreford
Clayton, A. D.
Clemons, S. N.
Clevenger, P. S.
Clifton, J. S.
Cobb, W. W.
Coffey, Harley A.
Coffey, H. E.
Coffey, R. N.
Cole, Wiley A.
Colgan, Daniel F.
Conley, O. C.
Cooper, J.
Correll, C. E.
Cowie, James
Craig, C. L.
Crain, Lewis
Critton, John
Crowshaw, J. H.
Cunha, A.

Dalton, Herbert C.
Dana, A. S.
Dana, L. R.
Danzie, Jos. F.
Dasteel, J. Hart
David, Ben
Daugherty, N.
Day, V. A.
De France, C. A.
Delaney, H. A.
Deleissegues, Geo. B.
DeMartini, P. T.
De Luca, Domenico
Dickerson, B. F.
Dickerson, H. G.
Dickinson, A. S.
Dike, Harry A.
Dinnes, Bert Thompson
Dooley, T. S.
Doss, Ashley
Doty, Sherman
Dowling, D.
Driggs, B. R.
Dudderar, Geo. Otis
Duffy, Frank
Duke, Albert E.
Dull, Harry B.
Dunbar, A. J.
Dunham, O. R.
Dunlap, Ralph S.
Dunnigan, W. F.

Edwards, W. R.
Ehrenclou, V. L.
Elkins, H. H.
Ellis, Norman H.
Ensminger, D. R.
Ericson, David E.
Erlbeck, Ernest
Evers, Chester

Fabing, Oscar
Falconer, William
Falk, E. F.
Faria, D. E.
Faria, F. G.
Faria, Joe
Farnum, L. L.
Faustino, Geo. D.
Federspiel, James
Feely, E. J.
Fernandez, Juan
Fisher, C. L.
Fisher, Horace
Fisher, Wm. H.
Fiske, Samuel
Fitzgerald, D. A.
Fladung, John Jr.
Fletcher, W. A.
Forsberg, J. A.
Forster, Geo. H.
Fowks, Alfred S.
Frampton, Fred F.
Frampton, W. J.
Frank, E. W.
Fuller, Jos.
Fulton, G.

Gallagher, J. B.
Gallagher, Pat
Gardner, John
Garrett, John W.
Gary, M.
Gates, C. L.
Gerken, Walter E. A.
Gier, M. A.
Gilardin, Victor B.
Gilmore, W. J.
Godfrey, C. F.
Goodale, J. S.
Gotterba, E. A.
Gragg, Alden O.
Graham, Jas. A.
Grainger, A. G.
Grant, Arthur
Grant, Wm. S.
Gray, E. E.
Gray, W. H.
Greer, R. C.
Gregory, C. A.
Gregory, E. D.

Hadeweg, E. P.
Haley, Oliver
Halvorsen, Hans
Hamberg, Alton F.
Hambly, Wm. C.
Hamel, J.
Hancock, I. J.
Hand, C. R.
Hansen, Julius
Hardman, Cecil Vern.
Hardman, Claude J.
Harris, W. Lee
Harrison, W. W.
Harrison, Thos. E.
Hart, J. D.
Hartman, A. G.
Hatfield, M. B.
Hatfield, R. T.
Hay, W. W.
Hayes, Edw. G.
Haylett, R. E.
Hays, T. A.
Heather, Alice Belle
Hemus, Harry
Henderson, Chas. H.
Hendricks, Wm. M.
Hennage, W. H.
Hensler, R. R.
Herbert, C. B.
Heyward, J. B., Jr.
Hickox, Fred
Hilsinger, R. G.
Hilton, Lemuel
Hinds, Omer G.
Hinton, C. E.
Hoenshell, Marian A.
Holbrook, W. A.
Holland, J. S.
Holloway, Carlisle R.
Hornidge, R. H.
Horvat, J. L.
Hosburgh, Mary L.
Howard, C. K. N.
Hoyt, D. J.
Huffman, Wm.
Hughes, George
Hyde, L. W.

Isakson, H. B.
Iverson, H. G.
Jansen, C. T.
Jennings, C. F.
Johnson, H. D.
Johnston, A. Z.
Johnston, B. L.
Jones, E. H.
Jones, Ernest Victor
Jones, F. H.
Jones, Harry T.
Joseph, Jos. L.
Kansagrad, N.
Kansagrad, Paul
Karge, Fritz
Katt, B. H.
Kearns, D. A.
Kelley, Arthur R.
Keeler, E. A. L.
Kelly, J. M.
Kelly, Mary
Kelly, V. H.
Kelty, Anne
Kemp, H. E.
Kennedy, W. H.
Killip, P.
King, E. C.
King, James
King, M. K.
Kirker, Geo. C.
Kleaver, Estelle B.
Knutsen, Lindsay
Koop, John O. F.
Koors, F. A.
Kuhn, Phil
Kuhns, W. D.
Kuykendall, James G.

La Graffe, Floyd
Laidlaw, T. R.
Lamont, F. J.
Lannier, V. L.
Larsen, Nels E.
Laughlin, E. L.
Lazear, Woodson
Leach, Ira Edgar
Lecocq, H.
Lee, F. E.
Lee, Robt. H.
Leland, D. A.
Lemmon, Lester Lee
Lemmon, Roy
Lepper, R. J.
Lewis, F. E.
Lewis, G. M.
Lewis, W. F.
Lieb, Chas. W.
Lindsay, Gladys
Linden, Royal
Lindsey, Ethel
Lithgow, Geo. E.
Lockwood, Ivory, W.
Logan, H. J.
Logan, S. D.
Lohmeyer, L. J.
Loitz, M. M.
Lopez, A.
Lopizich, Robt. N.
Lough, C. W.
Lowe, O. B.
Lowery, G. W.
Loyd, F. L.
Luhring, Rolla A.
Luxembourger, A.
Lyman, Charles

McAfee, M. W.
McAnnallen, J. T.
McAllister, Wm.
McCain, Lloyd J.
McCarthy, M.
McCutcheon, R. W.
McElhany, B. F.
McGinley, Barney
McGrath, Martin
McGurn, A. J.
McKee, Monta Fay
McKeehan, Walter
McKeever, C. J.
McKenzie, A. B.
McKenna, J. Albert
McKenna, S. S.
McQuarrie, W. H.
MacClocklin, J. D.
Maciel, M. P., Sr.
Mackenzie, Arthur
Mackintosh, J. C.
Maginnis, F. D.
Mahon, H.
Mahoney, Fred O.
Maisey, Harry
Malstrom, A. E.
Mann, C. H.
Manlove, Jeffrey H.
Mannelin, Beatrice E.
Manuel, C. A.
Marshall, A. C.
Martin, E. G.
Martin, J. R.
Martin, R. W.
Martin, W. H.
Martindale, W. H. A.
Mason, A. B.
Mason, Frank L.
Matheson, Gordon
Matson, C. L.
Matthews, R. D.
Maynard, J. H.
Meadows, C. C.
Mercer, Wm.
Merrick, Irene B.
Metcalf, L. G.
Meyer, Frank J.
Miller, W. N.
Mills, Emmett, B.
Mohan, Bessie
Montez, Joe
Moon, F. E.
Moran, John
Moseley, Chas.
Moynier, D. L.
Muellerweiss, A. F.
Mullen, Alfred
Mullen, J. A.
Munn, E. J.
Murphy, H. A.
Murphy, John A.
Murray, W. J.

Nance, E. L.
Nancett, P. H.
Nelson, R. O.
Nesbitt, J. D.
Ness, Barney
Nevitt, F. W.
Newell, O. J.
Nightingale, Paul, Sr.
Norman, A. E.
Nott, Wm. A. B.

O'Connell, Tim
O'Haver, I. K.
O'Leary, J. M.
Olivotti, Anna C.
Olivotti, Leno
Olsen, Helen C.
Olsen, W.
Openshaw, R. G.
Ott, T. F.

Page, A. G.
Parks, J. B.
Parsons, Geo. L.
Pearcy, Robert
Peiffer, H. C.
Pendleton, E. E.
Penrose, C. C.
Pettit, Chas. Wm.
Piequet, J. W.
Pierce, H. A.
Plath, Fritz
Polhemus, H. D.
Pope, John
Powell, Al.
Powelson, V. J.
Power, Eugene
Powers, Katherine
Pritchard, J. R.
Pruitt, J. S.
Pucher, Wm.
Purkiss, Vernon J.
Putnam, James R.
Pyle, Frank L.
Pyle, Guy Edwin

Quill, Thos.
Quill, Wm.

Quinn, James
Raggio, Louis B.
Raines, Meade D.
Ralph, Wm. R.
Ramey, C. N.
Ramsey, H. H.
Randall, C. R.
Rawlings, Chas. W.
Raynor, George
Rebber, L. L.
Recknor, Chas.
Reddick, H. V.
Reed, Thomas B.
Reeder, C. W.
Resseman, R. R.
Reynolds, M. J.
Richards, Frank
Richardson, Roy W.
Rico, Bert E., Jr.
Rimell, P. G.
Ring, Wm. B.
Roach, J. J.
Roberts, Joseph E.
Roberts, Robert
Robinson, Howard
Robinson, M. B.
Rogers, Antone E.
Rogers, Joseph
Rojas, John G.
Root, C. W.
Rose, Henry E.
Roseman, A. G.
Rosenberger, P. C.
Rouse, E. B.
Rowlison, E. W.
Ruedy, August
Ruppert, Ida

Sachs, A. B.
Santos, Joseph
Sass, Robert
Schachtman, J. G.
Schattner, G. W.
Schatzman, E. F.
Schmitz, Peter John
Schock, Frank
Schul, Geo. A.
Schutte, John F.
Seaton, G. B.
Seelye, Jos. H. S.
Sellers, Wm.
Sennewald, A. G.
Sharp, E. S.
Shaw, G. L.
Shea, J. J.
Shelton, W. M.
Sherman, Chas.
Shipkey, Carl A.
Shores, F. T.
Sims, M. E.
Simpson, A. B.
Slater, James F.
Smith, A. A.
Smith, B. H.
Smith, Howard
Smith, James E.
Smith, J. H.
Smith, Mait
Smith, Manuel
Smith, W. V.
Sovick, Bernard
Spencer, Byron
Spencer, H. E.
Stats, L. G.
Steele, John D.
Steele, W. H.
Stegman, Wm.
Stephens, Chas.
Stephens, J. F.
Stephens, L. C.
Stevens, E. C.
Stewart, C. S.
Stewart, W. O.
Stirrett, J. M.
Stock, Wm. L. F.
Stockall, Douglas
Stockert, William
Stogdill, I. J.
Stogdill, J. E.
Sullivan, J. W.
Supler, R. W.
Sutliff, A. P.
Swain, R. O.
Sweet, L. L.
Sweet, LeRoy

Talbott, Day
Tallant, E. P.
Tatjes, Fred G.
Taylor, Carl
Taylor, J. P.
Teel, B. F.
Tennyson, Frank
Thomas, Edwin
Thomas, Edw. A.
Thomas, Ernest Lorenzo
Thompson, A.
Thompson, T. F.
Thoms, Josephine S
Tilson, Oro E.
Toomey, Matt W.
Tornquist, C. G.
Traylor, John W.
Tuthill, Elmer D.

Uhren, John G.

Valerga, Antoinette
Van Leuven, Jas. Oscar
Van Marter, C. E.
Varner, J. P.
Vestal, A. C.

Wagner, W. T.
Wall, F. H.
Wallberg, C. A.
Walton, Joe E.
Wanklin, Price
Ward, F. S.
Wares, I. M.
Warner, H. F.
Washbon, Vivian E.
Wasson, John
Waters, Harry H.
Watkins, W. H.
Wayne, Ira L.
Weaver, Ray
Webber, M. B.
Weeks, L. C.
Weien, Thorwald
Welch, L. A.
Westmoreland, T. R.
White, A. N.
White, J. A.
White, Murray H.
White, T. R.
Whitworth, W. O.
Widenor, Grace L.
Willetts, C. O.
Willey, C. H.
Williams, B. R.
Williams, C. R.
Williams, Lloyd Earl
Wilson, James
Wing, Warren A.
Winger, Chas. S.
Winney, A. L.
Wise, Elmer
Wolfe, W. C.
Wood, R. J.
Woodard, F. M.
Worsley, R. C.
Wuesthoff, Bertha

Young, Chas.
Young, J. L.
Youngquist, Paul H.

Origin of the Species

By R. SNEDDON

Your auto didn't have a door
Some twenty years ago, or more,
And levers reared up from the floor
  Like quills upon a porcupine.
You cranked the brute till you were sore
The while you ranted, fumed and swore;
The engine gave one thund'rous roar
  Then settled down to sneeze and whine.

You set your motor cap askew
And bidding all your friends adieu,
You climbed aboard the old choo-choo
  And grimly started on your way
Like one just sentenced to the rack.
Then, bang! Convulsions seized the hack,
And so beneath it on your back
  You spent the remnant of the day.

They called the thing a "motor" car,
Although it seldom "moted" far.
It had no springs and every jar
  Displaced your bones from head to toe.
And then one day the poor old heap
Had lost the strength to even creep;
It gave one last spasmodic leap
  And evermore refused to go.

But from the ashes of that shay
Have sprung the cars we know today:
The campus bug, cabriolet,
  The stage coach and the limousine;
Straight eights, plus fours, twin sixes, Vs.
But for that first, not one of these
Would now be climbing hills with ease
  On Union Ethyl Gasoline.

NEWS *OF THE* MONTH

PAUL M. GREGG HONORED

Paul M. Gregg, General Counsel, has been appointed by the Mineral Section of the American Bar Association as one of a committee of nine lawyers to consider and report to the Association upon laws and proposals relating to the conservation of mineral resources within the United States, and to cooperate with other individuals and organizations having similar purposes.

E. G. MARTIN TRANSFERRED

E. G. Martin, formerly Manager of Export Sales at San Francisco, has been transferred to assume the duties of New Zealand Manager of Atlantic Union Oil Company, with headquarters at Wellington, New Zealand.

Mr. Martin is succeeded by C. J. McKeever of the Los Angeles office.

GASOLINE MILEAGE RECORD

Averaging 58.3 miles to the quart, or better than 233 miles to the gallon, George Skaugset, a reporter on the Tacoma Times, has established what is believed to be a new world's record for economy in gasoline consumption in motorcycle operation.

Skaugset's remarkable record was made with Union Gasoline in one of a series of country-wide tests conducted by the Harley-Davidson Motorcycle Company.

BEAUTY AND THE BEAKER

Dorothy Dwan, motion picture actress, holding the two-foot silver loving cup donated by the company to the winner of the sweepstakes in a contest of Outboard Evinrude racers sponsored on Lake Elsinore, by the Aloha Yacht Club of Elsinore and the Outboard Motor Association of Southern California. The trophy went to the "Ashbridge 2nd" owned by Fred Ashbridge of Wilmington.

ROUGH COUNTRY

E. C. Critchlow, Superintendent Orcutt Division, inspecting site of Rust No. 1, the new wildcat well in San Luis Obispo county on the Huasna ranch.

RADIO PIERCES 12,000 MILES

Sending its message clearly through 12,000 miles of ether, the 15-pound emergency radio transmitter on the company tanker, Santa Maria, recently set a record for distance transmission without relays.

From the swirling waters around Cape Horn, approximately 6,000 miles south of the equator, George Rand, wireless operator aboard the Santa Maria, "talked" to an amateur operator in Hartford, Connecticut—half way around the world.

Which recalls the feat of the La Brea in 1924 of maintaining daily radio communication with executives in Los Angeles until within 150 miles of London while enroute to Rotterdam. The messages traversed the breadth of both the Atlantic Ocean and the American continent for a total distance of over 6,800 miles—then declared to be one of the most remarkable achievements in marine radio transmission ever performed.

STATION DESIGNS SUBMITTED

Approximately 100 drawings were received as a result of the competition instituted by the company for the best service station design submitted by Pacific Coast architects and draughtsmen. The contest was officially closed November 23, and the task of judging the drawings is expected to be completed by December 15, at which time the winners will be announced.

The competitor whose design is placed first by the jury of award will receive $1,000, and those placing second and third will receive $650.00 and $350.00, respectively.

OCTOBER CRUDE PRODUCTION

The total production of crude oil in California for October amounted to 19,448,893 barrels, an average of 627,384 barrels per day. This is a decrease of 8,099 barrels per day under September production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 932,927 barrels. The total stocks at the end of the month were 140,046,248 barrels. The total stock decrease for 1927, up to October 31st, was 5,565,928 barrels.

Sixty-one wells were completed during the month with an initial daily production of 26,101 barrels, compared with 51 wells completed during September with an initial production of 18,559 barrels.

Complete details of production and development by fields for October will be found on page 23.

PHELPS & LAKE PUBLISH SECOND EDITION

Robert W. Phelps, Petroleum Engineer, and Francis W. Lake, Superintendent of Production, Orange District, have just published a second edition of their book, *Petroleum Engineering*.

The book is intended as a ready reference for the practical field man, and the presence of many straight line charts which is one of the outstanding features of the book makes for the rapid and accurate solution of the many problems encountered in the day's work.

UNION PRESENT AT AIR MEET

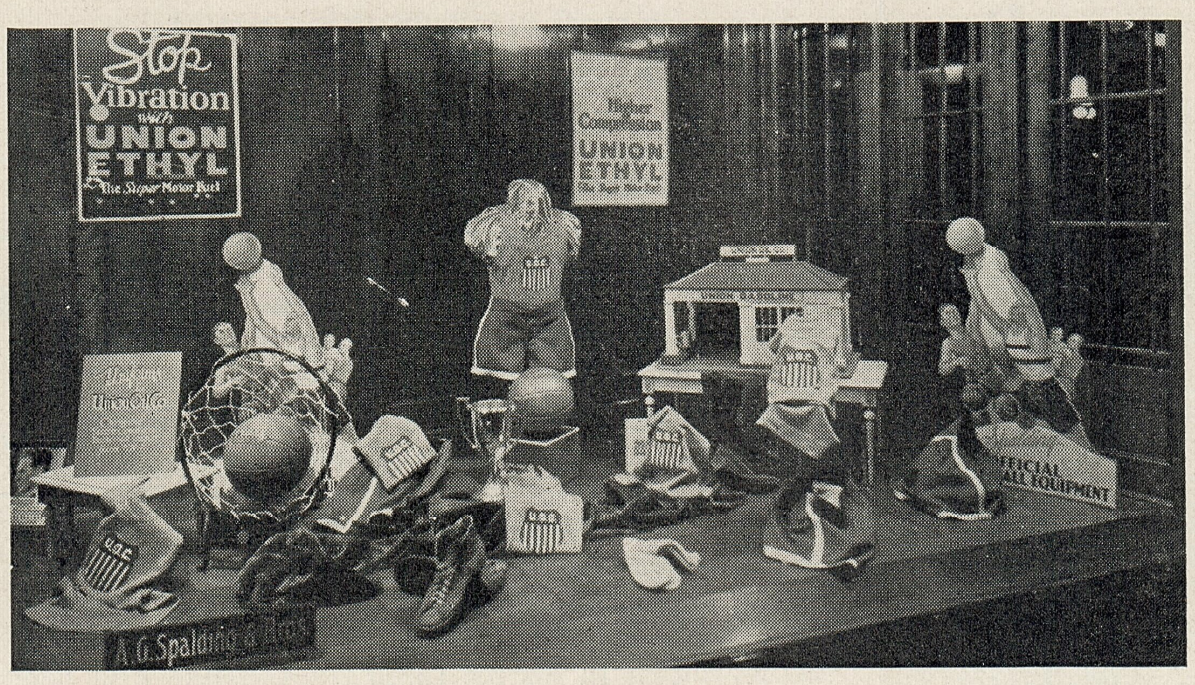
A significant feature of the recent World Flight Commemoration meet at Clover Field, Santa Monica, was the five big Union Oil tank trucks detailed to service the more than a hundred army, navy and civilian planes which participated in the various events. Union Aviation Gasoline and Aristo Aero Oil were the official fuel and lubricant selected by the National Aeronautical Association, sponsors of the event.

"Union Ethyl, please"

CLUB ORGANIZED

The Union Oil Social Club has been organized with a charter membership of 250 employees of the Harbor District. The first monthly meeting was held November 19, at Wilmington. A dance followed the business meeting with a large crowd in attendance.

The Personnel Department has been active in sponsoring the new organization.



TOGS!

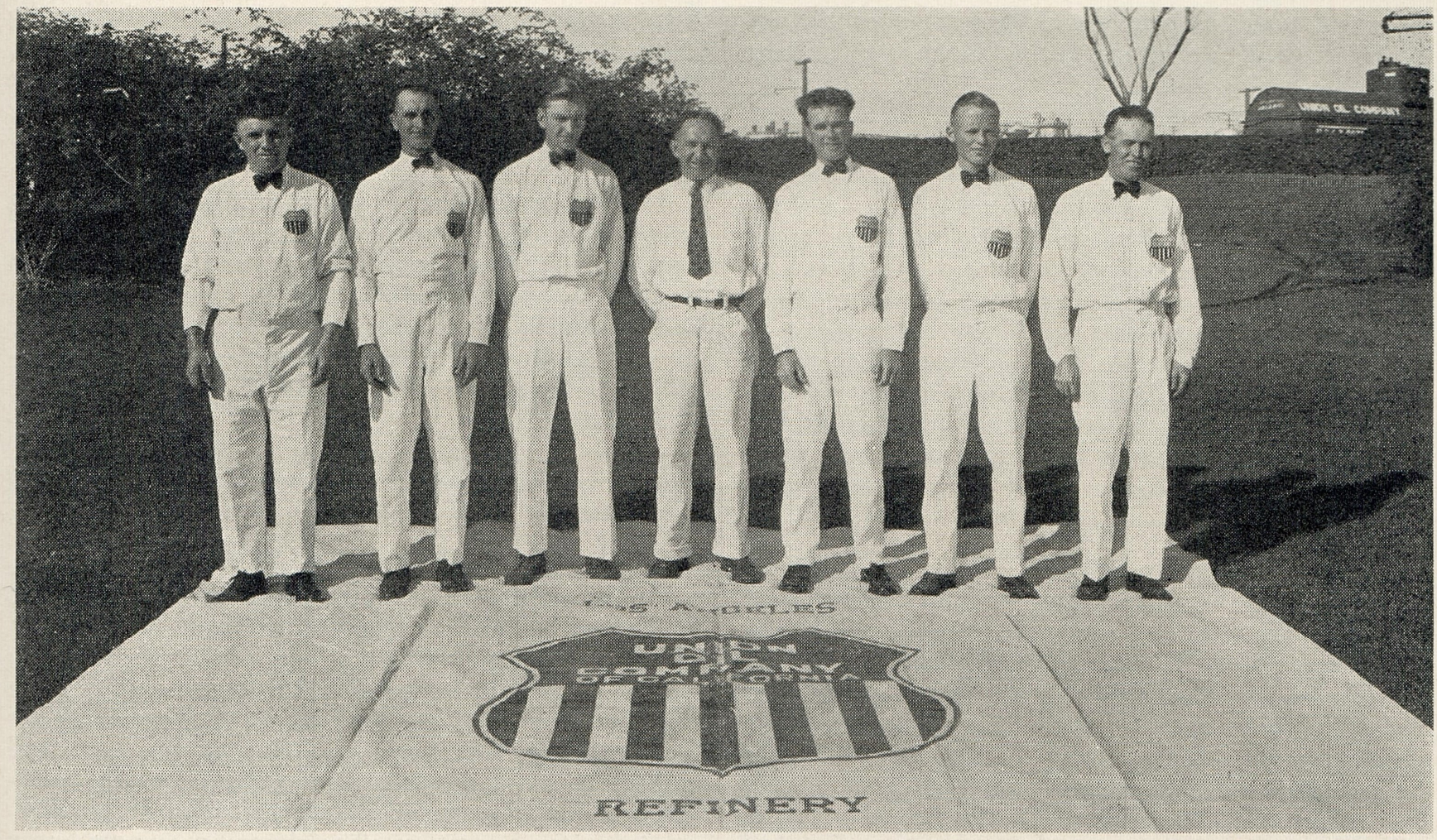
Window display on Second Avenue, the main thoroughfare of Seattle, showing the new equipment which is to be supplied the Seattle District basketball team when they start the current season in the City Commercial League. Last year, out of 100 teams divided into eight leagues, these boys fought their way to the finals but were finally defeated for city honors. Fortified with the above raiment, the team should be even more dazzling this year.

THIS MONTH'S COVER

"Home for Christmas" is the title of Frank Tenney Johnson's canvas reproduced on our cover this issue. This is the second of Mr. Johnson's paintings which has appeared on the BULLETIN cover. The first, "The Squaw Man" will be remembered on the April 1927 issue, which also contained a sketch of this famous western painter's career.

Employees may get reprints of "Home for Christmas" without printing and suitable for framing for the sum of 50 cents by applying to G. G. Blue, the proceeds to be diverted to the athletic fund. Readers other than employees who desire reprints are asked to communicate with Mr. Johnson at 22 Champion Place, Alhambra, California.

SAFETY *IN THE* UNION



Los Angeles Refinery First Aid Team. Reading from left to right: Thomas Nicholls, Captain; E. Shepherd, Harold McFadden, F. O. Bartella, Trainer; Irving Jones, Charles Jones and E. P. Duke.

FIRST AID CONTEST

Neither of the two Union Oil teams which entered the Fifth California Industrial First Aid Meet, held on October 27th and 28th, at the Los Angeles Armory, came in among the prize winners. Cereghino's charges lost by a small margin, taking sixth place, while Lutz' rebuilt first aid machine placed thirteenth in a field of twenty-three. There was keener competition this year than ever before, as evidenced by the fact that our Oleum team had fewer discounts this year than the sweepstake winners of a year ago. The big problem of finding enough competent judges is being automatically solved through the expedient adopted by the participating companies of eliminating their best men each year from the teams and sending them to the meets as judges. Of course these team members are assigned the task of judging other teams than their own and they have proved their sportsmanship in the fairness with which they exercised their responsibilities.

For the first time since these contests were started, the sweepstakes went from the petroleum industry. The first prize winner was the San Rafael division of the Pacific Gas and Electric Corporation. Shell company, Watson Refinery, Richfield Oil Company, and Standard Oil Company, Richmond Refinery took second, third and fourth place, in the order named. Four hundred and fifty team members and their friends attended the banquet at the Biltmore Hotel, where prizes were distributed to the winners by E. W. Bullard, director of the contest.

THE SAFE HANDLING OF FLAMMABLE PRODUCTS

(*Continued from the November number*)

I recall one man who lighted his pipe as he stepped on the derrick floor and as he did so met a rush of gas from the casing head. He may never light another pipe. His experience, however, is worth nothing unless someone makes it his business in the organization to teach the younger men that there are real penalties for broken rules. It may seem a far cry from fire prevention to craft instruction but our constantly increasing use of highly dangerous oils and gases is imposing on us the task of education in order that these useful fuels may not defeat the very purpose for which they were devised.

Cleaning Solutions

A man came to our company a few years ago with a patented chemical process for making gasoline fireproof. It was a bright idea but wholly impracticable. It would be a wonderful world if we could have oils that wouldn't burn except when we wanted them to, that wouldn't give off flammable vapors and yet would evaporate when they had served their purpose as solvents. True enough, there are some such products of the chemist's skill to be had for a price, but the price is still out of sight, commercially speaking. At our house we use pure carbon tetra chloride at a dollar fifty a gallon for cleaning clothes, simply as a matter of safety, living as we do beyond the confines of the city with its highly efficient fire department. But it will be a long time before the oil companies stop supplying petroleum solvents to the commercial dry clean-

ers. The fire problem has been solved in a simple and economical way. First they have written specifications for a cleaning solvent that is as safe as kerosene. It does not give off vapors at atmospheric temperatures that can be flashed by an open flame. Then, when the dry cleaners have used this solvent as a cleaning medium, they remove it from our clothes by drying them in steam heated tumblers and even re-use the smell by condensing it again to liquid. In other words, the oil companies and the dry cleaners have tackled their problem scientifically and have not only reduced the fire hazard to a minimum but have saved money by so doing.

There are many uses for which other solvents than petroleum are economical. Chemicals dissolved in hot water solutions are used by oil companies for cleaning machinery, pipe and fittings, washing floors and removing paint. These chemicals go under various trade names but are in general mild caustics which can be handled with perfect safety and have of course no fire hazard. There is still too much use being made of gasoline and distillate for miscellaneous cleaning on construction jobs. Where a petroleum solvent will do the work either kerosene or cleaner's solvent should be used. Both will of course burn but neither will flash from an open flame. Their use for this general cleanup purpose will eliminate a great source of fires.

Liquid Petroleum Fuels

I have spoken in no uncertain terms of the hazard of using gasoline and distillate as cleaning solutions, and that in spite of the fact that the firm which employs me sells these products. If this sounds paradoxical let me say that in company with all large refiners we make various products for various uses and we consider it the poorest kind of salesmanship to sell any product that is not safe and effective for the use to which it will be put. Gasoline is one of the most wonderful of fuels. It is concentrated energy, ten times as powerful as dynamite. It is cheap; one cent's worth will drive a small automobile a mile. It is safe when properly stored. Tanks of gasoline have repeatedly gone through conflagrations that have melted machinery, without damage. But the very characteristics that make gasoline an ideal engine fuel demand care in handling it.

One day a Mexican employee of a paving contractor in San Diego was filling a small tractor with gasoline. He had just stopped the machine and it was still hot. As might be expected, the tank was overflowed and a flash occurred. Result, one man burned to death.

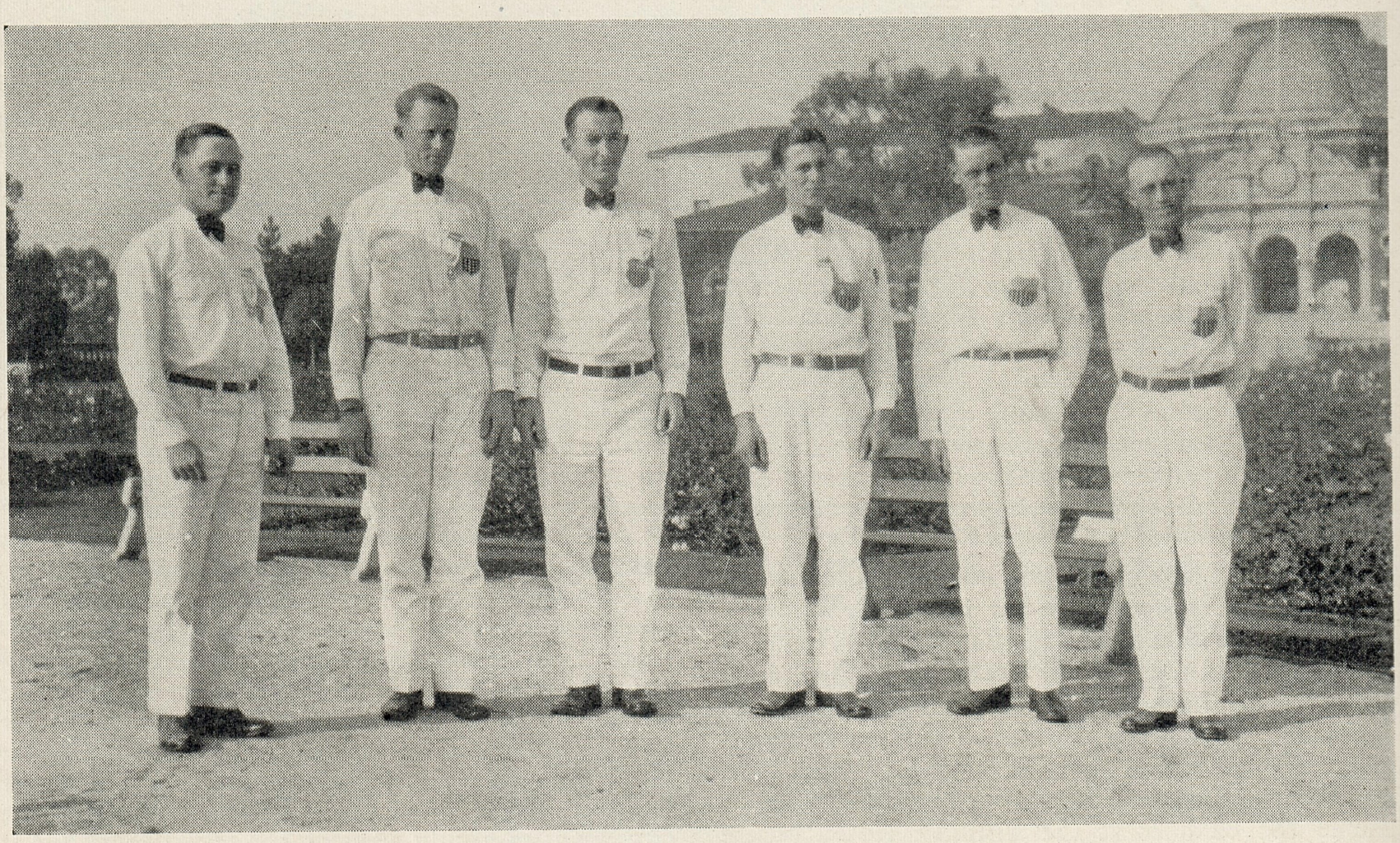
Another contractor left a plain, unmarked can of gasoline on a construction job in San Francisco. There was no watchman on the job and at dusk neighboring children played about the building site as children do. One youngster found the can and threw it on the embers of a small bonfire. No need to mention the harrowing details except to say that the contractor paid.

There is on the market safe equipment for handling gasoline but the employee on the job is not going to buy it for his boss nor will he use it unless taught to do so. Safety in this and all other lines starts, continues and ends with the man responsible for operations. The men he employs are part of his equipment and responsibility. He can make them safe if he will but take thought.

From an address made to the Fourth Pacific Coast Safety Conference, Los Angeles, October 24, 1927.

A YEAR OF SAFETY

On December 6th, if present indications hold good, H. L. Smith, Resident Engineer at Oleum Refinery for the Engineering Dpartment, will celebrate the 365th day that his men have worked without a single lost time accident. Here is a force of men varying in number and make up, who have of their own initiative and under their own leadership given the lie to two well-worn alibis. They have proved that engineering construction can be conducted safely and they now know that accidents don't *just happen*. There is just one thing unique about the men working for Engineering Department at Oleum. They decided they would quit having accidents and they have done it.



Oleum Refinery First Aid Team. Reading from left to right: E. E. Parker, Captain; Geo. T. Self, L. A. Conyers, E. W. Whittaker, Spencer Mastick and A. E. McKeen.

California Oil Statistics, October, 1927

PRODUCTION

(Figures of production and stocks are in barrels of 42 Gals.)

DISTRICT	BARRELS PER MONTH	DAILY AVERAGE Oct., 1927	Sept., 1927	Oct., 1926
Kern River	610,022	19,678	17,992	12,391
Mount Poso	2,637	85	81	——
Round Mountain	700	23	——	——
McKittrick	152,287	4,922	4,954	5,314
Midway-Sunset	2,560,654	82,602	84,700	93,360
Elk Hills	792,771	25,573	25,987	34,216
Lost Hills-Belridge	122,734	3,959	4,015	4,864
Coalinga	592,846	19,124	19,347	19,721
Wheeler Ridge	28,347	914	1,097	1,076
Watsonville	1,782	57	55	58
Santa Maria	181,928	5,869	5,687	5,000
Summerland	4,047	131	140	130
Goleta	10,341	334	300	——
Ventura Avenue	1,712,226	55,233	57,511	50,474
Ventura-Newhall	193,295	6,235	6,072	6,321
Los Angeles-Salt Lake	50,112	1,617	1,672	1,902
Whittier	54,174	1,748	1,739	2,025
Fullerton (Brea Olinda)	525,239	16,943	17,266	22,043
Coyote	435,568	14,051	14,059	16,216
Santa Fe Springs	1,213,434	39,143	39,940	45,981
Montebello	439,628	14,182	14,546	17,428
Richfield	664,416	21,433	22,106	17,410
Huntington Beach	1,940,849	62,608	64,667	54,233
Long Beach	2,906,537	93,759	90,166	95,582
Torrance	641,671	20,699	21,389	26,579
Dominguez	463,736	14,959	15,218	22,013
Rosecrans	241,125	7,778	7,953	14,300
Inglewood	1,012,039	32,646	32,984	41,255
Newport	1,286	41	22	173
Seal Beach	1,891,591	61,019	63,817	1,741
Potrero	571	18	——	——
TOTAL	19,448,893	627,384	635,483	611,808
September	19,064,500	635,483		
Decrease	384,393*	8,099		

*Increase

	STOCKS Oct. 31, 1927	Sept. 30, 1927	Oct. Stock Decreases	Oct. 31, 1926
Heavy Crude, heavier than 20° A. P. I., including all grades of fuel	93,593,275	93,390,070	*203,205	88,588,410
Refinable Crude, 20° A. P. I., and lighter	21,841,747	23,025,124	1,183,377	30,323,321
Gasoline	12,684,662	12,329,195	*355,467	10,614,073
Naphtha Distillates	2,351,849	2,672,994	321,145	4,120,222
All Other Stocks	9,574,715	9,561,792	*12,923	11,340,321
TOTAL ALL STOCKS	140,046,248	140,979,175	932,927	144,986,347

*Increase

	DEVELOPMENT New Rigs Up	Active Drilling	Completed	Daily Initial Output	Active Producing	Abandoned Wells Drillers	Producers
Kern River	10	16	17	3,665	1,328	1	..
Mount Poso	1	3	..	..	2	..	..
Round Mountain	..	4	..	..	1	..	..
McKittrick	6	4	2	16	314	..	..
Midway-Sunset	3	4	4	500	2,867	2	2
Elk Hills		1	..	..	219	..	..
Lost Hills-Belridge	..	2	..	..	245	..	..
Coalinga	..	3	..	..	974	..	..
Wheeler Ridge	..	2	..	..	29	..	1
Watsonville	..	..	..	..	6	..	..
Santa Maria	..	2	1	350	230	..	..
Summerland	..	2	..	..	92	..	..
Goleta	..	2	1	500	6	1	..
Ventura Avenue	1	27	1	4,725	102	..	..
Ventura-Newhall	2	18	2	245	505	2	..
Los Angeles-Salt Lake	..	..	..	..	336	..	..
Whittier	..	..	..	..	183	..	..
Fullerton	1	6	1	335	385	1	..
Coyote	..	4	1	100	209	..	..
Santa Fe Springs	1	2	1	65	322	..	..
Montebello	2	3	..	..	180	..	..
Richfield	5	12	5	583	255	..	..
Huntington Beach	14	36	10	2,360	592	1	1
Long Beach	32	30	4	9,288	660	..	4
Torrance	1	..	1	50	655	..	..
Dominguez	..	3	..	..	75	..	..
Rosecrans	2	2	2	358	117	..	1
Inglewood	..	..	2	465	224	..	..
Newport	..	1	..	..	4	..	..
Seal Beach	1	14	5	1,996	124	2	..
Potrero	..	..	1	500	1	..	..
Miscellaneous Drilling	5	129	..	..	..	9	..
October	87	332	6 1	26,101	11,242	19	9
September	60	339	51	18,559	11,234	17	13
Increase	27	7*	10	7,542	8	2	4*
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	
Average for year 1922	115	605	67	43,700	9,410	17	

*Decrease

REFINED *AND* CRUDE

The difference between opportunity and the kicker is that opportunity knocks but once.

* * *

Two Central Avenue pickanninies were arguing over the respective intellects of the black and white races. Finally the victor wound up with: "Boy, us isn't in it wid dem white trash. Dawgone if dey doan know jes whar to set up dem fillin' stations an' get gasoline."

* * *

"I often wondered why the English were tea drinkers."

"Yes?"

"Yep, but I know now. I had some of their coffee."

* * *

"My wife ran the car into the fence the other day and knocked some paint off."

"Off what, your car or the fence?"

"Neither; off my wife."

* * *

Mrs. Shimmerpate, just back from Europe, said to Mrs. Beanbrough:

"I just couldn't bear looking at the ruins in Italy. They made me homesick for my husband."

"Homesick for your husband?"

"Uh huh. You know, Henry has fallen arches."

* * *

A small boy had fallen into a creek, and a kind old lady had stopped until he was rescued and safely on the bank.

"Dear me, how did you come to fall in?"

"I didn't come to fall in," he explained, "I came to fish."

Willie: "Pa, what's a parasite?"

His Pa: "A parasite, son, is a man who walks through a revolving door without doing his share of the pushing."

* * *

Wife: "Every time you see a pretty girl, you forget you're married."

Hubby: "You're wrong, m' dear. Nothing brings home the fact more forcibly."

* * *

"I can't understand," explained the restaurant manager, "why customers complain. This soup is really excellent."

"They wouldn't grumble, sir," replied the waiter, "if the chef would admit it is soup. He says it's coffee."

* * *

Sandy MacPherson, after being shown to his room in a hotel, looked from the window and noticed a large illuminated clock in a tower across the street. He stopped his watch.

* * *

He: "You must economize! Think of the future. If I were to die, where would you be?"

She: "I should be here all right. The question is—where would you be?"

* * *

The sleight-of-hand performance was not going very well.

"Can any lady or gentleman lend me an egg?" asked the conjurer, coming down to the footlight.

"If we'd 'ad one," shouted a man in the audience, "you'd 'ave got it long before this."

Christmas

I SAW *a window pane whose frost*
Depicted tales of science lost,
And told of things unseen by men,
Displayed in splendor there again.
I saw the scenes and men who told
Of Christmas in the days of old.

I saw the years that hurried by
As though but pictures that must fly
To fill a gallery away
From eyes that search in coming day—
But thus displayed, that might be shown
The Christmas Days that men had known.

I saw the growth of men through all;
The steady progress, and the call
Of Good, e'er holding place on high,
Though men would shun and pass it by.
The happiness of greatness born
Was greatest on a Christmas morn.

I saw the acts—the deeds that give
The happiness to hours we live,
And in the pictures painted there
I saw the Christ, a Vision Fair,
As though to show how men become
Like Him through bits of good they've done.

WILLIAM ALONZO COOPER

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