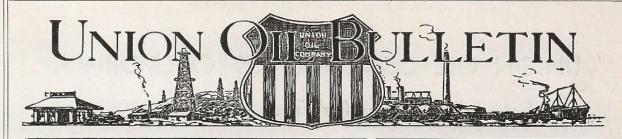


This Photographer Dodges Sun

Photography is a hobby with Thomas T. Gill, draftsman for the company in the Gas division. Most people wait for the sun to take their photographs; Gill waited for the clouds and fog to take these compressor plant views.



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VOLUME XII

APRIL

BULLETIN No. 4

## Third Reduction in Crude Oil Prices Announced

A REDUCTION in crude oil prices at the well—the third in the period of three weeks—was announced by the Union Oil Company March 28. The new schedule went into effect 7 a.m., March 30.

Under the new schedule a decrease of 35 cents per barrel is made in the price quoted March 15 for crude oil of 40 gravity and upwards in Los Angeles Basin fields. The new prices for 30 gravity and upwards is 35 cents per barrel, while the prices for 14 to 19.9 gravity crude remain unchanged at 65 cents per barrel. In the San Joaquin Valley fields the price for 29 gravity oil is reduced 22 cents per barrel, the new price for crude oil of 29 gravity and above being 35 cents per barrel. For the time being the company is not posting a schedule of crude oil prices for the Playa del Rey and Kettleman Hills field.

In placing a higher value on the low gravity oils than is paid for the high gravity crudes, for which premium prices were formerly paid, the new Union schedule reverses a concept of crude oil values which has pre-

vailed since the manufacturing of gasoline was introduced to the industry.

The new price schedule is based on the values obtainable from the different grades of crude oil under existing marketing conditions. Low gravity crude, fuel and gas oils now carry the greater economic values in comparison with higher gravity or gasoline crudes, inasmuch as the present price for gasoline, after deducting state taxes, will not pay for the cost of raw material for gasoline and the manufacturing and distribution costs thereof. It naturally follows, therefore, that the values of the higher gravity grades decrease in proportion to the increase in the gasoline content thereof.

As being related to the fundamental economies involved it may be observed that of the 755 wells complete in 1930 in the State of California 492 were drilled by independent operators and 262 were drilled by the seven largest companies which are engaged in all phases of the oil business on

# UNION OIL COMPANY OF CALIFORNIA

# Schedule of Prices for Crude Oil at the Well EFFECTIVE 7 A. M., MARCH 30, 1931

Price per barrel of 42 gallons in field indicated.

The last price shown in each column will be paid for all gravities above those for which prices are quoted.

14-14.9       \$.65       \$.60       \$.55       .55       14-14.9         15-15.9       .65       .60       .55       .55       15-15.9         16-16.9       .65       .60       .55       .55       16-16.9         17-17.9       .65       .60       .55       .55       17-17.9         18-18.9       .65       .60       .55       .55       18-18.6         19-19.9       .65       .60       .55       .55       19-19.9         20-20.9       .65       .58       .53       .53       20-20.2         21-21.9       .62       .56       .51       .51       21-21.         22-22.9       .59       .53       .49       .49       22-22.         23-23.9       .56       .50       .47       .47       .47       23-23.         24-24.9       .53       .47       .45       .45       24-24.         25-25.9       .50       .44       .43       .43       .43       25-25.         26-26.9       .47       .41       .41       .41       .41       .41       .41       .41       .41       .41       .41       .41       .41       .41 <t< th=""><th>Gravity</th><th>Alamitos Hts. Signal Hill Seal Beach Torrance Athens Rosecrans Dominguez Santa Fe Spgs. Montebello Hunt. Beach East Coyote Richfield Brea-Olinda</th><th>Santa Paula</th><th>Orcutt</th><th>Coalinga McKittrick Kern River Sunset-Midway Elk Hills Buena V. Hills Lost Hills</th><th>Gravity</th></t<>	Gravity	Alamitos Hts. Signal Hill Seal Beach Torrance Athens Rosecrans Dominguez Santa Fe Spgs. Montebello Hunt. Beach East Coyote Richfield Brea-Olinda	Santa Paula	Orcutt	Coalinga McKittrick Kern River Sunset-Midway Elk Hills Buena V. Hills Lost Hills	Gravity
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22-22.9       .59       .53       .49       .49       22-22.         23-23.9       .56       .50       .47       .47       23-23.         24-24.9       .53       .47       .45       .45       24-24.         25-25.9       .50       .44       .43       .43       25-25.         26-26.9       .47       .41       .41       .41       26-26-27-27.         27-27.9       .44       .38       .39       .39       27-27.         28-28.9       .41       .35       .37       .37       28-28.         29-29.9       .38       .35       .35       .35       29-29.	20-20.9	.65	.58	.53		20-20.9
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26-26.9     .47     .41     .41     .41     26-26-26-27-27.9       27-27.9     .44     .38     .39     .39     27-27.       28-28.9     .41     .35     .37     .37     28-28.       29-29.9     .38     .35     .35     .35     29-29.	24-24.9	.53	.47	.45	.45	24-24.9
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29-29.9 .38 .35 .35 .29-29.		.44	.38	.39	.39	27-27.9
	28-28.9	.41	.35	.37	.37	28-28.9
30-30.9 .35	29-29.9	.38		.35	.35	29-29.9
	30-30.9	.35				30-30 9

For the time being the company will not post a schedule of crude oil prices for the Playa del Rey and Kettleman Hills fields.

this coast. The foregoing compares with 910 wells completed in 1929, of which 459 were completed by independent operators and 451 by these seven companies. The same seven companies commenced drilling

189 wells in 1930 as compared with 485 in 1929, a decrease of 61 per cent, while there were 741 wells started by independent operators in 1930 as compared with 786 in 1929, a decrease of but 6 per cent.

# Chester Brown Retires

PORTY-FOUR years of continuous activity in the oil and mining business, most of it amply strenuous, was terminated March 31 by Chester W. Brown, director of exploration and production, when he retired to engage in private pursuits and enjoy well-merited leisure. Although he has given up active direction of the company's operations, which for so many

years have been under his jurisdiction, he meantime retains his seat on the Board of Directors, held continuously since February, 1924.

Mr. Brown has earned the title of "dean of California's oil men," through the length of his service in the industry and the prominent place he has occupied in it. He is the last of the state's early pioneer oil men to remain in active service. Most of the present leaders in the indus-

try were still in their swaddling clothes when he went to work as a roustabout in the Sespe district for the Hardison and Stewart Oil Company in 1887.

A break of fourteen years—from 1895 until 1909, during which he directed the operations of the Inca Mining Company in Southern Peru and opened up one of the richest mines ever discovered in that region, drilled for oil, and, with others, acquired a million-acre rubber concession from the Peruvian government—deprives him of the distinction of being the oldest employee in the company from the standpoint of continuous service.

Since 1909, when he returned from Peru, he has been in charge of the company's production. A few years ago the operations of the Geological department were also placed under his supervision.

He has devoted his attention to many activities outside of the company and has been a director of the California Oil and Gas Association since 1918, and for two years, 1927 and 1928, served it as president.

He has been the link between the early pioneering days of the industry and the

present. His reminiscences are a portrayal of the good nature and qualities that have won and held a host of loval friends; they are of individuals; humorous, human anecdotes of less serious moments that picture men and events with absorbing realism. Tragic occurrences, conflict and bitterness, are left to others to tell, while he recalls with infinite detail the human things that the average chronicler would overlook.



Chester W. Brown

These reminiscences also reveal an enthusiasm for living that Mr. Brown has never lost; a vigorous, wholesome outlook on life that is a reflection of his own physical stamina and well-being.

Mr. Brown has retired, not because the burdens of his position have become too heavy, but to give the younger men a chance to come to the top. He is satisfied that the things that he has done others can do equally well.

"I believe," he said the other day, "that we older fellows who can afford to, should step aside when there are younger men capable of taking our places. It gives them greater incentive to put forth their best effort at a time when their services are of the greatest value to the company."

# Five-Day Week

IN order to prevent further curtailment of operating forces and to aid the present unemployment situation, all employees of the Union Oil Company, as far as possible, are being placed on a five-day week operating basis. The change is being made as rapidly as the necessary arrangements can be made.

In inaugurating this new schedule for employees generally, the company is carry-

ing out a five-day week program put into effect among part of the refinery forces last September, and among approximately fifty per cent of the field department employees the first of the year, in order to retain as many employees on the payroll as possible.

The five day week has already been adopted by a large number of industries and is being contemplated by others with a view of curbing unemployment.

## Hawkes Bay Earthquake

N the earthquake of February 3, which I virtually reduced the towns of Napier and Hastings, New Zealand, to ruins, killing 212 of the inhabitants, and injuring a considerably larger number of others, the facilities of the Atlantic Union Oil Company, Limited, in the Hawkes Bay area, for the most part, escaped serious damage. The greatest loss was suffered at Hastings, where the case goods plant, a brick structure, was so badly damaged by the quake that it had to be completely demolished before the stocks could be removed. Six gasoline curb pumps in the district were also so badly wrecked that they could not be reclaimed.

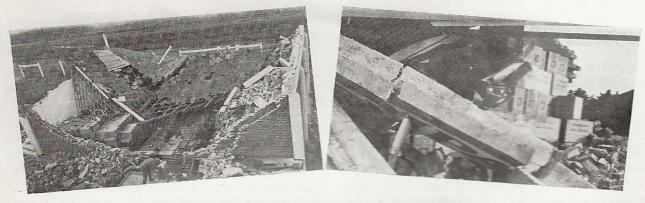
Bulk storage tanks, with the exception of one small leak, were not effected. Of the truck delivery equipment used only one truck was damaged, and that only slightly. The driver of the vehicle was making a de-

livery in down-town Hastings when the first quake was felt, and many times narrowly escaped falling debris in driving back to the plant. A corner of the cab was knocked off and falling bricks smashed in one side of the hood over the engine.

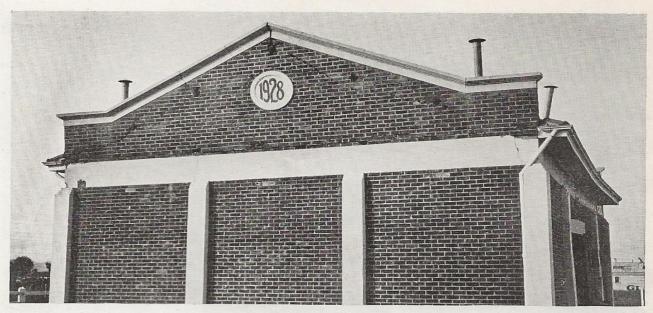
Mr. Melrose, Hastings salesman, was making a business call when the first shock came and only fast footwork saved his life. The building which he hastily deserted collapsed as he ran from it, a portion of the outer walls falling on and wrecking his automobile.

The Gisborne plant was left intact by the repeated earth shocks, but the offices of the company's agents at Wairoa, Williams and Kettle, were completely destroyed.

None of the employees of the Atlantic Union or their families were seriously injured in the tremblor. The company's forces were of considerable help in carrying forward relief work.



This is a view of the Hastings' storage plant while its demolition, made necessary by the quake, was under way.



The above photograph shows how Hastings' case goods plant looked just after earthquake struck. Note cracks all through the building.

# The Driller's Instrument Panel

A N instrument panel, built for utility rather than beauty, and performing for the driller a service similar to that performed for the aviator by the sensitive gauges in the cockpit of an airplane, is being installed in the Union Oil Company's drilling wells.

In the past the driller has worked under a two-fold handicap: He has, for obvious physical reasons, been unable to see the actual operations of the drill, and, in addition, has been called upon to estimate such important factors as speed of the rotation of the drill, weight of the drill pipe, steam pressure on the manifold, which represents the power being applied to the drill by the engine, and also the pounds per square inch pressure on the circulation pumps. "Flying blind," as it were, without a compass, and only his sense of direction to aid him.

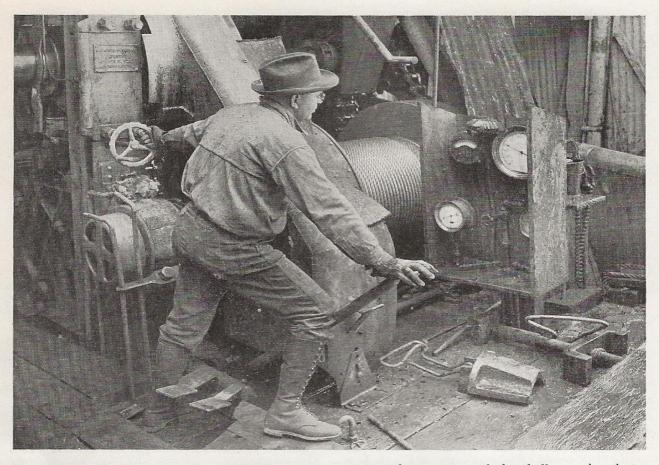
Without accurate gauges it has been necessary for the driller to develop a "feel" of the drill and to depend on his ear to pick out of the clatter and clanging within the derrick the "off notes" that would warn him when his various mechanical devices were not performing up to standard.

Realizing, with the advent of deep zone

drilling, that it was essential that the driller be provided with instruments to remove the guess work from his operations, the Field department set out to develop a series of gauges that would accomplish this. Others, outside of the company, undertook the same thing. As a result, over a period of two years, gauges that record the revolutions per minute of the rotary, the weight on the hook, steam pressure on the manifold and the pressure on the circulation pumps, have been made available. These have been installed, one at a time, as they were perfected, but it has only been within the past few months that the complete instrument panel, now used, has been installed in all Union drilling wells.

With the new instruments it would be possible for the driller to successfully operate the drilling equipment if he were shutoff entirely from a view of the floor of the rig.

These instruments have materially reduced twist offs. Before their advent, when the drill hit a logy formation the driller of necessity had to apply more power. He had no way of telling just how much he was applying: he had to guess. With the bit sticking and the power greater at times



This picture, taken at Bell 22, Santa Fe Springs, illustrates the position of the driller with relation to the instrument panel. C. G. Tornquist, for the past 14 years an employee of the company, is standing at the controls.

than should be applied, something had to give way, and a twist off frequently resulted. Now, when the bit hits this type of formation, the steam pressure gauge records to the pound the amount of power being applied; the revolution indicator tells the driller how fast the drill is turning, and when he sees that the increase in power is not increasing the speed at which the drill is revolving, he knows that it is time to resort to new tactics.

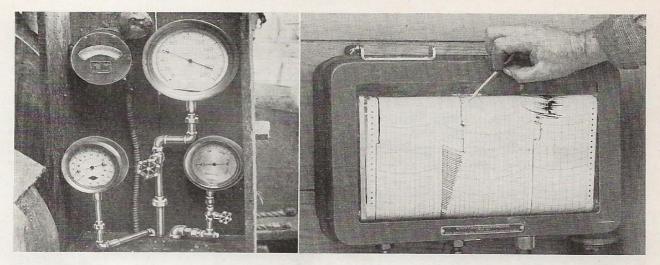
Formerly, when a drill pipe twisted in two it was often some time before the driller was aware of the accident. Now, just the moment a twist off occurs the weight indicator records the decrease in weight on the hook.

Drilling practices developed within the past two years have also disclosed that the speed of the revolution of the drill, as well as the weight on the block, should be varied

according to the type of formation the bit is penetrating. Knowing the proper speeds and weights to employ, the driller's job has become one of keeping them in correct adjustment by watching his instruments.

Occasionally a bit clogs up, stopping the circulation of the mud. If not detected quickly it is likely to cause the drill pipe to "freeze" in the hole. Previous to the advent of the mud pump pressure gauge, one of the first intimations the driller had of the stoppage was when his pump began to quit functioning. Now the pressure gauge records the difficulty instantly.

Operated in conjunction with these gauges, but in a different part of the rig, is a continuous recorder, which keeps a continuous and permanent record of the drilling operations. On the chart are registered simultaneously, in three separate columns, by means of inkers, the pounds per square



A close-up of the driller's "instrument board" is shown on the left. The meter in the upper left corner of the box registers the number of revolutions per minute of the rotary table. Tons weight on the block is shown by the upper right dial. The lower left records the pounds steam pressure on the engine manifold, and the lower right the pressure on the circulation pump. The continuous recorder at the right keeps a permanent and continuous record of the drilling operations. It is divided into three divisions: The column on the left shows the pounds per square inch pressure on the circulation pump; the middle one indicates the tons weight on the block, while the one on the right is a record of the revolutions per minute of the rotary table. Drilling had been temporarily suspended before the picture was taken, and the wide fluctuation in the tons weight chart indicates the "going back into the hole" operation. What happens when difficult drilling is encountered and the rotation of the bit is stopped frequently, is graphically shown in the column on the right.

inch pressure on the circulation pump, the tons of weight on the block and the revolutions per minute of the rotary table. Every fluctuation of the pressure and weight, and every change in the number of revolutions of the drill are shown. The circulating pump chart is electrically operated. Recordings on both the tons weight and revolutions per minute charts are made as a result of the change in pressure in sealed oil lines which extend from the machinery to the gauge box. All three charts are on a timeclock basis.

This unbroken record makes comparatively easy a complete analysis of the various phases of the drilling operations. The progress of the drill can be followed

from the time the well is spudded in until it is completed. Each variation from normal, the causes and effects, can be studied in detail.

As a result of the adoption of the gauges, drilling of crooked holes has become less prevalent. There also has been an appreciable decrease in twist-offs and long expensive delays for other trouble. The drill bits, per foot of formation drilled, require less sharpening and reconditioning than in former years. The new instruments have also, to a large measure, accounted for the fact that the per foot cost of the wells drilled during 1930, the average depth of which was 5424 feet, was eleven cents less than the per foot cost of the 3000-foot wells drilled in 1921.

## Gas Compressor Plays Important Role

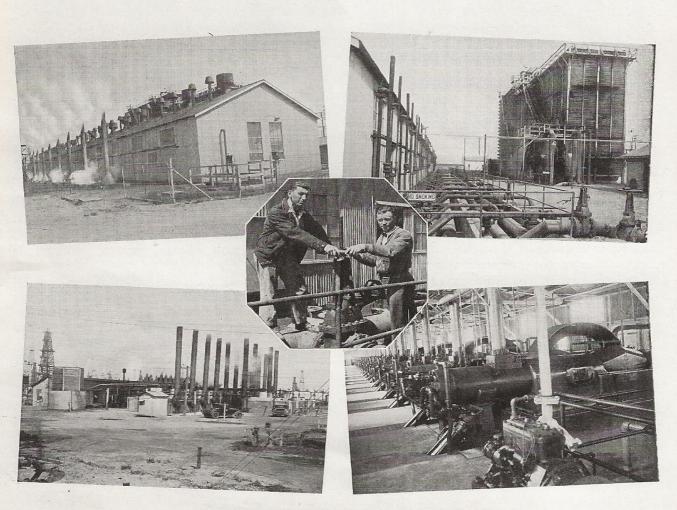
THE layman who is not familiar with all of the details of oil field operations may have a question in his mind as to the function and necessity of the gas compressor plant in the oil industry. Many articles

have been printed in THE BULLETIN and other petroleum journals during the past few years discussing Union Oil Company's gas storage ventures and the phenomenal results of gas circulation. The gas com-

pressor has made both of these feats a reality. It has been the means of reactivating and stimulating depleted oil sands. It has offered a more efficient method of producing oil during a certain cycle in the life of the well, and it has apparently increased the ultimate recovery of the well.

The compressor plant was originally operated as a means of collecting the enriched

natural gas from the wells. The earliest means of abstracting the desirable gasoline fractions from this natural gas was by the compression method. This process consisted in compressing the gas to a pressure of 250 pounds per square-inch, then by means of expanders and interchangers this gas was dropped to an extremely low temperature, in some instances as low as 100° F. below



Views of the Bell Compressor Plant

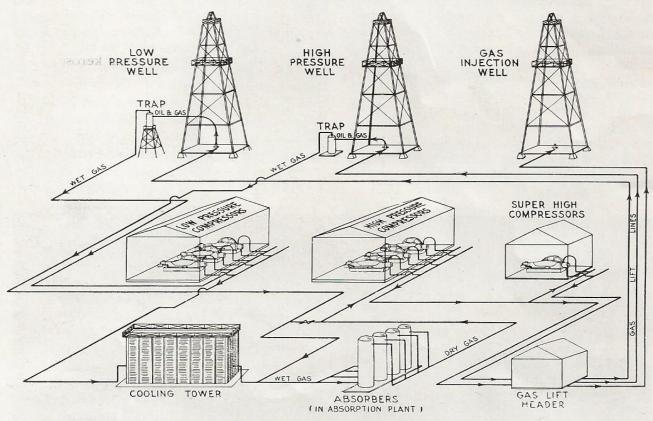
Exhausts for the gas engines are shown in the upper left photograph. On the right is a front view of the plant. The lines leading from the wells into the compressors are in the foreground and the cooling tower in the background. The booster plant, where the gas is raised to higher pressures, is shown in the lower left photograph, while on the right is an interior view of the compressor plant, where 20 units are in operation. In the insert, L. L. Farnum, chief mechanic at the Bell plant and Howard Thompson, district foreman, are switching gas from intermediate cooler to a higher stage at approximately 102 degrees.

zero. An appreciable volume of desirable gasoline was obtained at this low temperature and high pressure. This system was replaced by the modern absorption process. However, the old compression system is still used in part. During flush production periods, when the absorption plant is treating gas at its maximum rate, the compressor plant also contributes to the gasoline production. This gasoline occurs as a byproduct in compressing "wet" gas. The gas must necessarily be cooled to atmospheric temperature for reasons of efficient compression and this by-product gasoline or distillate is thereby obtained.

The accompanying diagrammatic flow chart illustrates the position of the compres-

sor plant with reference to the other field operations of Union Oil Company.

There are many details to be followed in connection with the efficient operation of a compression station. A daily report is made by each plant operator. A log is maintained on each station containing all such pertinent data as operating time, time required, load factor, fuel rate, oil rate, etc. These data enable the supervisors to visualize the functioning of the various plants. For example: a drop in the load factor will reflect the availability of additional capacity, the load factor being the ratio between the equipment load and the rated load of the engine. In this manner the equipment is kept operating at maximum usefulness.



The above diagrammatic sketch illustrates the cycle of natural gas. The oil and gas come from the well tubing in the form of a mist. It is introduced to the gas trap where the oil and gas are separated. The well to the left is operating on a low pressure trap. The gas from this well is pumped into the low pressure compressors from which it is discharged at a pressure suitable for treating in the absorption plant. The center well illustrates a well producing into a high pressure trap. The gas from this well is suitable for treating in the absorption plant without being compressed. After being treated in the absorption plant the gas is then available for sales, fuel, gas lift or injection. It is necessary to increase the pressure of the gas for the last two operations. The high pressure compressors provide the required pressure for circulation. The balance of the available high pressure gas is boosted to a still higher pressure in the proximity of 1000 lb. per sq. in., for injection or gas storage. Both of these last two operations are controlled from the Gas Lift Header. There are lines leading from this Header to the wells included on the circulation and injection system.

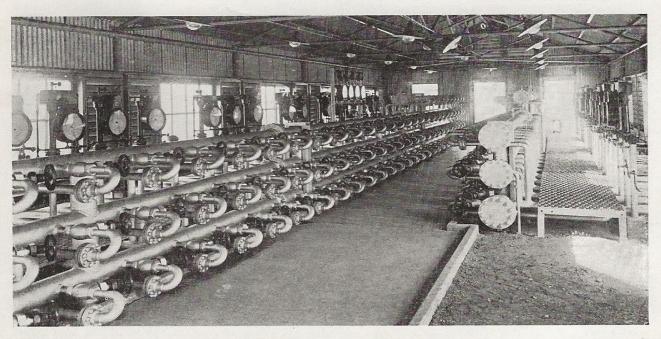
The gas engine indicator also plays an important part in increasing the utility and efficiency of the compression stations. The indicator is virtually an X-ray with which the internal functions of both the gas engine and the compressor may be analyzed. With this, certain losses and means of preventing them are discovered, thereby reducing the working load on the engines, resulting in a lower operating cost. An illustration of the results of this work can be made on one type of engine which was rated at 165 horsepower three years ago, while today it is not uncommon to operate the same engine continuously at 250 horsepower. This means practically a 50 per cent increase in the usefulness of invested capital. The total effect of this supervisory work on the 16,000 horsepower of gas compressors operating in the Los Angeles basin has meant a very considerable annual reduction in power cost.

The overall thermal efficiency of the gas engine driving a compressor is relatively high. It compares very favorably with the Diesel engine and the larger steam turbogenerator power plants, and ranks as one of the cheapest forms of mechanical energy.

It is imperative that this field compres-

sion service be continuous. A failure to supply the required gas to a circulating well means a shut-down with consequent loss of production as well as considerable effort and expense in replacing the well in operation. Compressor plants are designed with this in mind. Duplicate water pumps are provided, besides an elevated reservoir which will act as a third means of supplying jacket water to the engine. These systems are tied in with electric alarms and automatic controls which tend to minimize the possibility of shut-downs. The same precautions are taken on the oil system. Skilled mechanics are required to keep these engines mechanically fit. The compressor plant operator and his assistant, the oiler, are themselves competent mechanics and able to make minor repairs on the engines. They must be thoroughly familiar with the plant control so as to be able to cope with any emergency.

The Union Oil Company compressor plants in the Southern Division have a monthly oil consumption of about 2000 gallons of lubricating oil. The daily fuel requirements are 3,500,000 cubic feet of natural gas, this volume being equivalent to 35,000 gallons of distillate or kerosene.



The header house, where gas from the compressor plant and booster plant is distributed to the various wells in the field. Each bank of lines carries gas for one well. The number of pipes in each bank represents the different pressures available for gas lift in the well.

# Half Century of Service Between Them

HENRY VORTMAN, chief engineer of the Union tanker Deroche, and J. F. "Joe" Gallagher, superintendent of the Oakland main station plant, enter the ranks of the twenty-five year employees this month and will have their service emblems embellished with a third ruby in recognition of a quarter-century of service.

Thirty years ago Henry Vortman and a

companion were found adrift in a small bodt on the Sacramento river by A. O. Pegg, present marine superintending engineer of the Union Oil Company. The oars to the boat had been lost and the two men faced a cold night on the river when they were picked up. The incident proved to be the foundation for a friendship be-



Henry Vortman

tween Vortman and Pegg that has endured the years.

Convinced that if he was going to follow the sea he should get a job on one of the Union Oil Company tankers, Vortman five years later, in 1906, obtained employment as oiler on the S. S. Argyll, working under Thomas Lappin, chief engineer. Under Lappin's expert supervision, Vortman rapidly progressed and within the space of five years had reached the rank of chief engineer, a position which he has held on various tankers in the company's service for the past twenty years.

As the first member of the deep-sea fleet to receive a twenty-five year emblem, Vortman was honored with a luncheon in the dining salon of the S. S. Deroche, of which he is chief engineer, when she docked at Wilmington, April 2, and in the presence of fellow officers and head office members of the Marine department, was presented with the twenty-five year pin and congratulated on his noteworthy service.

GALLAGHER is something more than superintendent of the Oakland main station plant, he's a tradition of the East Bay district. It was Joe who opened the Oakland district for the company in 1907, using as his office one of three stalls in the stable built for the team of horses which powered the one tankwagon allotted him. There were no streets or side-



J. F. Gallagher

walks in the immediate vicinity of the Oakland plant at that time, and the city itself was still pretty sparsely built up. A single railroad track permitted tank car deliveries to the plant. When a car of oil was received its contents had to be pumped by hand into the tankwagon. Joe was the entire sales force at the outset. He

drove the wagon and signed up new customers. He had joined the company in San Francisco the year before and was imbued with the spirit of the company, then just starting to expand its marketing activities.

The progress of the Oakland district was watched by everyone, including the late Lyman Stewart, who took particular interest in it. An ambitious goal of 1000 gallons a day for all products was set for the new district. It was soon reached and surpassed, with the result that Joe was given more tankwagons, horses and men.

The growth of the district is well known. Many of those now high in the company's sales organization received their early training under Joe. He has taken particular delight in watching the progress of the young men who he initiated in the marketing business. In more recent years he has served as service station superintendent, tank truck superintendent, and in January of this year was made superintendent of the Oakland main station plant.

#### Complete 20 Years



#### Carl Krebs

Carl Krebs, employed March 1, 1911, is at present working at the San Jose substation. Originally employed as stableman, but later transferring his activities to the gasoline powered vehicles, Krebs has retained his love for the horse and mule and his favorite pastime is reminiscing on the good old "horse wagon" days.



#### George Weir

During his twenty years of service with the company, George Weir has served at virtually every station on the Producers Pipe Line. He successively occupied positions at Antelope, where he served as engineer; Creston, and Santa Margarita. For the past 15 years he has been pipe line foreman at the San Luis tank farm.

#### Fifteen Years

Bulger, Vallie A	Los Angeles Sales
Brown, Le Roy L	
Crain, Lewis	No. Div. Gas
Estes, Luther	So. Div. Field
Forsberg, John A	Oleum Refinery
Frampton, Fred F	No. Div. Pipe Line
Lamont,, Frank J	San Francisco Sales
Leland, Dwight A	H. O. Sales
Loitz, Moritz M	So. Div. Field
Manuel, C. A	So. Div. Field
Raynor, George B	So. Div. Field
Spencer, Horace E	So. Div. Field
Wallberg, Carl A	Oleum Refinery
Wise, Elmer	Los Angeles Pipe Line

len Year	S
Ackerman, Paul A	Oleum Refinery
Ball, Homer J	So. Div. Gas
Berg, Ole, Jr	San Francisco Sales
Carter, Harold B	San Diego Sales
Davis, Wallace R	So. Div. Field
Fielding, J. L.	No. Div. Field
Fitzgerald, A. V	So. Div. Field

Gingrich, Calvin E.	No. Div. Field
Glover, William	Los Angeles Refinery
Gregg, Paul M	Legal Department
Hadley, Morris L	San Francisco Sales
Hartin, Homer W	San Diego Sales
Houser, Fred Cecil.	Sacramento Sales
	Comptroller's Dept.
Jones, Seth G	Portland Sales
Marler, F. W	Sacramento Sales
	So. Div. Gas
Meade, Charles S	Purchasing Dept.
Oliver, Harry E	Seattle Sales
Page, Thomas J	So. Div. Field
Russell, Earl L	So. Div. Field
Ruthruff, Levi S	No. Sales Construction
Smith, Francis P	Head Office Fuel Oil Sales
Smith, Walter E	So. Div. Field
Smith, W. M	Los Angeles Sales
Stewart, Alva C	So. Div. Field
Stewart, Cameron (	CSo. Div. Field
Stine, Ray F	So. Div. Field
Stutz, John	Purchasing Department
	Los Angeles Refinery
Walker, Thomas J	No. Sales Construction
Saunders, W. G	So. Div. Field

#### The Bridge Builder

AN old man going on a long highway, Came at evening, cold and gray, To a chasm, deep and dark, and wide. The old man crossed, in the twilight dim, For the swollen stream held no fear for him But he stopped when safe on the other side And built a bridge to span the tide.

OLD man, said a fellow traveler near, You're wasting your time in building here; Your journey ends with this closing day, You never again shall pass this way, You crossed the chasm deep and wide; Why build the bridge at evening tide?

THE builder lifted his old gray head, My friend, in the way I have come, he said There followeth after me today—a youth, whose Feet must pass this way; this chasm That has been as naught to me, to that Fair-haired youth, may a pitfall be. He, too, must cross in the twilight dim.

# Over Donner Pass Highway

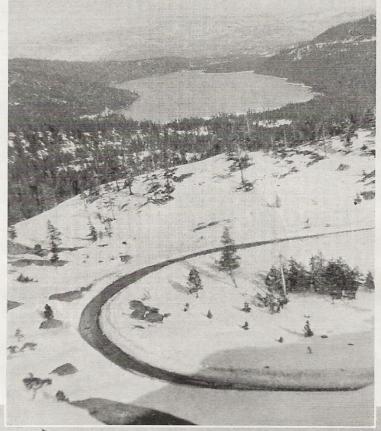
STRIKING Donner Pass during one of the few times it is passable in the winter months, W. F. Lewis, manager service

station distribution, I. O. Woolridge, assistant district manager sales, Sacramento, and C. K. Howard, assistant district manager operations, Sacramento, last month negotiated the rugged highway between Sacramento and Reno on a tour of inspection of the Nevada terri-

Closed virtually the entire time between the months of November and April, Donner Pass is one of the most picturesquely beautiful mountain trails in the Sierra Nevada ranges. The road climbs to a height of 7135 feet at the summit. From that point

one can see historic Donner Lake, nestling in the mountains at an altitude of nearly 7000 feet, and but a few miles from the town of Donner. Here it was that an early band of settlers pushing their way westward were hemmed in by violent winter storms and staged a heroic fight against famine and cold from which only a handful survived.

A government meteorological station is located at the summit.





Donner Lake, as seen from the summit, and I. O. Woolridge, left, and W. F. Lewis, right, at the highest point on the Donner Pass highway.

## Sacramento District Offices Moved





James Rolph, Jr., California's genial flying governor, and Florence Lowe Barnes, to whom he has just presented trophies in recognition of her achievements in the air, are shown in the foreground in the top photograph. Below is the speedy Travel Air Mystery ship in which Mrs. Barnes made her record flights from Los Angeles to Sacramento and return. At the right is the California State Life Insurance Building, a portion of the ground floor of which became the new home of the Sacramento district offices on March 1.

THE presentation of two trophies to Florence Lowe Barnes on the evening of March 2 by Governor James Rolph, Jr., in recognition of her recent record-breaking aerial achievements, was one of the important features in a celebration which marked the moving of the Union Oil Company's Sacramento district office from the Mull



building to spacious quarters on the ground floor of the 13-story California State Life Insurance building.

One of the trophies awarded Mrs. Barnes was for establishing, last summer, a new world's mile straight-away record for women of 196 miles per hour, and the other for a record-breaking round-trip flight between Los Angeles and Sacramento March 1. In both instances Mrs. Barnes flew her Travel Air Mystery ship. Governor, who is an aviation enthusiast and constantly utilizes this mode of transportation, spoke highly of the part women are playing in the development of aviation. The ceremony was broadcast throughout the Sacramento district and was part of a radio program announcing the moving of the district offices.

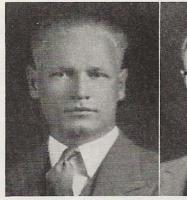
Prior to the establishment of offices in Sacramento 21 years ago, the Sacramento valley territory was covered by a special agency operating out of Stockton. On August 1, 1909, the first business was transacted from Sacramento and the first offices opened in the Stoll building July 1 of the following year. In more recent years the headquarters were established at Front and Y streets at which location the plant is still maintained. Two years ago general offices were taken in the Mull building. The growth of the district is manifest in the territory which now extends east to Las Vegas and Reno, Nevada, and comprises in addition to the main station, a number of commission agencies, 48 company-owned retail units, and more than 400 other outlets for company products.

## A. H. Hand and W. H. Steele Advanced

A. HAND, for the past three years auditor of general accounts, last month was appointed assistant to the comptroller, and W. H. Steele, chief of general accounts since 1928, was appointed auditor of general accounts. The appointments became effective March 19, 1931.

Although still in his early thirties, Mr. Hand has been in the employ of the Union Oil Company for nearly twenty years. His first job was in 1911 as utility man at the Los Angeles district office. He was soon transferred to the sales department in the head office, thence to the company's Atlas refinery, and in September, 1915, was shifted to the refined oil accounting division. In 1920 he was promoted to general accounts division, remaining there until 1924 when he was made assistant to auditors. April, 1926, he was chosen chief of general accounts division, retaining this post until January, 1928, when he became auditor of general accounts.

In his new position, Mr. Hand will have supervision of the general accounts of the company and subsidiary companies, and of the Provident Fund. He will also be charged





A. H. Hand

W. H. Steele

with the accumulation of all statistical information and the writing of statistical reports.

Entering the company's service in the accounting department of the crude oil division eighteen years ago, Mr. Steele remained in auditing work in this department until he was made chief of crude oil accounts in 1924. January, 1928, he was appointed chief of general accounts, which position he held until promoted to auditor of general accounts last month.

# NEWS OF THE MONTH

#### New Lead Base Gear Lubricant Ready

Union Leadlube, a new lead base gear lubricant for use especially in differentials and transmissions of automobiles and trucks equipped with hypoid gears, has been developed by the Union Oil Company and can be obtained

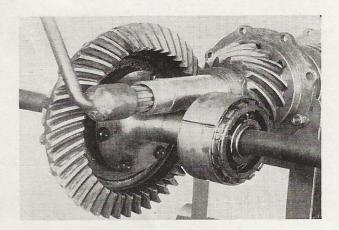
throughout its marketing territory.

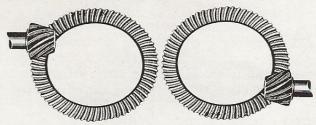
Working from recommendations supplied by manufacturers of hypoid gears, refinery technicians of the company have developed a product which is believed to be superior to those of competitive brands, since its mineral oil content is a highly treated and finished oil of the proper viscosity, while practically all competitive commodities contain an untreated black oil which has a greater tendency to asphaltize or foam.

Increased horsepower of motor and higher driving speeds, both of which have resulted in raising tooth-pressures on gears, have been directly responsible for the development of a lead base lubricant. Lead base greases have been found to form a more permanent oil film under conditions of higher pressures and temperatures, and promote easy gear-shifting and freedom from tendency to channel as well as to reduce power-

loss, gear wear, and failure.

Hypoid gears are similar in appearance to spiral bevel gears commonly used, the chief distinction being that the pinion teeth are so shaped that the pinion may be off-set above or below the central axis of the main gear. Arrangement of the pinion and gear in this manner permits the use of a smaller pinion on main gears of the ordinary size, making it possible to obtain greater reduction and power. The tooth shape and extra length of the face adds strength to the assembly and better operation is obtained.





Above you see a differential assembly of the Mack truck, in which hypoid gears are used. Note the position above the center line at which the pinion is placed. The two diagrammatic drawings below indicate the above or below-centerline position at which the pinion rests with respect to the ring gear, when hypoid gears are

#### WESTERN ASPHALT ASSOCIATION

At the annual meeting of the Western Asphalt Association held in Los Angeles, L. P. St. Clair, president of the Union Oil Company, was elected vice-president of the organization.

F. P. Smith, asphalt representative of the company, was chosen as treasurer for the ensuing year, and J. B. Arthur, manager fuel oil and asphalt sales, was appointed to the directorate.

#### RUBEL RE-ELECTED

A. C. Rubel, manager of field operations, has been re-elected a member of the Board of Administrators of the Employees' Benefit Plan, to serve for a period of three years. He will continue as chairman of the board, which office he held during the past year.

#### Willbridge Plant Superintendent Taken for a Ride



When the sales force in the Portland metropolitan area, under the leadership of S. L. Gain, lost to the Willbridge sales crew, under Plant Supt. R. V. Harrington, during a recent grease sales drive, it not only cost the city salesmen a dinner, but Mr. Gain was required to chauffeur Mr. Harrington around the Willbridge plant, as pictured above. Some of the Portland tank truck salesmen are shown in the lower photograph in their new uniforms. In the center, from left to right, are Mr. Gain, Mr. Harrington, and G. W. Schattner, district manager.

## Oldest Oakland Laundry Selects Union Products



The Peerless Laundry Company, successor of the John F. Snow Company, the first laundry concern in Oakland, Calif., is not only using Union gasoline and lubrication products in its large delivery fleet, but is also using Union fuel oil to run its plant. Charles J. Parker, superintendent, has been an employee of the laundry company for the past 26 years.

#### Flying Instructor Pumps Union Gas Between Hops

James E. Granger, who teaches the movie stars how to fly, is also an expert refueler of automobiles. When he isn't up in one of the dual-control planes, operated by the Pacific School of Aviation, of which he was the founder, he is pumping Union gasoline at service station No. 525, located on the highway adjacent to his flying school at Clover Field, Santa Monica.

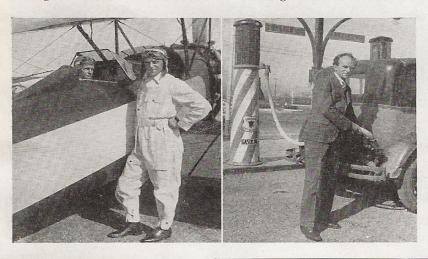
It is not an exaggeration to say that Granger has taught more members of the Hollywood firmament how to use their wings than any other aviation instructor. When the stars quit Granger's tutelage they were qualified for a private flying license, or better. Among his students have been Hoot Gibson, Bebe Daniels, Ruth Elder, Buster Collier and Ben Lyons. The latter had had preliminary training before he came to Granger for final instruction. Lyons flew in "Wings," and also the "Dawn Patrol." It was Granger's school that was used in filming the

"Air Circus," a story woven around a flying school.

Bobbie Trout, the fifth woman transport pilot in the United States, and co-holder of the present woman's refueling record, was at one time a pupil of Granger's. Vera Walker, whose name appears frequently in the papers in connection with women's aviation events, received her transport pilot's instruction in the Pacific School of Aviation.

Harry Hartz, the race driver, was taught to fly by Granger.

In the commercial field, there are some twenty pilots, now flying tri-motored transport planes, who received instruction under him. Granger started flying back in 1913 with one of the old "pusher" planes at Dominguez field. He has taught flying for the past seven years. Thirty students are now receiving instruction in his school



At the left you see Mr. Granger about to take one of his students aloft to play tag with the sea gulls, and at the right you observe him completing a refueling contact at his service station No.525.

#### The "White Flyer" Passes

The ship Erskine M. Phelps, "White Flyer" of the Atlantic and Pacific 30 years ago and for many years in the service of the Union Oil Company as tow barge between Port San Luis and San Francisco and the San Francisco Bay area, last month was sold to the Crosby Marine Corporation of San Pedro and is to be principally used for bunkering Dollar Line steamers calling at Los Angeles.

In the heyday of her career she was known by seamen the world over as the "White Flyer," as much for her speed as for the fact she was painted white from keel to truck. She was laid down in Bathe, Maine, 33 years ago and for the past eighteen years has been in the service of the company, having been acquired and converted to a fuel carrier in 1913.

#### Fueling Lumber Boat



E. K. Wood Lumber Company vessel bunkering at Union Oil Company marine terminal at Alameda.

#### Union Basketeers Top Two Leagues

With the Seattle Motorites winning the championship of the Automotive League of Seattle in the North, the Los Angeles Motorites, one of the leaders in the major Industrial Basketball League of Los Angeles in the South, and other company teams making equally good records in various sections of the company's marketing territory, the basketball season of 1930-31 has proved to be the most successful for Union Oil teams in many years.

The Seattle basketeers, although organized only a few days before the Automotive League opened, went through the schedule with but one defeat. The team was composed of ten employees of the Seattle district. T. W. Normoyle acted as coach.

Los Angeles Motorites won 10 straight games and the championship of their division and were runners-up for the City Industrial League title. Head office and Los Angeles district employees compose the personnel of the southern Motorites.



Seattle team is shown on the left and the Los Angeles "Motorites" on the right.

#### Overseas Motor Service Selects Union in Honolulu



When the Overseas Motor Service Corporation, subsidiary of the General Motors Corporation, which is installing advanced types of service stations in the United States and Orient, recently opened the above pictured station in Honolulu it carried Union Oil Company products 100 per cent. In the foreground, from left to right, are H. B. Weller, district manager of Union Oil Company in Honolulu; Roy Parker, assistant district manager; A. G. McVay, manager of the station, and J. G. Zabriskie.

#### Olympic Aspirants Pumping Union Gas



In immediate training for the A. A. U. track and field meet to be held this summer, but with their ultimate objective a place on the team which is to represent the United States in the Tenth Olympiad in 1932, four nationally recoganized stars of the cinder path are at present dividing their time between workouts and Union Oil service stations in Los Angeles.

Quarter-miler Riley Williamson, shown in the upper left, is junior 440 yard champion and a leading prospect for the Olympic games. The young man slicing the ozone at the top center is Kenneth Robison, former Nevada University star sprinter, Far-Western conference champion in the 100-yard and 200-yard dash, who turned in a 9 4/5 seconds performance in the Century in the first meet of the year. Charles Sansone, upper right, hails from Colby College, Maine, and is one of Uncle Sam's best middle distance men. "Rags" Wilcox is shown at the lower left in a characteristic position on the basketball court. He is coach-player of the Los Angeles Athletic Club team. The aerial performer at the lower right is Maurice Walker, a man who expects to exceed 25 feet in the broad jump before he hangs up his spikes.

The two stations which the athletes operate are shown in the center, with A. S. Newcombe, lessee. "Hap" Walker and "Kenny" Robinson are wearing on-duty regalia in the lower photograph.

#### Film Star Rides Union Plane



Transported from Hollywood to Fresno in a Union Oil Company plane piloted by Warren E. Carey, Sally O'Neill, diminutive motion picture star, reigned as queen of the American Legion Ad-Mardi Gras Ball held in Fresno, March 24, under auspices of Fresno Post No. 4. Here she is shown being greeted on her arrival by Z. S. Leymel, mayor of Fresno.

## Packers of Famous Oranges Know Their Oil



McDermont & Wall of Riverside, Calif., packers and shippers of the famous Blue Bow and Red Bow Sunkist oranges, has for a number of years been exclusive users of Union products. Yearly, it handles more than 600 cars of oranges in its packing house, nearly all of which are packed from its own groves.

Last year this firm purchased in excess of

150,000 gallons of Union Diesol oil for orchard heating. Other products used included Motorite, Purepenn, Super Union, Super Union Ethyl and Red Line greases.

The above photograph was taken in front of the McDermont & Wall packing house. The high luster on the automotive equipment was put there by the new Union Auto Polish.

## Dodges Islands

Capt. Frank Powers, taking a vacation while a new Diesel power plant was being installed in

the Union Oil tanker, M. S. Unacana, of which he is master, paid a visit to Los Angeles recently. For the past twenty years he has been operating vessels in British Columbia and Southwestern Alaska waters, and he says that he has seen only half of the wonders of the north country. There are 2,000 islands, more or less, off the coast of Southwestern Alaska forming a laby-

rinth through which he pilots the Unacana

Capt. Frank Powers

in delivering cargoes to Union Oil Company marine terminals and customers. Capt. Powers was master of the Olinda prior to being transferred to the Unacana.

#### Fuels With Union



Italian flying boat, "Savoy Marchetti," in San Diego harbor off North Island, where it was fueled with Union aviation gasoline and took on a supply of Union Aero Oil for a flight down the west coast of Mexico en route to New York City.

#### DOMINGUEZ BOWLERS WIN

Led by Wallace McIntosh, who won individual scoring honors with a series total of 639, the Dominguez Field bowling team finished first in the annual telegraphic roll-off for the company bowling championship and the Burnham trophy, with a team total of 2661 points.

# SAFETY IN THE UNION



# --- "and in the Community"

THE oil industry is a complex business which at one time had the reputation of being extremely hazardous from several points of view. The wise investors and operators have pretty well overcome the hazard of their particular interests, but as the sale of gasoline and other petroleum products has become well nigh universal, it is small wonder that attempts at legal regulation of the sale and distribution, not to mention the production and storage of petroleum, have kept pace with the increasing number of service stations and derricks. There are interstate regulations, state laws, county ordinances, and last and greatest in number there are literally thousands of municipal ordinances for the oil producer and marketer to learn and try to abide by.

Legislation in this age of intense industrial development has become a matter of extreme concern to all organized forms of business. To those who serve big business in the capacity of technical advisors in matters of accident and fire prevention, there is curious similarity between attempts to legislate safety for the general public into business and their small efforts to promote accident prevention in industry. The similarity lies in the fact that regulation by codes of law or company rules, is hopeless unless based on fundamentally sound operating experience. Practical codes can best be written by those who have a background of actual experience in the business and who have had the advantage of profiting by their own and others' mistakes in the past.

It is not strange that the Pacific Coast with its tremendous production of oil and its climatic advantage in the use of the automobile should also be the scene of some interesting developments in fire prevention and safety legislation. The Pacific Coast is oil conscious. It is also the scene of rather intensive business regulation by law. Sometimes the rules laid down for the oil industry have erred only on the side of excessive caution, as for example, in one city, the requirement at marketing stations for concrete fire walls with a capacity of 50 per cent in excess of that of the steel storage tanks, when such tanks contain only refined oils. A firewall of that size presupposes that all these tanks might burst at one time and that they would all be full at that moment, a contingency which has absolutely no foundation in experience. At other times attempts at regulations have been based on utter misconception of the technic of the industry in its specialized details. Such a rule was that proposed by the building department of a great city in the oil belt, which prescribes that in setting the casing in a drilling well the cementing mixture to be used was to be the same as that for reinforced concrete buildings, namely, one part of cement to two parts of sand to three parts of rock. Only those who realize the necessity for the smooth, plastic mixture of pure cement and water which is essential in this process, can appreciate the absurdity of this well intended regulation.

Those entrusted with the duty of writing fire prevention laws can well afford to invite the aid of the technicians who have made safety within industry such an outstanding success. There are actually fewer persons killed in industry in America by two-thirds than the grim total of those killed in their homes and on the streets. When carried to its logical conclusion, organized accident prevention in industry can practically eradicate fires and personal injuries. In one great industrial concern during one year, 16 men lost their lives from accidents at home or on the street, while during the same period not a single fatality occurred within the plant itself.

The attitude of the larger and older oil companies toward legislation affecting the public aspects of their business, particularly that aimed at fire prevention, has never had much publicity. The attitude has been largely a defensive one, meeting proposed legislation by advice and compromise as it arose. Better acquaintance with the fire chiefs and fire marshals of the Pacific Coast has, however, brought about an entente cordiale which has stimulated these companies to offer the services of their fire prevention engineers to any governmental body seeking to draft safety and fire preventive legislation. Many cities and counties and at least one State have gratefully acknowledged help thus given them in their efforts by these civilian firemen of the oil industry. At a recent meeting with the fire prevention engineers of the major California operators, the fire marshal of one of our large cities feelingly remarked: "I could not hope to pass or enforce an ordinance as 'hardboiled' as the regulations which you men have set up within your own companies. Nothing we can put into a law will affect your business, because you already are doing far more to prevent fires than we can prescribe for general use."

Organizations like the National Fire Protection Association have done excellent work in compiling well tried out safety regulations for use in ordinances. Through its quarterly the N.F.P.A. broadcasts the technical analyses of flagrations and other disastrous fires throughout the United States for the benefit of men charged with the saving of life and property. It is information of this sort which gives the background of all accurate and sound effort at fire prevention and

control through legal regulation. An outstanding example of work by the Association in this direction is the article on "Municipal Regulation of Oil Storage," by Robert S. Molton, Technical Secretary of the N.F.P.A. in the last quarterly. The demands for this article has already caused the Association to issue it in pamphlet form.

Through the California Oil and Gas Association on the Pacific Coast and through similar organizations throughout the United States, technical advice and whole hearted co-operation in the drafting of safety regulations is now available to those who care to take advantage of it. The oil industry welcomes the opportunity of sharing with the community what it has learned in setting its own house in order.

## Benefits for World War Veterans

THE Board of Administrators of the Employees' Benefit Plan feels that many war veterans, who are members of the plan, are probably not familiar with the benefits to which they are entitled by the Veterans' Bureau. In order that such employees may be fully informed, and that they may receive the full benefits to which they are entitled as war veterans, the following brief resume is submitted for their information:

Benefits offered by the Veterans' Bureau are divided into two groups:

- A. Benefits offered to those whose sickness or disability is directly connected with the World War and is officially acknowledged by the Bureau records.
- B. Sickness and disability not connected with the war.
- A. 1. Compensation monthly payments for sickness range from \$10 minimum, to \$100 maximum. Upon such veteran's death from service connected disability, widows' and orphans' compensation payments are allowed as follows to the dependents of a deceased veteran:
  - (a) To wife, \$30 per month, until she remarries.
  - (b) To first child under 18, or until such child under 18 marries, \$10 per month.
  - (c) To each additional child under 18, or until such children under 18 are married, \$6 per month.
  - (d) For one dependent parent, \$20 per month, and for two dependent parents, \$30.

It must be noted that there is a special clause that regardless of the family conditions, the total pension cannot exceed \$75 per month. Widows and children receive their pension before dependent parents; so that, if there is a widow and seven children,

the dependent parents do not receive any benefits.

All war veterans are entitled to what is known as an adjusted service certificate. This is a twenty-year endowment life insurance policy in the form of a bonus, which varies in amount according to the length of service, \$50.00 being the minimum. Sums under \$50.00 are paid in cash. Loans on these certificates, by the recent act of Congress, are now granted up to 50 per cent of the face value of the certificates. It must be remembered, however, that although the loan does not have to be paid back, interest at 4½ per cent is compounded annually, so that any unborrowed balance is materially decreased by the interest on the loan.

B. Disability allowance is made for permanent partial disability, provided the minimum disability is not less than 25 per cent. The maximum disability, of course, is 100 per cent. The minimum disability allowance is \$12 and the maximum \$40 per month.

Government life insurance which has lapsed through non-payment of premiums can be renewed, if the veteran undergoes and can pass the physical examination which is given free by the Bureau.

Any ex-service man becoming sick and requiring hospitalization can be hospitalized free of charge, including ambulance service, providing a bed is available in one of the government hospitals at the time. It must be remembered that there is a large waiting list, but emergency cases can generally be taken care of.

Clinical treatment can only be given to those under Group A and not to Group B.

If any further information or assistance can be given to any employees who are entitled to any part of the benefits enumerated, it will be glady furnished on application to Gerald G. Blue, Room 901, Union Oil Building, Los Angeles, California.

# REFINED AND CRUDE



#### By RICHARD SNEDDON

It will, perhaps, interest our readers to know that we boast quite a war record. The name of it is "Over There," and we can't play it any more, because a man came and took away our phonograph some time ago.

Also, while we realize it is not good taste to inject too much family history into a public document of this kind, we simply must tell you that junior is in trouble again. The young Turk will insist on salaaming the door.

Then again, the other day, when a traveling evangelist called at our home, exhorting us to remove all profanity from our lives, the youngster immediately yelled out to the kitchen with considerable gusto: "Hey, Mom, here's a guy what wants to buy Dad's golf clubs."

Driver: "I wasn't going forty miles an hour, nor thirty, nor even twenty."

Judge: "Here now, steady up, young fellow,

or you'll be backing into something."

—Orcadian.

Which reminds us of the college boy who took his campus car into the garage and inquired: "Do you do car repairing?" After looking the heap over, the mechanic replied, "Yes, but we don't do any manufacturing."

With all due respect to Darwin, we sometimes wonder if man's descent from the monkey has actually started yet.

And please note, the man who hides behind a woman's skirt now-a-days is not a coward. No, sir, he's a magician.

Incidentally, these laundries must be comical places. Our best shirt came back yesterday with its sides split.

An eastern scientist claims to have discovered the source of the knock in Pennsylvania gasoline, but no one has so far explained the knocks that the Pennsylvanian gives to our western gasoline.

Captain Powers of the U. O. ship Uncana recently visited Los Angeles with his family, and among other things enjoyed a good round meal at the revolving table cafe in Whittier.

And here let us all be clear on this point—a bouillon cube is not a square meal.

The Captain in addition to being an excellent ships' master is also a diplomatist of no mean order. It is said that in his younger days a visiting admiral asked him who he thought were the three greatest sailors of all time, and he promptly replied, "I don't know your name at the minute, sir, but the other two were Nelson and Drake."

There can be no doubt that the old reverence for royalty is fast disappearing. Just a few days ago we noticed that a man was hauled before the court to answer a charge of assault on three counts.

On the door of our room at a certain hotel recently we found this parting admonition: "Have you left anything?" After paying our bill we are convinced that it should have read: "Have you anything left?"

However, after all, time softens everything—excepting perhaps the sandwiches at the railway depot buffets.

Our nomination for the sublime optimist is the fellow who totes a trombone and a saxophone when he is looking for a room.

And while it is true that all men are born free, remember that, later, many of them get married.

The best thing to do, therefore, is to get your Auto and Furniture Polishes immediately and endeavor to improve the shining hour.

Apply yourself diligently to your allotted task, and who knows, someday you may become a boss, work twelve or fourteen hours a day, and have all the worry.

In conclusion, when this collection of nonsensicalities fails to come up to your expectations, don't get mad about it. We are probably just suffering a return of our chronic ailment—constriction of the jocular vein.



Brightening Up With Union Home Helps

It's spring! and above are a few effective demonstrations of how to "Brighten Up" with Union Auto Polish, Union Furniture Polish, Union Cleaning Solvent and Union Cleaner. A coastwise campaign, calling the public's attention to these specialties, will be inaugurated April 12. "Brighten Up" windshield stickers, carrying a message doubly significant at this time, are being distributed at all Union service stations.

