

# UNION OIL BULLETIN




FEBRUARY 1933





This Diesel-powered tractor, equipped with bulldozer, is carving the way for the new Maricopa-Ventura shortcut through the Sespe mountains. A tractor-drawn sled is used to haul fuel over the mountain ridges to the tractor.





# UNION OIL BULLETIN

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VOLUME XIV

FEBRUARY

BULLETIN No. 1

## New Campaign Backs Improved "76"

A SALES and advertising campaign to continue the popularization of Union "76" gasoline was launched January 6, at which time a further increase in the effective octane rating of the gasoline was announced. The 1932 campaign was the most successful ever undertaken by the Union Oil Company and it is hoped through the new campaign to hold the advantages gained last year. During 1932, the average sale per pump of Union gasoline was greatly increased over 1931. Some 1600 new dealers became resellers of Union products. A survey at the start of the new year, in the Los Angeles area, revealed that in split-pump stations selling "76" and other brands of gasoline at the same price, Union's orange-colored motor fuel was the leading seller in approximately 75 per cent of the stations.

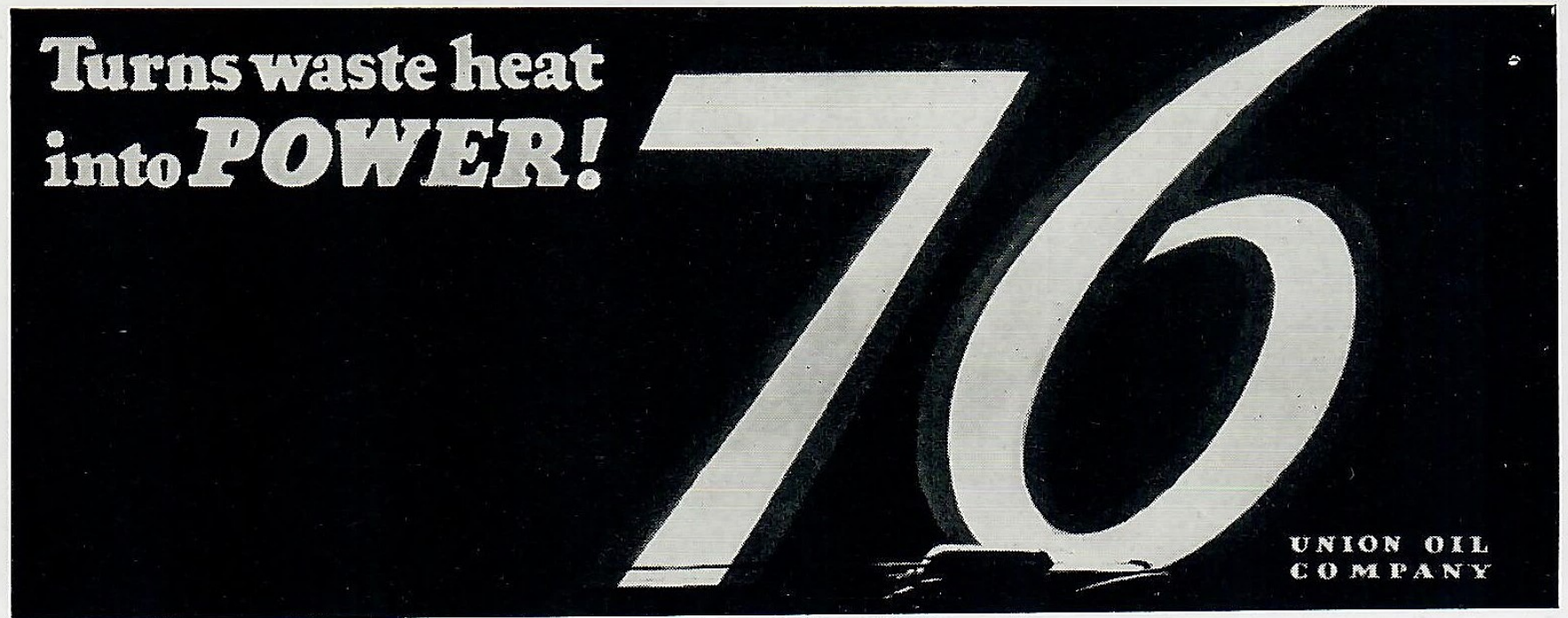
The increase in the effective octane rating of "76" featured in the advertising campaign, represents the third increase in the octane rating of the gasoline since its introduction to Pacific Coast motorists in January, 1932, and definitely places it in ad-

vance of competitive brands of gasoline and further establishes it as "The Leader."

The new Union "76" gasoline is designed to burn in an engine with an efficient non-luminous flame, and also to develop explosion pressures that do not exceed safety limits but give a smooth flow of power. In modern automobile engines, a low octane gasoline gives imperfect combustion. This imperfect combustion takes the form of a yellow luminous flame that dissipates heat units to the cylinder walls instead of converting them into power, and thus causes overheating of the motor. At the same time, the maximum or peak explosion pressures developed in the cylinder are several times as great as under conditions of proper combustion; and these excessive explosion pressures, of course, result in excessive wear of the cylinder walls, main and connecting rod bearings, etc.

Because of its extremely high anti-knock quality "76" actually harnesses heat wasted by gasolines of the low octane rating, and turns it into power that makes automobiles skim over grades in high.





One of the attractive billboards that will tell the motorists at a glance the important facts concerning the improved "76" gasoline.

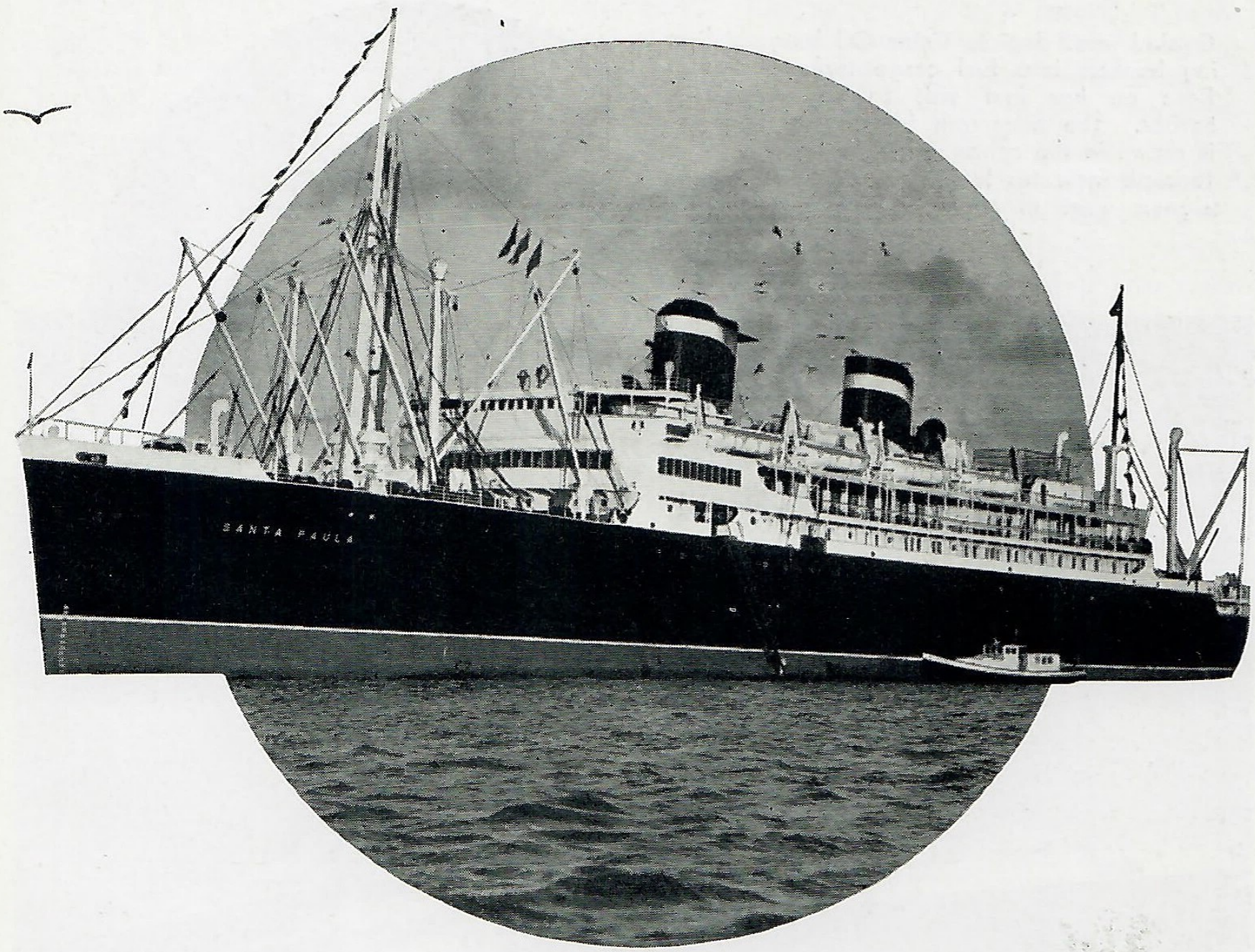
Inasmuch as it has a gasoline that is superior to any other non-premium fuel on the market, the Union Oil Company will continue its money-back guarantee.

The manufacture of "76" is not an accident. Millions of dollars in refining equipment, years of research work, and an adequate supply of selected crudes are necessary

to its production. The Union Oil Company is in the enviable position of having ample quantities of selected crudes, yielding high anti-knock gasoline. In addition, its cracking and other refining facilities make it possible to greatly increase the octane rating of the gasoline obtained by the ordinary methods of distillation.







## New Grace Liners Welcomed to Pacific

**S**TEAMING majestically past the breakwater and into the inner confines of Los Angeles harbor, the S. S. Santa Rosa December 12 was maneuvered into her berth by tugs dwarfed to miniature by the imposing hull upon which they labored, her maiden voyage to the Pacific Coast completed. Her sister ship, the S. S. Santa Paula, called at Los Angeles January 23 on her maiden trip to the West Coast.

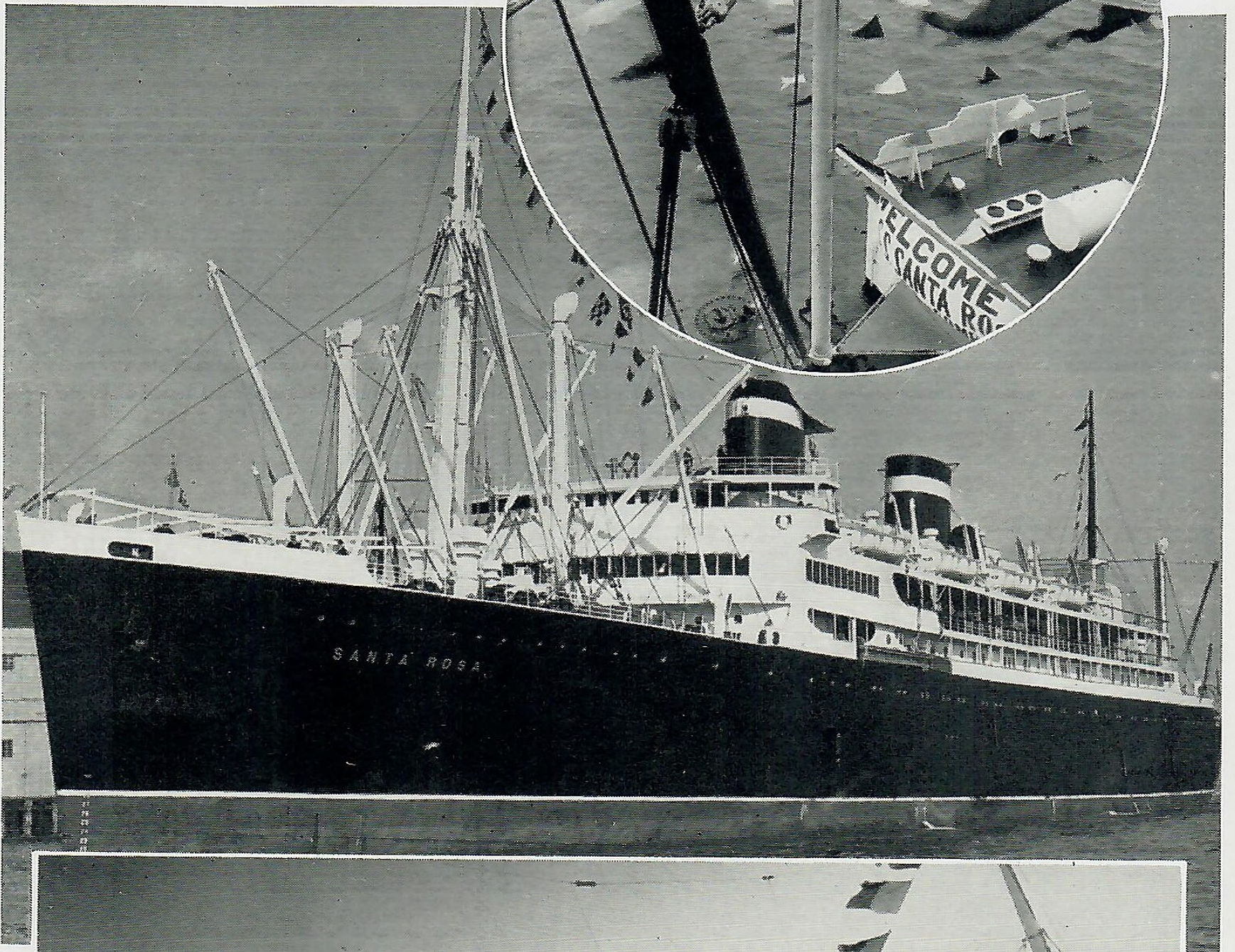
Newest additions to the fleet of the Grace Steamship Company and first and second of four sister ships to be launched, the Santa Rosa and Santa Paula have already been identified as two of the fastest and finest vessels in intercoastal transport. Luxuriously appointed and more than adequately equipped, they have accommodations for 225 first class and 65 third class passengers. Of twin screw propulsion, each develops a cruising speed of 18.5 knots per hour, and during test runs prior to being placed

in service attained a speed of 20.05 knots. Their regular trips from New York to Seattle are concluded within 21 days, during which calls of varying duration are made at Havana, points along the eastern coast of Mexico, Canal Zone cities, Pacific Coast Mexican ports, and Los Angeles, San Francisco, Seattle, and Victoria.

On her call at Los Angeles harbor, the Santa Rosa was bunkered with 10,000 barrels of fuel oil supplied by the Union Oil Company. A like amount was pumped into the fuel cargo tanks of the Santa Paula when she called at Los Angeles. Since February, 1930, the company has furnished fuel oil to all W. R. Grace and Company ships calling at Pacific Coast ports. The two companies first enjoyed mutually advantageous affiliations from 1915 to 1918, during which the Grace liners Cuzco, Santa Cruz, Santa Clara,



Ovaled inset depicts Union Oil barge delivering bunkers into fuel cargo tanks of Santa Rosa on her first visit to Los Angeles harbor. The mammoth intercoastal liner is shown in the center, while lower photograph indicates length to which designers went in streamlining stacks.





Santa Cecilia, Colusa, and others, a number of which are still in service, were regularly fueled at California ports.

All four of the new Grace liners have the general approximate dimensions of overall length of 508 feet, molded beam, 72 feet; loaded draft, 26 feet; cargo capacity, 250,000 cubic feet, of which 42,000 is refrigerated; and displacement of 16,500 tons.

The particular service to which the new Grace liners are being put is of paramount consideration in the designing of the ships, with the result that particular attention has been given to the accommodations for the comfort of the passengers.

The majority of the staterooms on both passenger decks are outside rooms provided with a maximum of ventilation and air. Sport and recreational facilities are particularly well executed.

Water tight bulkheads which divide the vessels into eleven sealed compartments, double bottoms, water tight doors, wing tanks, and the latest type of fire fighting and emergency equipment indicate the lengths to which the builders of the new Grace liners have gone to assure maximum safety. Auxiliary generating and lighting plants grant further protection in the event of an emergency.

The fact that a new record in fuel economy was established on the first run adequately speaks for the power plant of the Santa Rosa. The boilers consume but 0.558 pounds of fuel per horsepower developed for all purposes, which includes, in addition to the two 6,250 horsepower main motors, all supplementary equipment. Primary power plant consists of two reduction gear turbine generator sets, each rated at 6000 normal shaft horsepower, and 6600 maximum shaft horsepower with the propellers churning at 95 and 98 revolutions per minute, respectively. Auxiliary units operate off the primary plant through low speed pinions. Boiler working pressures are 430 pounds per square inch, with total heating surface, including actual, superheating, and economizer units, of 19,500 square feet.

Mechanical atomizing oil burners, operating under forced draft, fire the boilers. Fuel oil storage tanks are located fore and aft of the engine room. Union Oil Company's regular grade of fuel oil is delivered into the tanks.

The Santa Lucia and Santa Elena, sister ships of the Santa Rosa and Santa Paula, make their maiden calls at Pacific Coast ports during the months of March and April, respectively, coming off the ways to enter service in that order.

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## Manifest Christmas Spirit

**T**UNING their activities to the need of the times, representatives of the Union Oil Company in the various district offices during the past Christmas season exerted primary efforts along charity lines, providing food and clothing for deserving families.

Employees in the Fresno district observed their annual custom of furnishing Christmas dinners for Fresno families. Due to the generous contributions made by office and plant personnel, Christmas dinners and sufficient additional food to last two weeks were supplied to sixteen groups totaling sixty-five people. Work was carried on under the direction of Ernest Luly, to whom

a substantial share of its success is due.

Baskets containing groceries and fresh foodstuffs were made up and delivered to needy families by employees in the Sacramento district office. When the baskets had been delivered a party was held in the district office and entertainment in the form of a mock wedding furnished.

Three families in Seattle will be well clothed and fed for many days to come as a result of the activity in the Seattle district office during Christmas time. Under the sponsorship of three women in the office, an appeal was made to all employees for old clothing, blankets, and food. Cash donations were liberally made.





Top photo—Sacramento district office celebration after Christmas boxes had been distributed. Right, left to right, Emily Reddington, Alma Lee Wilson and Nell Evans of Seattle office, under whom supplies were collected for needy Seattle families. Below, left to right, Paul Myers, Mary Boyer, Marie Christensen, Ernest Luly and Lloyd Rogers, Fresno district office committee which assembled and distributed Christmas boxes.







Lima "101" shovel receiving gasoline during halt in grading operations on Maricopa-Ventura shortcut over Sespe mountains, and above, inset, showing tractor equipped with bulldozer in action.

## New Highway Projects

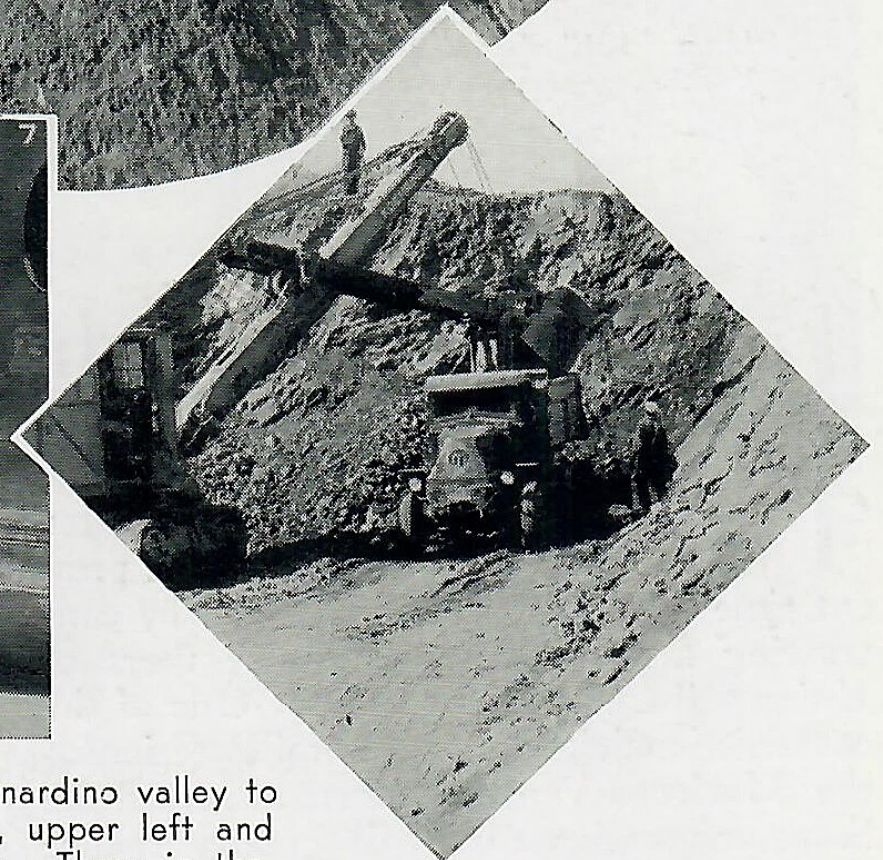
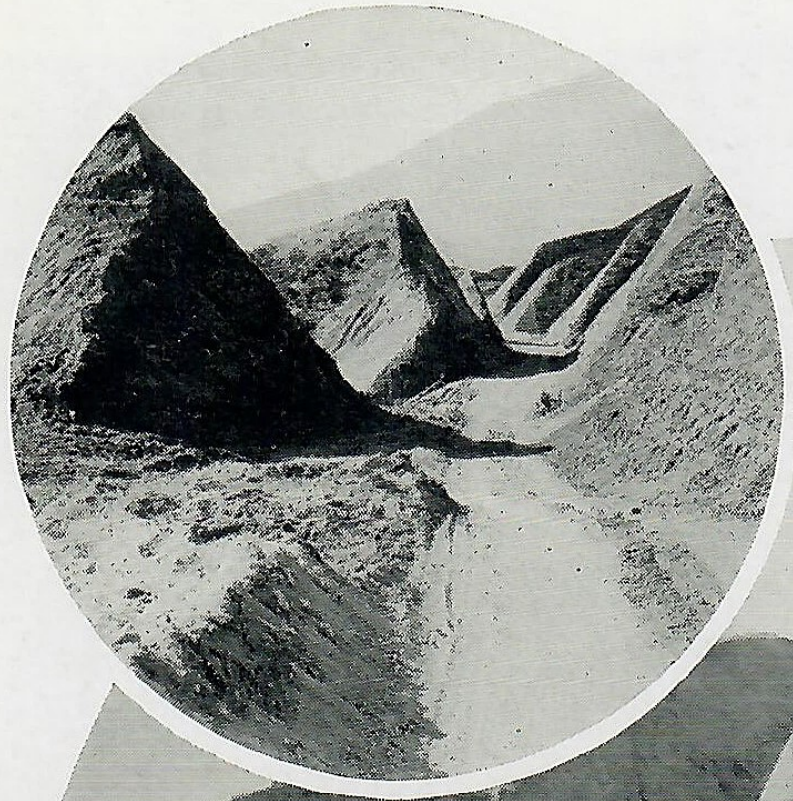
**T**WO important highway links under construction in California at the present time are being carried forward by contracting firms that are extensive users of Union Oil Company products. One of the construction jobs is the 17.3-mile section of the Maricopa-Ventura shortcut across the Sespe mountains that will greatly reduce the motoring time between the San Joaquin Valley and the coastal cities; and the other

is the 4.5-mile section of the state highway between Indian Archway and Camp Waterman, which will complete the high gear road between San Bernardino Valley and the San Bernardino mountains, in which is located Lake Arrowhead and other playground areas.

The new Waterman Canyon road will follow along the west wall of the canyon, rather than the creek itself, and will elim-

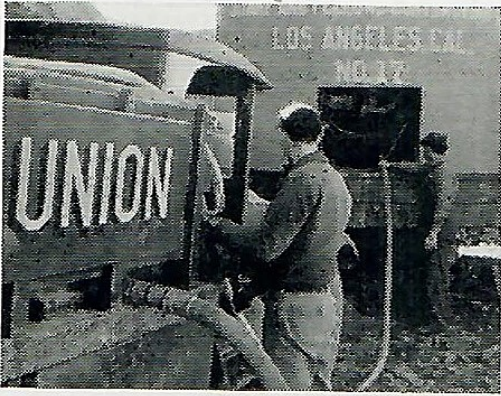


inate the treacherous "switchbacks" in the present road which in places have a maximum grade of 22 per cent. The roadbed will be 24 feet wide and the average grade



Building final link in high gear road from San Bernardino valley to San Bernardino mountain playground. The center, upper left and lower right photographs show the work in progress. Those in the group in the lower left picture are, left to right, E. O. Larson, superintendent and Roscoe Downs, time keeper of the Jahn & Bressi organization, and R. C. Copeland, agent, Union Oil Company.





Additional scenes from the new 17.3-mile section of the Maricopa-Ventura highway being built by Sharp and Fellows Contracting Co., using Union products.





will be 6 per cent. The surfacing material will be an oil mix. The cost of the improvement is expected to be approximately \$300,000.

The high gear road, with which the new section will join, was completed in 1931. The portion of the highway to be replaced was first constructed in 1901 by the Arrowhead Reservoir and Power Company to make it possible to haul in materials for the construction of the dam which now forms Lake Arrowhead. It was a toll road chartered by the county and closely followed the route of the Mormon lumber road, built in 1851 to permit the citizens in

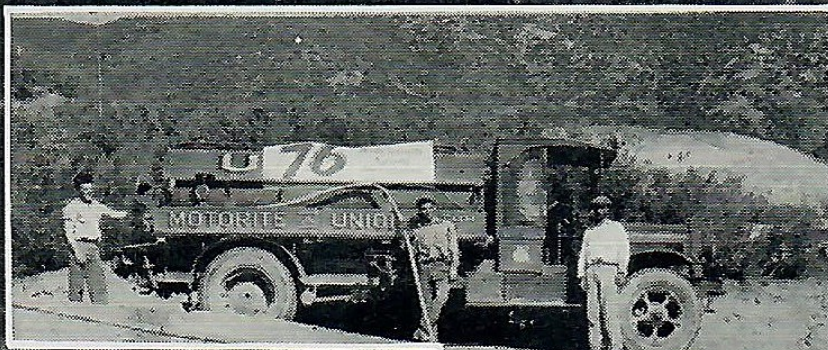
valley below.

Jahn & Bressi who have the contract for the highway have from the beginning of their operations been 100 per cent users of Union road oil, asphalt, lubricating oils, and gasoline. They have the distinction of having laid as much state highway pavement as any other individual contracting firm. They are now concluding two separate projects on the new Ridge Route road and have recently completed Lincoln boulevard between Culver City and El Segundo, and the section of the highway between Newport and Launga Beach.

The work on the 17.3-mile strip of the Maricopa-Ventura highway is being done by Sharp & Fellows Contracting Company, known throughout the West for its railroad construction work. The project calls for the moving of approximately 1,500,000 yards of rock and dirt, at a contract price of about \$500,000. Thirty-five pieces of equipment are being used and in the near future the monthly consumption of gasoline is expected to be 30,000 gallons.

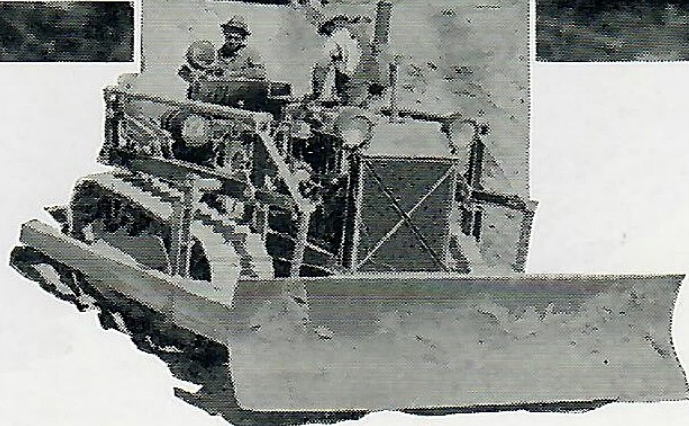
The Sharp & Fellows section of the shortcut is approximately half of the total project, the grading for the first half of which has been completed by Merritt, Chapman and Scott Co., of San Pedro and is now ready for paving.

The new work was started November last and is to be completed in one year's time.

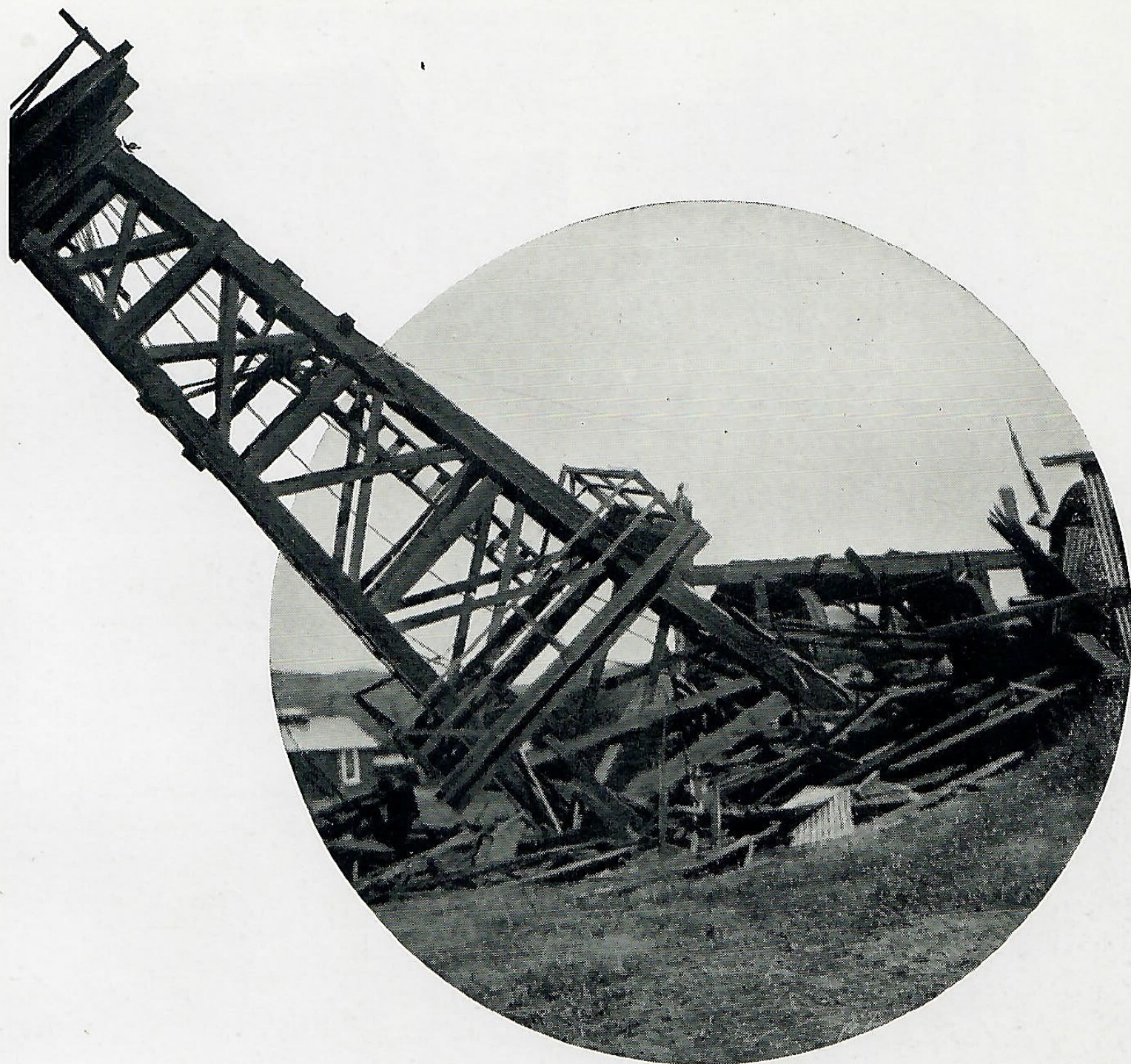


San Bernardino Valley to haul trees from the San Bernardino mountains.

The new highway starts at an elevation of 1850 feet and together with the present high gear road reaches an elevation of 7000 feet, keeping in view nearly its entire distance an ever changing vista of the







## Desert Gale Levels Oil Rigs

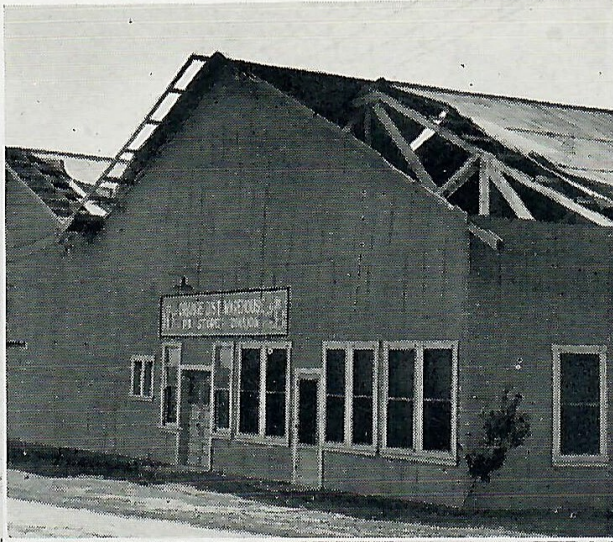
**A** DUST laden gale, at times attaining almost hurricane proportions, swept in from the desert through Cajon Pass at midnight January 10 and left in its wake in Los Angeles and Orange counties, Southern California, approximately 300 leveled oil derricks, uprooted trees, damaged buildings, broken telephone and power lines, a number of wrecked small boats at Los Angeles and Long Beach harbors, and a long list of minor property casualties.

Meteorologists of the United States Weather Bureau attributed the freak storm to an exceptionally high pressure area over Nevada. Most of the winds in Southern California come off the ocean, and it is only occasionally that the conditions are reversed, as was the case on January 10. Due to the fact the desert winds sweep into

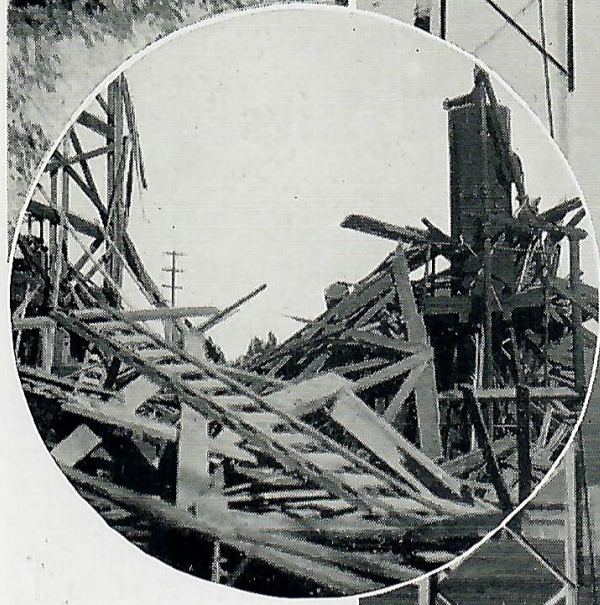
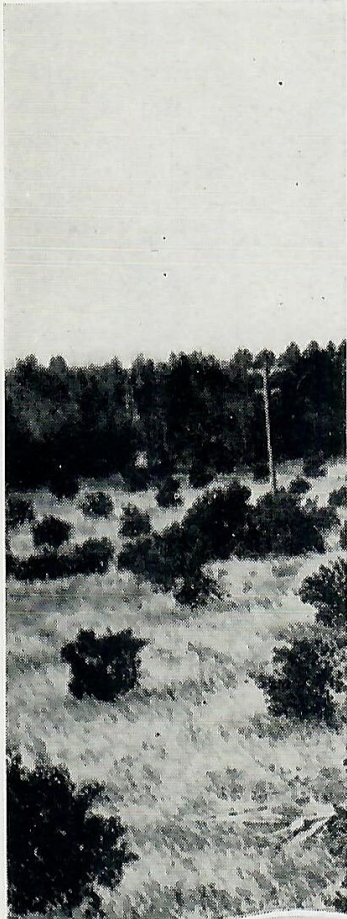
Orange and Los Angeles counties with greatest intensity through Santa Ana canyon, they are called "Santa Anas." Being from the desert they carry great quantities of dust. Rarely in the past, however, have the storms assumed serious proportions.

Most of the oil field damage, which constituted the greatest amount of the property damage, was confined to a few fields where the wind happened to strike with the greatest severity. The fields most affected were Richfield, Brea-Olinda, Huntington Beach and Signal Hill. Except where struck by falling rigs, no steel derricks were blown over. This was due to the fact that the wooden rigs were much older and presented greater surfaces than the steel derricks and were not as strong. Most of the damage was done in the older fields.



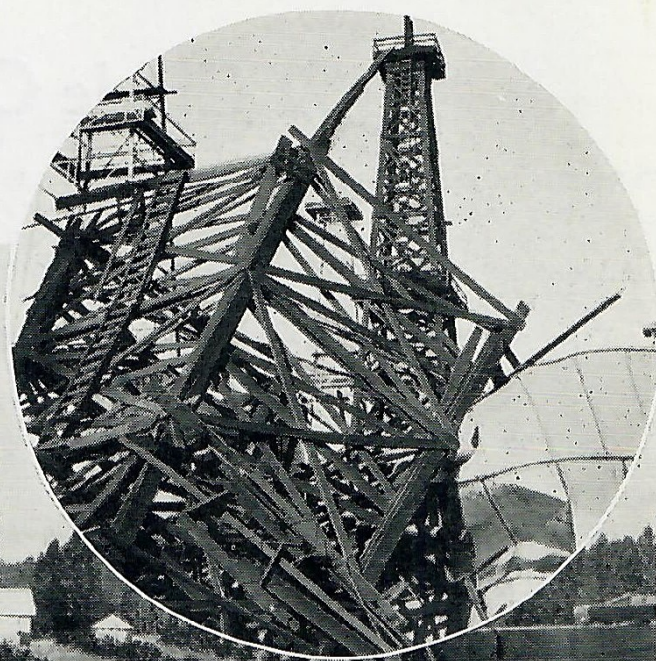
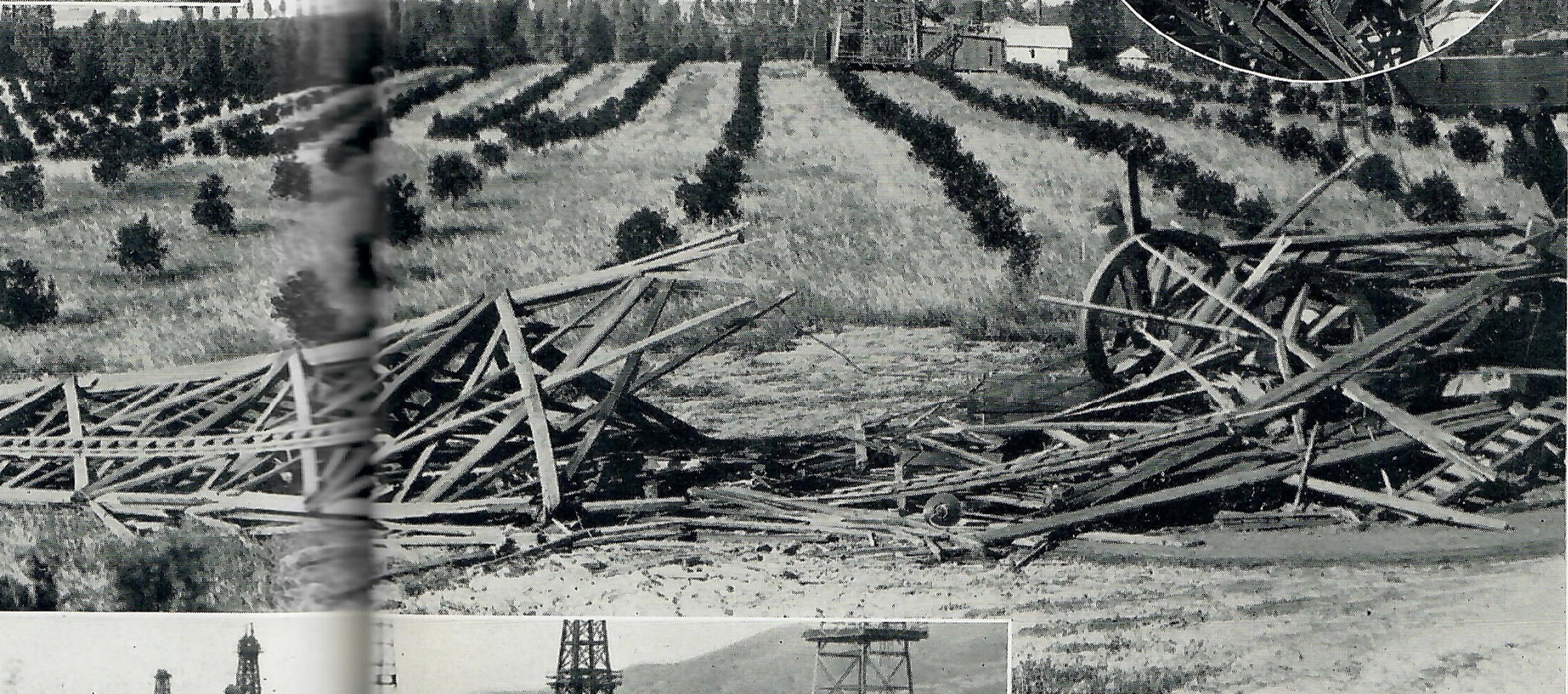
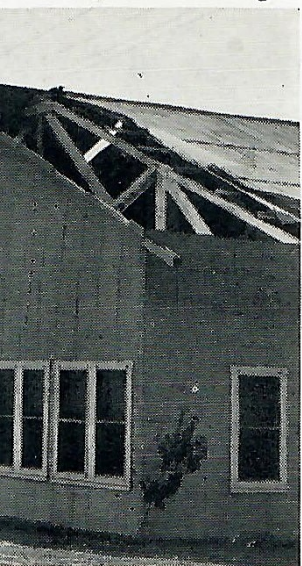


Wreckage in the path of the devastating desert "du...  
 Los Angeles oil fields, midnight, January 10. At  
 warehouse stearns lease, Brea. In the circle, at th  
 at Huntington Beach. Center shows how old rigs at  
 At left repairing lightning arrester tower bent d  
 bottom another wrecked derrick in Brea Can  
 remains of two rigs that collapsed together





Wrecked in the path of the devastating desert "duster" that swept through Los Angeles oil fields, midnight, January 10. At left, Field Department warehouse burns lease, Brea. In the circle, at the right, demolished rig at Huntington Beach. Center shows how old rigs at Richfield were flattened. At left, lightning arrester tower bent double by wind. At the bottom, another wrecked derrick in Brea Canyon, and, in the circle, remains of two rigs that collapsed together at Richfield.



In the area where the wooden rigs stood out alone they were toppled over like houses of cards, crashing to their full length. In some instances falling derricks crashed into one another, and in others crushed field tanks and buildings. The sheet-iron housings of many of the steel rigs were stripped off, leaving the rigs otherwise undamaged.

During the storm, the Union Oil Company lost forty-four wooden rigs in Richfield, Brea-Olinda and Huntington Beach districts. These are now being replaced with steel rigs. The material from the damaged derricks that can be used is being salvaged and the balance of the lumber and timbers turned over to relief agencies for firewood.



# 1932 Crude Oil Production

CRUDE oil production for 1932 in California totaled 178,127,794 barrels, a decrease of 10,701,238 barrels under 1931 production. The daily average for the year was 486,688 barrels, compared with 517,340 for the previous year, a decrease of 30,652 barrels per day. 363 wells were abandoned during the year; of these 183 were abandoned while drilling for oil, 8 while drilling for gas, and 172 were abandoned oil producers.

Total stocks held by California oil companies, both inside and outside the United States, as of December 31, 1931, were 169,835,949 barrels; as of December 31, 1932, they were 168,246,425 barrels, a decrease of 1,589,524 barrels during the year.

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

	<i>Barrels Per Year</i>	<i>Daily Average</i>	<i>Wells Completed</i>	<i>Daily Initial Output</i>
<b>GROUP NO. 1</b>				
Coalinga .....	3,649,578	9,972	1	10
Elk Hills .....	4,537,461	12,397	---	---
Fruitvale .....	1,600,801	4,374	32	13,071
Kern River .....	3,387,262	9,255	3	350
Kettleman North Dome .....	21,949,072	59,970	14	78,181
Kettleman Middle Dome .....	10,537	29	1	1,245
Lost Hills-Belridge .....	3,329,984	9,098	4	10,358
McKittrick .....	651,792	1,781	1	80
Midway-Sunset .....	17,929,036	48,986	5	681
Mount Poso .....	2,907,839	7,945	4	633
Round Mountain .....	928,814	2,538	9	2,393
Wheeler Ridge .....	187,299	512	---	---
<b>GROUP NO. 2</b>				
Capitan .....	3,092	8	1	25
Elwood .....	5,441,626	14,868	4	2,513
Rincon .....	628,179	1,716	1	250
San Miguelito .....	252,247	689	---	---
Santa Barbara .....	156,446	427	6	1,434
Santa Maria .....	1,080,723	2,953	2	297
Summerland .....	39,386	108	---	---
Ventura Avenue .....	12,332,853	33,696	9	11,853
Ventura-Newhall .....	1,259,755	3,442	4	184
Watsonville .....	22,824	62	---	---
<b>GROUP NO. 3</b>				
Coyote .....	3,716,467	10,154	7	6,584
Dominguez .....	6,823,579	18,644	8	12,866
Fullerton .....	3,018,125	8,246	2	175
Huntington Beach .....	8,016,001	21,902	1	100
Inglewood .....	4,869,335	13,304	3	435
Lawndale .....	110,350	301	---	---
Long Beach .....	27,435,553	74,961	29	5,031
Los Angeles-Salt Lake .....	394,124	1,077	---	---
Montebello .....	2,162,530	5,909	---	---
Newport .....	927	3	---	---
Playa Del Rey .....	5,910,926	16,150	---	2,440
Potrero .....	252,609	690	1	975
Richfield .....	2,263,699	6,185	1	105
Rosecrans .....	1,125,624	3,075	---	---
Santa Fe Springs .....	22,538,036	61,579	1	65
Seal Beach .....	4,522,489	12,357	4	4,384
Torrance .....	2,281,274	6,233	3	105
Whittier .....	399,540	1,092	---	---
<b>GROUP NO. 4 (Gas Fields)</b>				
Buttonwillow Gas Field .....	.....	.....	15	(Gas)
Dudley Ridge Gas Field .....	.....	.....	1	(Gas)
Goleta Gas Field .....	.....	.....	1	(Gas)
<b>TOTAL</b> .....	<b>178,127,794</b>	<b>486,688</b>	<b>184</b>	<b>156,823</b>



## 35 New Trucks for Sales Fleet

TOTALING an expenditure in excess of \$125,000, 35 new combination tank and stake type "611," six-cylinder White trucks, equipped with especially built bodies were purchased and placed in operation in various parts of the Union Oil Company's marketing territory late in December.

Five of the sales districts on the Coast share in the distribution of the new equipment, 11 of the trucks having been allotted to Fresno, 7 to Los Angeles, 6 to Oakland, 6 to Sacramento, and 5 to San Diego.

Equipped with the standard demountable type body, 33 of the trucks have three-compartment tanks with carrying capacity of 650 gallons bulk and space for three refined oil barrels. The two smaller bulk tanks can be removed to increase space for carrying more barreled goods when the need arises. Gross weight of the trucks is 15,000 pounds each. Two of the trucks are equipped with 750-gallon tanks for bulk gasoline.

Deviating from methods used on earlier equipment, the new trucks are fitted with oval tanks in contrast to the previously used rectangular type. Greater strength in the tanks and constant gauge are the merits of the oval tank. Another innovation is found in the domes which have been built into the tanks. Rotary type hand pumps are installed on all the trucks. The tanks are fitted with internal valves with remote control and fusible elements. In the event of an accident, dump valves can be closed from either side of the vehicle. The elements within the valves are composed of soft metal which fuses, when temperatures due to fire or other causes exceed 200 degrees Fahrenheit, automatically shutting off the flow of gasoline. In the two 750-gallon jobs, hydraulic internal valves have been installed. Flow is by gravity. The stripped chassis were purchased and outfitted with especially built bodies manufactured by Advanced Auto Body Works in Los Angeles, which concern also mounted 21 of the bodies and painted 21 of the trucks. The remaining 14 bodies were built and sent to Emeryville where they were mounted on

the chassis and painted by the maintenance crew in the central division garage.

Except for the stakes, the body and chassis are all steel. The cab, while of wood, is metal covered. Special compartments have been built into the space directly under the large permanent bulk tanks for carrying stocks of specialty products. Shelves upon which different types of products can be carried have been fitted into the compartments. The large permanent tank has capacity of 350 gallons, and the two demountable units hold 150 gallons each. The three refined oil barrels, for which ample space in the rear of the demountable tanks has been provided, have a combined capacity of 165 gallons motor oils and greases. The drivers' comfort was a paramount consideration in building the cabs. Each is completely enclosed to provide maximum shelter. A full set of instruments and gauges on the airplane type board tell at a glance the operating conditions of the motor. Low pressure pneumatic tires have been placed on all vehicles in the new fleet.

The compression ratio of 29 of the truck engines is 5.45 to 1 instead of the standard ratio of 4.76 to 1. On six of the motors the size of the combustion chamber in the head has been reduced to give the engines the unusually high ratio of 6.25 to 1, necessitating the use of 76 plus Ethyl gasoline. Higher compression ratios for the engines were adopted to give greater flexibility and power with reduced bearing pressures and lessened wear on the other rotating parts of the motor. Maintenance costs were likewise considered in the decision to equip with heads having higher than standard compression ratio.

The "611" type truck was adopted in furtherance of the company's policy of unit replacements in service as well as in stocking parts and making repairs. With the addition of the 35 new trucks, the number of pieces of equipment of this type now in operation exceeds 100. The new additions have made it possible to remove from service a number of trucks ready for retirement.

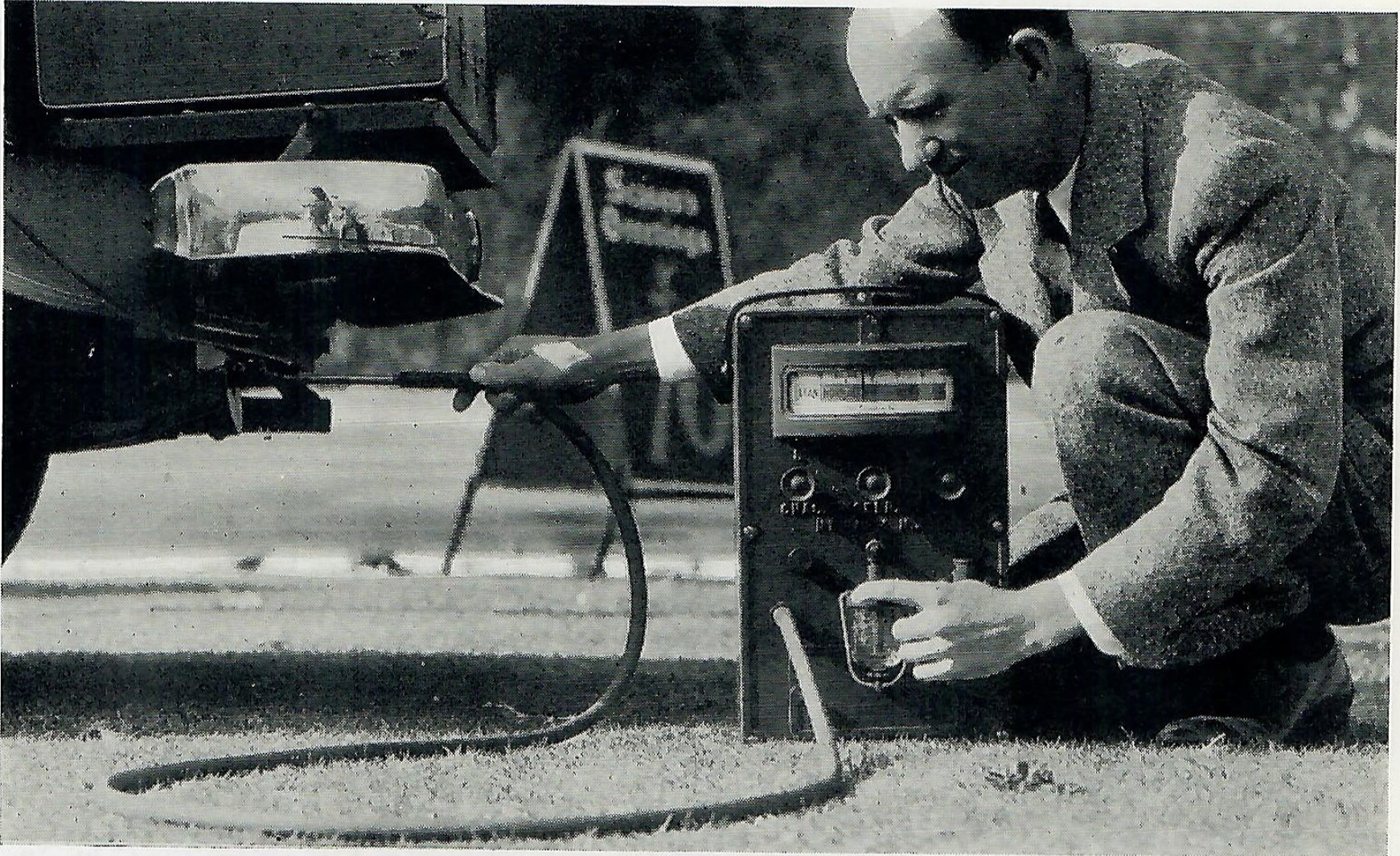




Oval at the top shows, left to right, Eugene Power, manager properties and facilities; J. W. Sinclair, supervisor automotive equipment, and C. G. Bussey, automotive superintendent southern territory, inspecting new trucks. Inset at top shows crew in shop of Advanced Body Works hoisting tanks into position. Center, four of the new trucks ready for service. Lower, preparing chassis for painting.







Earl Cooper demonstrating new exhaust gas analyzer.

## Exhaust Gas Analyzer

**T**O PROVIDE automobile owners and fleet operators with authentic information regarding adjustment or mal-adjustment of the carburetors of their cars, Earl Cooper, former race champion, now test engineer for the company, is using an exhaust gas analyzer to check the gas-air mixture.

The device has been installed in Cooper's "76" test car and is being used in sales promotion work which he is conducting. Since too rich a mixture results in waste of fuel, and too lean a combination, loss of power, the importance of a proper balance can be appreciated. Through tests which Cooper has already made a number of fleet operators as well as individual car owners have been enabled to materially improve the all around performance of their cars and increase mileage.

Utilizing the principle of the thermal conductivity of gases, the air fuel ratio analyzer, a product of Charles Englehard, Inc., Newark, is essentially a Wheatstone bridge circuit with a galvanometer to indicate balance or unbalance. Sensitive heating wires constitute part of the "bridge."

When both heating wires are surrounded by the air the heat is dissipated from them at the same rate, resulting in the galvanometer pointer indicating a balanced condition. One of the wires is sealed in air. The other, during the testing process, is encompassed in the gas-air mixture taken from the exhaust. If the mixture is too rich the exhaust gas contains a more than normal percentage of hydrogen and carbon monoxide, a combination which has a higher heat carrying capacity than air and causes the pointer to swing to the "rich" side of the scale. If the mixture is too lean the exhaust gas contains a high percentage of carbon dioxide which has a lower heat carrying capacity than air and causes the indicator to swing to "lean."

By the simple procedure of inserting a conveyor tube running from the mechanism into the end of the exhaust pipe and permitting exhaust gases to pass through the analyzer, it can be determined whether gas-air mixture being forced into the carburetor is too rich in vaporized gasoline or air. By making the necessary adjustments on the carburetor, the recording pointer will swing from rich or lean to normal.





# GRAND SLAMMING

WITH

## D·M·S



A "BLIND BOGEY" golf match does not reflect the type of golf played by the participants and does not require the individual players to make their shots blindfolded, though, it is true, they frequently could play their shots with their eyes shut and not miss the green any farther than they do when in complete control of their eyesight.

A "blind bogey" gets its name from the fact that the winning number is pulled from a hat after the match, the range of numbers from which the selection is made having been determined in advance of play. The participants place a handicap on themselves in advance of the game that they believe will enable them to come within the selected bracket.

The specific match, which is the object of this story, was played January 7 at the Midwick Country Club, having as the honored participants the district managers, who on that date concluded an intensive two weeks' session in Los Angeles on matters pertaining to the administration of their respective district offices. Although a similar session was held last year, this year's meeting was the first one in which golf was made the closing ordeal.

The Midwick "blind bogey" was between 70 and 80, and the fact that none of the district managers were among the prize winners is not so much a reflection on the golf they played, as the handicaps selected. Messrs. Newhoff, Schattner, Linden and Brewster, never before having attempted to man-handle a golf club, took generous handicaps, in fact, 75 strokes

each. In the case of the Spokane manager it almost wasn't enough. He had a total score of 146 strokes. Of the quartet, and because all were admitted tyros they were compelled to play together, the Sacramento manager displayed the best form, holing out on the 18th green for 127. Second to him was the hard-swinging custodian of Union's sales in Arizona, Mr. Brewster. Mr. Newhoff of San Francisco shot a sterling 141.

"Sid" Herkner, across the bay from Mr. Newhoff, demonstrated that there is no connection between the golf played in the San Francisco office and that played in Oakland, by leading the field with the low medal score of 81. His self-imposed handicap of 12 strokes eliminated him from the drawing, from which R. H. Hornidge, auditor of Production and Transportation Accounts emerged as winner. His score of 77 was the number pulled from the hat. A. C. Galbraith and J. B. Williams tied for second prize with 78s, third prize going to L. T. Babcock and Ray Ingram, two young men from the 7th floor at the Head Office.

Two of the district managers, F. W. Pemberton of Los Angeles and J. D. Nesbitt, escaped the match. Besides the playing managers already mentioned, the following participated, M. W. McAfee, Seattle; R. J.

Kenmuir, Canada; C. S. Myer, Portland and W. E. Davenport, Fresno.

Those who chaperoned the managers around the 18-hole course included, besides Messrs. Galbraith, Williams, Hornidge, Babcock and In-

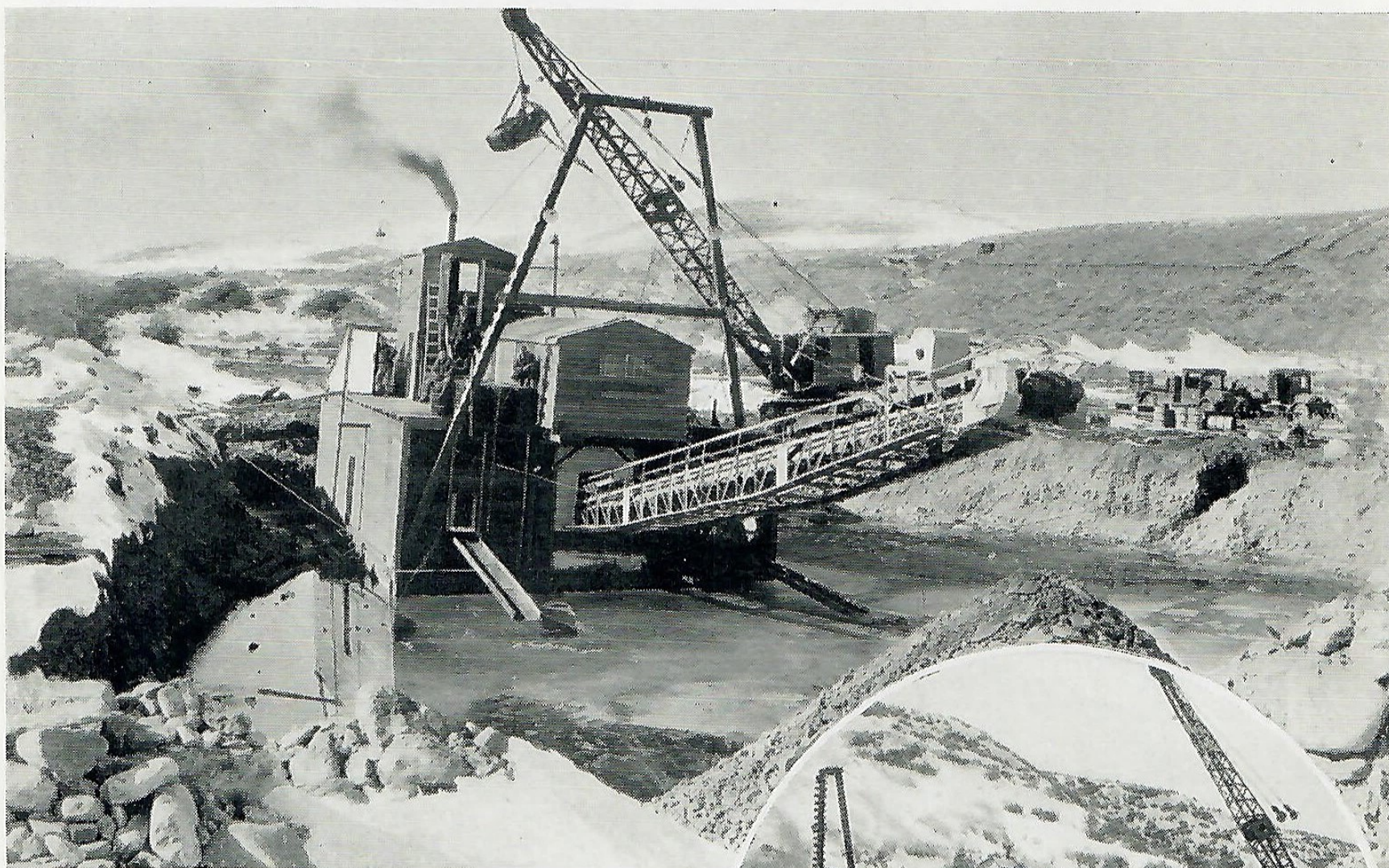




gram—already named—William Groundwater, J. H. Dasteel, J. B. Arthur, A. C. Stewart, G. G. Blue, Lawrence Wolff, R. O. Jones, W. F. Lewis,

H. H. Brown, C. C. Ireland, A. B. Mason, L. V. Shepherd and T. R. Laidlaw.

## Gold Operations On Lower Lynx Creek



Adding to the United States' gold supply at the rate of 40 cents per each cubic foot of earth handled on Lower Lynx Creek, Arizona. The inset shows Union trucks delivering gasoline and lubricants.



The present economic depression has intensified the search for gold in all regions. The Arizona Placers have long attracted the attention of gold seekers, but due to shortage of a continuous water supply, the seasonal fluctuations being wide, the amount of fine gold encountered and the large proportion of black sand (mostly magnetite) most of the placer operations have been unsuccessful. One of the exceptions is the case of the firm, Harp and McGuire, assisted by Designing Engineer Henry Bradley, now operating on Lower Lynx Creek, near Prescott.

This property was thoroughly sampled by test pitting and deep trenching in advance, and the results checked by pilot operation. All of which revealed that the yardage and values were sufficient to justify an initial investment large enough to permit equipping for a low operating cost. The placer area available at the site selected is estimated at ten million yards. The recovery is said to be at the rate of 40 cents per yard while the operating cost is only  $7\frac{1}{2}$  cents.

A 60 foot concrete dam on Lynx Creek, about a mile above the present operating point, designed to impound 300 acre feet of water, regulates the supply of water so that an adequate amount is available for all year-round operation. The problem of water economy and flash floods have been met by placing a washing or recovery plant on a barge. The barge pond, which is carried along as the operation progresses, serves both as a reservoir and settling pond, as well as making the unit mobile. This construction also provides for stacking the washed material back of the barge, thus filling the previously excavated area.

Actual operating practice shows that this plant can circulate 3000 gallons per minutes for the



washing operation, and maintain the pond level with a replacement of less than 100 gallons per minute of new water to cover evaporation, absorption, and seepage.

The gold bearing gravel is introduced into the washing plant with a K-48 link-belt dragline shovel using a one and one half yard bucket with a 60-foot boom.

Water for the operation is supplied by gravity from the dam through a mile of eight inch pipe directly to the dredge pond.

The prime mover is mounted on the barge and consists of a 135 horse-power Superior six cylinder full Diesel engine and the drives are chain, flat belt and motor. The general plant flow sheet consists of a grizzly, rejecting 12 inch oversize and passing minus 12-inch to a reciprocating feeder, feeding from a hopper to a 4½-foot by 27-foot friction drive trunnion type trommel screen having 5/16 perforations. The undersized material and wash water from

the trommel pass into 500 square feet of sluice box area with Australian Type Angle riffle bars to four Neil Jigs. The concentrates from these Jigs go to a 3-inch Wilfley sand pump serving a forced amalgamation process which is on the upper deck. The sand is dewatered and stacked, along with the trommel rejects, by an 85-foot stacker belt directly in back of the plant.

The plant is making better than one hundred per cent recovery as compared to the test pit sampling, due to the recovery of fine gold which is not recovered from the sample with a rocker. The operating cost is 7½ cents per cubic yard on a basis of 100 yards per hour. The recovery is 40 cents per cubic yard.

The property is being operated under lease from the Arizona Dredging and Power Company, the owner G. S. Fitzmaurice of Prescott. The petroleum products required, consisting of Diesel, gasoline, lubricating oil and grease, are supplied by the Union Oil Company.

### Children Benefit in Welfare Work



Feet of children of Harbor City, Calif., school, fitted with shoes which were provided by contribution from Refinery Welfare Fund, employee organization at Los Angeles refinery.

Quietly, without any demonstration or attempt to obtain commendation for the service they are performing, Union Oil employees of the Los Angeles refinery are contributing to the Refinery Welfare Fund, which is rendering assistance to a large group of deserving children in the Los Angeles harbor district.

Operating primarily for the service of its own members, who receive from it sick benefits and other forms of help, the Refinery Welfare Fund has found it possible to provide others not directly connected with members of its own organization in combating the unemployment problem. Each month the surplus which results from unused portions of the monthly con-

tribution of \$1.00, which members place in the fund, is utilized to purchase needed articles for children of families living in the harbor district. Working with local Parent-Teacher clubs in each school the Fund committee contributes money for the purchase of shoes, dresses, trousers, and other wearables. Harbor City, Compton, Gardena, Wilmington, San Pedro, and other schools regularly receive funds from the employee organization. During 1932, more than \$1000 were released to the various Parent-Teacher clubs. Henry Kinghorn is president of the Refinery Welfare Fund and Miss Branche Hackett, secretary-treasurer.



## Commemorate Deeds of Arizona War Hero



Portion of sky fleet of U. S. army bombers which participated in Arizona air review is shown at top. Picture at right shows Boeing pursuit ships being fueled with Union aviation gasoline at Phoenix Sky Harbor.



Presentation to the war department of the Frank Luke, Jr., trophy commemorating the daring exploits of one of America's most interpid airmen during the World War was the occasion for army air maneuvers over Phoenix, Ariz., Dec. 17.

Honoring the memory of Frank Luke, Jr., who was known during his meteoric career in the air forces of his country as the "Balloon Buster from Arizona," the trophy was presented for the Arizona American Legion by W. F. Martens, state commander, and was accepted by Col. H. H. Arnold, commander of March Field, on behalf of the war department.

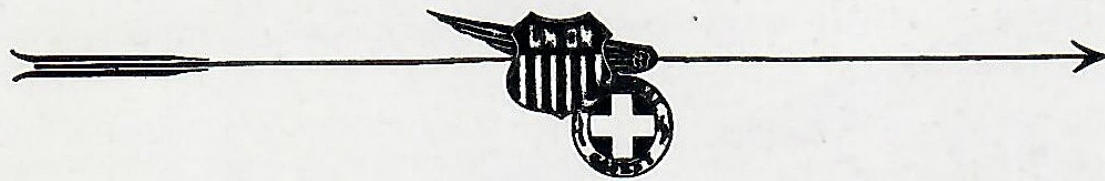
A sky armada of 60 ships, including bombers, pursuit, and observers, flew from March Field

to Phoenix for the ceremony and performed a routine of aerial maneuvers over Sky Harbor witnessed by more than 20,000 people.

More than 8000 gallons of Union ethylized aviation gasoline was delivered into the ships prior to their take-off for the home hangars. Five barrels of gasoline were spotted alongside each bomber to be pumped into the tanks. Union tank trucks delivered fuel into the pursuit and other type ships on the line.



# SAFETY IN THE UNION



*"Attention to business, without undue haste and supported by a knowledge of safety principles, will prevent a majority of accidents."*

—says P. C. Perry, Agent at Petaluma, Calif.

## 1932 Accident Report

IT IS at this time of the year that accounts are cast up and reports rendered for the edification of our stockholders, in which category is now included hundreds of employees. Their interest in the report of the Safety Board is a dual one, for they will learn that as stockholders they have earned a profit on the money expended by their company in accident prevention, and as employees they will probably realize without much urging that accident prevention has placed some enviable figures on the right side of the ledger in lives saved and misery prevented.

In the marketing department of the company, for example, there has been continued reduction in the number of serious and minor injuries. In 1928 there were 204 injuries classed as serious, last year but 74 and with a larger force. From the stockholders' viewpoint these figures can be translated into dollars of expense to the company by multiplying them by 300. The saving is close to \$40,000.

In order to achieve this record some sales divisions did remarkably well during the year. Portland with close to three hundred wholesale employees worked more than three quarter of a million man-hours and drove their one hundred forty six trucks a million and a third truck miles—and all without a single lost time personal injury. Sacramento also had a perfect score for the year, second to Portland only because theirs is a smaller district and consequently has fewer men and trucks. Fresno lost out as a member of the goose egg club by an injury on next to the last day of the year. The garage of the Southern Division and the construction forces of both the Southern and Central Divisions likewise went through the year scot-free. Of course Portland won the Kelly Trophy, and G. W. Schattner, formerly district manager at Portland and now at Sacramento, can well claim part of the credit.

In the retail end of the marketing business, the hustling young salesmen of Union Service Stations, Inc., ran a contest of their own and hung up two perfect scores. Fresno with its average of 87 employees was the winner but Spokane likewise had a perfect score, though attained with a smaller personnel. J. H. Dasteel, general manager, has suitably recognized the achievement by the presentation of a trophy.

The other departments of the company closed the year with consistent records, some perfect and others well below the figures of former years. Avila, Bakersfield, Santa Paula and Vancouver refineries, for example, and the Research Laboratory in Wilmington had no lost time accidents to report, nor did the Ventura field and the pipeline group. That has become customary, and is now taken as a matter of course. Individually these units are small in numbers of personnel and consequently are not entitled to have accidents more frequently than once every four or five years. But the real progress in accident prevention in the company is found when measuring the sum total for last year against, for example, four years ago. In 1928 the com-







pany employees, then averaging 8600 outside the head office, reported 549 lost time injuries. Last year, the 7000 employees reported only 160 such injuries. For the mathematically minded this difference, at \$300 per injury, represents a saving of well over one hundred thousand dollars.

It is hard to visualize an accident that didn't happen. It is harder still to impress on a group of people the fact that they, as a group, have been spared a total of some four hundred injuries. It isn't one of those things that lends itself to dramatic presentation. But there it is, nevertheless, the equivalent of nearly four hundred arrows shot into a crowd, which by some magic failed to find their mark.

### Wins Hawaiian Trip

Entered as "Miss 76" in a contest sponsored by a number of San Diego firms and conducted by Anderson Tours, Miss Jessie Wiseman, San Diego district telephone operator for the Union Oil Company, last month won first prize consisting of a trip to the Hawaiian Islands with all expenses paid. Miss Wiseman's popularity is attested by the fact that she led her nearest competitor to the finish line by approximately 1,000,000 votes.



### M. S. Barrett Dies

M. S. Barrett, head office employee in the properties and facilities division of the sales department, died suddenly of a heart attack, January 16, while enroute to his home from work.

Having spent the entire period of his fourteen years' service with the company in the sales department, during which he had charge of physical properties maintenance work, Barrett was well known throughout the organization. A definite capacity for handling details, and the ability to see the necessity for facts and to utilize them as such earned for him the reputation of being one of the most thorough men within the company.

### His Second Hole-in-One

C. J. McKeever, special export representative of the Union Oil Company, at San Francisco, for the second time in his golfing career recently made a hole-in-one at the El Camino course at San Mateo, California. The hole on which it was made is 190 yards long. Only a straightly hit ball can reach the pin, as existing traps and inequalities of the ground would divert a sliced or hooked ball. Mr. McKeever plays in the 70's, which is proof in itself that there is something beside luck behind his golf game. His score cards in the past six months contain many birdies and a few eagles.

### Three-Star Safety Tankers

Three-star safety flags were awarded the tankers Utacarbon and La Brea on the same day, January 9, signifying the fact that no member of the crews of either vessel had met with a lost-time accident during the past three years. Inasmuch as the two tankers received their awards the same day a rivalry has developed between the crews to outdo each other in carrying forward their splendid safety records.

### Girls' Club Gift Baskets

Huge baskets containing food enough for a week were made up and delivered December 23 to nearly five hundred deserving but impoverished people by the Union Oil Girls' Club, women's organization in Los Angeles.

To everyone who contributed either food-stuffs, clothing, or funds, the Girls' Club expresses thanks in assisting to make one hundred and seventeen families happier at Christmas.

### Fleet Operation Costs Cut

Fleet of Riverside, Calif., City School busses, has for the past two year been exclusively fueled and lubricated with Union Oil Company products. A complete record of operating costs of the sixteen busses of the fleet indicates that Union Oil products are responsible for the low maintenance expense of the fleet.



# REFINED AND CRUDE

By RICHARD SNEDDON

Ethnologically, the people of the United States may be divided into two great classes—those who have good jobs, and those who believe in Technocracy.

*The technocrats claim that man is rapidly being overtaken by the machine, and they're dead right. Only this morning we narrowly escaped being run down by an Austin.*

Today almost everything is made in a mere fraction of the time it formerly took—everything, in fact, but payments.

During the past twenty years one third of the entire man labor of this country has been permanently and everlastingly replaced by machinery. If our progress continues at the same rate, and that's a modest assumption, in another twenty years two thirds of the working population will be idle; in forty years—three thirds; sixty years—four thirds, and so on until the thing becomes a public nuisance.

*It used to require the effort of eight full grown Japanese girls to turn out ten little fans. Now, all you have to do is get a couple of prize fighters together for thirty minutes, and ten thousand fans will turn out.*

When we were a boy, a hundred dough punchers, working their heads off for eight hours, could only bake a thousand loaves. Now look at the crust some people can develop without ever baking at all.

The production of certain commodities has mounted so rapidly that the overall increase in the past few years amounts to several thousand per cent, and we don't need the overalls.

*And what is the result of all this? It's perfectly simple. Despite the fact that there is an abundance of food and clothing for everybody, one half of the population goes cold and hungry, while the other half lives in California.*

To put the whole matter in a nutshell (there's an idea), it looks as if we shall have to abandon the five-day week and adopt the five-day week end.

Meantime, with the prospect of \$20,000 a year (Technocratic currency) in the offing, we are having the garage enlarged.

*Be all that as it may, however, it has been established that most people sing in the bathtub, simply because the door won't stay locked.*

And poor Junior is in disgrace again. We took him to the church service on Christmas morning, and when the boys' choir filed in, dressed in white surplices, he whispered hoarsely, "Gee, they're gonna get their hair cut."

Scientists tell us that if it were possible to reach the moon, an adult person weighing 175 lbs. on earth, would weight only 29 pounds on that satellite. That's about what we scale when we are called into the manager's office to explain an error in addition.

*Remember, too, that many a poorly dressed man is suspected of wearing clothes selected by his wife, when as a matter of fact, she merely picks the pockets.*

There can never be any real satisfaction in the ownership of a radio until some genius invents one that can be shut off with a click loud enough to be heard in the studio.

Can you believe, it has been so cold in the east this winter, that one doctor removed a patient's appendix and found it quite badly chapped?

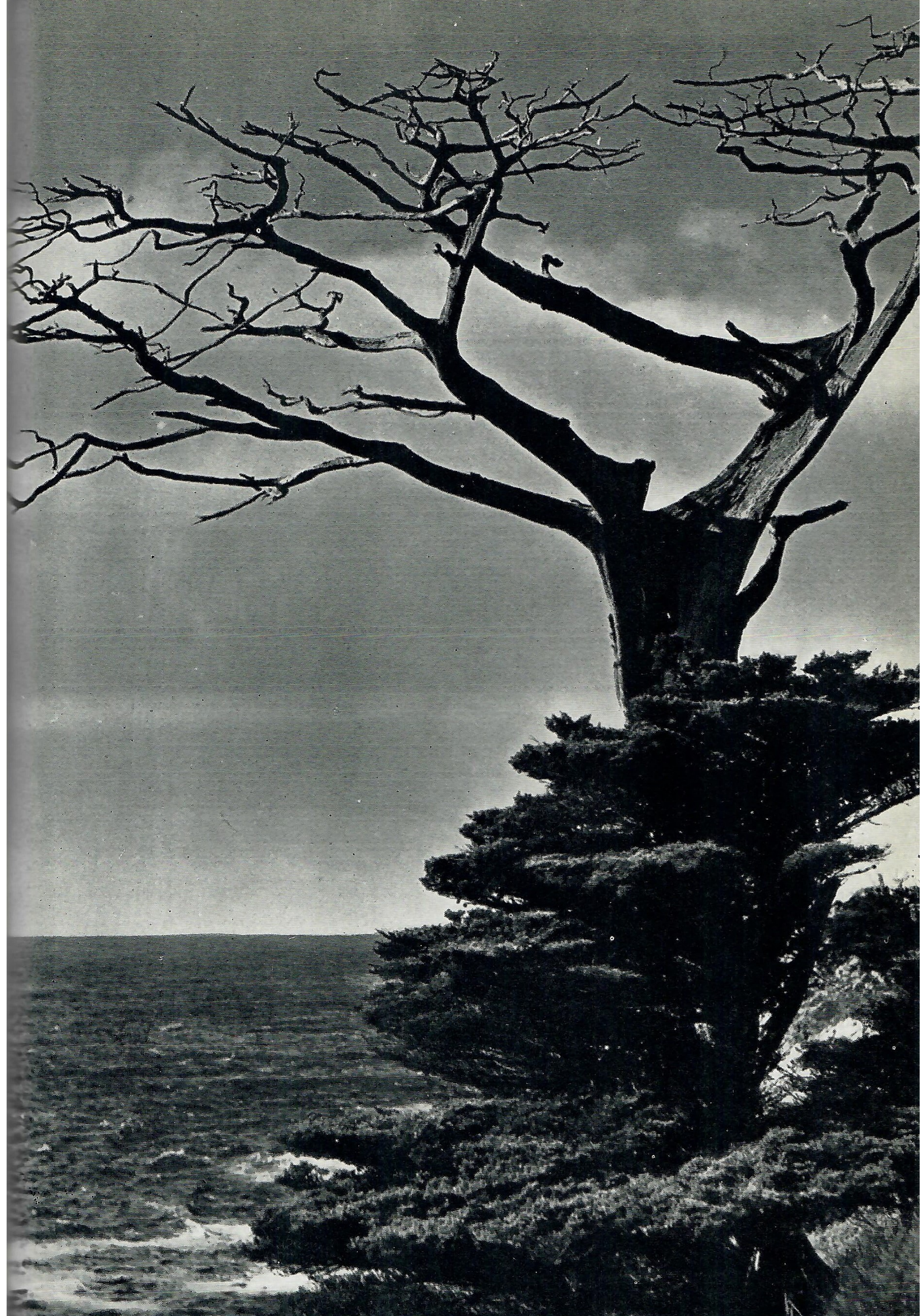
*And that, although there are gasolines without number, there is only one Seventy-six?*

Seventy-six, incidentally, is the motor fuel that is always making a mole hill out of a mountain.

A very good story is going the rounds, concerning a well known celebrity—a pronounced joker, and an equally pronounced democrat. This gentleman was taking exception to an alleged remark of Mr. Hoover's, that if the democrats were returned to power, grass would soon be growing in the streets. A republican enthusiast immediately entered the arena and stated that he doubted whether Mr. Hoover had ever made such a statement, but in any case he himself would bet ten dollars that four months after the democratic administration began to function, every bank in the United States would be closed. The aforesaid celebrity promptly covered the bet, whereupon his republican adversary pointed out that four months after the opening session of Congress it would be exactly July fourth.

*In conclusion, you must never order your steak "rare." It simply isn't done.*





The scenic beauty of the Monterey Peninsula has remained unmarred in the more than 300 years since first explored by Sebastian Vizcaino in 1602. Its historical background rivals that of any other spot on the Pacific Coast. The photograph on this page, and the ones on the front and back cover, taken by James N. Doolittle, are only suggestions of the scenic attractions of the peninsula.



