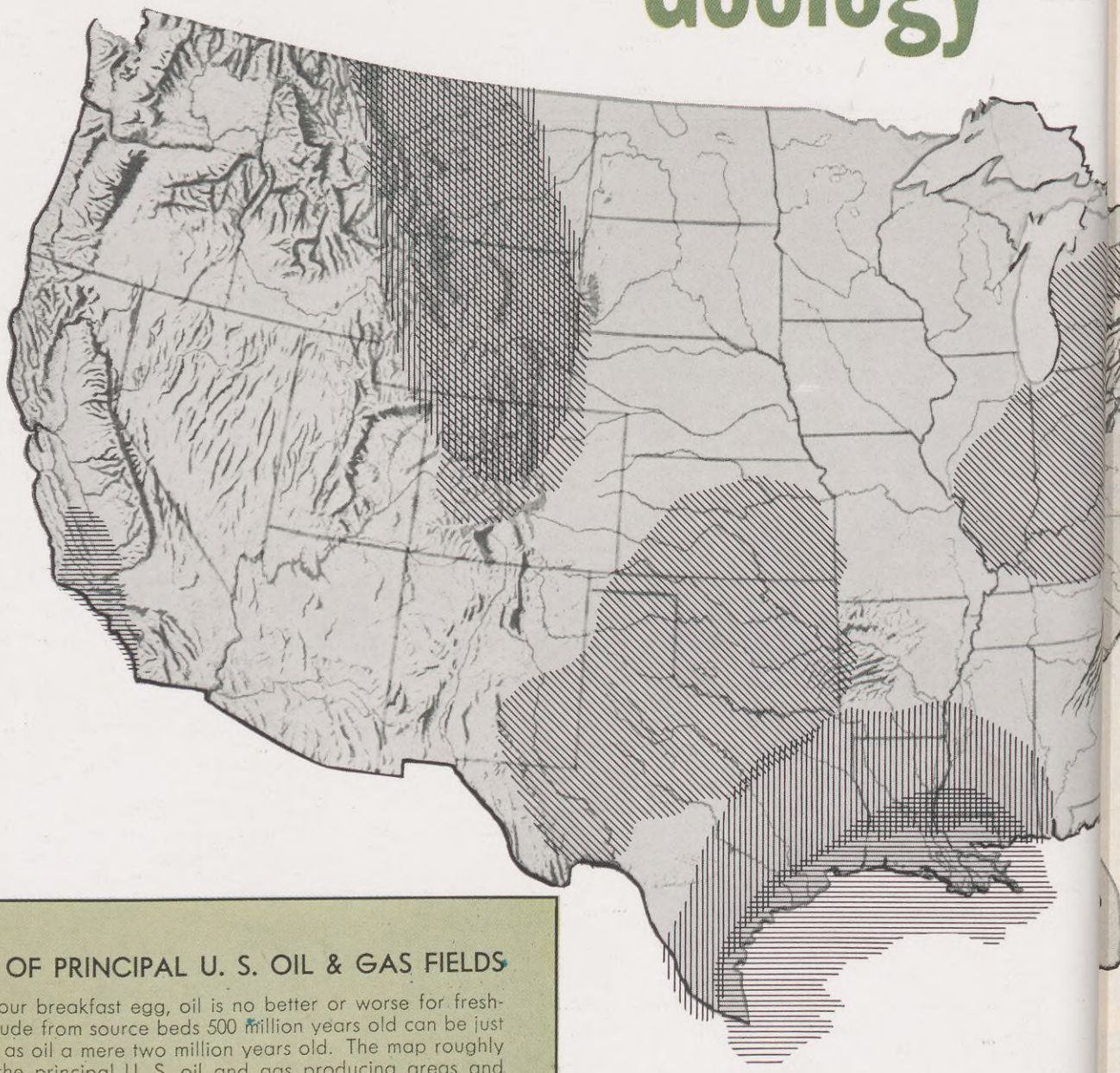
SHELL NEWS

NOVEMBER 1949

Geology in E

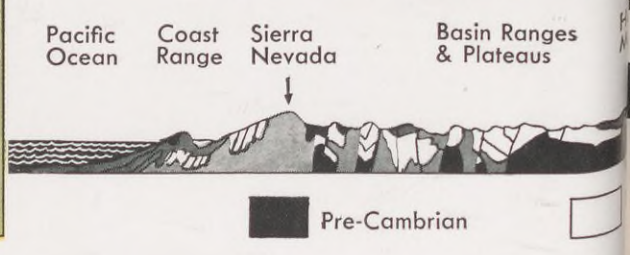


AGES OF PRINCIPAL U. S. OIL & GAS FIELDS

Unlike your breakfast egg, oil is no better or worse for freshness. Crude from source beds 500 million years old can be just as good as oil a mere two million years old. The map roughly locates the principal U. S. oil and gas producing areas and indicates the geological age of major producing formations in each. Note that in Colorado, Wyoming and Montana principal production is obtained from both Mesozoic and Paleozoic formations. In some cases Tertiary production of lesser importance is also obtained. In Louisiana and Mississippi Tertiary and Mesozoic production areas overlap. There are, of course, oil and gas fields in areas not shown, the shaded areas being only the major sources of U. S. production.

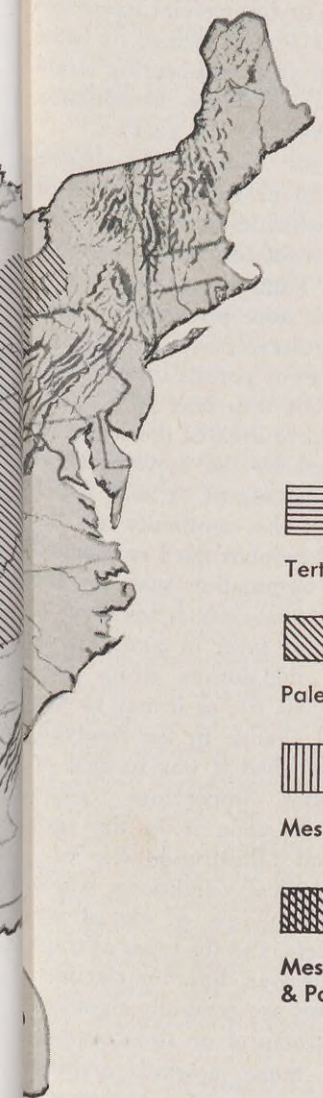
The cross section sketch at right is a geologist's idea of what the U. S. would look like if the continent were sliced along the 38th parallel, say from San Francisco to a little south of Washington, D. C. Here again, the impression is general. Minor variances in formations of different geological ages, caused by the earth's restless shifting, are not indicated.

GENERAL CROSS SECTION OF THE U



earch for oil

Age Old Idiosyncracies in the Earth's Crust Puzzle Yet Aid the Prospecting Oil Geologist Seeking Additions to U. S. Petroleum Reserves

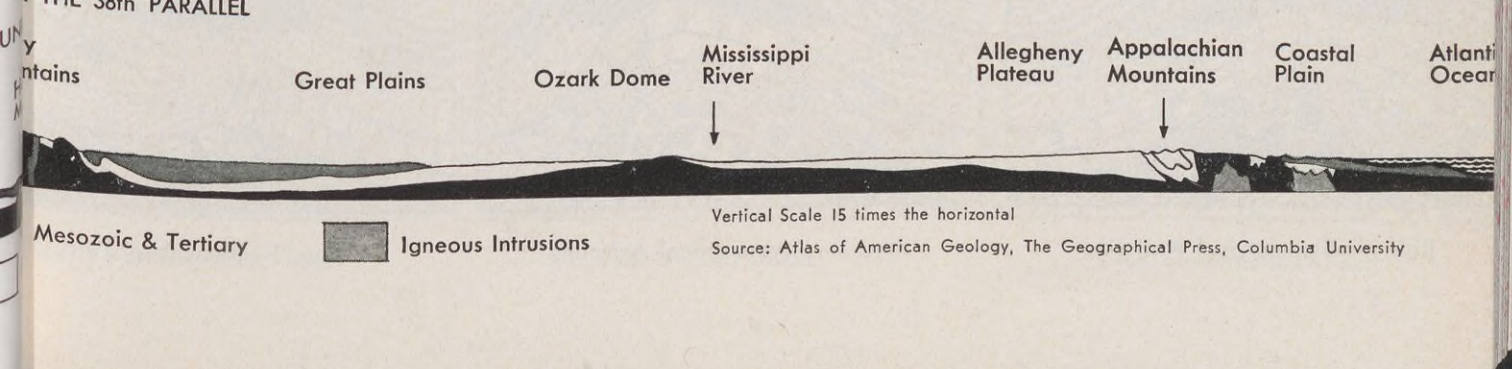


AT the beginning of the year the United States alone had estimated proven oil reserves amounting to nearly 28 billion barrels buried beneath its soil and offshore waters. Add to this a reserve of 175 trillion cubic feet of natural gas. That's a mighty lot of oil and gas.

However, these enormous reserves locked away in the safe deposit boxes of the earth become less impressive when considered in the light of present rates at which they are being consumed and the growing uses for them. Year by year the finding of new reserves becomes increasingly complex. It takes a heap of skill and much luck to find oil and gas, for the things the geologist seeks are far below the ground on which he walks, and he can rarely rely upon surface indications to tell him where they are. Like the bride's cake, many a smooth icing covers a disappointing group of layers.

Where AGE Counts

To understand some of the myriad factors involved in the geology of oil, consider the geological history of the earth itself. Like history in general, it repeats itself, being a recurring cycle of deposition, folding and erosion—sometimes on a minor scale, sometimes embracing entire continents. It covers hundreds of millions of years, a stratum which is a



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Dedicated to the principle that the interests of employees and employer are mutual and inseparable

Employee Publications Division
Personnel Department, New York

contents

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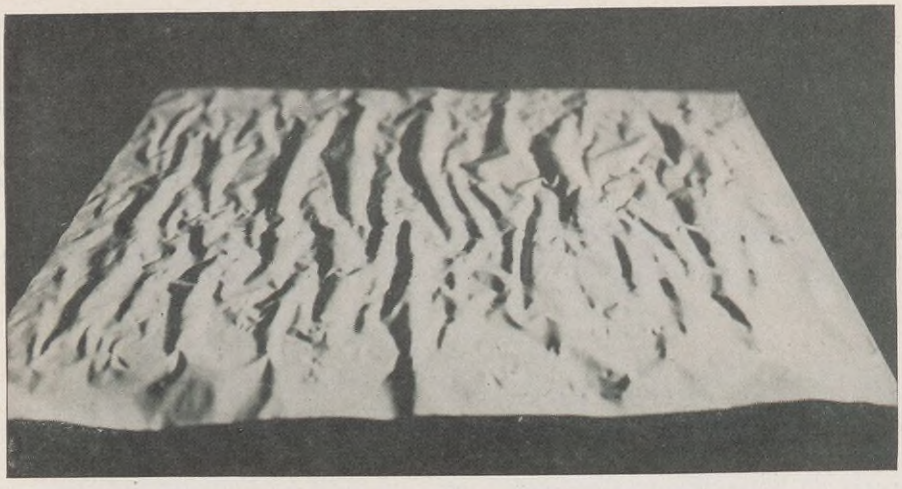
SERVICE WHERE IT'S NEEDED

The 2,000-gallon aviation refueler shown on the front cover servicing a DC-4 airliner at LaGuardia Field, New York, is just one of many "specialists-on-wheels" discussed in the article beginning on page 10. The picture taken by Hal Power, Public Relations photographer, Head Office, shows Driver-Salesman Michael Dupnak (on the wing) and Richmond Mecca about to refuel the plane. Special underwing loading equipment on the truck can pump 200 gallons a minute into the plane's tanks.



You can imitate the shifting earth's surface by placing tissue paper on a table. By pushing edges together first one way, then another, hills and valleys are formed.

mere one or two thousand millenniuums old being a brash upstart among the rocks of ages.

Under the attack of rain, wind, ice, streams, and tides, the earth's surface is constantly changing. The peaks we see today are not the mountains that existed long ago. The attack of the elements erodes the mountains and the hills, carrying sand, silt and clay into the lowlands and the seas and leaving them there as sediment. These deposits, though formed slowly when measured by man's standards, eventually stratify to form new layers of rock, one on the other.

At the same time other forces are working. The earth's surface, never static, pushes up in some places, sinks in others. As it wrinkles, new mountains are formed and basins for new seas appear. During these movements, the layers of rock forming the earth's crust are folded, distorted, crushed and shattered in an extraordinary variety of ways. Igneous intrusions, like the upthrust of salt domes or of molten rock, also distort the formations. As a result of pressure caused by folding and/or weight of overlying sediments, mud becomes shale, loose sand is converted to sandstone, accumulations of living skeletons of tiny marine animals are converted into chalk and limestone. Enormous pressures and heat may change the shales into slate and the limestones into marble.

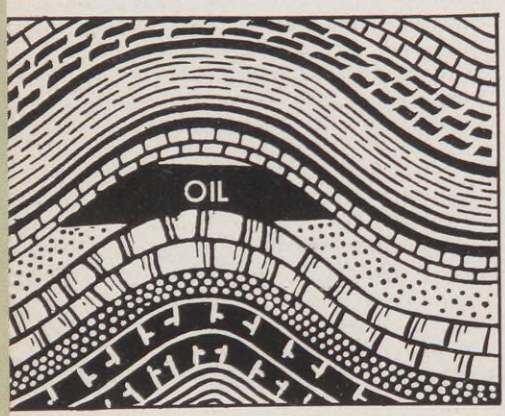
The Geologist's Problem

For the oil geologists, the trick is to locate the spots where the earth's idiosyncracies have made conditions favorable to oil. In his search for oil, the following fundamental rules-of-thumb apply:

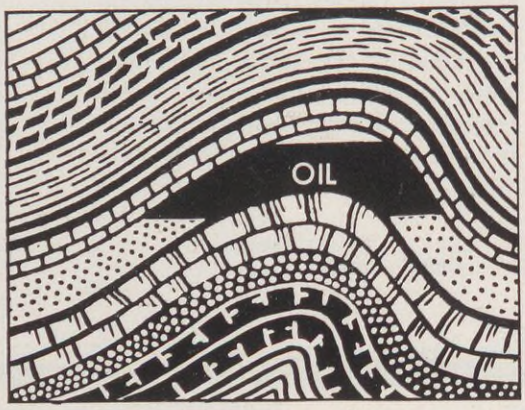
(1) Oil is formed in *source b* of sedimentary rock deposited ocean floors millions of years a (2) Oil migrates from the sou beds into porous *reservoir rocks.* Oil collects in commercial quanti only when a *trap* is formed by so arch or fold of the oil-bearing st or where an abrupt terminat occurs in the reservoir rock.

The source beds the geolog looks for will probably be shale limestones which contained an ab dance of vegetable or animal mains, or both, when they w deposited on some pre-historic oc floor. The reservoir beds will usu be sandstone, or porous limeston dolomite. The trap may be an a clinal upfold or arch of the reser rock, formed by the movement the earth's crust, or it may b place where the continuity of porous rock is interrupted or pin out. This termination may be result of a fracture which has bro the oil bearing layer in contact impervious non-porous strata Illustration No. 6), or it may be to a lateral change in the reser rock caused when it was forme when heavy impervious pressed down upon it in the that followed (Illustration No.

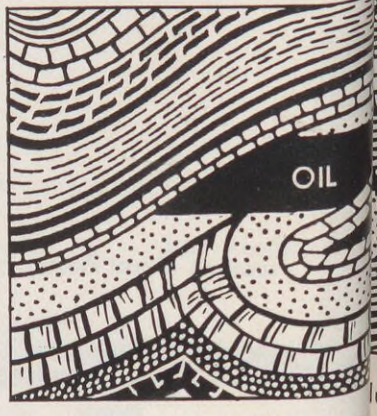
The geological conditions form these traps are of almost limited variety, and the types of no less numerous. But, for clari tion, oil traps are generally class as either *structural* or *stratigra* Anticlines, those upward arc folds of rock layers, are a com type of structural trap, as are



Illus. 1—Symmetrical Anticline



Illus. 2—Asymmetrical Anticline



Illus. 3—Recumbent Fo

domes, faulting, and in rare instances the intrusion of volcanic rocks. Stratigraphic traps occur when some condition squeezes out the reservoir rocks or presses their porous channels closed, blocking further migration of oil.

Though the variable characteristics of individual structural traps frequently pose enigma-like problems for the geologist, they are usually easier to find than oil-rich stratigraphic traps. The latter are often overlooked by the prospector because their existence underground is not reflected in the uniform rock layers which cover them. Structural traps, on the other hand, such as those associated with anticlines and salt domes, can sometimes be located merely by observing the surface.

Prospectors Look for Anticlines

Anticlines are nothing more than arches of stratified rock, but they are extremely important to the oil prospector, for the dome of an anticline is one of the commonest forms of traps occurring in nature. Oil and gas, in migrating through porous formations, seek the highest levels they can find. Once they reach the peak of an anticlinal arch, hemmed in by an impervious layer of cap rock, they cannot retreat because of water pressing up from beneath.

Like other forms in nature, anticlines assume many shapes (Illustrations Nos. 1, 2 & 3). Some are almost perfectly round domes, some are long and narrow. Some are evenly slanted on each flank while some are asymmetric, a flank being steeper on one side than on the other. Some anticlines are so remarkably arched that they loop over to one side. A cross section of such a recumbent anticline would resemble the floppy hump on a dromedary's back.

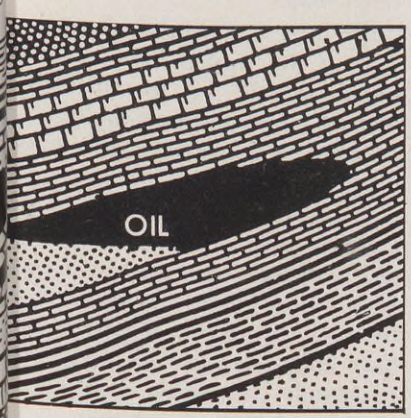
GEOLOGICAL GROUP (Eras) AND SYSTEMS (Periods) OF PETROLEUM DEPOSITS

Time-Eras & Rock-Groups	Time-Periods & Rock-Systems	Approximate age (millions of years)	Production of oil	Major areas in U. S.
Quaternary	Recent	—	Very little produced	
	Pleistocene	1		
Tertiary	Pliocene	—		California; Texas and Louisiana Gulf Coast belt; Gulf tidelands
	Miocene	30		
	Oligocene	—		
	Eocene	60		
Secondary or Mesozoic	Cretaceous	100		Inland Gulf Coast belt in Texas, South Arkansas, North Louisiana and Mississippi; Rocky Mt. area in Wyoming and Montana
	Jurassic	150		
	Triassic	180		
Primary or Paleozoic	Permian	200		West Texas & N. Mex.; North Texas; Texas Panhandle; Okla.; Kans.; Ill., Ind., Ky. & Mich.; Ohio, W. Va., Pa. & N. Y.
	Carboniferous	300		
	Devonian	400		
	Silurian	450		
	Ordovician	500		
	Cambrian	600		
Eozoic	Pre-Cambrian (Algonkian)	1,200	Unproductive	
Azoic	Archean	1,500	Unproductive	

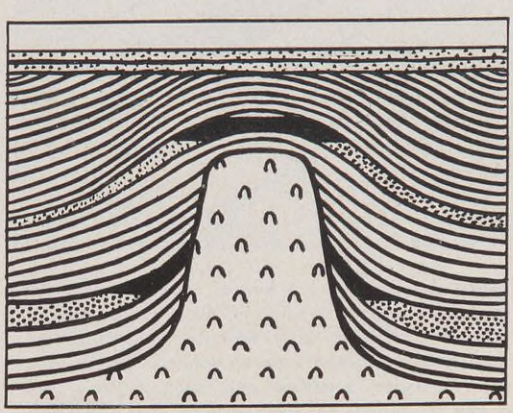
Why Oil Hugs Salt Domes

A salt dome (Illustration No. 5) is formed by the forcing up of a great plug of salt rock from some unknown depth. A porous formation may extend over the top of the huge salt column and, if this in turn is covered by an impervious layer, the porous formation might contain a pool of oil. Further, the upward intrusion of the salt column tilts the rock beds pierced by it so that they dip away in all directions from the column. Migrating oil can collect in traps formed where the upper ends of the porous strata are pinched out against the salt dome.

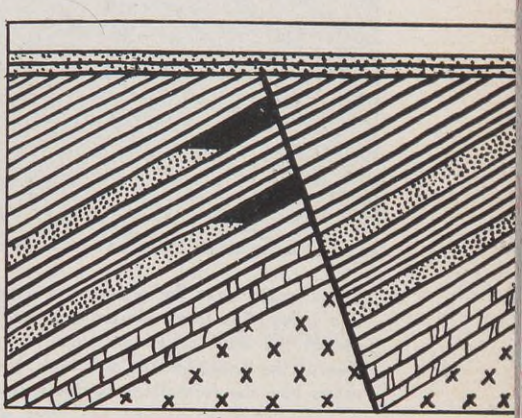
But if Mother Nature can provide an oil pool, she can just as easily take it away. A new wrinkle in the earth's itchy skin can shatter a trap and disperse the oil it contains —but at the same time it may be forming new traps and potentially rich reservoirs. Hence, though the



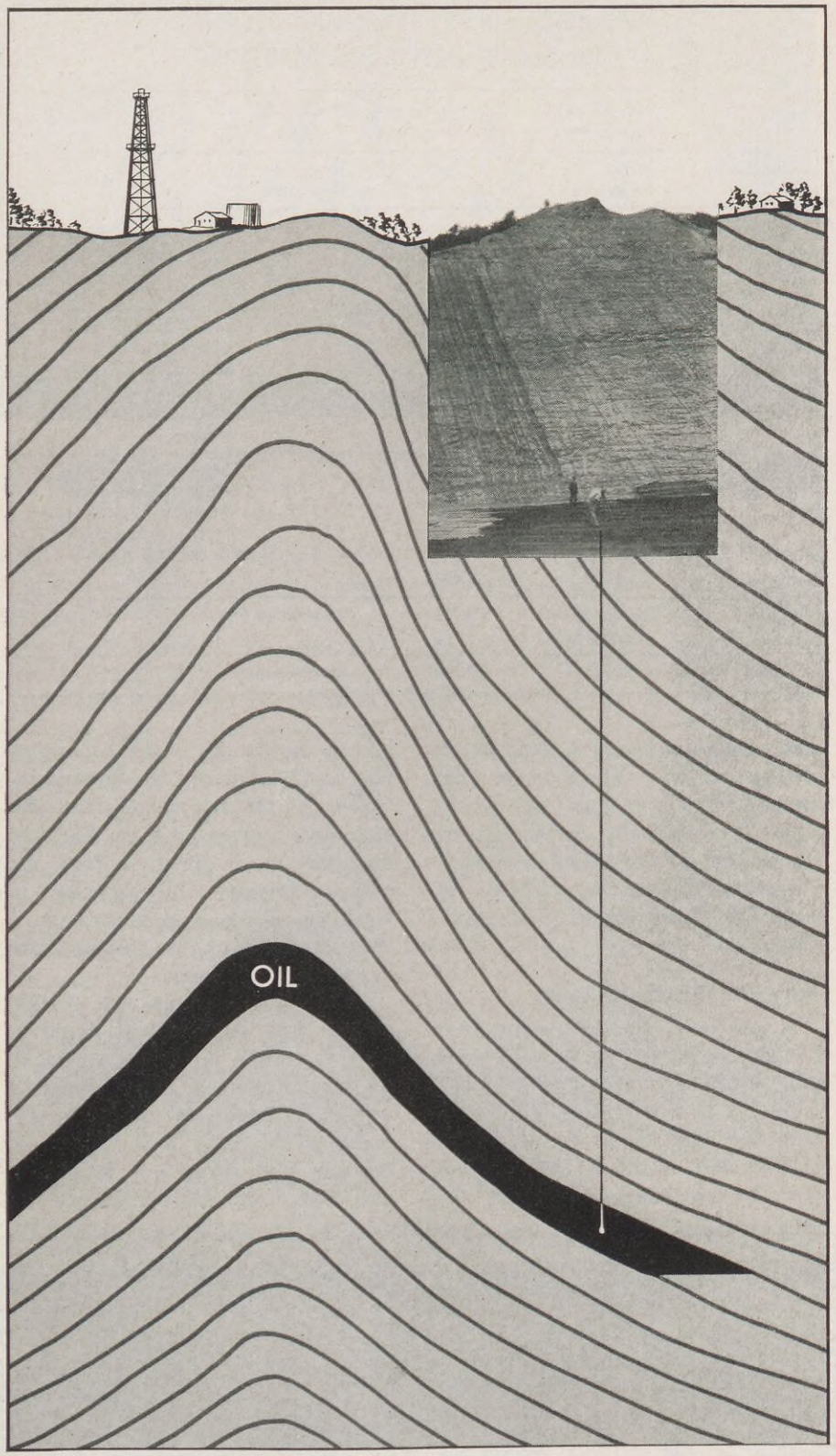
Illus. 4—Stratigraphic Trap



Illus. 5—Salt Dome



Illus. 6—Structural Fault



When strata near the surface are bared, they sometimes give a hint of what the drill will find below. The insert photograph (above) shows surveyors standing on the flat area gouged out of the flank of an anticline to erect a derrick in the hilly Ventura field. When the side of the anticline was cut away, the sloping layers of strata were revealed. The drawing shows how the formations continue downward and gives a general impression of the arched oil trap below the drilling site. Note, also, how the surface has been worn by ages of erosion.

age of a formation has a mi relationship to its oil-bearing ch acteristics (the imperviousness o rock tending to increase with age), the principal yardsticks o formation's potential production the number and nature of traps contains and their accessability the oil driller. Tertiary, for exam a comparatively young rock, is source of the rich California Gulf Coast oil output. On the ot hand, Tertiary formations in so other locations of this country duce little oil or none at all.

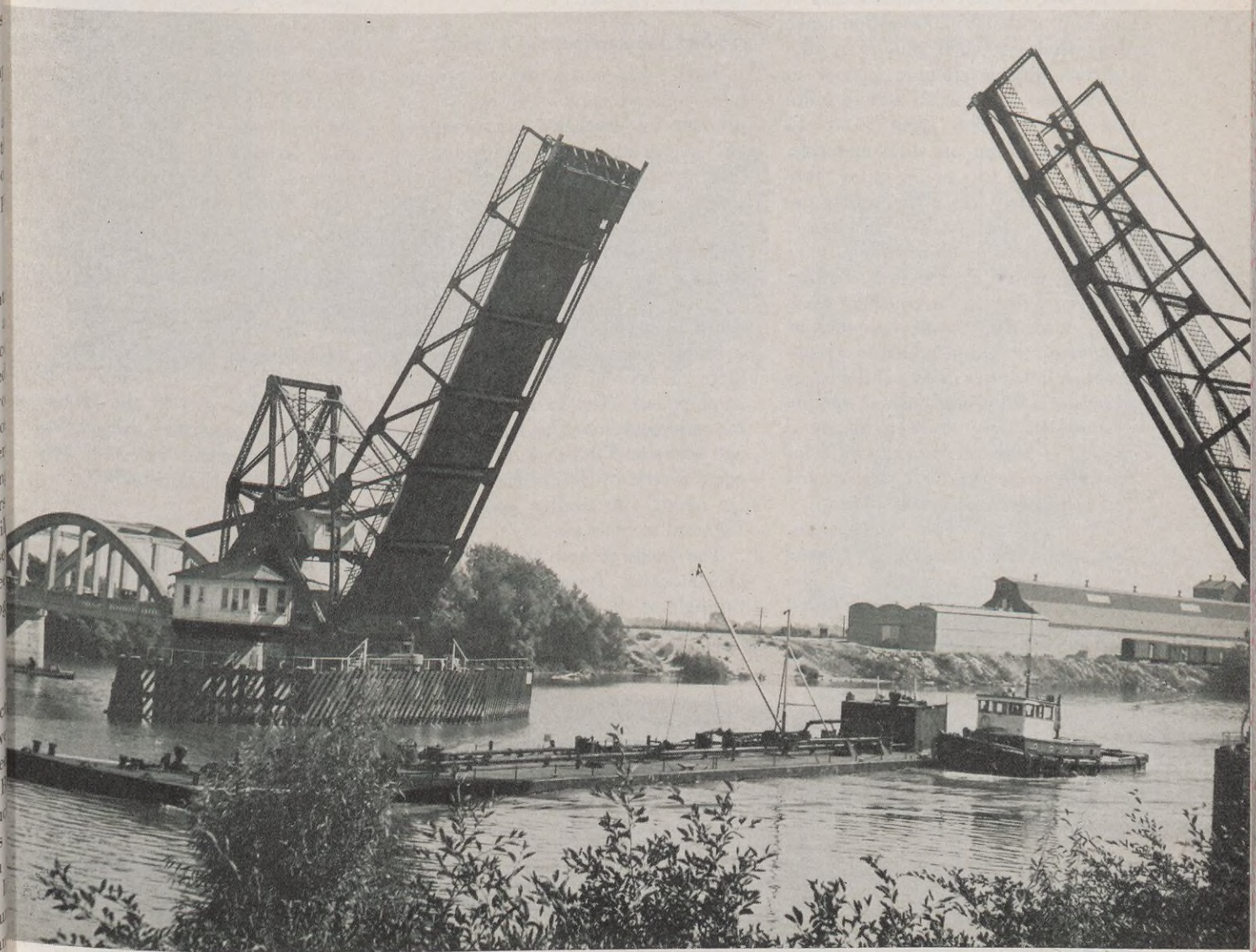
Needed for Oil: 1 Million Years

Oil may be found in sediment strata of almost any geological though some do not produce in c mercial quantities. On the preced page is a table of geological gro and systems of petroleum depo Note that oil production gener comes from formations beginnin a million years of age and taper in hoary rocks more than 600 mil years old. Incidentally, there se to be no obvious relation betwe *type* of crude oil and its geolo age.

Formations of the Tertiary are credited by some geologists about half the world's oil produc In the United States, how Paleozoic strata — as exemplifie the Southwest's great Permian — have proved highly produ The main areas of oil and gas duction in the United States in tion to their geological ages are in the table on Page 3 and fu illustrated on the accompan relief map.

To date, a general geological ture of the United States has bared, literally bit by bit, we well. As each new hole is drille log adds to the geological know of the area, perhaps a whole re But the search for drilling sit mains a difficult art. Elusive and anticlines don't advertise wares when buried thousands below the surface of the earth. once found, they give up their reluctantly. The drill alone co termine whether or not they co commercial oil or gas.

Oil Travels Upstream



Gliding upstream between levees lining the Sacramento River, a barge and tug pass a drawbridge at Isleton, halfway to their destination.

CALIFORNIA'S version of "Ol' Man River" is really two streams which join a few miles before reaching the sea. In the north, the Sacramento splits the state down the middle for 400 miles before its waters reach the Pacific by way of San Francisco Bay and the Golden Gate. To the south is the San Joaquin which flows up to empty into the Sacramento a few miles before the latter reaches salt water.

Once watering places for cattle, these streams became arteries of commerce during the Gold Rush, as paddle wheel steamers carried adventurers to the "diggins." Today, petroleum products, steel, lumber and merchandise flow up the Sacramento and San Joaquin in enormous quantities, and on the return trip come fruits, vegetables and grain destined for the ports of the world.

Shell makes extensive use of this river transportation. Huge steel barges, each loaded with 10,000 barrels of Shell fuels, are pushed up the Sacramento by tugs several times a week from the Martinez Refinery to the state capital, Sacramento. Other barges, carrying up to 14,000 barrels each, make the trip from Martinez to the city of Stockton on the San Joaquin.

Typical of barging operations for Shell in California was a recent run

made by the barge *Lassen*, the motive power being supplied by the tug *Plumas*. On the trip upriver from Martinez to Sacramento, the *Lassen* carried two 25,000-gallon tanks of diesel fuel, two 25,000-gallon tanks of stove oil, and six 50,000-gallon tanks of gasoline—400,000 gallons in all.

From Martinez Refinery's dock to Sacramento is about 75 statute miles and the trip takes from 10 to 14 hours, depending on wind and tide. The Stockton trip of 54 miles takes proportionately less. When going upstream, the tug pushes the barge. When traveling downstream, the barge is towed by the tug. Towing takes more time as the propeller wash slows down the passage; as much as three hours would be added to the upstream trip to Sacramento if the barge were towed instead of pushed. On the downstream trip, however, towing is preferable because slower speed helps the crew maneuver the barge around curves and between bridge pilings.

The river pilot has target signs, lights, buoys and familiar landmarks to aid him in navigation. Echo boards, which fling back the sound of a tug's whistle, tell him where he is on foggy days. When the weather closes in, tug operators have a pathfinder scroll for the course, which gives the exact running time and compass course for flow or ebb tide, upstream or downstream, from one marker to another.

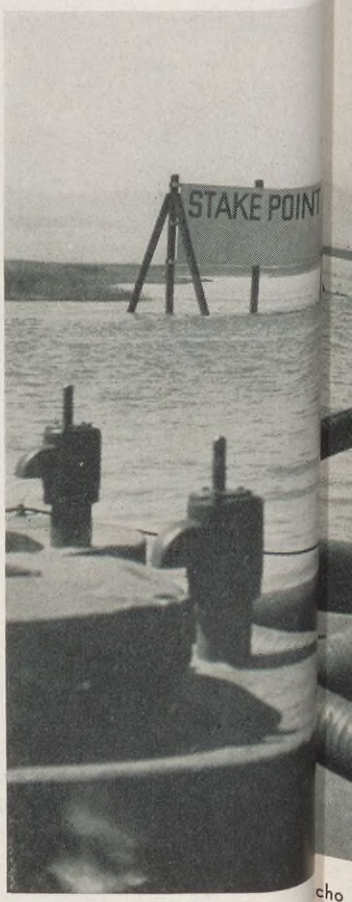
Product Contamination Avoided

Shell takes extraordinary precautions against contamination of one product by another. The Company has helped the barge lines develop loading and discharging methods by which three commodities are handled at one time, without danger of contamination and with greater speed in loading and discharging.

When products arrive in Sacramento, a sample of each is taken and a flash point test made to make sure there has been no mixture of products in shipment. The barge then pumps the shipment into the terminal storage tanks and the new deliveries become a part of Sacramento's "stocks on hand." A similar procedure is followed at Stockton.

The yards of both the Sacramento and Stockton Terminals see a rapid throughput of Shell consumer products. Shell Clippers, transport trucks of "for hire" carriers, and railroad tank cars deliver products as far no as the Oregon line, east into Neva south almost to Fresno and west Brentwood. Like the two rivers wh drain the region, this country is p pled with the ghosts of the color past as well as the busy population today. Shell Clipper drivers head into the Mother Lode country, cen of the Gold Rush, find themselves the land made famous by Bret Ha and Mark Twain. They deliver Sh products to Angel's Camp, Poker F Table Mountain, and other pla where the Duchess, Truthful Jan the Heathen Chinee, Tennessee Pardner, the Outcasts of Poker F and the Jumping Frog of Calave once lived.

California's two great rivers, Sacramento and San Joaquin, pla an important part in the growth America. Today, they are playing equally important role by help promote modern commerce.



< Loaded with 400,000 gallons o now low in the water, the ba away from the Martinez R

At the dock of the Sacramento Terminal, 75 miles upstream from the Martinez Refinery, the barge *Lassen* discharges its cargo of Shell products. The dock has pipe connections at three different levels because of the river's rise and fall.

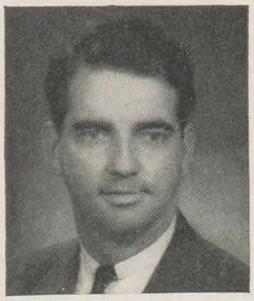
Every product received by barge at Sacramento Terminal receives a flash point test to make sure it has not been contaminated in transit or while being transferred to terminal tanks. Ole Eid, making the test upon arrival of a shipment, has been with Shell 30 years.

cho boards like this one placed at Stake Point eflect the tug's whistle in dense fog to guide ne river pilot when the visibility is poor.

The yard of Sacramento Terminal is full of traffic morning and afternoon as Shell tank trucks and trucks of "for hire" carriers arrive and depart. Many trucks operate on a round-the-clock schedule. More than 1,400 loads of petroleum products go out from the terminal each month by rail and truck.

P. G. DREW

R. S. DAVIS



D. B. CLARK

C. W. McDOWELL

Shell People In The New

P. G. DREW has been appointed Sales Manager of the Boston Marketing Division of Shell Oil Company. A graduate of Oregon State College, where he majored in civil engineering, Mr. Drew came to Shell Oil Company in 1928 as a salesman at Junction City, Oregon. He held sales positions at various West Coast locations throughout the next decade prior to becoming Wholesale Manager for the Portland Marketing Division in 1939. Named Manager of the Resale Department there in 1945, Mr. Drew has served as Sales Manager of the Portland Division since late 1948.

★ ★ ★

R. S. DAVIS has succeeded P. G. Drew as Sales Manager for the Portland Marketing Division of Shell Oil Company. Mr. Davis began his Shell career in 1926 as a service station attendant in San Jose, California. In the years that followed he served in sales positions at various California locations until 1942, when he was transferred to the Seattle Marketing Division as Manager of the Retail Sales Department. In 1944 he moved to the San Francisco Office where he became Retail Merchandising Manager and subsequently Manager of the Light Oil Department. Since late 1947 Mr. Davis has been Sales Manager for the Seattle Marketing Division.

★ ★ ★

D. B. CLARK has succeeded R. S. Davis as Sales Manager of the Seattle Marketing Division of Shell Oil Company. Following his graduation from Stanford University, where he majored in economics and chemistry, Mr. Cl joined Shell Oil Company as a clerk in the New Y Marketing Division in 1937. He was made a salesm later that year and served at various locations in t Division prior to entering military service in 1942. Up his return to Shell in late 1945, Mr. Clark beca Manager of the Inwood District of the New York M keting Division and the following year he was appoin Sales Manager for the Albany Marketing Division.

★ ★ ★

C. W. McDOWELL has replaced D. B. Clark as S Manager of the Albany Marketing Division of Shell Company. Educated at Wabash College, Mr. McDo started with Shell as a service station salesman in Chicago, Indiana, in 1932. He served in several locati in the Chicago Division during the following years u 1941, when he was transferred to the Indianapolis M keting Division as Division Retail Representative. McDowell served as Manager of the Fort Wayne Distr of the Indianapolis Marketing Division from 1942 u 1946 when he became Manager of the Retail Departm of the Atlanta Marketing Division.

★ ★ ★

W. B. GAINES has been appointed Office Manager of Minneapolis Marketing Division. A graduate of Washi ton University in St. Louis, where he majored in co merce and finance, Mr. Gaines came to Shell in 1

W. B. GAINES

J. H. RADFORD

J. W. SUTTON

T. H. MOORE

as a clerk in the St. Louis Office. He served in St. Louis and Houston in various accounting positions until 1942 when he was moved to the Auditing Department in New York. In 1945 he was transferred to the Houston Exploration and Production Area as Administrative Assistant to the Exploration Manager. He moved to New Orleans in the same capacity in the following year and served there until late 1948 when he became Administrative Assistant to the Area Manager. Since April of this year he has been Office Manager of the Exploration and Production Area in Calgary, Canada.

★ ★ ★

J. H. RADFORD has been appointed Office Manager of the Exploration and Production Area in Calgary, Canada. Educated at Washington University in St. Louis, Mr. Radford came to Shell Oil Company in 1929 as a clerk in the St. Louis Office. He moved to the Tulsa Exploration and Production Area in 1931 and in the years that followed served in a variety of accounting positions at that location. He was named Assistant Chief Accountant in the Treasury-Accounting Department at Tulsa in 1945 and the following year moved in the same capacity to the New Orleans Exploration and Production Area. Since late 1946, Mr. Radford has served as Chief Accountant of the New Orleans Exploration and Production Area.

★ ★ ★

J. W. SUTTON has been named Division Production Manager of the Kansas Division of the Tulsa Exploration and Production Area. A graduate of Rice Institute in Houston, Mr. Sutton joined Shell in 1937 as District Superintendent in Iowa, Louisiana. After several years in Louisiana production work, he moved to Kilgore as District Superintendent in the great East Texas Field. Early in 1946 he was transferred to personnel work, and in November of that year became Personnel and Industrial Relations Manager in the Houston Area concurrent with the reorganization of East of the Rockies Exploration and Production activities.

★ ★ ★

T. H. MOORE has been appointed Manager of the Personnel and Industrial Relations Department of the Houston Exploration and Production Area. A graduate of the Pennsylvania State College, where he took a pre-legal course, and of the University of Michigan Law School, Mr. Moore joined Shell Oil Company in 1945 and has served since that time as a member of the Industrial Relations Department in the New York Head Office.

JOHN L. LAURENT, Office Manager at Norco Refinery, died on November 2 after a brief illness.

J. L. LAURENT

Mr. Laurent came to Shell at Norco early in 1922 as a Yield Clerk. After progressing to Head Yield Clerk, he was transferred to Houston Refinery in 1929. He served as Assistant Office Manager there from 1932-1934, after which he went to Arkansas City Refinery before becoming Office Manager at Norco in 1938. He remained at Norco until his death except for a period as Chief Accountant at Houston Refinery from 1940-1943.

Born in St. James, Louisiana, November 24, 1897, Mr. Laurent studied bookkeeping in New Orleans and accounting through Northwestern University.

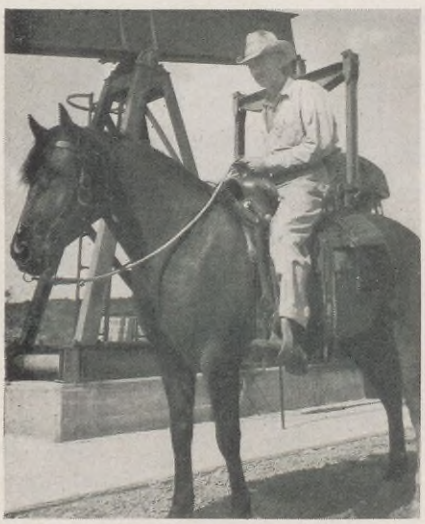
His many friends in Shell extend their sympathy to his wife and family.

A Truck for Every Purpose

In This Highly Motorized Age, and the Myriad Operations of the Oil Business, Shell Relies on a Lengthy List of Versatile Specialists on Wheels

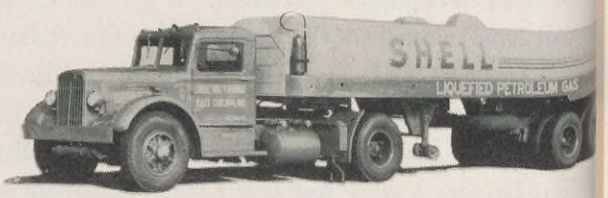
JUST as the derrick has become a symbol of the entire petroleum industry, the tank truck has long been the emblem of oil marketing. If asked to name the working vehicles typical of the oil industry, the average man would probably cite only the well-known tank truck. Several would also name the more spectacular "swamp buggy", and a handful of others might mention a seismographic truck, because they have seen pictures of them at work.

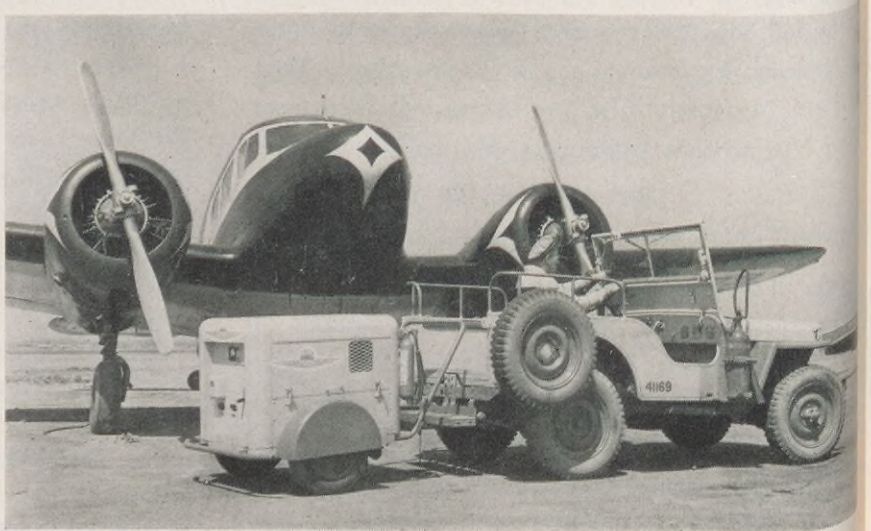
While public familiarity with the "work horses" of petroleum may be neither here nor there, it seems a paradox that so little is generally known about the trucks of an indust which probably uses more differe types than any other commercial e terprise. Literally scores of varieti of trucks are carried on the roste of rolling stock, and each variety m have several sub-variations. For e ample, Shell alone uses about a doz different kinds of tank trucks, and seismic party in the field may operating with: (1) a drilling tru for making shot holes, (2) a shooti truck, (3) a recording truck, (4) water and supply truck, and stati wagons, pick-ups or jeeps to co plete the caravan. If the crew is the move in some far away place,

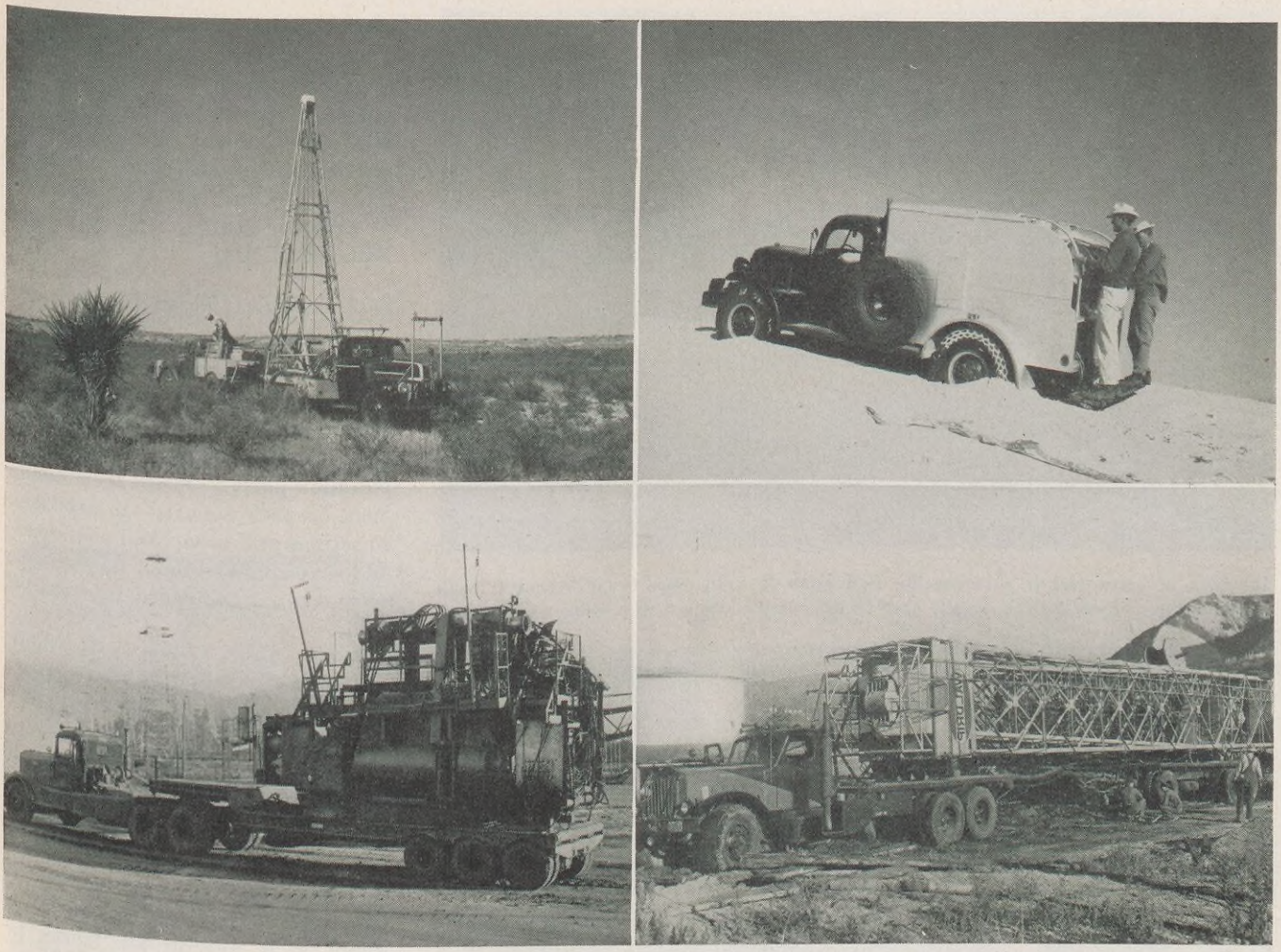


Huge trucks with portable derricks (top, above) service wells in the oil fields, but old Dobbin still serves along with them. In the rough terrain of the K.M.A. field of North Texas, pumpers ride horses on daily rounds.

Twin-tank vehicles for hauling L-P Gas (right) dwarf the versatile Jeep (below), but each has important uses in operations. >





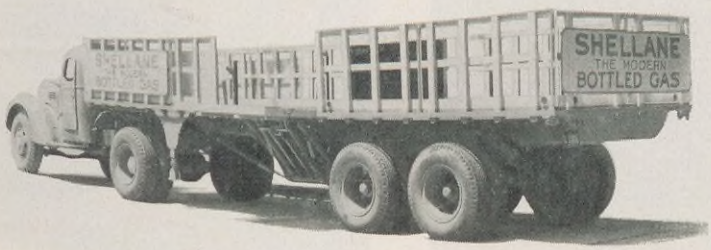


Exploration parties travel in caravans which include a drilling truck and attendant pipe and water truck (above, left) and seismographic recording truck (above, right). The lower pictures show the draw works (at left) and derrick (right) of the largest portable electric rig ever constructed. The units weigh 18 tons, are compact enough to comply with highway regulations. They are used in the Ventura Field.

may be equipped with a modern "chuck wagon" and trailer living quarters.

So, while the tank truck may be the rolling symbol that brings oil to the public mind, in terms of work accomplished and constant usage it is no more typical of the oil business than a score or more other trucks. In an industry as far-flung and variety-packed as petroleum, there is a truck for every purpose.

True, Shell's first use of motor vehicles was of the tank trucks for delivering products to market. But through the years rolling stock has taken over other hauling tasks and—through technological developments—has assumed many tasks previously done by men. Truck units now range from tiny three-wheel scooters to giant 18-ton juggernaughts. Shell has more than 3,000 in all.



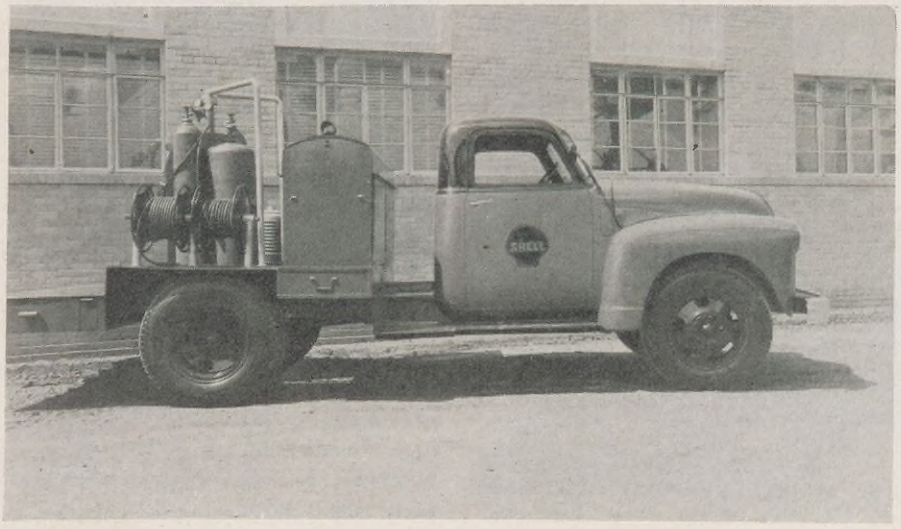
Shellane cylinders, 145 at a time, can be transported in this special stake truck with hydraulic lift gates halfway along either side.

Agents Often Owned Stables

When the Company first began operating in this country back in 1912, a few horse-drawn tank wagons were used for products delivery in the Pacific Northwest. The selection of early depots, then operated by commission agents, was often determined by the fact that the agents were owners of livery stables or coal yards and already had horses and wagons available. For its own use, the Company began purchasing tank trucks—

The hoist or boom-truck is a serviceable work horse in every department. Above it hauls lumber in the oil field, but it is equally good on comparable jobs around a refinery or terminal.

Two more types of special service trucks which double in brass for more than one department of the Company are the electric linemen's truck (above) and the portable welding unit (below).



clanking, chain-driven machines wi hard rubber tires from whose jolti progress a good nine miles per ho could sometimes be enveigled. 1915 the Company, and most of t commission agents, were motorize having sold the old tank wagons farmers for hauling stock water a liquid fertilizers.

Pack Animals Yielded Slowly

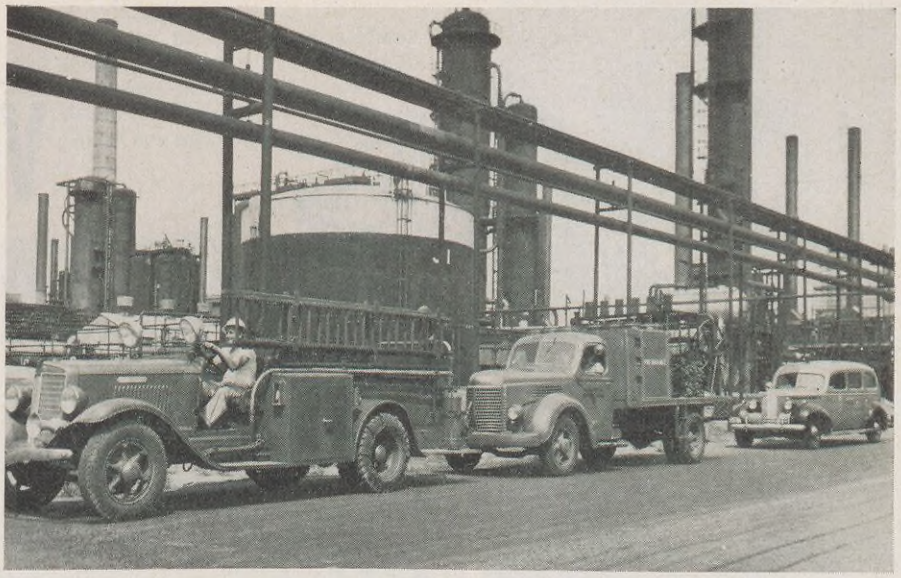
The transition from horse to tru in exploration and production acti ities was necessarily slower. Rou unsurveyed terrain was too much f early vehicles with little power. E ploration parties carried their equi ment on pack animals—an expedie sometimes still used. And poor roa and seas of mud slowed the entran of motorized equipment into the fields.

But the truck proved itself behi the battle lines in World War I, a in the oil play that followed that w new and surplus trucks began to su plant the horse and wagon for hauli supplies. The transition has nev been complete, because of the d ficult terrain in some fields. Sh still uses horses in some sections the K.M.A. field of North Tex where it is difficult for trucks negotiate the precipitous hills.

The Manufacturing Department h used motorized vehicles from the o set. But in the operation of instal tions such as refineries, where it wou seem that all that is required are

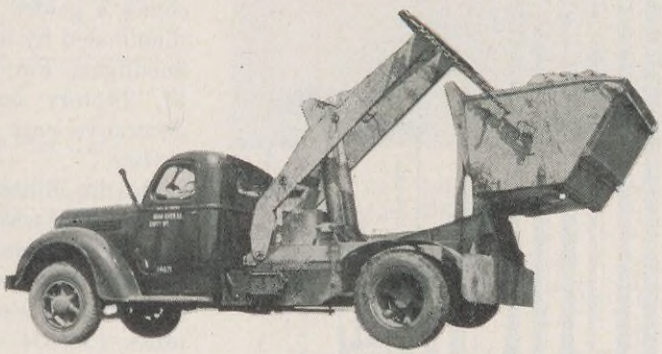
While the tank truck may b mind, it is no more typic

th th



Refineries, like small cities, are provided with an array of fire trucks and ambulances, buses, street sweepers, all other public service facilities. >

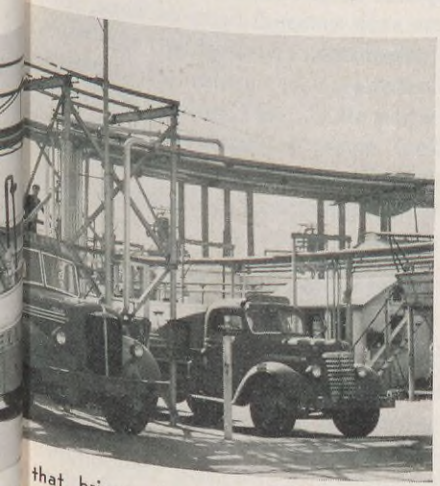
Panel trucks find uses in most of Shell's departments. Marketing has several like the one below, with side and rear doors and a hydraulic lift gate, for hauling packaged products. V



The Dempster Dumpster typifies the kind of trucks used around refineries for hauling waste and in construction work. This sturdy vehicle is an odd-job specialist-on-wheels. >

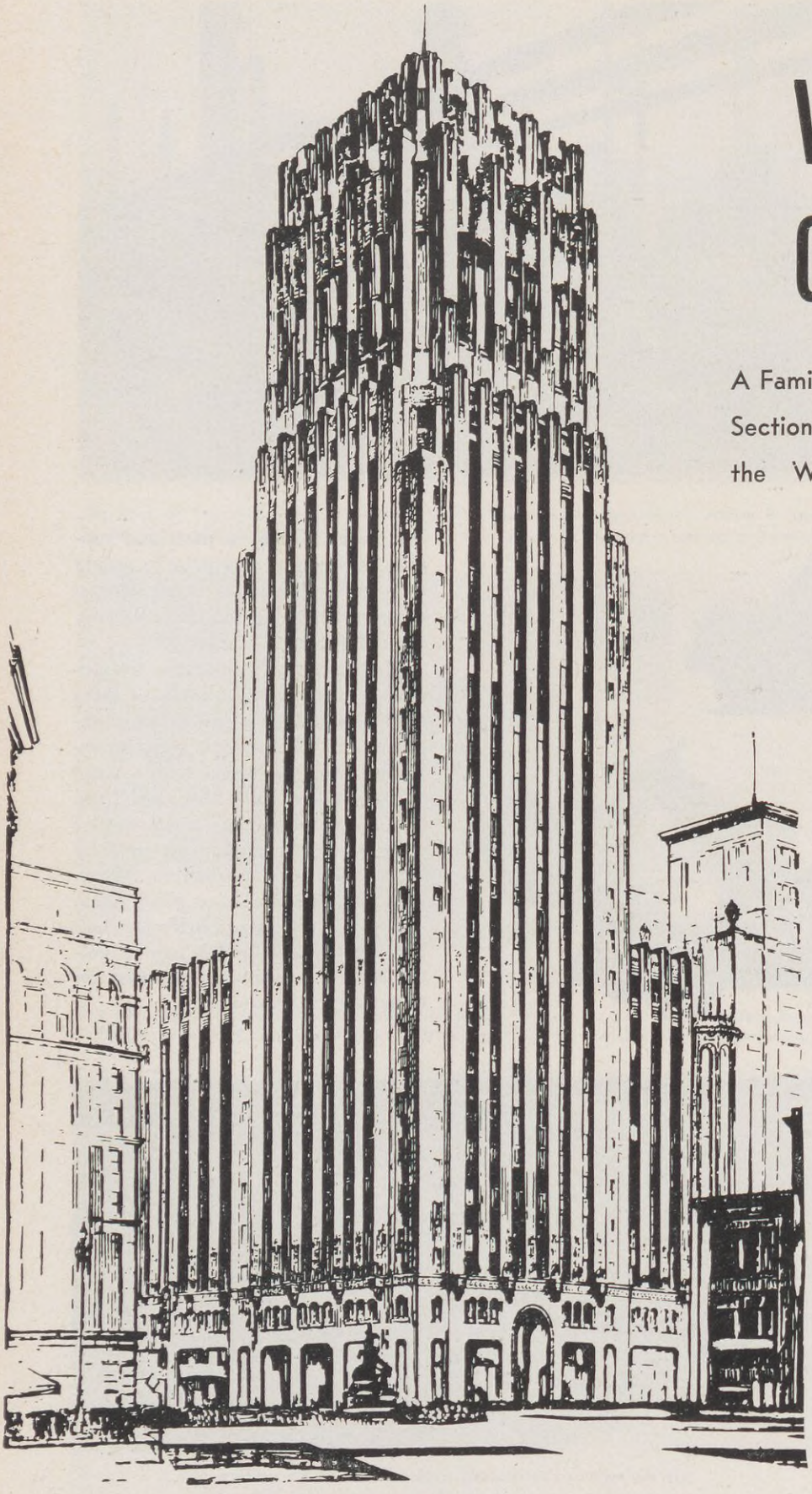
few trucks to haul in parts and supplies, it comes as a surprise to people to learn that Manufacturing uses a greater variety of vehicles than any other department of Shell.

Though many Shell trucks are specialists in their lines, some of them double in brass for two or more departments. The versatile jeep, for example, fork-lifts, boom trucks, stake trucks with hydraulic "lift gates," and enormous, low-slung tractor-trailer units for heavy hauling are used by Exploration and Production, Manufacturing and Marketing alike. Some idea of the variety of Shell's mechanical specialists-on-wheels can be gotten from the examples pictured on these and the previous pages.



that brings oil to the public's than a score or more other trucks.

Literally scores of varieties of trucks are used in the industry, and each may have several sub-variations. Example: The "Snomobile."



Vertical Community

A Familiar Sight in San Francisco's Busine Section, the Shell Building Provides f the Working Needs of 1,400 Peop

THE Shell Building in San Fra cisco, rising almost 400 feet the financial district, is one of t famous seaport's most distinguish landmarks. A graceful tower sheath in warm-colored terra cotta, it comes a golden shaft at night wh illuminated by more than 300 amb floodlights. For 19 years, the soft lit, 29-story building has been decorative part of the city's jagg skyline.

On the utilitarian side, the bui ing is Shell's West Coast headqua ters. Employees of Shell Oil, Sh Development and Shell Chemical cupy about 70 per cent of the str ture's 150,000 square feet of flo space. In the remaining office sp are such national firms as Time, In Luckenbach Steamship Compa Container Corporation of Ameri California Barrel Company, Lybra Ross Bros. & Montgomery, Hom stake Mining Company, Pacific Lu ber Company, and J. C. Penney Co pany.

Housekeeping on a Large Scale

Managing the Shell Building is task comparable to that of runni a small community. During course of a working week, occupa must be supplied with power, lig heat, elevator service, communic tion, protection and a host of oth

services. It is housekeeping on a grand scale—in a $4,000,000 structure.

Many problems of building management are simple homely ones, multiplied hundreds of times. There is, for instance, the housewife's age-old worry: how to keep the place clean. Some 23 janitors take care of that. These men and women work through the night to have the building immaculate when tenants come in each morning. Two 20-horsepower turbine vacuum cleaning machines in the basement are connected with each floor. Vacuum cleaning, exactly as done at home, can be carried out anywhere, with a score of sweepers operating at one time.

There's even a trick to waste paper disposal in the Shell Building. The paper is gathered from each floor in canvas bags and stored in basement bins, one bin per floor, for 24 hours before being thrown away. This is done in case a file or an important letter gets lost via the waste paper basket. Such things are easily recoverable without searching through the waste from 29 floors, which amounts to five or six tons per month.

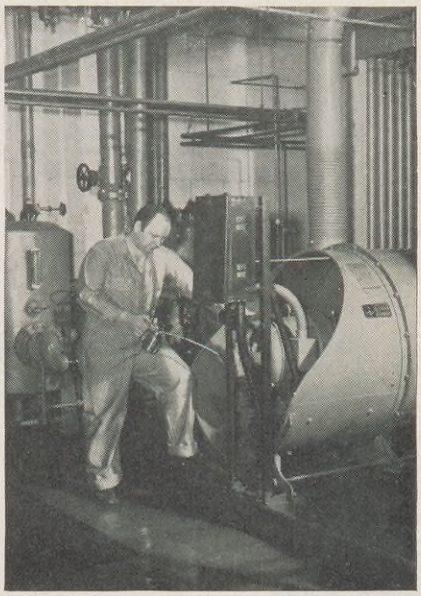
Acres of Windows in His Care

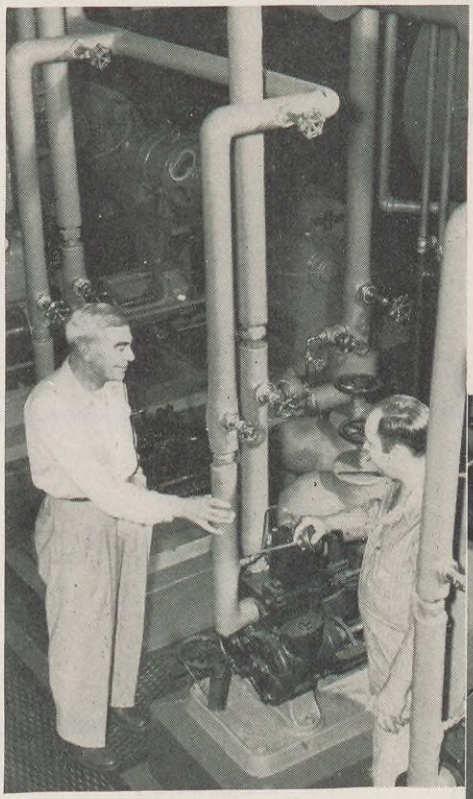
Shining glass in the Shell Building is the special pride of one man who cleans windows continuously, finishing one round only to start another. In his care, he has 30,000 square feet of glass in 936 outside windows, as well as interior glass in doors, partitions and transoms.

"Going Up" and "Going Down" sound in the building corridors countless times a day, for 7,500 people are transported in or out of the Shell Building or between floors every day. Six semi-automatic elevators carry out this job without fuss or confusion, leaving the lobby floor every 25 seconds in rush hours. Each car travels about 24 miles per day, completing 180 round trips.

As the elevators descend with their peak loads each evening, two night watchmen go to work patrolling the building. On hourly trips throughout the structure they check for fires, open faucets and the other things which might occur in the lonely hours of the night.

Arthur W. Bails, stationary engineer at San Francisco's Shell Building, oils the motors of the vacuum cleaning machinery. Vacuum cleaning can be carried out anywhere in the building. >





∧ In the Shell Building's sub-basement, C. P. (Pat) O'Callaghan, chief engineer, gives instructions to an assistant on the proper maintenance of the feed water pumps for the boilers.

Temperatures and pressures are registered on the panel board charts of the building's engine room and are carefully entered in the logbook by the engineer during every eight-hour watch. >

Nerve and control center of the Shell Building lies in the sub-basement, 32 feet below street level, where the main mechanical plant is located. Here, Shell engineers operate the boilers, water heaters, pumps, water treating equipment and tanks, incinerator, vacuum sweeper and pneumatic tube machines — not to mention air compressors, circulating hot water heaters and ventilating fans.

Shell employees and tenants of the building are not only comfortable, but safe as well. The caisson-type foundation plus other structural features incorporated in the tower enable it to resist earthquake and high wind stresses.

The tenth in a new series of organization charts

November—1949

Vice President & Treasurer

W. A. Baker

Assistant Treasurer & Assistant Secretary

J. H. O'Hare

Chief Accountant

J. H. Singleton

Vice President

P. H. Swinchatt

Assistant to Vice Pres. & Assistant Secretary

D. F. Sears

Purchasing Agent

J. B. Thompson

Superintendent Texas-Gulf Area

C. E. Dolhonde

Assistant Superintendent

R. V. Lahr

Superintendent Austin Division

W. B. Sanders

Superintendent East Texas Division

W. H. Craddock

Superintendent Bayou Division

C. P Wilson

Superintendent McCamey Division

E. C. Reece

SHELL PIPE LINE CORPORATION ORGANIZATION CHART

President

T. E. Swigart

Vice President & General Manager

H. H. Anderson

Secretary Manager-Land, Insurance & Tax

A. E. Groff

Chief Engineer

D. H. Lewis

Superintendent Mid-Continent Area

C. D. Winkelman

Assistant Chief Engineer

O. W. Heyden

Superintendent Oil Movements

R. C. Nicholson

Superintendent Communications & Transport Facilities

F. W. Littell

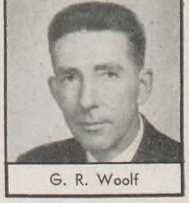
Assistant Superintendent

G. G. Billings

Manager Personnel & Ind. Relations

L. C. Geiler

Assistant Manager Land & Insurance



G. R. Woolf

Superintendent Tonkawa Division

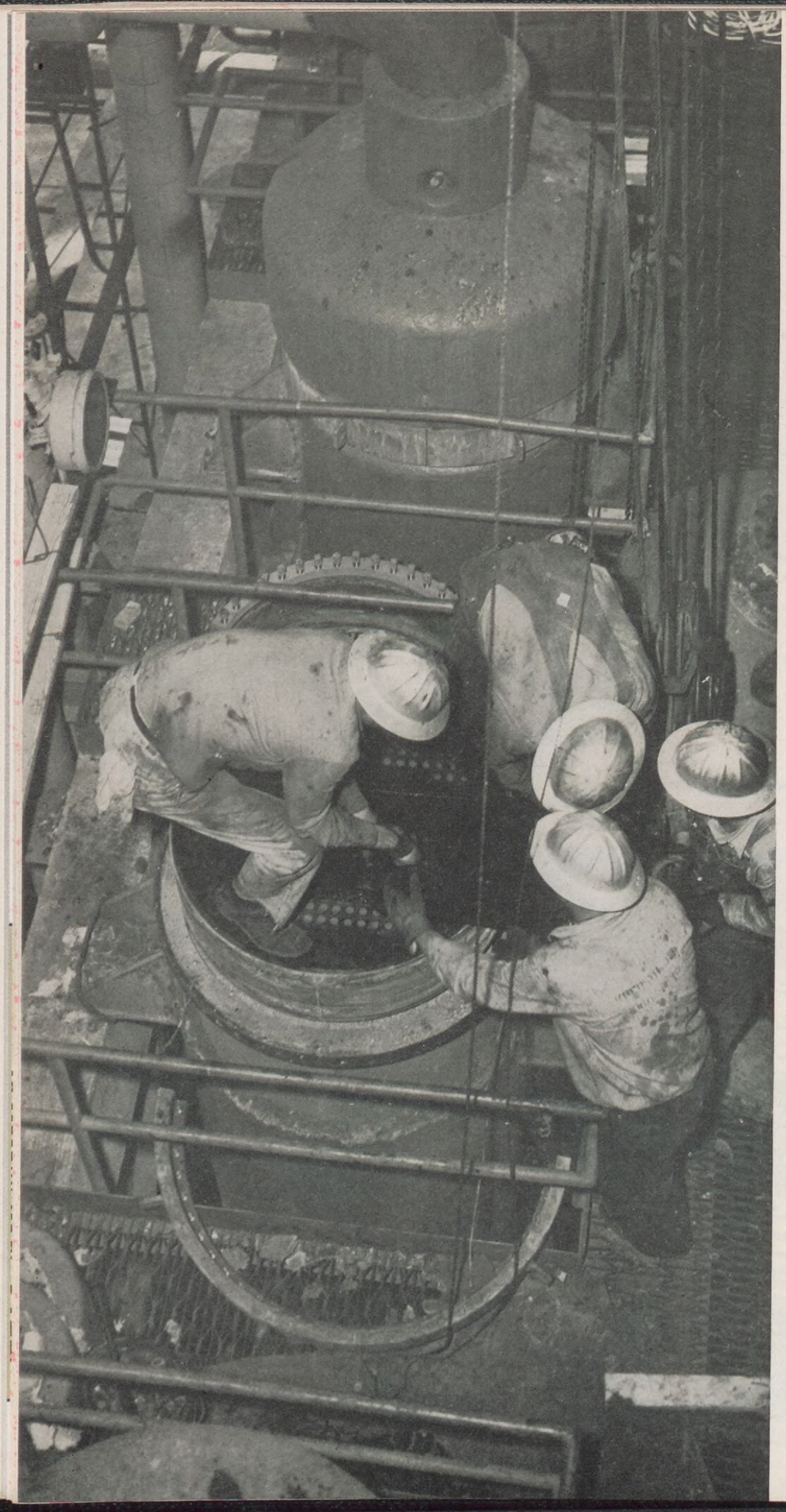
J. R. Floyd

Superintendent Ozark Division

H. E. White

Superintendent Healdton Division

T. D. Brown



MAINTENAN

THERE'S more truth than fictio in the old saw ". . . for lack of nail, a kingdom was lost." As f back as the first century A.D., Mong hordes proved it by taking advanta of disrepair in China's Great W and sweeping south to burn and p lage. In fact, the saw is so axiomat that it has become involved in ever thing from modern national defen programs down to the dab of na polish a stenographer puts on a sn in her stocking.

Such precautions—whether polit cal, moral or mechanical — com under the heading of "maintenance and "maintenance" itself has becom so universally a part of modern livin that it is often taken for granted an its true importance overlooked. I industry, for example, where bot objective and preventive maintenanc are prime factors in production, th expenditures and man-hours devote to upkeep and repair of plant equip ment sometimes exceed investment of time and money for direct pr duction.

One Out of 6 Engaged in Upkeep

Shell is no exception. Today on out of every six men employed by th Company, and one out of every tw in Shell refineries and plants, is en gaged in maintenance of the Com pany's manufacturing units. Alto gether more than 4,000 persons wor in a continuing refinery and plant up keep program that annually accoun for the expenditure of about 15 mi lion dollars.

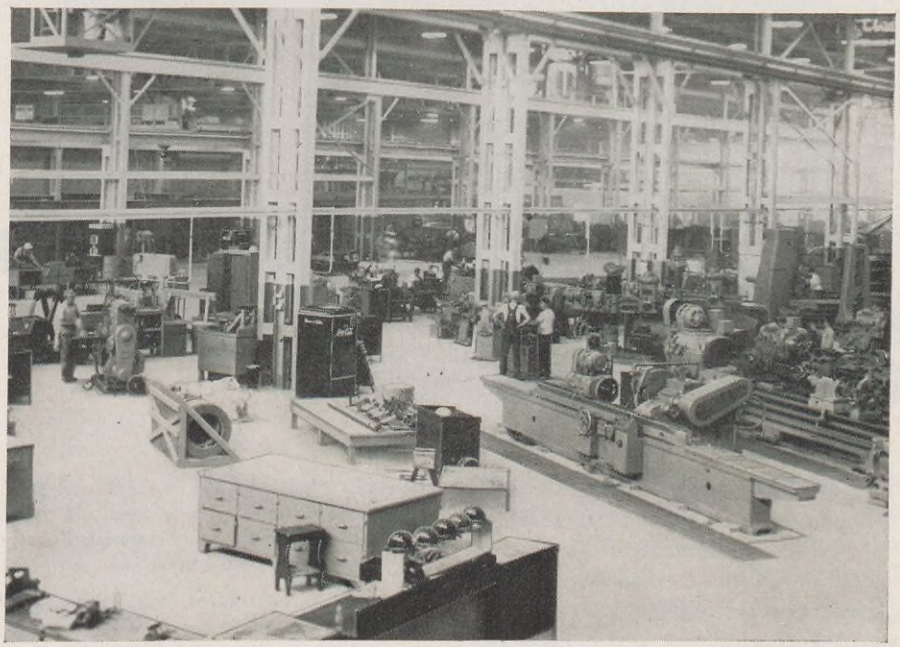
Refinery maintenance ranges from tightening a screw on a door handle to a turn-around on a cat cracker (left) requiring scores of men. Regardless of size, each job is important.

The "Man Behind the Man"

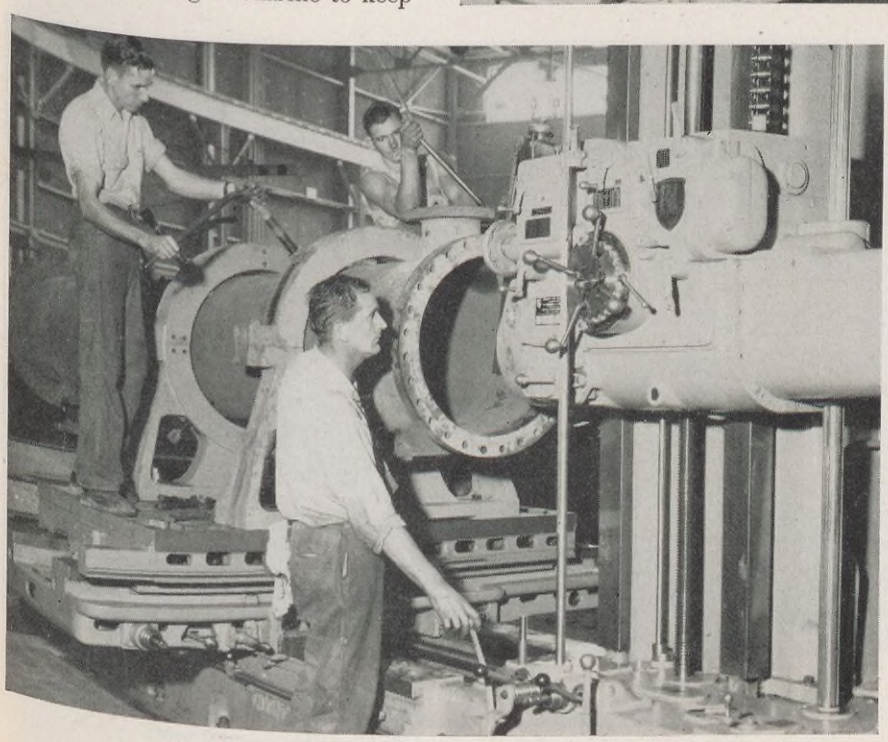
For Every Employee Engaged in Manufacturing Products in Shell Refineries Another Is Busy at Upkeep and Repair That Keep the Job Safe and Productive

It takes a huge and especially skilled crew to maintain a modern petroleum processing plant. Every unit must receive constant attention and care, for failure of any one can mean heavy losses in time and equipment and perhaps endanger the safety of employees. A small hand valve in disrepair could cause the complete stoppage of giant catalytic or thermal crackers and all the component units dovetailed into their operation.

Overseeing this complex maintenance program are the Engineering Departments in each Shell plant. In reality, teams of craftsmen — along with specialists in fields like inspection and metallurgical engineering, industrial engineering, preventive maintenance engineering, and lubrication engineering—combine to keep equipment operations efficient and safe. These teams constantly search for improved methods and materials and develop new techniques. New ideas are exchanged at meetings attended by representatives of each plant, and through reports on materials and techniques coordinated and distributed by the Manufacturing-Engineering Department at Head Office.



The department-store-like interior of the new Houston maintenance shop spreads over 98,000 square feet, housing a complexity of machinery and employee facilities.



< A machinist and two helpers at the Houston Refinery prepare to mill an exchanger shell on a precision machine in the new shop.

Merely scheduling the maintenance program of process units engaged in 24-hour-a-day operation is a big prob-

Portable storerooms like the one above at Wood River Refinery save time and labor by taking needed tools and materials directly to the maintenance crew on the job.

lem, since no part of the work can be left undone too long nor can reserves in men and equipment be tied up in event of an unexpected breakdown. A cat cracker turnaround, for example, a major task which takes the cracker off stream about once a year, must be anticipated so that the required materials will be on hand and Engineering can marshal its forces from a variety of minor maintenance jobs scattered throughout the plant. At best it takes from three to four weeks of round-the-clock hustling to complete a turnaround.

Centralizing Maintenance

The trend today is to bring as much maintenance work as possible under one roof—an operational headquarters from which repairs throughout the plant can be scheduled and directed and to which parts and even whole units can be brought for repair and rebuilding. An advance step in this trend was made recently with the opening of one of the finest modern shop buildings in the petroleum industry at the Houston Refinery.

Built to house and allow for expansion of the scattered maintenan facilities of the refinery, the new sh replaces methods and equipment ha put to cope with a throughput whi has increased four-fold in the last years. It is one of the largest of i kind in the industry, and in its fa tory-like interior skilled employe use advanced techniques gathered a lengthy survey of shop practices more than a score of major industri plants. The shop will handle annu refinery maintenance valued at minimum of $2,500,000.

Many Crafts Share Facilities

With a floor area of 98,000 squa feet, the shop building includes offi for all craft foremen, a toolroom, co ference rooms, heavy material sto age and lockers and washrooms. A attached cleaning building reduces a minimum the dirt and oil broug into the shop by providing sand bla ing equipment and huge dipping va

The shop space is divided into thr sections, each of which has a trav ing bridge crane which operates t length of the building. Sharing ma facilities and working close enou to have the advantage of one anothe services are machinists, boilermake

The maintenance shop at Houston, located in the center of the refinery area, symbolizes a new trend toward centralization in plant upkeep. All repair is directed from this control point.

welders, tinners, valve repairmen, blacksmiths, pipe fitters, riggers, carpenters, electricians, instrument men, insulators, painters and masons. By bringing all these crafts together, the new shop makes their interdependence a time-saving asset. They have over 120 modern pieces of power-driven machine tools at their disposal.

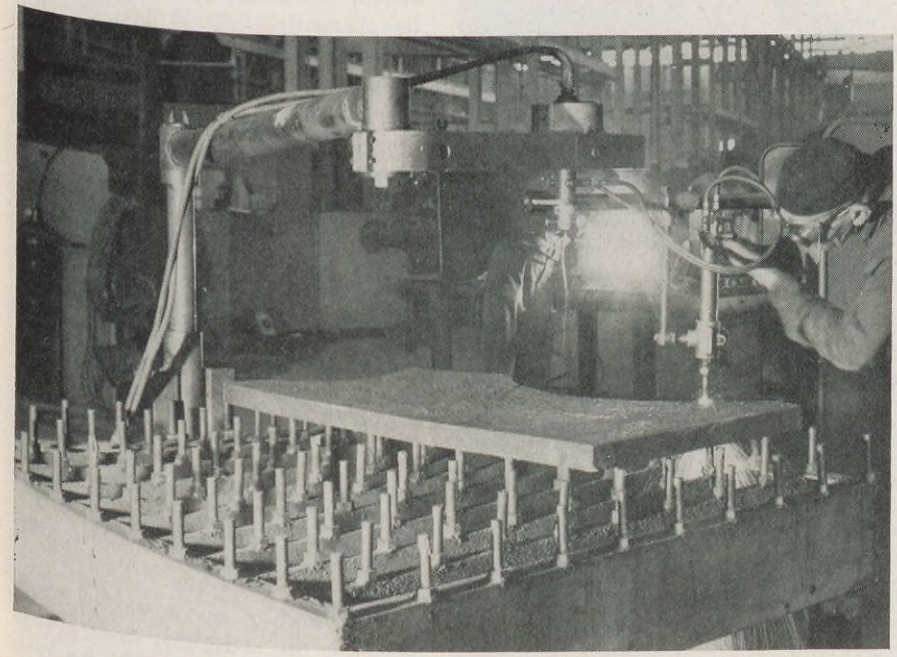
Meeting On-the-Spot Problems

But while the trend in maintenance may be toward centralization, the intricate equipment of a mammoth oil processing plant will always create problems that require on-the-spot field maintenance. In such cases the central shop or Engineering Field office serves as the command post, controlling the logistics of any particular maintenance campaign, large or small. Men and supplies are quickly routed when and where they are needed.

Wood River Refinery, for instance, has several radio cars equipped with two-way communications so that maintenance supervisors can be quickly contacted. A supervisor can order an emergency repair job started and actually direct it before he arrives on the scene.

Another speed-up method for maintenance work used in Shell plants is a delivery service from a central toolroom and warehouse. Offering a "home delivery" system like the corner grocery, the service receives orders by phone from men on repair or replacement work and within minutes delivers a gasket, a pipe fitting, a valve. This service is further supplemented by rolling toolrooms in trailers, which are driven to the scene of major maintenance jobs. The largest of these, now in use at Wood River, has telephone connections, a public address system and its own loading ramp to receive additional tools and supplies from the central toolroom.

The technologist above is removing scale from a high pressure vessel during the turnaround of a cat cracker. Such activity is extremely important to effective maintenance because the quantity of deposit and its chemical analysis serve as guides in controlling future operations.



A variety of equipment meets every repair or construction need. As one welder hand welds a piece in the background (above) another uses a special flame-cutting machine to shape a metal slab.

Backing Up the Maintenance Man

If the maintenance worker is the "man behind the man behind the product," he has still others backing him. The upkeep of oil processing plants has become a highly specialized business, to the extent that it has a scientific arm to improve its methods. Metallurgical laboratories assist by reporting on the causes and expectancy of corrosion, what metals are best for replacement parts, and a wide variety of other technical information. Other engineers and designers constantly search for and develop improved equipment—for, as refining technology expands, the importance of maintenance grows with it.

Art for Art's Sake

A Shell Employee Finds Relaxation in Sculpture and Painting After Having But Little Formal Instruction

Art's wife is his model for this three-quarter size portrait bust in clay. Almost completed, it is being given final touches to add the finest details. After it is completely dry, Art will make a plaster cast, though the clay head itself is a finished piece of art. Woman-like, Mrs. Williams changed her hair-do after bust was started.

ART WILLIAMS, christened Arthu Charles Williams 38 years ago, i aptly named. When he isn't bus in the Marketing-Aviation Depart ment in Head Office, he's most ofte home in River Edge, New Jerse modeling in clay, sculpting in ston or painting a portrait or landscap in oils or watercolors.

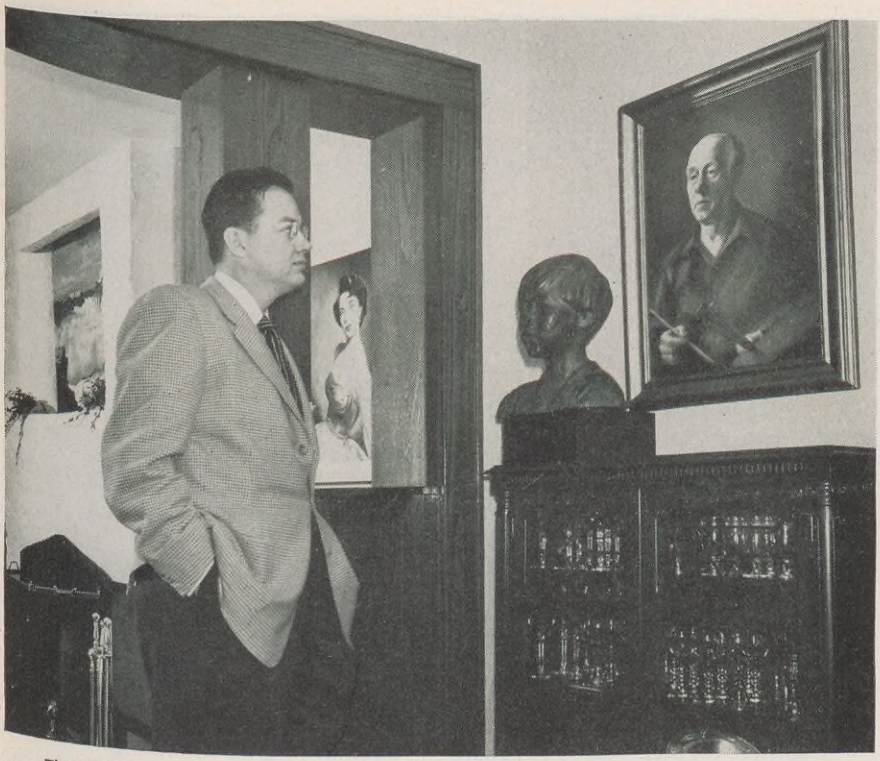
His art is a serious hobby and h hopes that his talent may lead to pleasant, creative way to spend hi time after he has reached retiremen age. Meantime a lot of friends— among them fellow Marine and Nav officers he knew during the war—ar happy possessors of portraits of them selves and other examples of Art art.

The remarkable thing about Art work is that, though his paintings an sculptures are good enough to hav been accepted for art exhibitions, h is practically a self-taught craftsman He has had only one brief period o formal instruction in each of the me diums he uses—and those instruc tions only after his self-inaugurate experiments led him to seek the an swers to specific problems in tech nique and materials. In short, Ar has proven that a person does no necessarily have to attend an ar school to become an artist. True, Ar has been drawing all his life. Bu when he graduated from Amhers College in 1933, he still hadn't ha any art training.

Copied Prints of Old Masters

Actually it was a bit of bad luc which started his considering paint ing and sculpturing seriously. H became ill and had to spend a lon time in bed. Tiring of sketching i pencil, he got an oil painting kit an some prints of old masters and s out to copy them as closely as h could. The results were a pleasan surprise and when Art was back o his feet he continued to paint in hi spare time, adding watercolors, the sculpture to his forte.

But painting poses certain prob lems for the artist that can't alway be worked out alone. So, he too lessons in the evening from Guisepp Trotta, prominent in the field of o



The Williams' living room demonstrates how a hobbyist-artist can decorate his home. A portrait of Art's instructor and other oils adorn the walls. The sculptured head on the bookcase is plaster, coated and polished to look like real bronze.

portraiture. The same procedure was repeated in watercolor and sculpture. He attacked the mediums in his own way, developing as much as he could, then sought out Watercolorist John Chetcutti and Sculptor Urbici Soler of Montevideo for brief training in studio classes. By the time Art joined Shell in 1941 he was a proficient hobbyist in all three mediums. To date he has executed ten portrait busts in clay and made plaster casts of some of them. He has also carved one bust in limestone. He has lost track of the number of oils and watercolors he has done.

First Draw, Then Draw . . .

To the beginner wishing to make painting or sculpture a hobby, Art says the old tried-and-true rule of drawing, drawing, drawing always holds good. "First become proficient —through long practice—at sketching and drawing, then attack the medium you wish to use in your own way," he advises. "In the course of each succeeding painting or sculpture the novice will pick up new tricks and learn how to avoid mistakes. Inevitably there will be perplexing problems which the beginner cannot work out himself. Then is the time to seek competent instruction."

Another suggestion Art offers the beginner is to wade right in and attempt every possible thing that can be done with a medium. In doing so he will discover the technique or process best suited to his individual talents.

Instruction books can be a great deal of assistance, even books on the lives of artists. There are a number of good instruction books available to the beginner in almost every medium, among them those published by Studio Publications, Inc., and Watson-Guptill, both publishing houses which specialize in how-to-do books for students.

In doing a clay portrait head, Art likes to have the model sit for about three hours at a session. To complete the clay model takes from five to eight sittings, depending upon the features of the subject.

His working methods are simple and no special tools are needed. For example, he first constructs an armature of wood or metal around which the clay will be modeled and fastens the armature securely to a wooden base. For his portrait heads, Art makes a cross-shaped armature of pipe, the cross bar running parallel to the forehead. An intense study of proportions of the model at this stage simplifies later work.

Using a water-base clay, he kneads it to a pliable consistency and places it firmly around the armature, approximating general contours of the subject.

Working from a plaster cast and checking proportions and shapes with a "pointer," Art made the limestone portrait head, right.

Progress of an Artist

Art learned painting by copying old masters like Rembrandt's *Die Mutter*, above. After experimenting in oils, watercolors and sculpture, Art sought instructors who could answer specific questions in studio classes. He continued to paint while a Marine in the Pacific, using as models fellow officers.

Art lets the basic clay dry a little until quite firm, then begins to sketch in details by more adding or cutting away the base clay. The finer details are formed by working in thin layers of pliable clay over the harder base clay. Fairly heavy pressure can be applied without changing the larger basic forms. This is the essential reason for preferring waterbase clay over oilbase clay, such as "plastocene," which is permanently soft.

From the dried clay model Art can make plaster casts which can be further carved, sanded, coated or p ished to become finished pieces of or, using the cast as a guide, he c carve a stone or wood piece. G cartoonists to the contrary, its a r sculptor who carves in stone direc from the model.

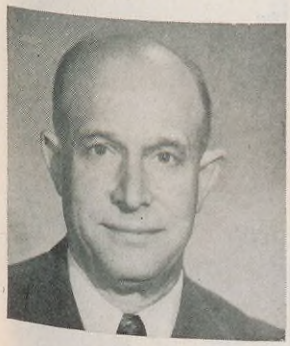
To the hobbyist, Art suggests cl sculpturing finished in plaster as s ficient. Carving in stone is a ti consuming operation—his one pie in limestone taking at least 150 hou If permanent bronze pieces are d sired, professional art foundries c cast them from the plaster mod though it is an expensive project.

As a hobbyist artist Art has do well. Juries of selection have a cepted his works for shows given East Hampton, Long Island, and T neck, New Jersey. In an exhibition Flushing, New York, one of A watercolors was voted most popu in the show.

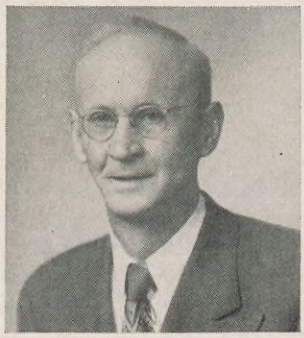
Right now he has two projects u der way: a three-quarter size portr head of his wife and a large lan scape in oils to decorate the clu house of a golf club where he a his wife spend their vacations. Mea time there will be other paintin done at home in his spare time, b cause, as Art Williams puts it:

"I get a terrific bang out of cre ing something that is entirely a pro uct of my own hands and thought

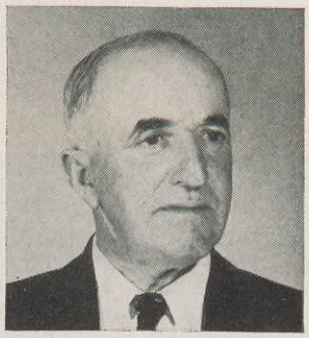
They Have Retired



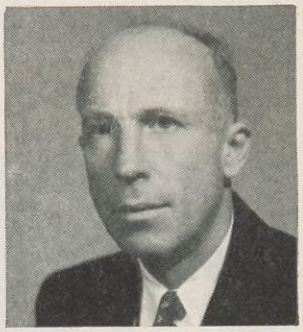
ANDREW ALBERIGI
San Francisco Division
Operations



EMIL CARLSON
Martinez Plant
Engineering



GEORGE CRANSWICK
Wilmington Refinery
Engineering Field



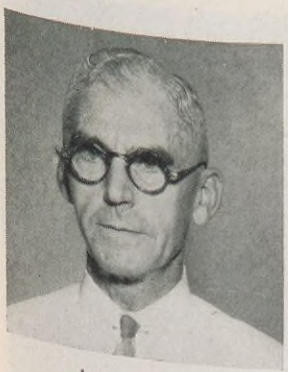
A. K. EATON
Head Office
Sales

K. H. FICH
Dominguez Plant
Engineering

W. G. FIVASH
Shell Point Plant
Engineering Field

J. H. GREEN
San Joaquin Division
Production

F. I. GREENE
San Francsico Office
Administrative



J. M. QUAID
Sewaren Plant
Treasury

J. H. SALMON
Head Office
Economic Development

O. M. SHERIDAN
De Witt, Illinois
Products Pipe Line

C. C. VENABLE
Tulsa Area
Production

coast to coast

< Miss Katherine Behr, left, awards first prize to Mr. and Mrs. H. E. Harber for the "corniest outfits" at the Lake Charles Shell Club Barn Dance.

George Logue (left) and Marilyn Donner won top honors in the costume contest when the New Orleans Shell Club members held their annual Tacky Hallowe'en party.

< C. F. Torrey, C. E. Clifton and A. R. Cowan (from left) rec
ten-year emblems from E. W. Jenkins, Northern Division Pipe L
Superintendent, as M. C. Alcorn, Assistant Manager, watch
The service award dinner was held recently in Tracy, Califor

Over 280 Los Angeles Marketing Division employees were h
ored at the recent emblem party in the Biltmore Ho

square dance jubilee

Shell's Houston Employees Turn an Evening of Gaiety Into a Sum of More Than $4,000 for a Local Polio Fund

BLUE jeans and hoop skirts were in order throughout Houston's big night on October 15 when more than 5,000 people jammed the City Auditorium to swing their partners. Paced by callers from 12 different square dance clubs, two rural bands kept the festivities going at a brisk pace for Shell employees and other citizens of the Houston area. When the last weary fiddler packed his bow away, the Harris County Emergency Polio Fund was richer by over $4,100 and Shell people who planned and executed the party felt their efforts had been well rewarded.

The need for money to meet the recent polio outbreak in the Houston area became evident when the Emergency Fund fell short of its goal by $7,000. To help meet the deficit, the square dance was sponsored by the Shell Employees' Recreation Association of the Houston Refinery and Houston Chemical Plant. Shell participation, however, was widespread with the downtown employees' club of Shell Oil Company and Shell Pipe Line Company helping to sell tickets and the Company giving a hand with advertising over station KXYZ. Some 250 local businessmen cooperated in the distribution of tickets to the gala affair.

As special guests, six young polio patients from Houston hospitals took an active interest in the proceedings. Watching them, committee members said: "The jamboree meant a lot of headaches and work—but the sight of those six crippled boys and girls was all it took to make every bit of it worth while."

< Houston Refinery's Clarence Sharpe officiated as the Jubilee chairman and called dances for the gay crowd above.

A young honor guest (below) is assisted by Shell's Don Bailey and Herbert Hall (left to right). Houstonians of many ages attended the costumed festivities. V

Among the enthusiastic participants at the Square Dance Jubilee, Shell's Jack Staton cuts a fancy figure with the wife of Jack Taylor, Houston Refinery Welder (immediate foreground). >

safety makes news

SHOWING the way to 22 Class A American refineries in the first year refineries have been allowed to enter the contest on an individual basis, Norco Refinery won the 1948-1949 Petroleum Section Safety Council Award. Honored at the National Safety Council Congress held in Chicago late last month, Norco led with a 0.70 accident frequency rate . . . less than one accident per million man-hours worked. The average for Class A refineries was 4.82.

At the same meeting, Shell Pipe Line Corporation won the second-place award among Oil and Gas Pipe Line Companies for the least disabling injuries during the year ending June 30, 1949. Shell Pipe Line's disabling injuries per million man-hours worked were 2.08.

Another Shell safety headline winner in October was the East Products Pipe Line which received the National Fleet Safety Contest Award for Group 2 of the Intercity Truck Private Carrier Division Contest. Winning over 38 competitors, the East Line truck fleet operated from July, 1948 through June, 1949 without a reportable accident. The average for the contesting fleets was 1.10 accidents per hundred thousand mile

F. L. Miller, Master Mechanic, East Produc Pipe Line (at left) accepts the Nation Fleet Safety Contest Award from a rep resentative of the National Satety Counc

Early in the month, at a ceremon in Odessa, Texas, R. L. Duncan switcher in the Midland Area Pr duction Department, was awarded th President's Medal of the Nation Safety Council, and C. M. Marsde another Shell switcher, and O. Whiteside of the Gulf Oil Corporatio received Certificates of Assistanc They were honored for successfull applying the Schafer Prone Pressur Method of Resuscitation to O. Binnicker last January 5 at the Co nell lease in the Penwell field of south west Ector County. Binnicker, pusher for a tank repair compan had been overcome by gas fumes.

Safety Council award winners C. M. Marsden, R. L. Duncan and O. B. Whiteside (right) with B. L. Ryan, Midland Area Manager (second from right), who presented the awards.

Norco's Safety Committee examines the refinery's award. Left to right, they are: standing, P. E. Hurley, Refinery Manager; T. O. Hendry, G. H. Peters, A. L. Cameron, S. C. Harris and H. C. Millican; seated, W. J. Bodin, G. Bertram, V. E. Bradley, G. E. Cleveland and E. G. Simon.

Service Birthdays

Thirty Years

J. R. HARMAN
Coastal Division
Administration

J. C. LIGHT
Martinez Refinery
Dispatching

J. F. LORIO
Norco Refinery
Engineering Field

M. J. LORIO
Norco Refinery
Engineering Field

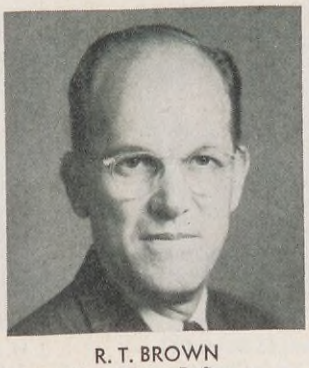
H. C. SHIPMAN
Tulsa Area
Production

U. R. SOUTHARD
Wood River Refinery
Engineering Field

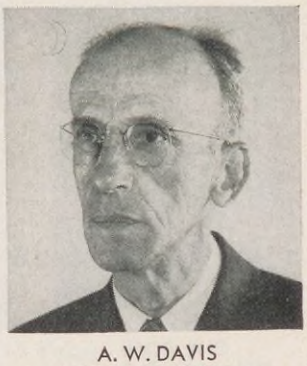
Twenty-Five Years

W. H. BAILEY
Wood River Refinery
Lubricating Oils

A. A. BARNES
Wood River Refinery
Engineering Field



R. T. BROWN
Wood River Refinery
Personnel & Ind. Relations



A. W. DAVIS
Wilmington Refinery
Engineering Field

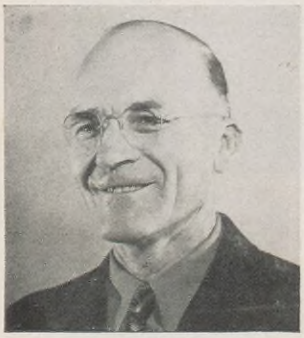
TWENTY-FIVE YEARS—*Continued*

D. H. FILBERT
Los Angeles Office
Treasury

M. J. FREICHEL
Chicago Division
Operations

ARTHUR HELD
Wilmington Refinery
Engineering Field

L. P. HITT
Shell Pipe Line Corporation
Mid-Continent Area

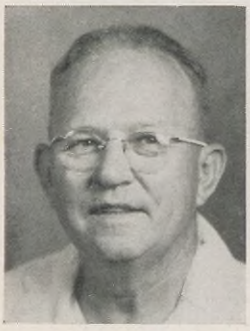


J. B. JONES
Wilmington Refinery
Cracking

CLAUD KARNES
Wood River Refinery
Engineering Field

F. J. LEE
Martinez Refinery
Dispatching

D. G. McGINTY
Shell Pipe Line Corporation
Mid-Continent Area



C. A. MEYER, JR.
Wood River Refinery
Engineering Field

B. F. PUHSE
Wood River Refinery
Engineering Field

O. H. REEVES
Tulsa Area
Gas

M. T. REINES
Sacramento Division
Treasury

P. F. ROMER
Coastal Division
Production

C. A. ROSE
Wilmington Refinery
Dispatching

CHARLES SCHMITT
St. Louis Division
Treasury

J. H. SCHULKE
Tulsa Area
Production

H. J. SEEGER
Wood River Refinery
Engineering Field

E. R. SHEETS
Tulsa Area
Production

H. W. SHEPPARD
Wood River Refinery
Cracking

W. I. SMOTEL
Los Angeles Basin Division
C. & M.

M. J. STROMGREN
Head Office
Exploration & Production

O. N. WAGGONER
Tulsa Area
Production

E. D. WINTERS
Tulsa Area
Production

SHELL OIL COMPANY

Head Office

20 Years

T. A. Garbutt ..... *Marketing*
M. Marcus ..... *Marketing*
L. P. Pattison ..... *Marketing*

15 Years

V. R. Bjorkman ..... *Marketing*
H. D. Loeb ..... *Economic Development*

10 Years

G. H. Donovan, Jr. ..... *Marketing*

San Francisco Office

15 Years

N. V. Du Chesne ..... *Treasury*

Exploration and Production

HOUSTON AREA

15 Years

J. L. Alford ..... *Production*
E. W. Larsen ..... *Production*
W. F. Rockholt ..... *Production*
O. E. Simpson ..... *Production*

10 Years

C. A. Craighead ..... *Production*
S. D. Rainey ..... *Exploration*
A. Whitley ..... *Production*

MIDLAND AREA

20 Years

J. J. Havens ..... *Production*

15 Years

H. H. Honea ..... *Production*

10 Years

J. L. Kennedy ..... *Production*
D. H. Trahan ..... *Production*

NEW ORLEANS AREA

15 Years

G. S. Cooper ..... *Gas*
E. J. McLain ..... *Land*
W. S. Pike, Jr. ..... *Exploration*
J. E. Reed ..... *Personnel & Ind. Relations*
H. C. Winfree ..... *Production*

10 Years

S. D. Ballard ..... *Land*
W. W. Cloud ..... *Treasury*
C. H. Esterlein ..... *Production*
R. C. Magnuson ..... *Production*

TULSA AREA

20 Years

L. E. Brown ..... *Production*
J. S. Clark ..... *Production*
M. Emerson ..... *Gas*
R. S. Grove ..... *Production*
F. D. Scott ..... *Production*
G. W. Young ..... *Production*

15 Years

J. S. Brien ..... *Personnel & Ind. Relations*
N. P. Curtis ..... *Production*
C. O. Owens ..... *Production*
D. Rogers ..... *Production*
E. I. Sierer ..... *Land*

10 Years

B. G. Swain ..... *Production*
A. W. Trepatz ..... *Exploration*

COASTAL DIVISION

20 Years

F. Eaton ..... *C. & M.*
H. Hughes ..... *Production*

15 Years

C. C. Ayers ..... *Production*
E. A. Beckett ..... *Gas-Gasoline*
L. L. Lisman ..... *C. & M.*
L. Murray ..... *Production*

10 Years

B. C. Daly ..... *Gas-Gasoline*

LOS ANGELES BASIN DIVISION

20 Years

J. Goodart ..... *Garage*

15 Years

T. M. Stoddard ..... *Treasury*

SAN JOAQUIN DIVISION

15 Years

T. E. Eveleth ..... *Production*
J. W. Moore ..... *Production*
D. L. Whitfield ..... *Production*
C. T. Wood ..... *Exploitation*

PIPE LINE

15 Years

W. L. Mitchael ..... *Pipe Line-South*

Manufacturing

HOUSTON REFINERY

20 Years

R. V. Board ..... *Stores*
C. R. Gates ..... *Cracking*
J. W. Matthews ..... *Cracking*
J. H. O'Farrell ..... *Dispatching*
R. D. Perry ..... *Treasury*

15 Years

H. F. Ireton ..... *Engineering Field*

10 Years

J. W. Brown ..... *Engineering Field*

MARTINEZ REFINERY

20 Years

J. J. Foged ..... *Lubricating Oils*
S. F. Sardo ..... *Engineering*

15 Years

H. J. Fivash ..... *Cracking*
W. D. LaFleur ..... *Cracking*

10 Years

R. Anderson ..... *Research Laboratory*
H. A. Foster ..... *Asphalt*

NORCO REFINERY

20 Years

G. C. Bourgeois ..... *Engineering Field*
A. J. Chauvin ..... *Laboratory*
R. J. Englade ..... *Gas*
B. Vicknair ..... *Engineering Field*

15 Years

E. E. Duhe ..... *Engineering Field*
G. E. Songy ..... *Distilling*
J. D. Walker ..... *Laboratory*

WILMINGTON REFINERY

20 Years

D. Ledonne ..... *Engineering Field*
C. F. Workman ..... *Personnel & Ind. Relations*

15 Years

D. U. Beaver ..... *Compounding*
H. M. James ..... *Alkylation*

WOOD RIVER REFINERY

20 Years

L. Adkins ..... *Distilling*
E. F. Hatten ..... *Lubricating Oils*
J. T. Hawkins ..... *Distilling*
W. C. Kirk ..... *Lubricating Oils*
G. T. Lamm ..... *Engineering Field*
E. P. Loire ..... *Railroad Section*
M. S. Magee ..... *Lubricating Oils*

15 Years

J. L. Harris ..... *Engineering Field*
P. S. Helm ..... *Gas*
J. Levora ..... *Alkylation*
G. E. Mallory ..... *Control Laboratory*
C. H. Mankel ..... *Engineering Field*
H. T. Plank ..... *Lubricating Oils*
W. E. Vandergriff ..... *Engineering Field*

10 Years

W. K. Camp ..... *Engineering Field*
A. J. Certa, Jr. ..... *Engineering Field*
C. H. Determann ..... *Engineering Field*
F. A. Donahue ..... *Gas*
H. E. Dubin ..... *Engineering Field*
S. M. Fulkerson ..... *Engineering Field*
C. A. Kovarick ..... *Engineering Field*
B. B. Lyster ..... *Engineering Field*
W. F. Monahan ..... *Cracking*
W. H. Nietert ..... *Gas*
G. E. Schaaf ..... *Dispatching*
M. E. Sepo ..... *Engineering Field*
R. E. Sims ..... *Distilling*
F. O. Smith ..... *Cracking*
F. W. Tonkinson ..... *Engineering Office*

Marketing Divisions

20 Years

P. A. Bellinger ..... *Albany, Operations*
H. R. Butler ..... *Albany, Sales*
J. W. Domermuth ..... *Albany, Operations*
W. D. Duncan ..... *Albany, Operations*
W. L. Ball ..... *Atlanta, Sales*
G. F. Marsh ..... *Atlanta, Sales*
C. G. Mooney ..... *Atlanta, Sales*
H. W. Hancock, Jr. ..... *Baltimore, Operations*
H. McCurdy ..... *Baltimore, Marketing Service*
E. P. Robertson ..... *Baltimore, Operations*
F. R. Chase ..... *Boston, Sales*
M. J. Gilligan ..... *Boston, Operations*
D. W. Lehan ..... *Boston, Operations*
B. B. MacLeod ..... *Boston, Operations*
H. J. McDermott ..... *Boston, Operations*
H. E. Sullivan ..... *Boston, Operations*
R. Ginley ..... *Chicago, Treasury*
H. F. Schmid ..... *Chicago, Treasury*
Vera E. Hahn ..... *Cleveland, Marketing Service*
R. E. Kincaid ..... *Cleveland, Operations*
B. J. Brusiee ..... *Detroit, Operations*
J. O. Mathews ..... *Los Angeles, Treasury*
J. W. Kennedy ..... *New York, Operations*
W. H. Luis ..... *New York Operations*
R. T. McIntyre ..... *New York, Operations*
A. J. O'Keefe ..... *New York, Operations*
H. W. Ryerson ..... *New York, Operations*
J. Van Hook ..... *New York Operations*
L. P. Rippin ..... *Sacramento, Operations*
G. E. Conaway ..... *St. Louis, Treasury*
J. A. Leonhardt ..... *St. Loius, Operations*
W. Calder ..... *Seattle, Treasury*
W. W. Strane ..... *Seattle, Treasury*

15 Years

V. C. Guptill ..... *Boston, Operations*
H. J. Holihan ..... *Boston, Operations*
R. M. Lampe ..... *Boston, Sales*
S. Murray ..... *Boston, Operations*
W. Rozett, Jr. ..... *Boston, Sales*
F. S. Young ..... *Boston, Operations*
T. Atkinson ..... *Detroit, Operations*
A. M. Champagne ..... *Detroit, Operations*
L. W. H. Chock ..... *Honolulu, Operations*
J. F. Burks ..... *Indianapolis, Operations*
A. A. Gregory ..... *St. Louis, Operations*
E. R. Heyman ..... *St. Louis, Operations*
J. A. Layton ..... *St. Louis, Operations*
L. Silverstein ..... *St. Louis, Marketing Service*
A. Trefz ..... *St. Louis, Operations*
J. K. Whittlesey ..... *San Francisco, Sales*
E. S. Wiebalk ..... *San Francisco, Sales*

10 Years

C. J. Gayhardt ..... *Baltimore, Operations*
J. J. Hartell ..... *Los Angeles, Sales*
V. B. Knese ..... *St. Louis, Operations*
W. D. Walsh, Jr. ..... *St. Louis, Sales*

Sewaren Plant

20 Years

J. S. Pollock ..... *Termin*

10 Years

E. DaCunha ..... *Termin*
Anne M. Dyer ..... *Treasu*

SHELL CHEMICAL CORPORATION

15 Years

L. C. Caldera ..... *Shell Po*
A. D. Latham ..... *Shell Po*

10 Years

G. A. Daniels ..... *Western Divisi*
J. H. Hunt ..... *Houst*
J. V. Kimball ..... *Shell Po*
E. R. Mosley ..... *Houst*
J. Smilek ..... *Houst*
L. Stephens ..... *Houst*

SHELL DEVELOPMENT COMPANY

20 Years

Helen M. Holland ..... *San Francis*
R. C. Mobley ..... *Emeryv*

15 Years

R. C. Archibald ..... *Emeryv*

10 Years

J. R. Weaver ..... *Emeryv*

SHELL PIPE LINE CORPORATION

20 Years

J. H. Ash ..... *West Texas A*
F. E. Bulman ..... *Mid-Continent A*
J. A. Chastain ..... *Texas-Gulf A*
C. R. Eller ..... *Bayou Sys*
W. K. Hawthorn ..... *West Texas A*

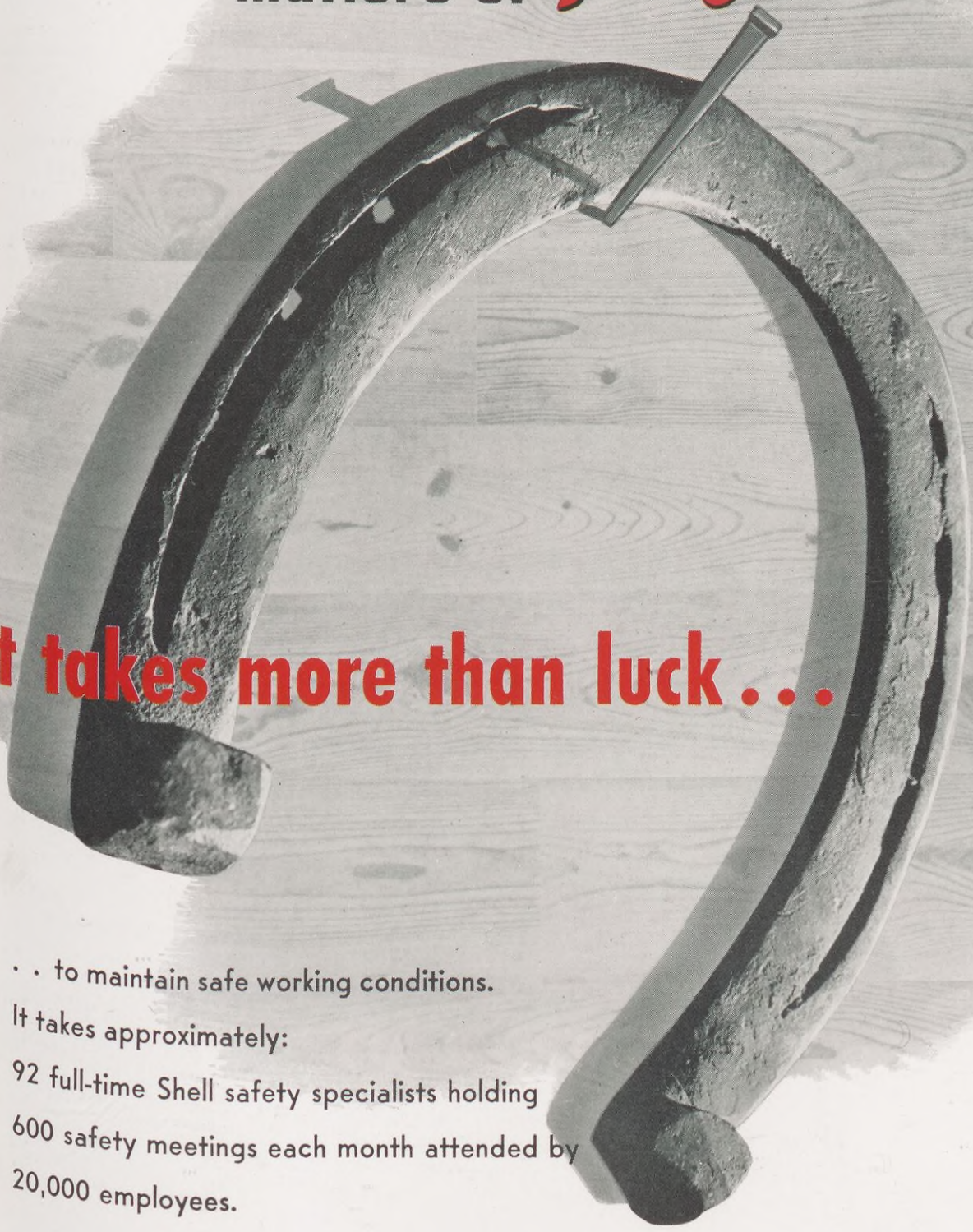
15 Years

M. L. Daft ..... *Head Of*
J. M. Holder ..... *Mid-Continent A*
W. K. Scudday ..... *West Texas A*
W. E. Wadsworth ..... *West Texas A*

10 Years

E. E. Cox ..... *Bayou Sys*
J. M. Wiggins ..... *Head Of*

matters of *Fact*



it takes more than luck . . .

. . to maintain safe working conditions.

It takes approximately:

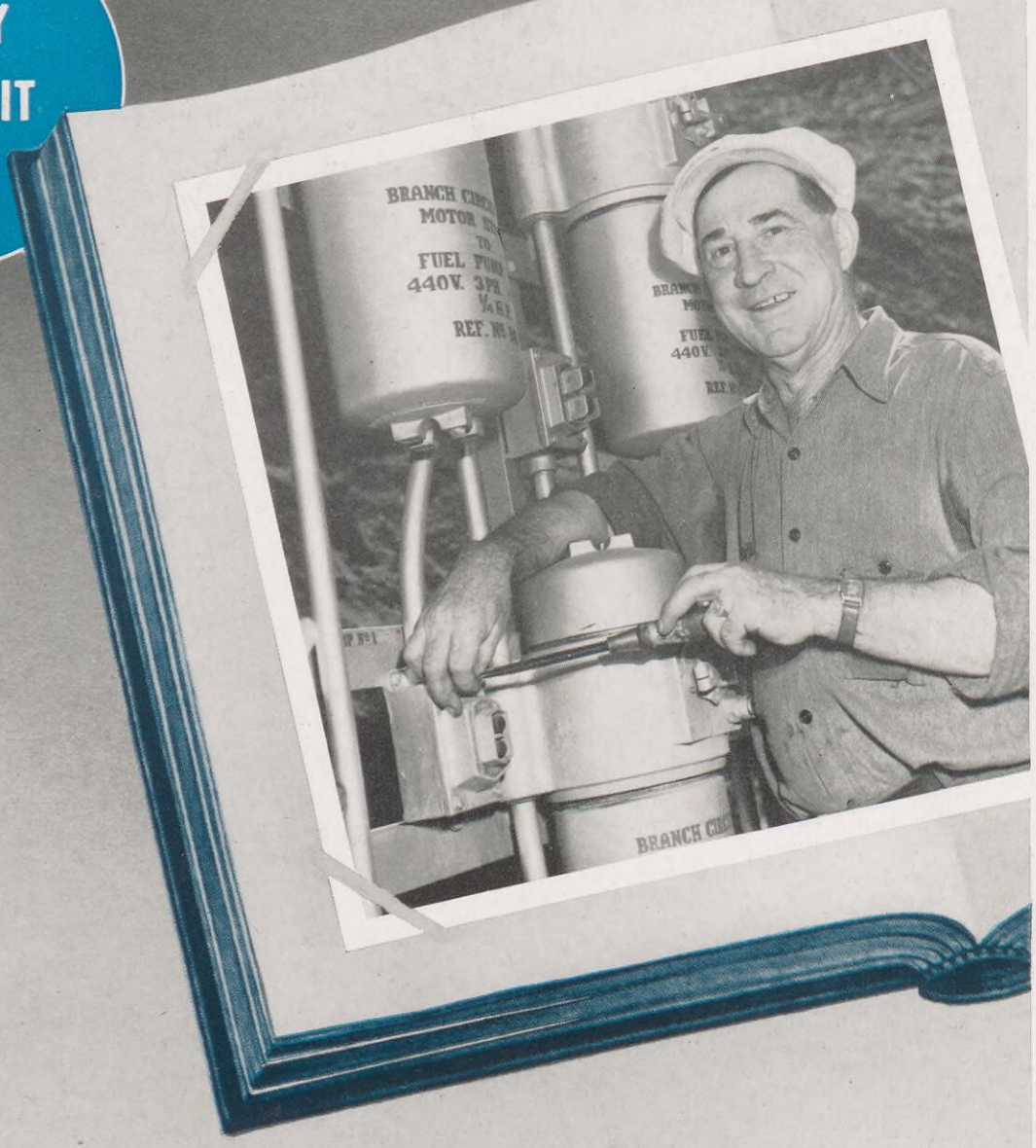
92 full-time Shell safety specialists holding

600 safety meetings each month attended by

20,000 employees.

But, most of all, safety on the job depends on YOU!

FAMILY PORTRAIT



ELECTRICIAN (Manufacturing)

CHARLES J. SHELTON

Last year Shell electricians serviced facilities which enabled refineries and chemical plants to consume 720,000,000 kilowatt-hours of electricity. That was enough power to meet the average domestic requirements of as many people as live in Los Angeles. These specialists install and maintain power lines and conduits, electric motors, control system switchboards, lights and alarms. In the shops, they repair electrical equipment—from extension cords to the largest motors and heating elements. Portable electrical equipment that is connected throughout the operating areas is also their responsibility.

One such electrician is Charles Jesse Shelton, who this month completes 29 years of service with Shell, all of them at the Martinez Refinery. Charley had worked on gold dredges before he was employed at Martinez as a Pipefitter Helper on November 15, 1920. About three months later, he switched to electrical work and has seen the capacity of the refinery's electrical system increase five-fold.

Father of two and grandfather of four, Charley lives with Mrs. Shelton in nearby Pacheco. He keeps a fine vegetable and flower garden, although he occasionally exchanges his hoe for a fly rod and enjoys a trout fishing trip in the California mountains.