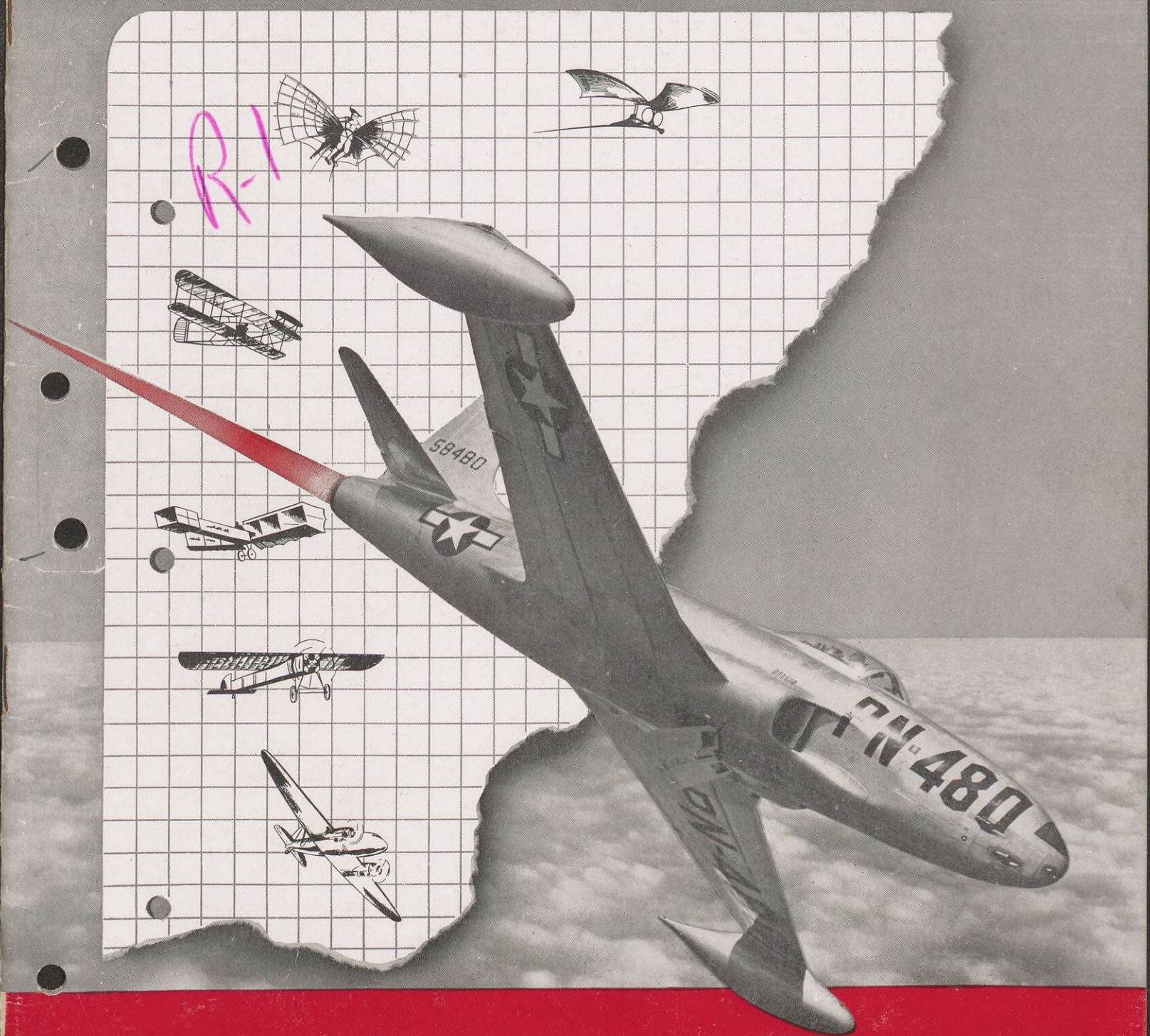
SHELL NEWS



NOVEMBER · 1947


SHELL
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SHELL-LUBRICATION

Shell and Small Business

THROUGHOUT the U. S. there are many thousands of small businessmen who work in close cooperation with big business—to their mutual welfare. The Shell dealer and the Shell distributor are among them.

There are two main groups of Shell dealers. The first type, called the "Open Dealer," owns the service station property or holds the base lease on it. The second type of dealer operates under what Shell calls the "L-Operation." In this case, either Shell owns the property and leases it to the dealer, or Shell leases the property and then re-leases it to the dealer. Both types buy Shell products and resell them to the motoring public.

These dealers are independent businessmen, working for themselves and operating their businesses in the way they think best. They are, in a sense, the "presidents" of their own companies.

In addition to its 22,000 dealers, Shell also has contracts with hundreds of distributors all over the U. S. These distributors are businessmen who distribute Shell products to Shell dealers and to large industrial or commercial consumers in their enfranchised territories.

Why do these thousands of independent Shell dealers and distributors choose to handle Shell products, and what does Shell have to offer that continues to make the association attractive to the dealer?

Well, if you were to start out in the business of selling or distributing petroleum products, what would you look for first? Naturally your primary interest would be a full line of quality petroleum products which were readily accepted by the purchasing public. This Shell certainly offers.

But in the creation and development of the relationship between supplier and dealer or distributor, Shell goes much further and actually helps the dealer to get started in business and to operate his business profitably once it is underway. Shell will assist him in the arrangement of his finances, and trained men will guide him in the selection of the best possible location. He will receive the benefit of the Company's marketing experience and its advertising and sales promotional programs. And that isn't all. The Shell dealer knows that once his business is underway, Shell will continue to give him the benefit of all the best technical and business information available—things he has to know in order to operate at maximum efficiency, but could probably never have the time or necessary resources to find out for himself.

The Company and its dealers and distributors have found that this system of cooperation works and works well. And the success of this teamwork has emphasized one important fact: That big businesses and small businessmen can not only get along together, but they can also work together on a mutually profitable basis.

SHELL NEWS

VOL. 15 • No. 11

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

NOVERMBER • 1947

Employee Publications Division, Personnel Department, New York

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Published by Shell Oil Company, Incorporated. (H. S. M. Burns, President; E. C. Peet, Vice-President, Treasurer; C. S. Gentry, Vice-President, Secretary), for its employees and those of Shell Pipe Line Corporation, Shell Chemical Corporation and Shell Union Oil Corporation. Address communications to Shell News, Shell Oil Company, Inc., 50 W. 50th St., New York 20, N. Y.

INFERNO

THE citizens of New England had never experienced such a glorious Indian summer. August temperatures had carried over into late October, making the rustling heaps of fallen leaves seem curiously out of place. Easterners, long accustomed to chilly weather as early as Labor Day, were watching late October football games in shirtsleeves. And for many weeks, not a single cloud had appeared to blot the clear blue of the sky. That was pleasant but dangerous. The Maine forests, as well as every wooded area from New Jersey to Canada, were bone dry, and cautious citizens knew that an uncontrolled spark or a carelessly discarded cigarette could result in disaster.

Suddenly—without warning—the New England tinderbox exploded in blasts of flame that leapt hundreds of feet into the air. Wooded areas, dry as old parchment, succumbed to the advancing fire. The State of Maine was hardest hit. There, from Acadia National Park south along hundreds of miles of coastline to New Hampshire, the citizens of Maine set their teeth and prepared to do battle with the huge fires that ultimately destroyed 1,056 homes, gutted 100,000 acres of woodland, killed 13 people, and left 2,500 homeless.

Among the thousands of citizens who dropped everything and voluntarily went into battle against the great fires were the Shell employees in the disaster areas. Most of these were Company employees at the South Portland (Maine) Terminal. Their entire fleet of four tank trucks and one stake truck was turned over to fire fighters and remained with them for five days. The fifteen driver-salesmen, yardmen, and male clerks at the South Portland Terminal put in more than 295 hours driving Shell trucks loaded with water to the fire zones—all this exclusive of the uncounted hours they devoted to the back-breaking

Shell Employees and Equipment Battled the Flames That Recently Engulfed the Maine Seaboard

work of fire-fighting itself. And while all this was going on, the women employees at the South Portland Terminal were not idle. They did patrol duty, made sandwiches and coffee, packed food boxes, and sorted garments which had been collected by relief agencies for people who found the only possessions they had left in the world were the clothes on their backs.

Shell's South Portland trucks were driven over a thousand miles in combatting the huge fires. Most of that mileage was piled up in driving water from loading zones to fire zones.

The demand for water was so urgent that some stake trucks even had 2,000 and 3,000 gallon underground tanks strapped to their platforms. Every conceivable vehicle was put to use in some way in the desperate effort to get water to the burning areas. From miles around oil companies and truck companies sent equipment to help meet the crisis. Shell's semi-trailer truck, driven trip after weary trip by Driver-Salesman Wendell Daggett, came in especially handy. Supplied with an auxiliary pump, Daggett's truck did not have to remain stationary as did most of the orthodox fighting equipment. Instead, he kept it moving along, with volunteer firemen walking alongside manning the hose. In many spots, the fire raged only four or five feet away, singeing their eyebrows with its intense heat, and coating their faces with black soot. But the daring of these men paid dividends. Many people felt that the Shell semi-trailer, with its self-contained equipment, was largely responsible for saving the village of Clarks Mill.

Right. Volunteer fire-fighters left for disaster areas by the truckload. Shell tank trucks followed with thousands of gallons of precious water.

Far right. Shell employees in the area fought against the fires in many different ways. Driver-Salesman Bill DeCosta, assisted by volunteers, put in many exhausting hours hauling water.

Aerial observers were able to get a vivid picture of the extent of the great fires which leveled thousands of acres.

Some farm animals had to be turned loose to save themselves as best they could. Many pigs and cows became fear-crazed and headed straight for the flames.

Shell's stake truck became especially valuable when the towns of Saco and Biddeford were threatened. When the fire began to bear down on those towns, the citizens began a mass evacuation with as many of their belongings as they could carry. Driver-Salesman Lou Barth, who spent most of his time fighting the fire and who narrowly escaped tragedy when he and two other men were almost surrounded by fire, had even more things to worry about when he realized that his own house was in the direct path of the flames. Shell's stake truck evacuated Barth's family and household goods; then, fortunately, the winds shifted just in time to save his house. Unlike hundreds of others who were less fortunate, Barth was able to move back in when it was all over.

While Shell equipment and men fanned out to fight the fires in surrounding territory, the South Portland Terminal itself suddenly became threatened. Fire broke out in the town of Scarboro, only four miles from the Terminal, and gale winds made the threat even more serious. All possible precautions were taken as townspeople and Terminal employees prepared for the worst. Fortunately, however, the fire was brought under control before it reached South Portland.

Water was not the only thing urgently needed to combat the roaring flames. Because of the heavy demand by fire fighting equipment, gasoline supplies became dangerously low. But to transport gasoline into these burning areas was an extremely dangerous undertaking. Shell's men were advised beforehand of the dangers they would have to face, but, without hesitation, Driver-Salesmen Lucien Fraser and Frank Patten volunteered to make the scheduled deliveries.

The Shell dealer location at Hollis, owned and operated by Mr. Frank Clark, was the operational headquarters for all fire fighting activity in the area. From this Shell station, the Chief of the Portland Fire Department directed all operations.

When disaster strikes, those whom it affects have to work hard to minimize the general suffering. The Maine fires were no exception. Everyone who possibly could worked long and unselfishly. Sleep was reclassified as a luxury.

District Salesman H. S. "Hockey" Field, volunteered to help one of the tank truck drivers. After catching a glimpse of the roaring flames, he changed his mind. Instead, he jumped out of the truck and went to work battling the fire directly. For three gruelling days he got no rest at all.

One morning, while Driver-Salesman Russ Hall was transporting water through the mountains near Westboro, the wind started up and fire broke out all around him. No sooner had he started fighting the fire on one side of the road than it crossed to the other side and left him trapped. Then, to top it all off, his truck got stuck. After a few anxious moments that seemed like hours, help appeared and Hall and his truck were towed to safety.

Terminal Superintendent John Dempsey, Depot Superintendent Dennis Hickey, and District Manager G. H. Atkinson, all of South Portland, were on 24 hour call during the entire emergency. For twenty hours every day they dispatched trucks, gave assistance to dealers in the fire areas, assisted families in evacuation, and coordinated efforts with Fire Chiefs, and with the Red Cross and Salvation Army.

As often happens in times of crisis, the things remembered most vividly when the crisis has passed are the relatively unimportant things — the oddities and the ironical situations. Hurrying from Biddeford to Hollis,

Driver-Salesman Vernon Guptill spied three young calves wandering down the road in a daze of fright. He took time to stop his car, get out, and steer them into a safe place. Guptill still wonders how several houses in the middle of fields were burned, while several other houses, which were surrounded by trees, managed to escape. He saw many buildings that weren't even touched even though the trees immediately surrounding them looked like giant black telephone poles after the fire had passed.

Guptill was also impressed by the grim irony that lay behind the attempt of one man to save some of his property. Thinking that his garage was doomed, this man moved his truck out and parked it several hundred feet down the road. The unpredictable path of the flames shifted unexpectedly, consumed the truck, and left the empty garage unscathed.

On the afternoon of October 23, fire was raging on the outskirts of Rochester, N. H., and an urgent appeal went out for all available tank trucks in the area. A tank truck and a pick-up from the Shell Depot at Newington went into service and were supplemented by a 1,500 gallon tank truck from the Lakeport Depot. When the uncontrollable flames leaped across the Salmon Falls River from Rochester into the State of Maine, the Newington truck followed, and helped in the successful battle to save the town of North Berwick.

When it was all over, the people of Maine were too exhausted to think. They just fell into bed for the first uninterrupted sleep they had had for days. But when they awoke, the smell of smoke was still in the air to remind them of what they had been through. They looked around them and shuddered at what they saw. Despite their valiant efforts, the fire and smoke and water had caused damage estimated at more than 30 million dollars. And they guessed that it would take nature at least fifty years to restore the thousands of acres of timberland that had been destroyed.

▲ Wooden buildings were so dry after weeks of no rain that when they caught fire they went up like kindling wood. This was once a house.

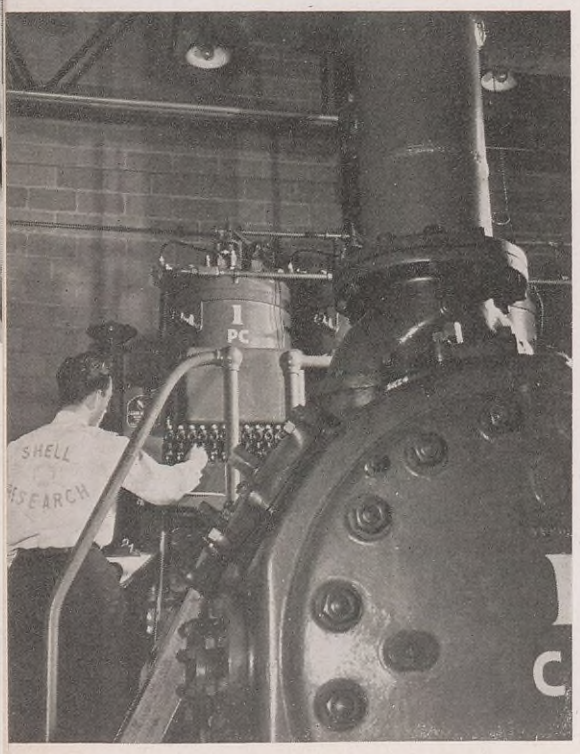
Driver-Salesman Frank Patten was one of ▶ the many who ignored sleep. He ended up soot-covered and completely exhausted.

After the fire had passed, some areas reminded air observers of atom-bombed Hiroshima. These pock-marks were once homes. ▼

BUCK ROGERS IN THE 20TH CENTURY

BY THE END OF THE NEXT DECADE THE CONVENTIONAL AIRCRAFT ENGINE WILL PROBABLY BE ON ITS WAY TO THE MUSEUM AND JET POWER WILL BE TAKING ITS PLACE.

This massive compressor at the Wood River Laboratory supplies the enormous amounts of compressed air needed for jet burner research.



AMERICANS, raised on a diet of Flash Gordon comic strips and Buck Rogers broadcasts, ought to be ready for anything. Yet most of them will be surprised to know that, within 10 years, they may actually be riding in a distant cousin to one of the fantastic space ships they've read and heard about.

The theory behind jet propulsion is not new. Every schoolboy who has ever watched a Fourth of July rocket arch its way through the sky has dreamed of using that same power for a rocket flight to the moon. But, even when jet-powered buzz-bombs and V-2 rockets rained destruction on England during the war, there were skeptics who said that the same force could never be used to transport humans.

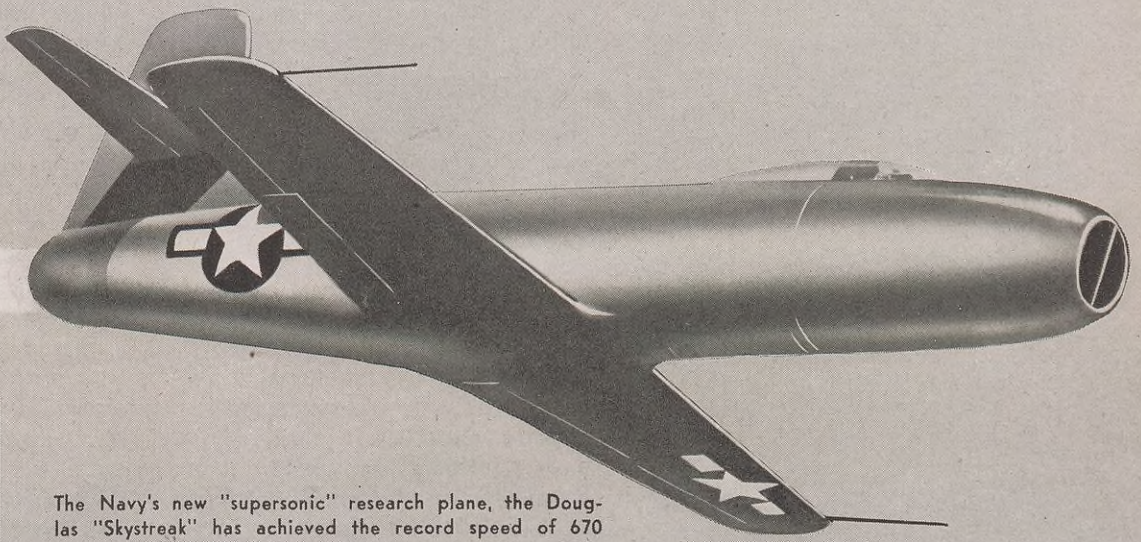
"Jet power is fine for a pilotless bomb," they said. "A bomb should go to pieces when it lands. But how could you land a jet-propelled load of people even if you could get them safely off the ground?"

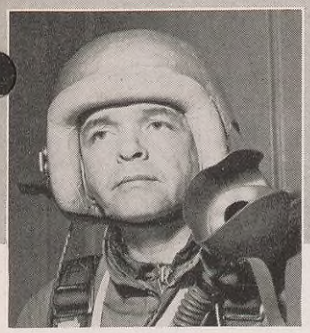
The skeptics have their answer. Jet-engined fighter planes have already won an established place in the Air Forces, and the widespread commercial use of certain types of jet engines may be just around the corner. As a matter of fact, Shell Union Vice-President J. H. Doolittle recently told a group of aviation students that within ten years more than half of our air transports will probably be powered with gas turbine engines. Practically all of these will combine the gas turbine with the conventional propellor, but the use of pure jet will be on the increase. Doolittle pointed to the fact that, in both the U. S. and England, no new high-power reciprocating engines of the conventional type are being developed. Except for improving existing engines, all power plant development is on jet turbines.

So Buck Rogers isn't so far away after all!

Speed Is a Problem

Actually, there are a great many problems that must be solved before "pure" jet engines can be used commercially. Most of these stem from

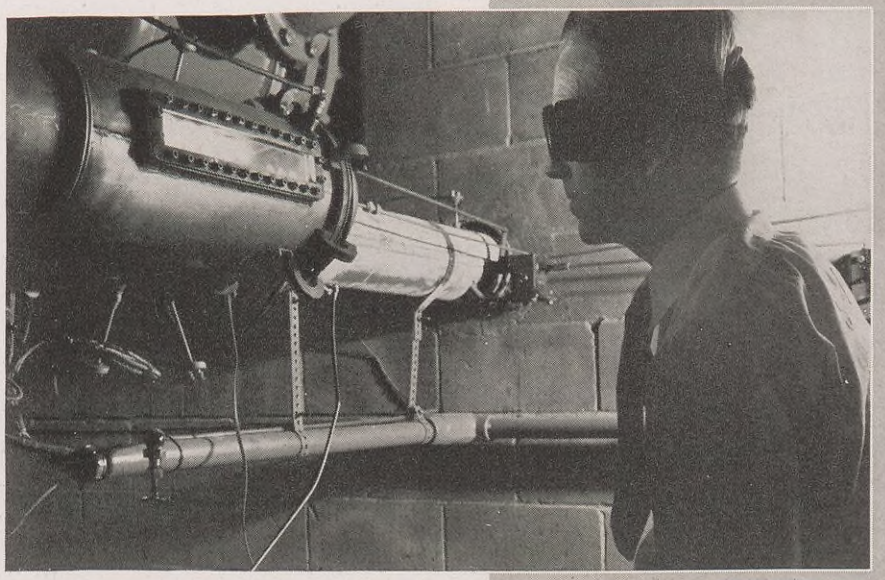




The Navy's new "supersonic" research plane, the Douglas "Skystreak" has achieved the record speed of 670 miles per hour. Left: Gene May, wears protective clothing specially designed for the record-breaking flight.

the terrific speeds at which pure jet planes *must* operate to be efficient. One radical type of jet engine, the ramjet, or "flying stovepipe," which hasn't a single moving part, won't even stay in the air at speeds below 400 miles per hour. For flight below 300 miles per hour and at altitudes less than 25,000 feet the reciprocating engine is still the most efficient type of aircraft engine yet developed.

Fighter planes, of course, can make use of some of the tremendous potentialities of jet power. Under combat conditions, high speed and altitude are not so much problems as they are necessities. Commercial aviation, on the other hand, has not yet found extreme speeds either practical or possible. What is making it turn to jet power is that the large-sized piston-driven engines required to drive extremely large transports are heavy, cumbersome, and present serious physical problems in their manufacture. It is impractical at present to construct and operate reciprocating engines which produce much greater than 3,000 horsepower.



At Shell's Wood River, Ill., laboratory, a research engineer studies fuel combustion characteristics in a one tube jet burner.

Since extremely high speeds are either impractical or impossible for commercial aviation in its present stage of development, something must bridge the gap. The answer lies in the turbopropjet engine.

In man's efforts to fly at greater and greater speeds and farther and

THIS MONTH'S COVER: Silhouetted against a scrap of paper from an aeronautical designer's notebook, the Navy's new Thunderjet zooms through the upper sky. Counterclockwise from top right, drawings represent: 1, Da Vinci's 16th century conception of a flying machine; 2, the flying man of France, a failure in 1788; 3, first type flown by Wright brothers at Kitty Hawk, 1903-5; 4, an early European aircraft, 1906; 5, Bleriot's monoplane, first to fly the English Channel, 1909; 6, a modern transport.

farther from the earth, the turbopropjet stands midway between the conventional reciprocating engine and the pure jet. It combines a gas turbine and "thrust power" with a propeller, and, at speeds below 350 miles per hour, promises take-off power, fuel economy, range and payload *equal* to the conventional reciprocating engines. Beyond that speed, it is far superior.

The Next Step

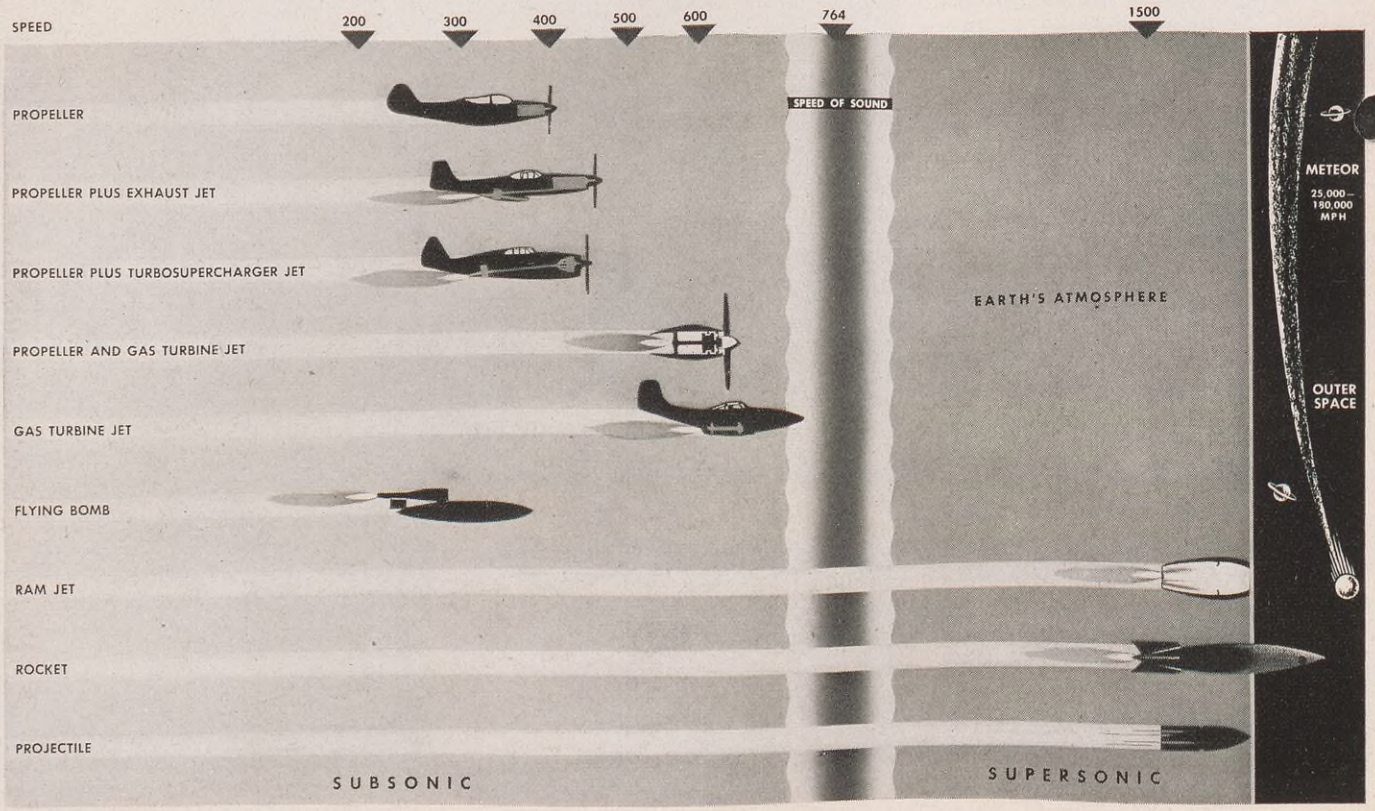
When and if commercial aviation moves into the stratosphere, its next step will logically be to the turbojet, which is already in use on new military aircraft. In this type of power, turbines are used to power a compressor into which feeds air to the combustion chamber. Turbojet is a form of pure jet power, and eliminates the propeller completely. It is usable at speeds up to 800 miles an hour and beyond.

In the more extreme types of jet engines, the gas turbine is eliminated altogether. In the case of the ramjet, the speed of the craft (usually over 1800 mph) is sufficient to compress the air. The pulsejet, which powered Nazi V-1 bombs across the English Channel, also operates without a turbine; flapper-like valves which open with the inrushing air and close with the force of the explosion help supply the compression. So far as passenger carrying possibilities are concerned, ramjet and pulsejets are still in the laboratory stage and are expected to remain there for some time to come. At any rate, their efficiency is so low as to make their commercial operation quite unattractive.

Liquid fuel rocketjets dispense with air. Oxygen and fuel are self-contained in a chemical combustion unit, are ignited and blown out the tail nozzle in a blast of flame at 4,500 miles per hour. If any space-ship ever carries passengers on interplanetary journeys, the rocketjet, because of its self-sufficiency, will be the one to do it.

All of these types have been built and successfully tested. No man, however, has piloted one beyond the speed of 670 miles per hour and lived to tell about it; faster craft have been flown as robots or simply hurled out through space. Medical men still

Chart shows approximate operating speeds expected of various types of propulsion units in the near future. Vertical bands represent transonic region where high speed airplanes are at present encountering difficulties.



do not know the answer to the question: "How fast can the human body travel?" Marine Major Marion Carl who flew a turbojet Douglas Skystreak at a speed of 670 miles an hour said afterward that it was just like traveling at 200. But, at that speed and at the higher ones contemplated, turns and sudden starts and stops are apt to have serious repercussions on the body. Air "bumps" become a serious hazard. Nor have aircraft manufacturers been able to design and successfully test an airframe that will fly at these tremendous speeds and can still get back to earth in a single piece.

Mysterious Wall

Another thing: jet pilots attempting to fly faster than the speed of sound (764 miles per hour at sea level) will have to run straight through an invisible wall. That mysterious wall exists at the speed of sound and is called the sonic barrier. They will have to go through this wall with a burst of speed, perhaps propelled by the extra power of a rocket. Otherwise, it is believed, sound waves will pile up one above the other, buffeting the plane and wrenching at the controls.

Fuel is another problem. Jet engines consume about twice as much fuel as reciprocating engines. This tends to make commercial operations uneconomical, not only because of fuel costs, but also because of the additional weight of the fuel, which reduces the payload potential.

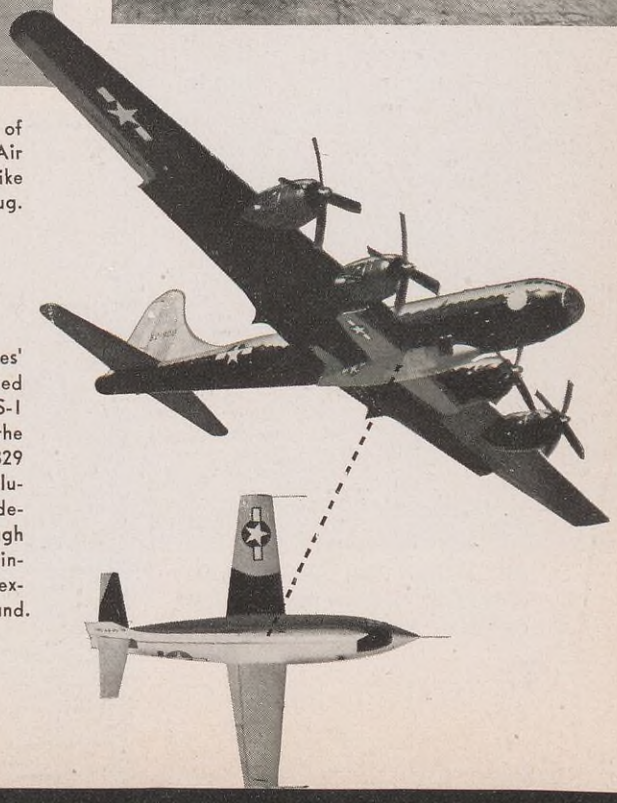
To help meet these problems, Shell has been working with jet fuels in its special jet laboratory at Wood River for three and a half years. For the most part, this research has been a carefully guarded secret.

In May, 1944, an old Wood River pumphouse suddenly began to take on new dignity when it was completely stripped, refurnished, and put under constant guard. Not many people knew it then, but Shell had begun to carry out a series of exhaustive jet fuel tests for the armed forces. Since jet fuel was a comparatively unexplored field, Shell researchers had to start from scratch.

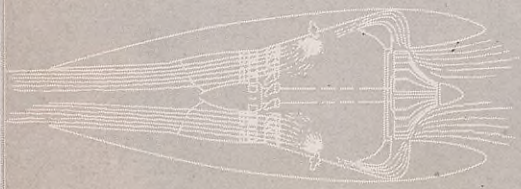
The Army experimental jet bomber XB-47 has a radical design and is propelled by six turbo-jet engines, three fixed to each wing.

A sailor is checked by Navy medics to test effects of a jet engine's vibrations on man. Medical men still cannot answer the question: "How fast can the human body travel?"

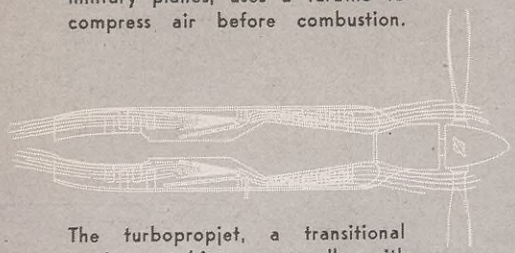
The huge nacelles which house two of the four engines of the U. S. Army Air Forces' new XB-45 jet bomber look like the head and eyes of a gigantic bug.



The Army Air Forces' first rocket-propelled plane, the little XS-1 is launched from the bomb bay of a B29 Super-Fort. The revolutionary plane is designed to break through the supersonic wall, invisible barrier that exists at speed of sound.

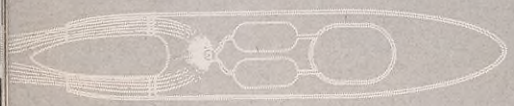


The turbojet engine, now in use on military planes, uses a turbine to compress air before combustion.



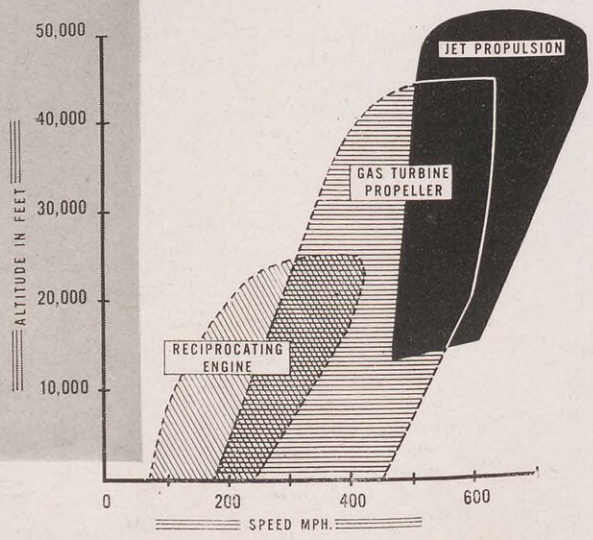
The turbopropjet, a transitional engine, combines a propeller with the "thrust power" of a turbine.

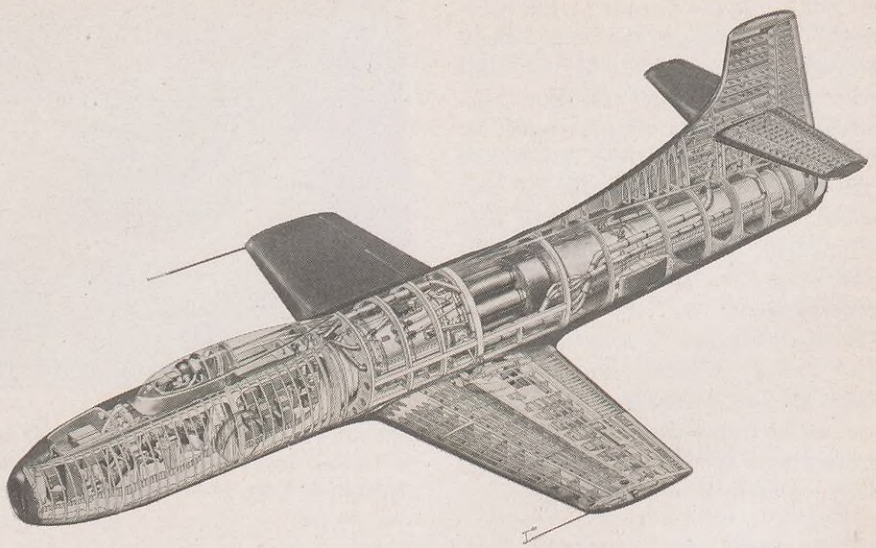
The ramjet engine eliminates both propeller and turbine. Its speed (over 1800 mph) compresses the air.



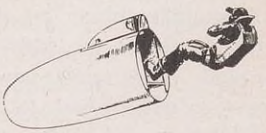
The rocketjet engine eliminates air intake, contains its own oxygen and fuel.

The graph at the right demonstrates the speed and altitudes at which the various types of engines operate most efficiently.





Cutaway drawing of Douglas "Skystreak" shows position of enormous turbojet engine. Right, in cases of emergency entire nose section of plane is thrown off, protecting pilot from air impact. Later, pilot bails out.



Experiments are not confined to gasoline alone, as many people think they are. Shell's technicians are trying many other hydrocarbon products, too . . . kerosene, for example. So far, they've found that no one fuel is best for all engines—and it's been a matter of trying hundreds of different combinations to find the one best suited to each type of jet engine.

To determine the efficiency of jet engines and jet fuels, Shell scientists have brought an actual jet engine into the laboratory. Its exhaust gases are captured and studied to determine the proportion of fuel that has escaped unburned.

A particular problem of jet engines is their tendency to "carbon up" under improper conditions of fuel use. Laboratory tests at Wood River have shown that fuel composition and volatility are not the only factors affecting carbon deposition, but that the intake temperature of the fuel mixture, the method of fuel introduction, and the conformation of the combustion chamber are likewise important.

As a result of their studies, the researchers have been able to make a number of recommendations to engine manufacturers for improvements in jet engine designs.

The whole field of jet power is a challenge to human technology, and, for the present, its horizons appear unlimited. Shell, in collaboration with the entire petroleum industry and with industry in general, will continue to help meet the challenge, help make the dreams of tomorrow the realities of today, help bring Buck Rogers to life—five centuries ahead of time.

Wildcatting by Air

By K. B. Showler

Mr. Showler, a staff writer for The Shell Magazine, was asked for an article on "the loneliest job in the Shell Group." This is his answer.

ECUADOR ITSELF is a remote country. Geographically it is so because lying across the equator on the Pacific coast of the South American continent, it is away from the world's major trade routes. In time, too, it seems remote from the twentieth century. Modern ways of life and thought are apparent in some of the towns, but the greater part of this picturesque country conveys the impression of belonging to another day and age. Large tracts of Ecuadorian territory are still to be explored on foot although during recent years aerial surveys have been made, particularly of the vast Oriente region which, starting at the eastern base of the Andes, stretches away to the Peruvian and Colombian borders, an area of dense jungle, interspersed by a number of rivers and innumerable small streams.

The Oriente is inhabited mainly by two races of Indians, the Jibaros and the Aucas, sometimes termed the Aushiris. The Jibaros are friendly; an Evangelist mission works among them and they do laboring work at the oil camps. They were formerly head-hunters and excelled in the art of drying and shrinking the heads of their enemies. I have seen heads thus treated reduced to the size of an orange, the hair and features remaining in perfect condition as in life. A few years ago the government declared head-hunting illegal, but there is no doubt that the custom still persists, though on a very limited scale. Like most jungle races the Jibaros are small in stature.

The beautiful but forbidding peak of snow-capped Tungurahua, one of Ecuador's many volcanoes, looms over the road to Shell-Mera.

Geophysical parties are often supplied by Grumman amphibians landing on the broad rivers of the Oriente.

"Lonely" is the only word for this Shell geologists' camp in the heart of the forbidding jungle near Cangaime.

Tiputini airstrip, was wrested from the tangled Oriente wilderness by pioneering Shell engineers.

The Aucas are the bad men of the Oriente. Strong and completely untouched by civilization they lead a nomadic life in the dense jungle. Naked, except for a loin cloth, they deeply resent the intrusion into the Oriente of the white man, whom they will slay with long wooden spears, thrown with great strength and accuracy, whenever a favorable opportunity presents itself.

It is in this setting that the Group has established an advanced base (known as Shell-Mera) and three camps where trial holes are to be drilled or are already being sunk in the search for oil. There are no roads deep in the Oriente, so each of the camps receives its personnel and supplies of food, drilling equipment and building material by air from Shell-Mera. Beyond the camps there are at present working two geophysical parties and two geological parties, one within reasonable distance of one of the camps, the other three some two hundred miles away on the Peruvian border. These four parties also receive food and other necessities by air but, as the nature of the terrain prohibits a landing, their supplies are dropped by parachute or are delivered by amphibious aircraft which touch down on the waters of some of the rivers near the border.

As a brief summary of the Group's activities in Ecuador the foregoing paragraph might be considered sufficient, but it does not present anything like a true picture, for it omits all reference to the initial and current problems inseparable from such inherently difficult operations. Furthermore, no mention is made of the ever-present element of danger which marches hand-in-hand with working conditions of this nature.

The planning, erection and maintenance of Shell-Mera and the three camps, together with the drilling work now in progress or timed for the near future, has called for heavy cash expenditure. It has also cost a number of lives through air mishaps or as the outcome of attacks by the Aucas. Shell operations in Ecuador, in fact, sim-

It's rough going in the Oriente, and building a road from Ayuy airstrip to the drilling site at Macuma takes skill with the bulldozer.

ply cannot be prosaically summarized, for there is nothing even remotely prosaic about them. Let me, therefore, try to describe them in greater detail.

The Head Office of The Shell Company of Ecuador is situated in Quito, the capital, a picturesque and architecturally interesting city standing on a narrow plateau of the Andes at an altitude of 9,345 feet, which means that, although it is less than a dozen miles south of the equator, its temperature is only equal to that of a normal spring-time. Shell-Mera is seven hours' car journey distant from Quito, and that seven hours marks the passing from a temperate climate at high altitude to one of tropical warmth at about 3,400 feet above sea level. The journey also covers some remarkably beautiful country, particularly in its latter stages when it traverses a road built by the Group which follows the course of the Pataza River.

The road is mountainous in character and for much of its length is cut out of the sheer face of the rock with a steep precipice falling away on one side. Several waterfalls are passed, including one with a drop of some 200 feet. Being constructed out of the side of the mountains the road is subject to landslides, sometimes slight and cleared away within a matter of an hour or so, sometimes of a major character, taking perhaps a week to move, thus providing problem number one, for this is the only road into Shell-Mera and along it must pass all food and material for Shell-Mera itself and for the camps and geological parties.

In military phraseology, Shell-Mera is an advance base. It receives and dispatches all supplies for Arajuno, Ayuy and Taisha, the three camps, and from it is exercised local supervision of their work, together with the control of flying operations—and flying operations present problem number two. First, there are unfavorable weather conditions to be overcome. Low clouds, mist and rain may keep the aircraft grounded from one to four days on end. Then there are the usual periodical overhauls, not to

A cluster of thatched huts, threaded by a winding road and served by a nearby river, marks the village Puyo to a Shell aerial party.

The road to Shell-Mera winds past the silver cascade of Agoyan waterfall and under the ominous shadow of the towering volcanoes.

Into the yawning mouth of a Bristol freighter at Shell-Mera go supplies for airstrips and drilling camps in the outlying jungle.

Civilization, in the form of telephone poles and frame huts, transforms the Ecuadorean jungle into a camp near the Ayuy airstrip.

Quito, the capital city of Ecuador, hugs a narrow plateau of the Andes mountain range at an altitude if 9,345 feet. Here is located the Head Office of the Shell Company of Ecuador.

mention the development of mechanical faults, all of which again combine to keep some, at least, of the planes out of the air.

At the time I visited Shell-Mera (mid-January) seven aircraft were on the field and three or four more were expected as soon as delivery could be effected. There is a large hangar and workshop facing the wide, 4,200-foot-long airstrip, and when flying conditions are good the aircraft are taking off or landing at the rate of three or four an hour, ranging from a single-engine Norseman to a pair of large Curtiss C-46's, with a couple of Grumman amphibians and two Ford tri-motor transport planes in between.

And that, in brief outline, is Shell-Mera, standing on the verge of the Oriente, with away to the south a view of the volcanic mountain of Sangay intermittently belching puffs of black smoke into the clear air.

The first camp to be constructed was at Arajuno, over fifty miles away. As already mentioned, there are no roads through the jungle, but before aerial operations could begin an air strip had to be laid out. So one day a party of men set forth on mules, taking with them a supply of food, axes, shovels, pick and other tools. In face of much difficulty, many hardships and a vast amount of hard work, a space was cleared, barely sufficient to permit one of the Fords to land. It brought reinforcements and supplies, and in its frequent subsequent flights it transported such things as tractors, bulldozers, building materials to provide accommodations for the men working on the camp site, and equipment of many other types.

With the aid of the bulldozers and tractors the airstrip was enlarged and a road was built to the site where the first test-hole was to be drilled, all the heavy and cumbersome equipment for the rig being transported from Shell-Mera by air. During the early days the camp was attacked by the Auca Indians, who ambushed several isolated working parties, killing a number of them. When at last all was ready, drilling commenced, but at 5,280 feet the hole was abandoned and now another road to another site is being built at Arajuno.

In the meantime a start was made in similar fashion at Ayuy and, more recently, at Taisha. At Ayuy the airstrip at present is not very long and the heavy Curtiss aircraft must touch down on the first ten yards of its length or face the prospect of overrunning the field and meeting with disaster in the surrounding jungle growth. The strip is being enlarged, but at present landing at Ayuy with the larger aircraft is an operation calling for special skill and precision on the part of the pilots.

A winding, undulating road leads from Ayuy through six miles of jungle to the site of the first test-hole, where drilling had reached a depth of 1,600 feet when I was there. The road is being continued to the site where the second test rig is to be erected, and going along it to its present limit of construction I was able to see something of the way these jungle roads are made.

The road engineer having mapped out the course it is to follow, a couple of bulldozers go ahead and make a preliminary clearance of the trees and undergrowth. Gangs of laborers, mainly composed of the head-hunting

A perfect drop! A Douglas DC-3 cargo plane parachutes foodstuffs and work supplies to ground parties clearing the Tiputini airstrip.

Jibaros, then clear away some of the debris while the bulldozers go back and cut out the surface of the road, make cuttings where the rising nature of the ground calls for them, dig and shift vast quantities of ballast to make an embankment, or prepare the way for the laying of a culvert where a stream has to be crossed. The subsoil being clay, the road bed must have a more solid foundation, so a fleet of trucks (also brought by air from Shell-Mera) makes a series of journeys to the Pastaza River for cargoes of large gray stones, laid in place by other labor gangs.

At Taisha, rock formations which

have to be blasted are proving an obstacle to the rapid building of the road which will lead to the site of the trial hole, yet to be drilled.

All the camps are in touch with Quito and Shell-Mera by radio but that, apart from the visiting aircraft, is their only means of communication with the outside world. If it is a lonely life for the men, how much more so is it for the women, for at Arajuno married quarters are being built, some of the houses are completed and already several men have their wives living with them. Shopping—of a strictly utilitarian nature—is done at the commissariat which is a feature of each of the camps and also at Shell-Mera where, too, there is a married colony. Bearing in mind the surrounding conditions and the fact that every item for building has to be transported by air, the accommodations and furnishings of the married houses are remarkable. The latest scheme, to combine service with economy, is to build prefabricated wooden structures both for married staff and bachelors; there is a spacious mess hall at each camp for the use of the latter. Recreational facilities are at present somewhat limited but will be extended if oil is found.

On the whole there is surprisingly little wild life in the jungle around the camps. Such as there is is mostly of the unpleasant kind, such as snakes, of which there are many varieties, big and small, and mostly poisonous. The Oriente is also the home of that nasty fellow, the vampire bat, which is probably one reason for the comparative absence of birds, small monkeys and other mammals, who seem to have agreed not to make their homes there, mainly, one supposes, on account of the neighbors. There are, however, many beautiful butterflies, while after dark innumerable specks of light denote the presence of large numbers of fireflies. Nightfall, too, brings out from their hiding-place large moths and small moths and a great variety of winged insects of different shapes and sizes, most of them intent on dining well and richly off some exposed part of one's anatomy.

The meandering Pastaza River cuts a crooked path through rugged jungle.

During the past twelve months little has been seen of the Auca Indians, and it is hoped that they have realized that they cannot prevent the white man's invasion of what they regard as their domain, and have retired deeper and deeper into the jungle. Certainly, a search by air over an extensive area around the camp sites in which I took part failed to reveal any sign of them, although this failure to observe their possible whereabouts is not conclusive evidence of their departure, for they are skilled woodsmen, make no fires (they eat all their meat and vegetables uncooked), and practically the only cleared spaces observable from the air are along the banks of rivers or streams.

They do not attack openly, but steal up on their intended victims, usually at dusk when the failing light makes the task of following them impossible. The spears they launch are about eight feet long and are made of wood, notched at the sharp end to prevent quick withdrawal. The Aucas do not live in villages, but move about from place to place, making no attempt at cultivation. It is hard to believe that in this highly-civilized age primitive man still exists, but during my stay in the Oriente I gathered sufficient evidence to prove that savagery and sudden death are still inseparable companions.

Such, then, are the conditions under which Shell is working in Ecuador. They are hard and not without risk to life and limb, but they are by no means unpleasant, for the climate in the Oriente is not unhealthy, as is the case in so many tropical regions, while the temperature, though high, is not unbearably hot. The lasting impression I got from a series of visits to the camps was one of intense enthusiasm for the job, and that even if life was at times a bit grim and earnest, it was also great fun and something of an adventure to be searching for oil in such novel circumstances, where every item of food and each piece of equipment, large or small, has to be transported by air.

The cloud capped mountain of Sangay dominates the rugged wilderness conquered by Shell exploratory parties seeking new reserves of oil.

NORCO REFINERY

Chief Engineer

T. O. Larsen

Manager
Topping and Cracking

B. J. Lehman

Manager
Gas

W. M. Frech

Manager
Dispatching

C. J. Troxler

Manager
Marine Shipping

L. C. Oubre

Manager
Laboratory & Treating

W. N. Day

The eleventh in a series of Organization Charts

Shell Oil Company, Incorporated (East of Rockies Territory)

November—1947

Manager

P E. Hurley

Financial Control

st. Supt.

J. B. Dunlap

Office Manager

J. L. Laurent

Manager Stores

C. A. Bearden

Car Department

B. H. Bond

Chief Technologist

S. J. Oertling

Manager Industrial Relations

G. J. Bleakley

Exploration and Production

The 4,350 employees of this portion of the Shell organization have the keystone job of finding oil and bringing it to the surface

(The first in a series of articles on the organization of Shell Oil Company, Inc., East of the Rockies Territory)

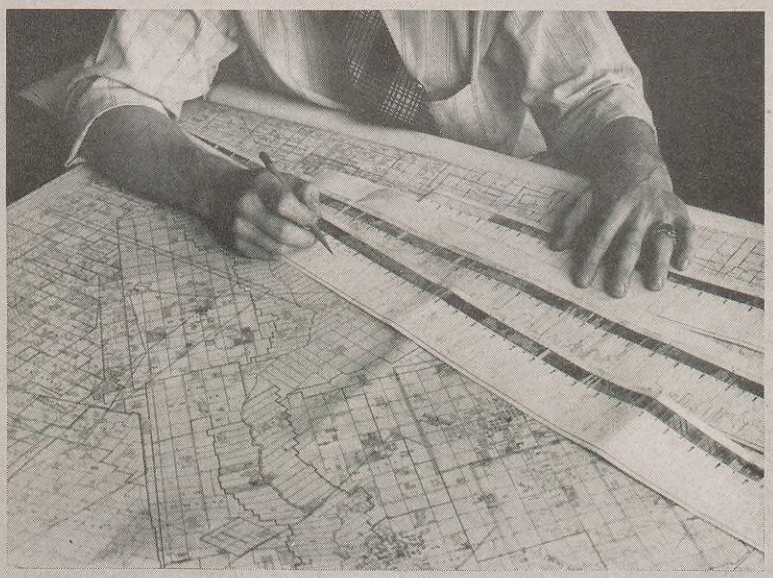
OIL has lain under the ground longer than man has stood above it. Yet it is only in recent times that man has had the knowledge and the tools necessary to find it and bring it to the surface where it can be made useful. Making use of this knowledge and these tools, and helping to advance them, is Shell's Exploration and Production Organization.

Broadly speaking, the principal tasks of Exploration and Production are to discover areas favorable to oil accumulations, to drill test wells in promising areas, to produce oil when found, and to deliver it to pipe lines and other means of transportation to refineries.

These tasks are accomplished with the aid of 4,350 employees whose work is divided into a dozen functional classifications.

As a rule, oil doesn't lie about on the surface where it can be scooped up in buckets. It's hidden deep away in the earth, and the first job of Exploration is—as the name implies—to find it. In some cases surface studies may indicate the presence of anticlines or some other condition favorable for oil accumulation. In many cases, however, no surface information is obtainable and, therefore, subsurface studies are necessary. Exploration employees use hand auger and core drill equipment to locate marker beds near the surface; they make gravity and magnetic surveys and even use the seismograph (earthquake meter) to isolate still further the areas most favorable for oil accumulations.

When tests indicate the possible presence of oil in an area, Exploration then notifies the Land Department and authorizes it to purchase leases on the area.



From data furnished by field parties, map makers project contour lines on maps so hidden structure of underground formations may be interpreted.

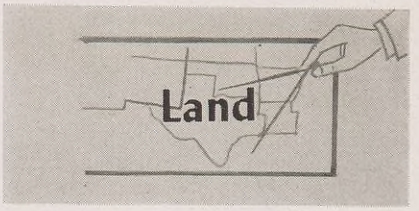
The Land Department searches all titles carefully before oil lands are leased.

The map library at Shell's Houston office contains nearly 20,000 maps.

Title searchers must comb vast files like these in the Texas State Land Office.

If the prospects justify, Exploration recommends the drilling of "wildcat" wells, specifying the formations to be tested, and submits a forecast of the formations and conditions that are likely to be encountered during drilling operations.

All this while, Exploration's "scouts" are collecting information on the activities of the Company's competitors, particularly drilling and leasing information.



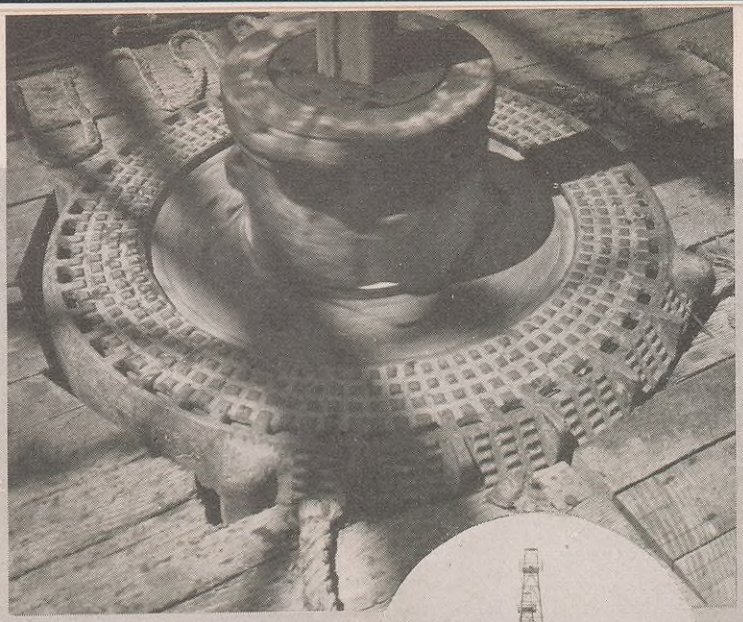
Did you ever buy an old, old house and have the title searched? Then you have an idea of one phase of the work of Exploration and Production's Land Department. Only, when you're dealing with oil leases, you have to be especially thorough.

When the rightful owner or owners of a property have been determined, the Land Department negotiates with them and purchases a lease or mineral interest on their land, or, if the area appears promising but has not yet been explored and evaluated, secures an option on it.

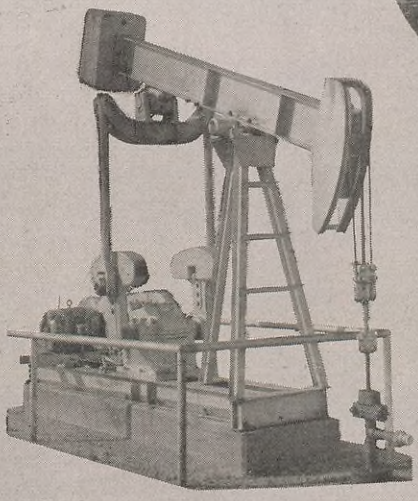
Map-making is an important function of the Land Department and an extensive map library is maintained.

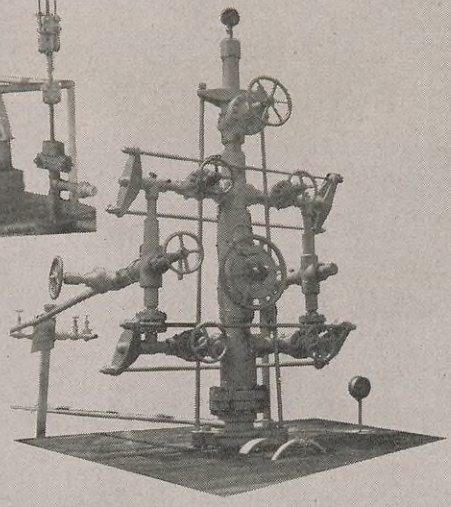
Thousands of individual leases and lease-holders mean thousands *and* thousands of records, and many of the employees of the Land Department devote their attention to keeping records of lands and leases, amount of rentals, and dates for payment of rents, and to paying rents as they become due. The provisions of leases and agreements are brought to the attention of operating executives who authorize their fulfillment or the surrender of the leases.

In cooperation with the Production Department, Land may negotiate the outright purchase of producing properties.



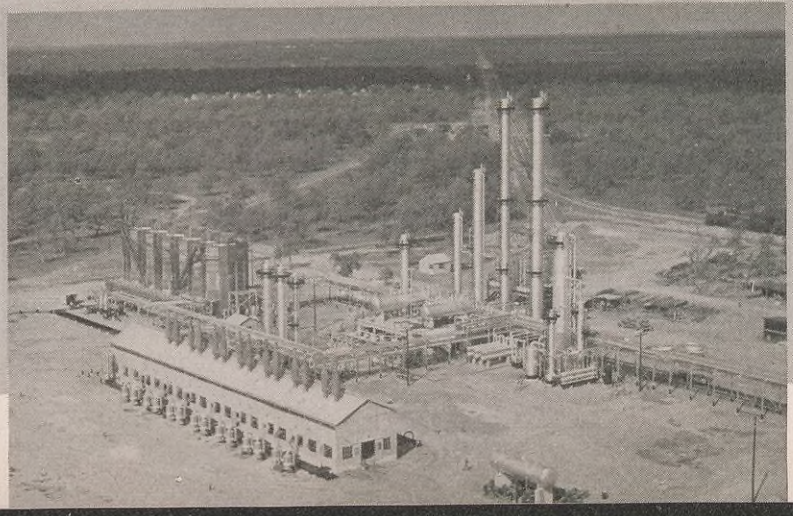
Production drills exploratory wells, exploits fields where oil is found.





The pump and the Christmas tree are important tools of the Production Department.

The Gas-Gasoline Department processes gas in plants like this one at Sheridan, Texas.



Once Exploration has decided *where* an exploratory well should be drilled, it's up to Production to drill it. This means, first of all, the selection of the right type of equipment and the right method of drilling for the particular well. Then, before actual drilling can start, the site must be prepared, roads built.

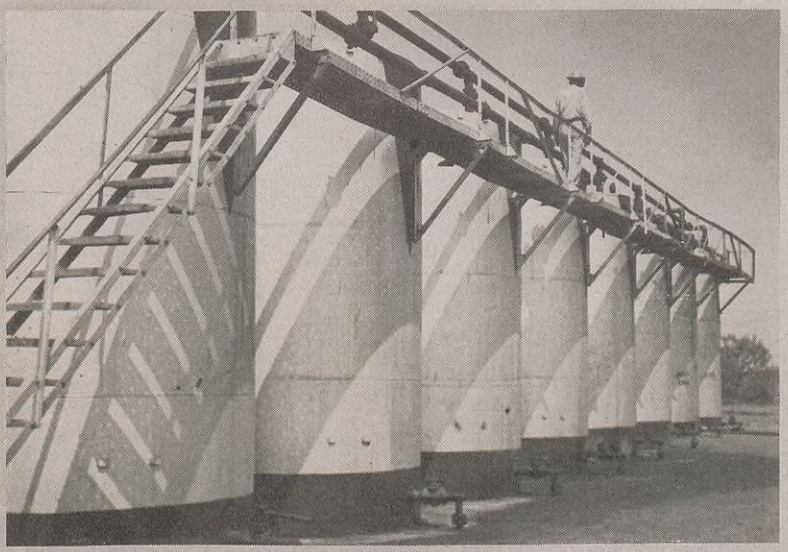
Once drilling has commenced, Production keeps a sharp eye on its progress, carefully testing all "shows" indicating oil and gas accumulations.

Should the exploratory well prove successful, Production will then exploit the field around it, deciding where wells should be drilled and the spacing pattern to be used, depending on the reservoir characteristics and the lease situation. Production will also make careful estimates of the reserves of both oil and gas under the property, and may recommend the purchase of further properties to improve the Company's reserve position.

Finally, Production delivers to the pipe line or other carrier the oil that has been brought to the surface.

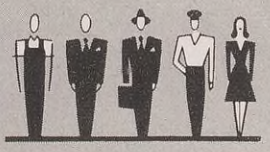
This department advises on the construction of gas-gasoline and cycling plants, and designs, constructs, tests and operates them. In many cases it negotiates agreements for their joint construction and operation with other companies.

The gas and volatiles made available in the course of plant operation are utilized by the refineries or sold. Production and supply are coordinated with the Transportation and Supplies and Manufacturing organizations, and with Shell Chemical and Shell Pipe Line Corporations.

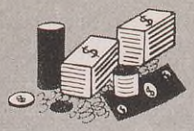


Crude oil, stored in tanks like these, is bought or sold by the Crude Oil Department.

Purchasing-Stores



Personnel and Industrial Relations



Treasury

Tax-Public Relations

Legal

Crude Oil

The Company's crude supply program is studied, proposed and administered by the Crude Oil Department, in cooperation with Production and Manufacturing.

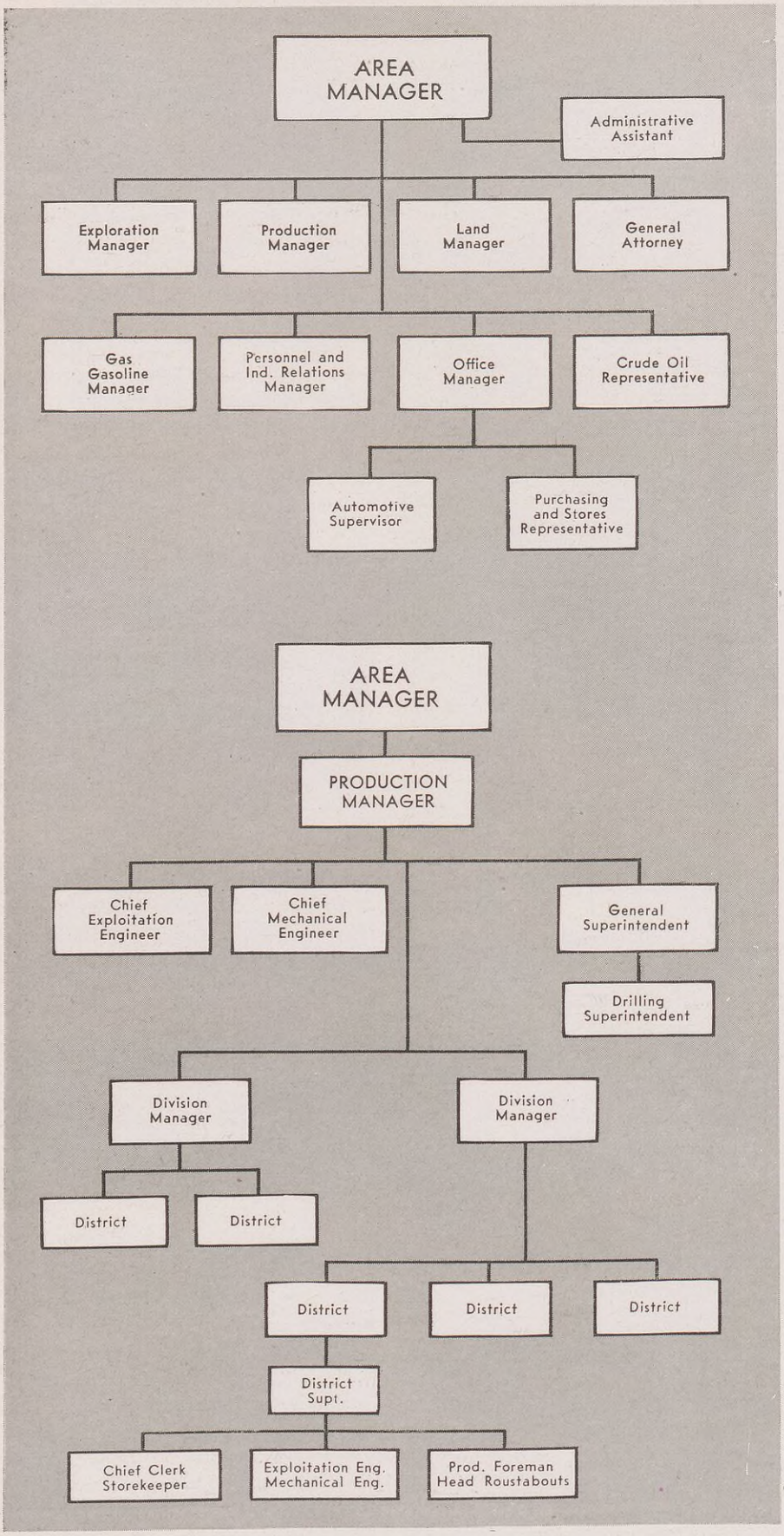
Crude oil is often bought, sold, or exchanged with other companies. These transactions are handled by the Crude Oil Department, which must keep constantly informed concerning the sources and availability of crude oil, crude oil connections, and facilities for the transportation of crude and volatiles, and on the position of competitive purchasers.

Other Activities

Other employees in Exploration and Production engage in Treasury, Purchasing and Stores, Automotive, Personnel and Industrial Relations, Legal, Tax, and Public Relations activities.

Organization

In order to do a job effectively, Exploration and Production operations are divided into four administrative areas, with area offices at Houston, Midland, Tulsa, and New Orleans. Each of these areas has a manager with jurisdiction over the operating divisions and districts which compose the area. To a large extent he is an independent executive responsible for all operations within his area.



Area And Line Organization

The chart on the left shows a typical area organization.

Each Department shown on this chart has a line organization of its own. Take the Production Department, for example. Its organization is shown on the chart at the lower left.

Exploration, Land, Gas-Gasoline and Crude Oil also have line organizations suited to their own operating problems. "Staff" departments attend to necessary treasury, personnel and industrial relations, purchasing and stores, automotive and legal matters, all under the direction of the Area Manager.

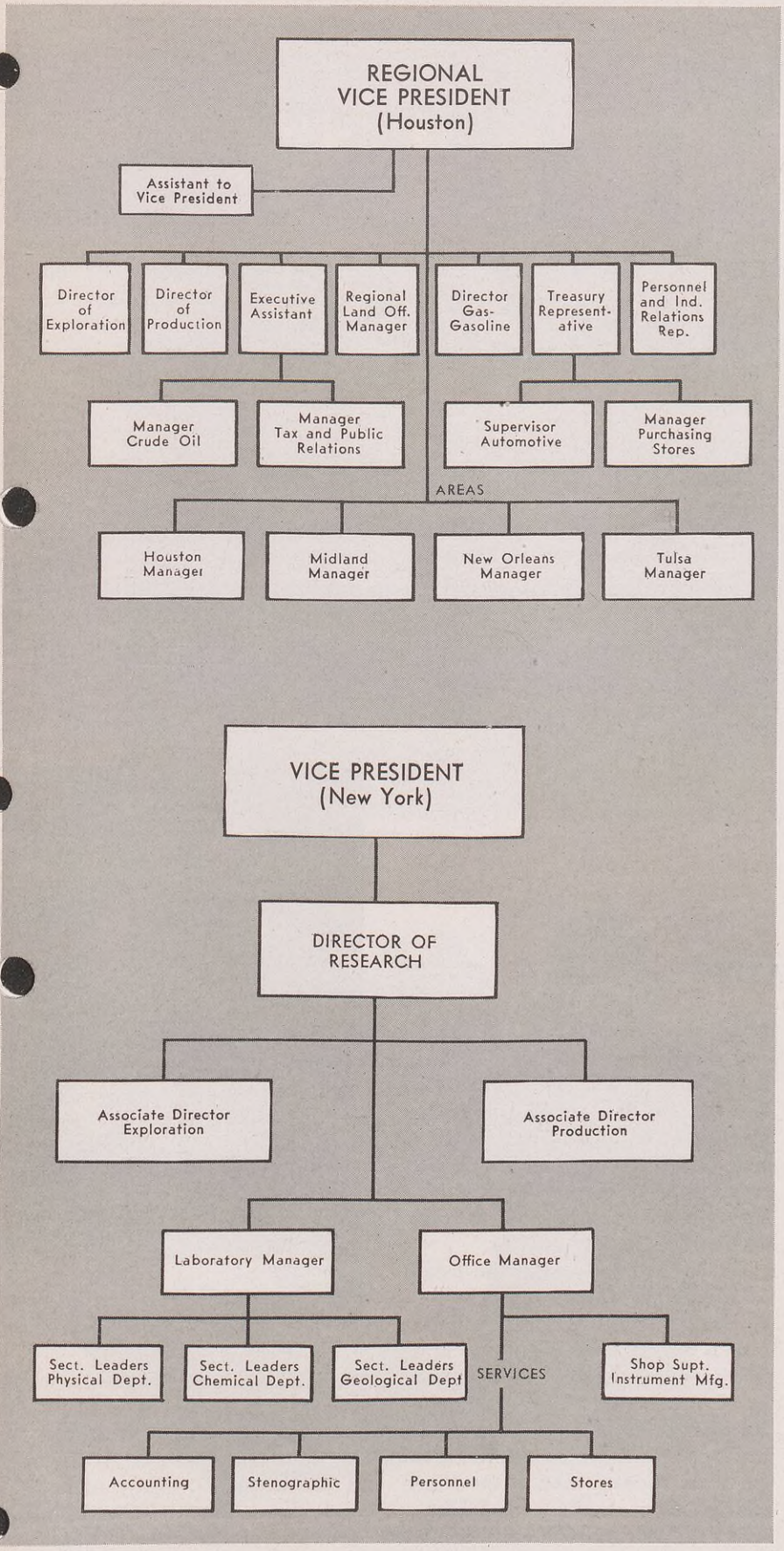
Regional Organization

In his turn, the Area Manager is responsible to the Regional Vice President, who coordinates the activities of the four areas, sets over-all exploration and production policies and, through his regional staff, provides service to the Area Managers and their assistants. (Top of opposite page.)

The members of the regional staff have a two-fold function: to advise and assist the Regional Vice President in their respective specialties, and also to counsel and assist their associates on the Area staffs. They fulfill, therefore, a service function. There are two exceptions to this—the Crude Oil Manager and the Director of Gas-Gasoline.

Since the problems of crude supply must be solved on an over-all basis, direction over crude sales, purchases and transfers have been centralized, and the Crude Oil Manager may be considered an operating executive.

The Gas-Gasoline Director on the regional staff carries on negotiations



with other companies and operators, since gas-gasoline and cycling plants are usually constructed and operated as joint ventures. He plans and supervises the construction of these plants, which are then operated under the Gas-Gasoline Manager on the area staffs.

The Treasury, Personnel and Industrial Relations, Purchasing and Stores Representatives, the Manager of Taxes and Public Relations, and the General Attorney on the Area Staffs have special advisory and liaison functions in the organization.

Vice President New York

In addition to the Regional Vice President, there is a Vice President of Exploration and Production in New York. He is the immediate adviser of the President, and serves as a liaison between him and the Regional Vice President, with whom he consults and advises on exploration and production problems. The New York Vice President also is in charge of the exploration and production research carried on in large, modern laboratories in Houston, Texas.

Exploration And Production Research

This division, with headquarters and laboratories at Houston, serves Shell throughout the country—East and West of the Rockies. Its employees conduct fundamental research in the physical, chemical and geologic sciences, in order to develop and improve methods and instruments for finding and producing oil.

The division also trains personnel engaged in geophysical exploration work, and designs and manufactures scientific instruments for use by all Shell companies in exploration and production activities.

SHELL'S HOBBY LOBBY

There are hundreds of ways to make the most of leisure moments—and, at different locations throughout the country, Shell men and women seem to be testing every one. Ranging from model plane building and photography to flying and golf, these avocations cover an almost limitless field of interest.

More unusual than most are the hobbies of at least six Shell employees.

STAR GAZING

DOWN through the years, the heavens have always been a source of wonder and speculation to men. Affairs of state and heart alike have seemed at times to run a course ". . . set by the stars."

Today, down in Colorado, Texas, Shell Pipe Line's Division Superintendent E. M. Owen keeps close check on these celestial wanderers with the aid of his powerful homemade telescope.

Star-gazing as a hobby came to Owen during his college days when he took an engineering course at Oklahoma A & M. He maintained his interest in astronomy after college and, in January, 1943, began work on his own telescope. After four years and many painstaking hours of work he completed his instrument. Patterned after the world's largest, the giant 200-inch telescope at Mt. Palomar, Calif., Owen's handiwork is a reflector-type telescope in which images are observed through their reflections in a concave mirror.

In Owen's hands a prosaic length of wire, a discarded tin can and an old razor blade served as equipment for an almost unbelievably accurate test in optical physics—that designed by 19th century French physicist Jean Pierre Foucault for determining a mirror's focal point and radius of curvature. Construction of the 6-inch mirror—from shaping to polishing—was a delicate and tedious operation.

Shell Pipe Line's E. M. Owen likes to scan the heavens with his homemade telescope.

Grinding alone required seven grades of abrasives, the last finer than flour.

Making a telescope is a hard job, all right, but, according to Owen, all it takes is ". . . plenty of patience and elbow grease. The know-ho comes as you go along . . ."

PENCIL COLLECTING

COLLECTING is the backbone of many hobbies. But Mary Gouldsmith Bryan's collecting hobby is as unique and different as stamp collecting is common among hobby lovers. Her collection of mechanical pencils is known far beyond the confines of the Accounting Department of the Tulsa Office in which she works.

Miss Bryan began her pencil collection back in 1938 while employed as office manager in a Tulsa bakery. For good will and advertising purposes, many salesmen that Christmas gave business associates mechanical pencils. Miss Bryan received about a dozen . . . and the idea for a new hobby. Today her collection numbers more than 450. Several in the collection have transparent plastic compartments containing wheat, cotton, Shell crude oil, even small fishing flies—each a sample of the goods advertised. Some conceal sets of dice in secret chambers, and hidden under the cap of one is a cigarette lighter. Still another is a puzzle.

It might seem that keeping track of so many items would prove a problem. But even here there is a pencil to help with the right answer. For one of them has numbered segments which can be revolved and made to supply answers to multiplication problems!

Mary Bryan of the Tulsa Office arranges her huge pencil collection in neat, display-window fashion.

FLOWER RAISING

Renabelle Gault has cultivated nearly 50 varieties of irises which bloom from early spring to late fall.

NO ONE visiting the Tulsa Paleontology Laboratory this summer could miss the large vase of king-sized irises on the receptionist's desk. The giant blooms were but a sample of the unusual gardening achievements of one of the laboratory employees, Renabelle Gault.

Miss Gault began raising irises five years ago in her yard in Tulsa. The flowers grew as fast as her enthusiasm for the hobby and soon were too numerous for the small city plot. As a result she transplanted the majority to a garden on her parents' farm near Grove, Oklahoma, where she now spends many weekends attending to her hobby.

You might think that growing one iris is very much like growing another. Miss Gault would disagree. Experience has convinced her that irises, like humans, have varied appetites. Some require wet, shaded soil, and others blossom best in dry soil flooded with sunlight. All have yielded to her cultivation, and she now has nearly 50 varieties which bloom from early spring till late in the fall. They're not the ordinary garden variety either—but virtual giants!

PORTRAIT PAINTING

THERE'S a limit to the indulgence of even the most doting parents. So when Harrison Rohrkaste, Tinner Foreman at the Wood River Refinery, at a tender age took to sketching on the wallpaper, his parents went to some pains to discourage the hobby. They didn't have much luck though, until they changed their tactics and substituted an easel for the wall. Rohrkaste has been pencil sketching and painting ever since.

Women, children, and dogs have been Rohrkaste's favorite subjects although he has done some landscape work. He claims that sketching is not only a rewarding hobby — filling many hours with pleasure and relaxation—but in his case is a definite aid in his daily job of supervising the laying out of sheet metal work.

Harrison Rohrkaste puts the finishing touches on his portrait of movie actor Robert Taylor.

COYOTE HUNTING

HUNTING coyotes on the Texas range, via Piper Cub, is the unusual pastime of another Shell hobbyist, H. R. Stevenson, a Gang Pusher in the TXL District. He has support for his hobby from neighboring ranchers to whom the wolf-like coyotes spell nothing but trouble.

To one rancher of Stevenson's acquaintance a dead coyote on his ranch is worth $25. This makes Stevenson's hobby of shooting the pests from the window of his plane both pleasant and profitable. In pursuit of it he has not only been able to pay for his off-time recreation, but has also managed to "log in" more than 90 hours flying time in the J-3 Piper Cub he bought about a year ago.

H. R. Stevenson has shot and killed many coyotes from the window of his Piper Cub.

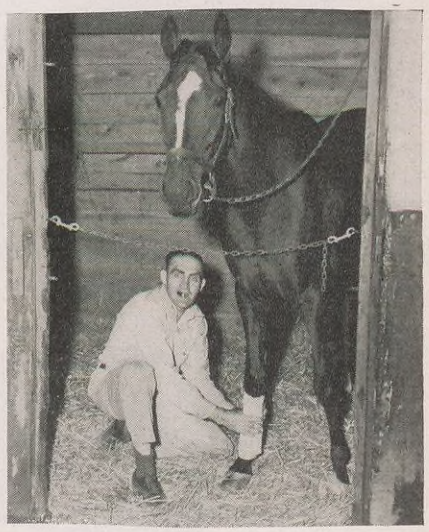
HORSE RACING

THE Sport of Kings is a hobby with John H. Laux, a shift foreman at Wood River Refinery. John raises and trains race horses.

Beginning as a jockey in country races at the age of 12, Laux rode home 150 winners in his first year. In the succeeding years he has acquired and raised a string of "bangtails," bearing such names as "Patsy Anne," "Dahlia Bud," "Hooks," "Lumber King," and "Miss Bobby Sox," the most recent addition to his stable. His interest in race horses has proved infectious and when he acquired "Hooks," there came into being a "Hooked By Hooks" club, which most of the Cracking Department joined in due course.

When a hobby rewards the hobbyist, it can be classified fairly definitely as a success. Laux's hobby has easily fulfilled this qualification from the date of his initial purchase. His first horse, "Patsy Anne," won her first race and then went on to annex 15 out of the 18 in which she went to the post.

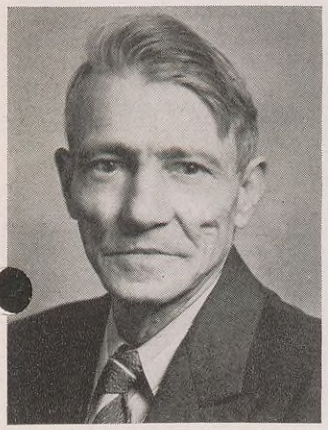
Hobbies don't always pay their way in cash. But for millions of people they form a healthy, relaxing form of activity. They combine with work to give everyone the chance for a full and interesting life.



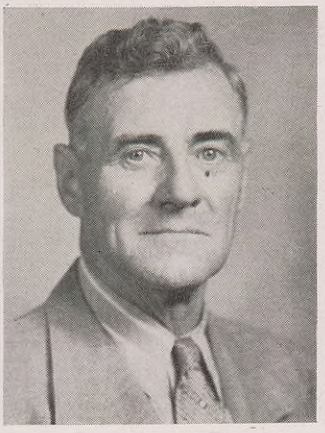
Ex-jockey John Laux, now a Wood River Shift Foreman, has owned a string of thoroughbred winners. This one is Miss Bobby Sox.

THEY HAVE RETIRED

WOOD RIVER REFINERY



E. B. Burris, Engineering Field



John H. Kinder, Engineering Field

Thomas M. Martin, Engineering Field

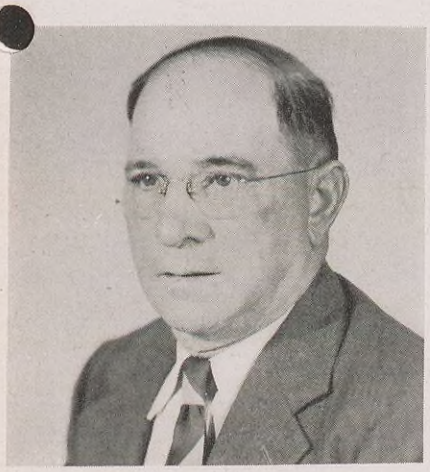
J. T. Fitzgerald, Lube Operating

REGIONAL STAFF HOUSTON

Eric F. Feighl, Production

SHELL BUILDING ST. LOUIS, MO.

Kurt P. Ilgen, Treasury



MIDLAND AREA

Lee A. Coleman, Production

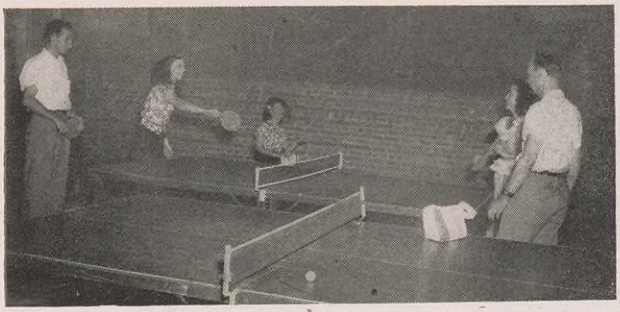
ST. LOUIS DIVISION

Frank J. Schmitt, Treasury

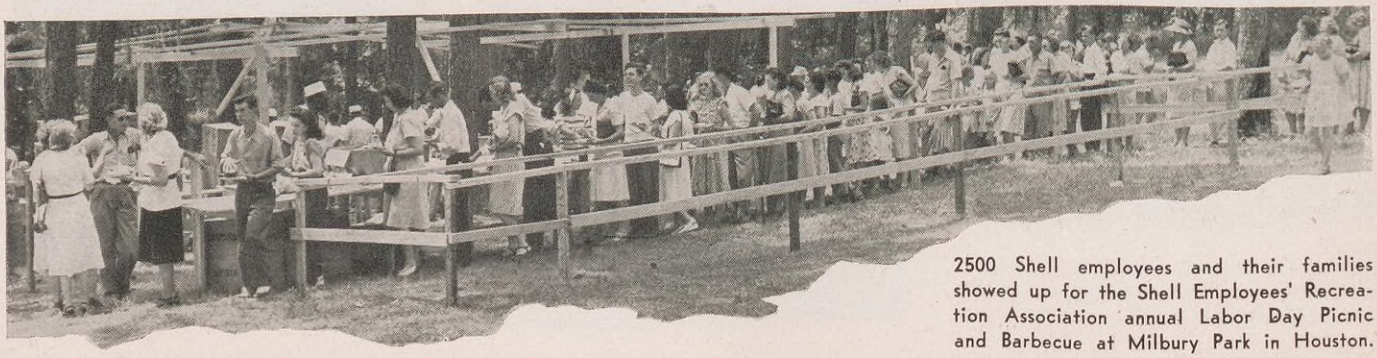
After HOURS

Above. At South Connecticut Marketing District outing, C. K. Mullins serves corn to fellow employees. Left. Costumed in old-style bathing suits, Lillian Talbert and Helen Best stroll with District Manager, J. S. Norton.

Albany Marketing Division Manager H. M. Bailey presents Golf Trophy to C. B. Shulz, as runner-up J. R. Black looks on. ▶



Ping-pong was played under lights at the recent Shell barbecue for Atlanta Marketing Division employees and their families.



2500 Shell employees and their families showed up for the Shell Employees' Recreation Association annual Labor Day Picnic and Barbecue at Milbury Park in Houston.

SERVICE BIRTHDAYS

30 YEARS

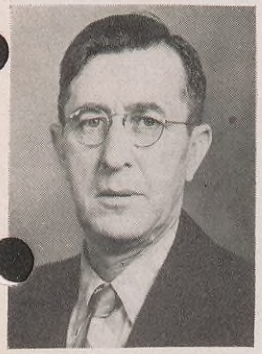
C. E. LEE
Houston Area
Production

TWENTY-FIVE YEARS

F. H. BANGERT
Wood River Refinery
Loading Racks

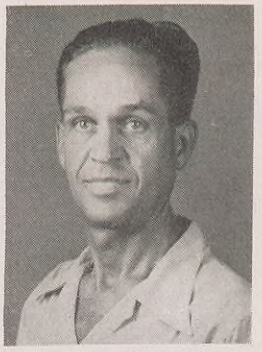
T. P. BERTIER, JR.
Wood River Refinery
Engineering Field

O. H. DAY
Products Pipe Line
Clinton, Ill.



J. T. DWYER
Wood River Refinery
Car

V. H. EGGEMAN
St. Louis Division
Purchasing—Stores



J. C. EMERY
Wood River Refinery
Car

E. P. FRANKE
Wood River Refinery
Engineering Field

F. GOLDSTONE
Regional Staff (Houston)
Exploration

S. C. HAYES
Wood River Refinery
Dispatching

G. P. KOCH
Head Office
Marketing

J. LAVADA, JR.
Shell Chemical Corp.
Houston

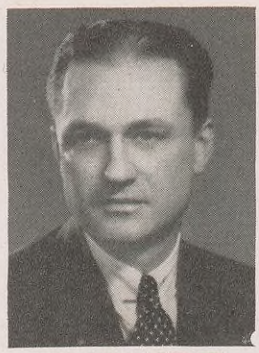
W. B. LEONARD
Wood River Refinery
Dispatching

W. R. MITCHELL
Wood River Refinery
Engineering Field

W. F. O'HAIR
Wood River Refinery
Engineering Field

M. A. ROGERS
Houston Refinery
Lube

C. W. RYAN
Wood River Refinery
Lube



F. H. SCHLAPPRIZZI
Head Office
Personnel

O. D. STORY
Regional Staff (Houston)
Purchasing—Stores

TWENTY YEARS

H. ANDES
Products Pipe Line
DeWitt, Ill.

C. A. BEAR
Tulsa Area
Production

C. F. BUTCHER
Shell Pipe Line Corp.
West Texas Area

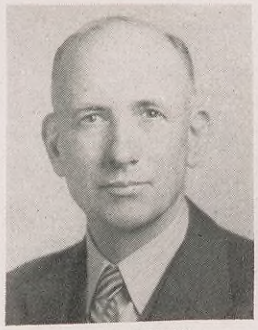
L. L. DUNCAN
Baltimore Division
Treasury

R. ETHERINGTON
Houston Area
Production

H. H. FLETCHER
Wood River Refinery
Lube Treating Heavy Oil

A. G. FUCHS
Wood River Refinery
Engineering Field

I. E. GAITHER
Shell Pipe Line Corp.
Bayou System



J. E. GINN
Shell Pipe Line Corp.
Mid-Continent Area

A. F. GREEN
Shell Pipe Line Corp.
West Texas Area

W. D. GREGORY
Shell Pipe Line Corp.
West Texas Area

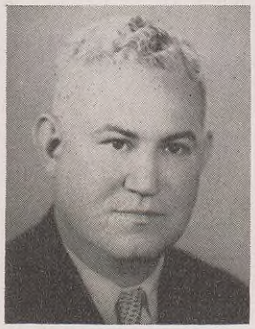
R. E. HICKMAN
Shell Pipe Line Corp.
Head Office—Houston

J. M. KEENAN
Indianapolis Division
Operations

L. J. KENNEDY
Wood River Refinery
Treating—Light Oil

F. J. LEHMANN
Products Pipe Line
Bradley, Ill.

B. J. LONGSHORE
Shell Pipe Line Corp.
Texas-Gulf Area



I. C. MANNING
Midland Area
Treasury

I. R. MJOEN
Tulsa Area
Treasury

R. C. NICHOLSON
Shell Pipe Line Corp.
Head Office—Houston

C. T. ORR
Shell Pipe Line Corp.
Texas-Gulf Area

E. W. POGUE
Indianapolis Division
Sales

G. M. ROSE
Wood River Refinery
Control Laboratory

W. SCHLESINGER
St. Louis Division
Operations

M. F. SHAPPELL
Tulsa Area
Production

E. H. SHERIDAN
Houston Area
Production

F. N. SHRIVER
Midland Area
Legal

J. C. SINCLAIR
Shell Pipe Line Corp.
West Texas Area

L. SPRAGIO
New Orleans Area
Production

E. V. STEPHENSON
Houston Area
Production

B. STEWART
Tulsa Area
Production

C. SUMMERS
Wood River Refinery
Engineering Field

H. TELTHORST
St. Louis Division
Sales

R. H. TUCKER
Wood River Refinery
Topping

F. VASEL
St. Louis Division
Operations

W. B. WARE
New Orleans Area
Land

I. L. WIGGER
Wood River Refinery
Engineering Field

L. T. WITTER
Wood River Refinery
Boiler House

Head Office

15 Years

J. J. Davis ..... *Treasury*

10 Years

C. S. Harris ..... *Marketing*
G. R. Smith ..... *Transportation & Supplies*

Products Pipe Line

10 Years

O. K. Johnson ..... *Terre Haute, Ind.*

Shell Chemical Corporation

10 Years

J. B. Knight ..... *New York*

Shell Pipe Line Corporation

10 Years

L. M. Weitzel ..... *Mid-Continent Area*

Sewaren Plant

15 Years

C. Serak ..... *Operations*
J. A. Sullivan ..... *Terminal*

10 Years

J. M. Klein ..... *Terminal*

Houston Refinery

15 Years

C. Stewart ..... *Industrial Relations*
W. M. Thomas ..... *Automotive*

10 Years

F. J. Alexander ..... *Engineering Field*
J. B. Clarke ..... *Engineering Field*
R. E. Richmond ..... *Engineering Field*
R. W. Woods ..... *Engineering Field*

Norco Refinery

15 Years

F. J. Braud ..... *Cracking*
J. A. Carville ..... *Engineering*

Wood River Refinery

15 Years

J. R. Anderson ..... *Automotive*
W. M. Blair ..... *Lube C. & S.*
W. W. Lengacher ..... *Lube Treating Heavy Oil*
W. Reed ..... *Engineering Field*
C. C. Van Camp ..... *Engineering Field*
F. H. Warner ..... *Engineering Field*
R. J. Waterfall ..... *Automotive*

10 Years

F. Bugg ..... *Engineering Field*
V. J. Ellis ..... *Catalytic*
W. C. Krupski ..... *Main Office—Cost*
R. A. Reed ..... *Engineering Field*
A. P. Texada, Jr. ..... *Research Laboratory*
E. H. Uhley ..... *Engineering Field*

Exploration and Production Departments

Houston Area

15 Years

F. P. Cline ..... *Production*

10 Years

J. F. W. Jones ..... *Production*
L. J. Rains, Jr. ..... *Land*
J. W. Sutton ..... *Personnel & Industrial Relations*
M. E. Toerck ..... *Production*

Midland Area

10 Years

T. A. Abernathy ..... *Production*
C. L. Rabe ..... *Production*
T. L. Stall ..... *Exploration*
C. W. Stephenson ..... *Exploration*

New Orleans Area

15 Years

L. S. Broussard ..... *Production*
V. L. Judice ..... *Production*

10 Years

E. C. Abell ..... *Land*
T. Ballard ..... *Production*
A. C. Blanchard ..... *Production*
V. T. Gaines ..... *Production*
C. Granger ..... *Production*
D. R. Griffith ..... *Production*
W. L. Lorette ..... *Production*
N. T. Robicheaux ..... *Production*

Tulsa Area

10 Years

C. T. Gariepy ..... *Production*
H. C. Matthias ..... *Production*

Exploration and Production Research Division

15 Years

H. H. Breitenbach ..... *Service*

Marketing Divisions

15 Years

E. L. Markle ..... *Albany, Sales*
J. E. Donnelly ..... *Boston, Operations*
J. J. Wright ..... *Boston, Operations*
J. J. Feeney ..... *Chicago, Sa*
J. R. Kefgen ..... *Chicago, Operations*
J. A. Waldie ..... *Chicago, Treasury*
H. W. Campbell ..... *Cleveland, Operations*
H. R. Houk ..... *Cleveland, Operations*
A. M. Cowan ..... *Indianapolis, Sales*
T. C. Shanley ..... *Indianapolis, Sales*
J. G. Cribbs ..... *Minneapolis, Sales*
J. P. Broome ..... *St. Louis, Operations*

10 Years

R. F. Peck ..... *Albany, Sales*
J. E. Barton ..... *Atlanta, Sales*
G. A. Gorham ..... *Baltimore, Operations*
C. J. Batho ..... *Boston, Operations*
J. A. Coffin ..... *Boston, Sales*
R. E. Jones ..... *Boston, Sales*
W. L. Gordon ..... *Cleveland, Sales*
H. H. Ruland ..... *Cleveland, Marketing Service*
J. J. Sparks ..... *New York, Operations*
C. H. Lowry ..... *St. Louis, Operations*

matters of *Fact*

HAVE YOU PROVED YOUR AGE?

This is necessary to establish your eligibility for the benefits of the Shell Pension Plan and of Social Security.

A birth certificate is the best means of establishing proof of your age. Next in order of legal importance come:

1. Church record of birth or baptism.

2. Census bureau notification of birth registration.

3. Hospital birth record or certificate.

4. Physician's or midwife's birth record.

5. Certification of Bible or other family record.

6. Naturalization record.

Other acceptable forms of evidence include passport; immigration papers; military, school, vaccination and marriage records; insurance policies; and records of fraternal organizations.

DON'T DELAY—THIS IS IMPORTANT TO YOU!

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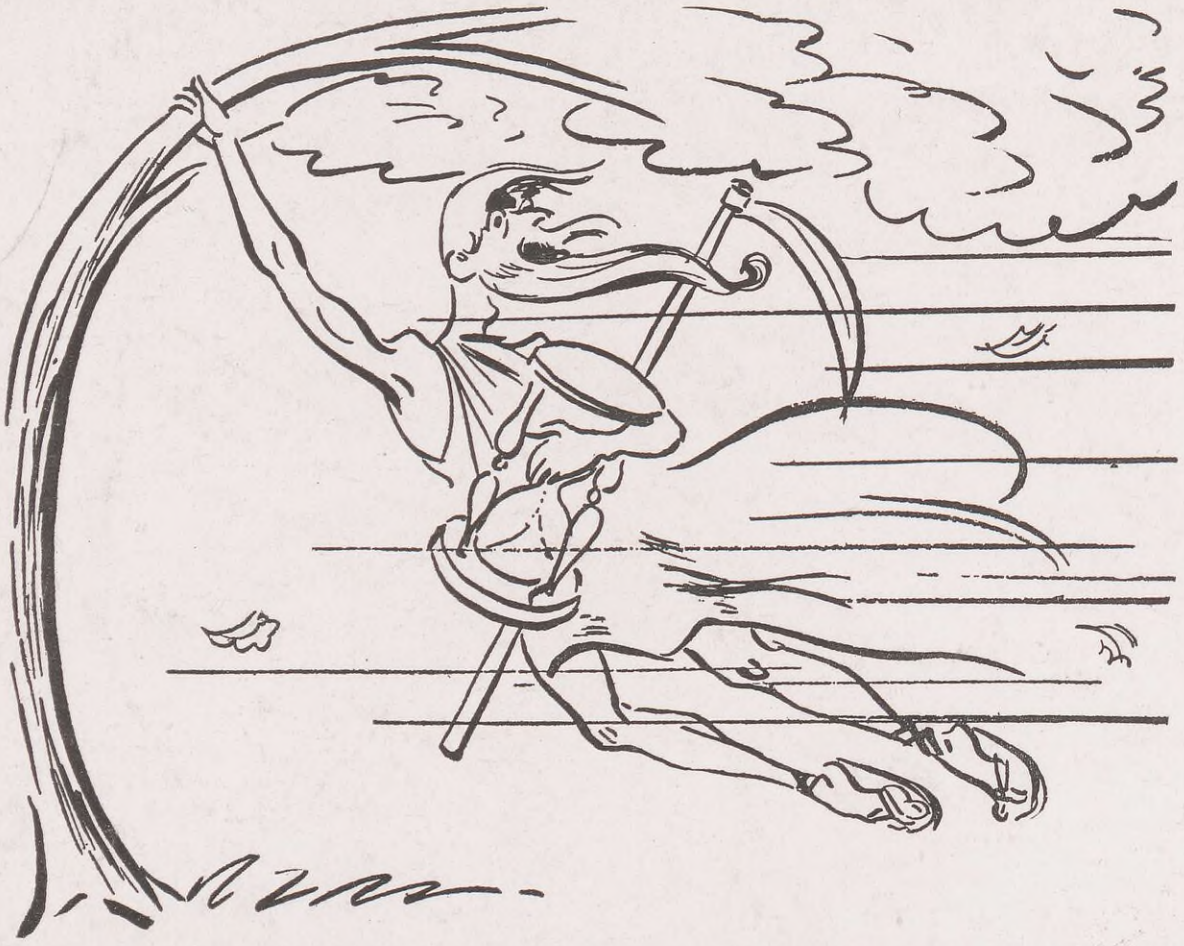
INCORPORATED
50 West 50th Street
NEW YORK, N. Y.
RETURN POSTAGE GUARANTEED



How to make a monkey out of Father Time

• THE PETROLEUM INDUSTRY has only the kindest feeling for the white-bearded Old Gentleman. But often he's slow about getting things done. Right now, the Petroleum Industry is making him look foolish by improvements that weren't supposed to happen for years!

Well, understand rivalry and you understand America. Rivalry in the Petroleum Industry—with its more than 34,000 individual companies, its 1,250,000 people—results in more and better products at fair prices. In oil drilling, research, refining, transportation and retailing, competition supplies incentive . . . incentive results in *progress* . . . aids advancements in plastics, jet propulsion, drugs, fabrics and a thousand other fields.

We're sorry to make Father Time revise his schedule. Next time, Pop, make your entries in pencil. And keep an eraser handy. Petroleum is progressive.

THERE'S A PLUS FOR YOU IN PETROLEUM'S PROGRESS