SHELL NEWS

MAY 1952

AUTOMOBILE WHEELS make the world go 'round for Southern Californians. Los Angeles, above, with one passenger car for every three persons, leads the nation. The national average is one car for every 4.2 persons.

Southern California

The Sun Shines On More Than Orange Blossoms and Bathing Beauties In This Weatherman's Utopia Where Industries and Agriculture Are Among the Nation's Biggest and Best

SKEPTICS may pass off Southern California's epic accomplishments and Los Angeles' rocketing growth with remarks about the easy living and mild weather. But it wasn't so long ago that the largest metropolitan area in the United States, in point of ground covered, was a sleepy little pueblo and the surrounding area was cut off from the rest of the nation by the Great American Desert and high snow-capped mountain ranges.

Southern Californians will agree the weather *has* helped. Only a few places in the world have anything to compare with its year-round mildness—which fosters a distinctive out-door way of living. But the real credit must be given the people themselves, who visualized and masterminded their own progressive development.

Before the birth of the automobile,

The area is a tourist wonderland. At left above, for example, is the Junipero Serra Museum at San Diego, modeled after an old Spanish mission. At right, is one of many warm and sunny coastal beaches.

SHELL NEWS

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

Employee Publications Department
New York, N. Y.

contents

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WORLD PIONEER

The painting on this month's front cover is symbolic of the Shell Aviation Service, which for more than 30 years has been pioneering the air lanes of the world. Shell has established a pattern of sure and dependable service almost everywhere planes may fly. With facilities at more than 1,500 airports around the globe, the Service is used by a greater percentage of commercial airlines than that of any other oil company. An article about the Shell Aviation Service, and how it grew, begins on page 8.

Petroleum products have been helpful to Southern California in many ways. Above, in the Imperial Valley, diesel tractors assist in harvesting lettuce which petroleum derived chemicals helped to grow. The Valley's annual lettuce crop is worth $15,000,000.

San Diego Bay, above, is home port for big commercial fishing fleets. A group of piers is shown here lined with tuna "clippers" in port between trips to Central and South American fishing grounds. Shell serves many of the vessels with fuels and lubricants.

oilmen found two of the Pacific Coast's three great oil producing areas. This availability of cheap, portable energy helped develop a society that is literally "on wheels"—for nowhere is life more closely geared to the automobile than on the Pacific Coast. Businessmen saw the need for foreign trade, created it, then built two great harbors to aid and abet it. Engineers brought water by canal and aqueduct to make the desert bloom. Movie men built an industry of world-wide fame. Aeronautical pioneers established and built one of the nation's biggest aircraft manufacturing centers.

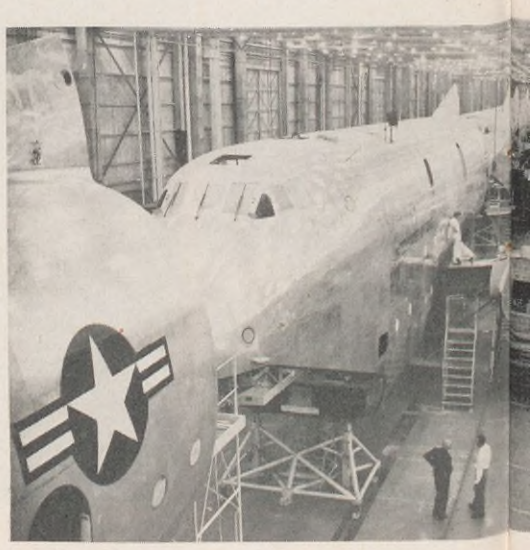
Most of this bee-hive activity has revolved in and around Los Angeles, where more than 4½ million people live. But Southern California's second largest city, San Diego, merits a share of the credit, too. Los Angeles, where a unique community structure has inspired the saying, "fifty suburbs searching for a city," was founded as a Spanish settlement in 1781 and named El Pueblo de Nuestra Senora La Reina de Los Angeles de Porciuncula. For a time, the words of the title almost outnumbered the houses. Even when gold was struck in the Sacramento Valley and San Francisco, 400 miles north, was booming, the pueblo's 1,600 citizens continued to enjoy their mid-afternoon siestas.

The pace changed abruptly around 1876. In that year the rails of the Southern Pacific reached Los Angeles, followed shortly by the Santa Fe, and a flood of "Pullman pioneers" began to pour in. In time, the migration of new settlers eclipsed that of northern California's gold rush and was climaxed with the founding of 60 new towns in a single year (1887). Real estate prices soared from $100 to $10,000 for a town lot.

When the boom ended, an outward trek began—Los Angeles lost as many as 100 people a day—but the majority had been impressed by the bounties of Southern California and elected to stay. Meanwhile the slow Spanish way of life has been supplanted by the purposefulness of solid American families with business and civic development in mind. As early as 1888, they formed an association, which was later to become the Los Angeles Chamber of Commerce, and began selling Southern California to themselves and to the world.

Southern California has features worth selling. Industrially, it has the greatest diversification in the United States and can be ranked among the nation's five top industrial centers. It leads the nation in production of aircraft and aircraft parts, motion pictures, pumps and compressors, refrigeration machinery and equipment, canned sea food, and heating and plumbing equipment. It ranks second in women's and misses outerwear, pressed and blown glass, concrete and plaster products, automobile assembly, rubber tires and tubes, storage batteries, jewelry, silverware, wood millwork, and oilfield machinery and tools. In a dozen other industries, the area takes third place.

The diversification is also indicated by the fact that in 1950 there were nearly 9,500 manufacturing plants in Los Angeles County alone—to which $300,000,000 worth of expansion and



Aircraft plants like this Douglas one at Santa Monica are a big Southern California industry.

new installations were added in 1951. This does not include other Southern California industrial centers, like the aircraft, shipbuilding and cannery operations at San Diego; the fast growing steel, metal processing and chemical plants of San Bernardino County; or the food processing plants in Orange County.

In spite of the encroachments of industries and residential areas, agriculture has also continued to expand. Although long famous for its citrus groves, the area grows an abundance of other products ranging from cattle to cut flowers. The most important cash crops are fruits, nuts and berries, with an annual value in excess of $150,000,000. Through extensive irrigation projects, acreage has been gradually increased, and intensified scientific cultivation has raised the yield per acre. For the last 40 years Los Angeles County has led the nation in the cash value of its agricultural products. The annual value of farm products in the nine Southern California counties averages about three quarters of a billion dollars.

Then, of course, there's that wonderful, wonderful weather. Southern California's comfortable climate has temperatures which usually range from 60 to 76 degrees, with a relative humidity of 40 to 70 per cent at noon —and spiced with "just enough" sunshine and gentle breezes.

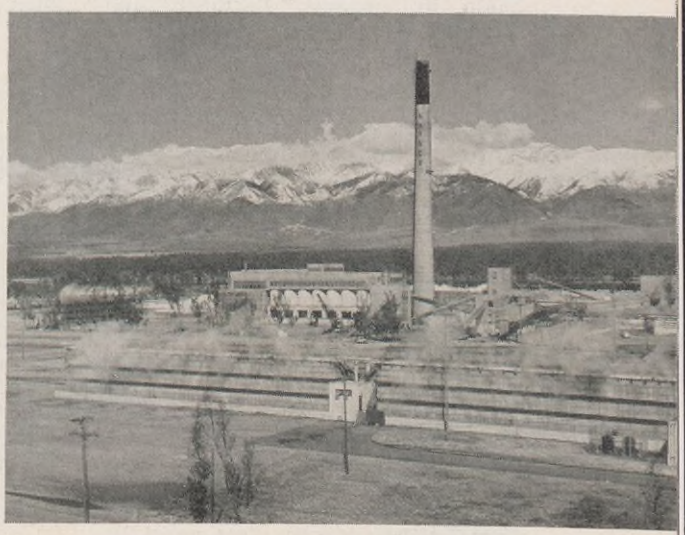
Added to this is a dazzling array of scenic wonders. The contrast between the industry and agriculture of the early Southern California days and the bustling activity that goes on now is no greater than the curious contrasts of the landscape. Within the area is the lowest, hottest, driest spot in the United States—Death Valley—and, just 50 miles away, the nation's highest peak—snow-capped Mt. Whitney. Along a 200-mile coast line are warm and sandy beaches, and a few hours' drive inland are the skiing slopes of the San Bernardino mountains or the clear, dry atmosphere of sage-dotted deserts famed for lavish resorts like Palm Springs. The whole area is peppered with tourists' attractions, such as Spanish missions, Palomar Observatory, Signal Hill oil field, the Rose Bowl, La Brea tar pits, ghost mining towns, desert oases, the Salton Sea, citrus groves, Santa Catalina Island, and movie lots. The first commercial motion pictures in Southern California were filmed at Edendale in 1909, but today a sight-seeing trip through famed Hollywood is one of the biggest attractions for the millions of visitors who come to the area annually.

Interspersed among the many scenic wonders of this sunny region are ample signs of intensive oil production, refining and distribution activities. Oil was discovered at Los Angeles in 1892 and the surrounding area turned out to be lavishly endowed with producing sands. The development of these sands has been spurred on by a singularly mobile life, which consumes great quantities of gasoline and oil. New residents soon lose the habit of walking, for enterprising businessmen have promoted this "automotive society" by installing drive-ins of every kind—restaurants, banks, laundries, shoe repair shops, groceries, theaters. In Los Angeles County alone, two and a half million passenger cars are fueled at 5,800 service stations. The County leads all U. S. counties in gasoline consumption —almost *two billion* gallons annually.

Los Angeles, which is the third-ranking oil center in the nation, is one of a very few metropolitan areas where the Industry is completely integrated. From the oil well to the motorist's tank, petroleum never leaves the area for refining or processing.

Shell, already well established in the Northern California oil fields, joined the Southern California development in 1921 with the drilling of its Alamitos No. 1, discovery well of the prolific Signal Hill Field at Long Beach. In 1922 Shell purchased the Brea-Olinda properties of the Union Oil Company of Delaware, as

Long Beach, a derrick-studded center of industry and trade, has a man-made harbor which typifies what progressive businessmen here have done to promote world trade.



Industry and scenic splendor combine in this photograph of a steel plant and the San Jacinto Mountains.

Shell drilled Alamitos No. 1, discovery well of the famed Signal Hill Oil Field at Long Beach, in 1921. After 30 years, the well is still producing and the field has expanded many times.

well as the holdings of the Puente Oil Company, an old and respected Los Angeles marketing organization.

With this wedding of production and marketing facilities in Southern California, Shell supplied another link toward integration in 1923 by constructing a refinery at Wilmington, five miles from Signal Hill. Originally designed for 25,000 barrels per day throughput, the capacity was expanded three years later—and has been several times since—to handle crudes from numerous other Southern California fields in which Shell obtained production. Among these were Santa Fe Springs, Torrance, and Dominguez, as well as leases in other fields in the Los Angeles Basin. Today, the Wilmington Refinery's daily throughput is about 60,000 barrels.

In this atmosphere of on-the-spot production and manufacturing, and with a large and demanding market at hand, it is little wonder that the Los Angeles Marketing Division is one of Shell's most energetic sales organizations. The Division handles all of Southern California and additional areas in Arizona, Southern Utah, Western New Mexico and Las Vegas, Nevada. Its District offices are located at Los Angeles, Pasadena, San Bernardino, San Diego, Santa Monica and Wilmington in California, and Phoenix and Tucson in Arizona.

Like Shell Oil Company, Shell Chemical Corporation is also active in Southern California, manufacturing a variety of products geared to the manufacturing and agricultural needs of that and many other areas. Alcohols and solvents are manufactured in the Corporation's Dominguez plant adjacent to the Wilmington refinery facilities. Butadiene for synthetic rubber is produced at Torrance in a plant owned by the Reconstruction Finance Corporation, Synthetic Rubber Division, and operated by Shell Chemical. To augment its production of ammonia for agriculture, now manufactured in Northern California, Shell Chemical is constructing a new anhydrous ammonia plant at Ventura. The Corporation's own Marketing organization also sells a variety of herbicides and insecticides to Southern California farmers.

The reasons for all this concentration of petroleum and petrochemical facilities in the southwest corner of the United States are plain. Not only are large sources of crude oil and natural gas located there, but other conditions have made it possible for oil to provide more than 90 per cent of the area's energy for industries, home consumption, and transportation. The by-products of petroleum, such as the numerous agricultural aids, are also in great demand.

Such a situation has enhanced the living conditions and prosperity of an area already attractive because of its pleasant climate. The result has been that Southern California is populated by "visitors" who came to call and never got around to leaving. There are more Iowans in Los Angeles than in Des Moines, more Nebraskans than in Lincoln, and that's only a sampling. They're all "native sons" now, convinced that life in Southern California is wonderfully worth while.

Palm trees give a typical Southern California touch to Shell's Mormon Island marine terminal at Los Angeles, shipping point for many products from the Wilmington Refinery.

Shell People In The News

C. E. DAVIS, Vice President—Refining of Shell Oil Company, has been named Assistant Deputy Petroleum Administrator in charge of domestic operations for the Petroleum Administration for Defense. In this capacity he will be responsible for all phases of Industry operations within the United States which are now coordinated by the Petroleum Administration. This is a new Government assignment for Mr. Davis who has been serving in Washington, D. C. since August of last year as Director of the Refining Division.

Mr. Davis brings to his new post the background and knowledge gained from thirty-five years of varied Shell experience. He has held the position of Vice President since 1945.

P. L. KARTZKE has been appointed Manager of Shell Oil Company's Calgary Exploration and Production Area. A graduate of California Institute of Technology where he majored in civil engineering, Mr. Kartzke began his Shell career in the Production Department at Ventura, California in 1935. He subsequently held numerous positions there and at Long Beach prior to becoming Exploitation Engineer in the Los Angeles Office in 1940. Assignments at other California Exploration and Production locations preceded his appointment as Senior Exploitation Engineer at Los Angeles in 1945. Mr. Kartzke has since served as Division Manager of the San Joaquin, California, and Rocky Mountain Exploration and Production Divisions.

J. E. CLARK has succeeded P. L. Kartzke as Manager of the Rocky Mountain Division of the Pacific Coast Exploration and Production Area. Mr. Clark, an engineering graduate of Stanford University, joined Shell Oil Company's Production Department at Long Beach, California in 1933 after having been employed during several summer vacations since 1927. He served at Long Beach in various positions before becoming Division Production Foreman at Bakersfield in 1942. After returning to Long Beach in 1944 as Division Superintendent, he was made Senior Engineer at the Los Angeles Office in 1947. Mr. Clark was Manager of the Coastal Exploration and Production Division from July 1948 until his latest assignment.

G. W. HULDRUM, JR. has been named Sales Manager of the Western Division of Shell Chemical Corporation. After completion of studies at the University of California, Mr. Huldrum joined Shell Chemical Corporation in 1938 as a Chemist at its Shell Point Plant in Pittsburg, California. In 1943 he was appointed Technologist at the same location. After technological and marketing assignments in Dumas, Texas and San Francisco, California, he was appointed Senior Technologist for the Eastern Division in New York in 1946. Mr. Huldrum moved to Detroit as District Manager in 1947 and served there until 1949 when he returned to the Western Division as Manager of Agricultural Products in San Francisco. He has held the position of Assistant Sales Manager of the Western Division since 1951.

C. E. Davis

P. L. Kartzke

J. E. Clark

G. W. Huldrum, Jr.

"HOT" RESEARCH AT EMERYVILLE

Radioactive Tracers Are Being Used by Shell Development To Reveal the Secrets of Petroleum Products and Processes

THIS Atomic Age—for all its gloomy overtones occasioned by the presence of The Bomb and other weapons of war—is nevertheless paying dividends in peaceful applications to scientific and industrial development. Radioactive isotopes, by-products of atomic fission, are now available in quantity to scientists outside the atomic energy projects; and in the long run their use in modern research may constitute atomic energy's greatest contribution of the Age.

In most applications, the isotopes serve as tracers. A tiny amount introduced into a given material can be traced through, say, a human body, or a growing plant, or a chemical process. As tracers, isotopes have become an accepted tool of routine research in the Oil Industry; helping to develop better techniques and processes in all phases of petroleum activity and aiding in the development and improvement of products.

At Shell Development Company's Emeryville Laboratories, radioactive isotopes have been used recently in a number of analytical studies and in investigations into the effectiveness of Shell products. A number of problems, which would have been difficult or impossible to unravel by conventional methods of analysis, have been solved when radioactive tracers were introduced.

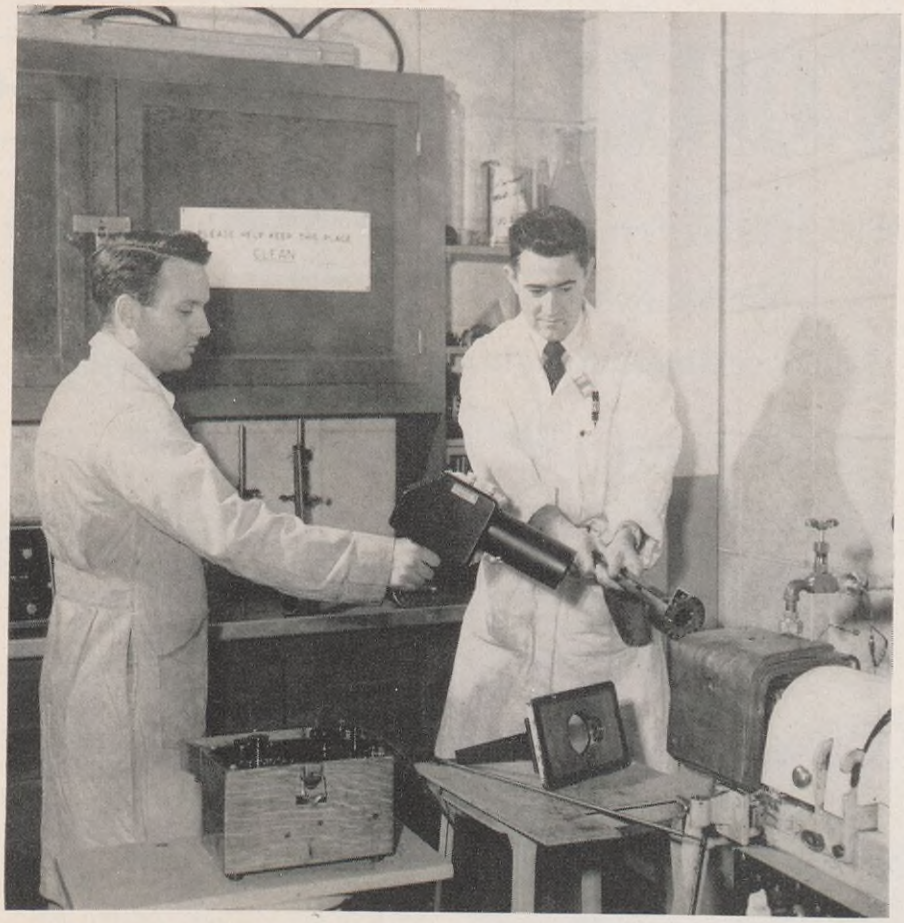
Among the studies already completed in which tracers were used is one which improved the method of removing impurities from synthetic ethyl alcohol. Another aided in developing an improved catalyst. A third gave information on the effectiveness of certain petroleum products used in sizing papers.

Several other research projects utilizing tracers are now in progress or under consideration. They include more studies of catalysts, investigations into the effectiveness and depth of penetration of insecticides, and an especially interesting one is aimed at developing a material for impregnating wrapping papers to prevent food spoilage. In this last project, one problem is to prevent the inpregnating material from penetrating the wrapped foods. Finding out how much penetration occurred was a hard thing to do until the isotopes came along. Now radioactive "tags" are put into the material and the amount that gets into the food can be measured with a Geiger counter.

The most extensive use of radioactive isotopes at Emeryville, however, has been in studying the amount of wear in motor gears and the effectiveness of various lubricants in reducing the wear. So far as is known, Shell Development is the only company which has yet used the radiation technique to study gear wear.

For the studies, the gears are irradiated in the uranium pile at Oak Ridge, Tennessee, a research service which the Atomic Energy Commission now performs for private industry. When the radioactive gears arrive at Emeryville, they are placed in a special testing machine, so constructed that any desired load may be applied to the gears under conditions closely simulating normal use but often more severe. Microscopic particles of metal are worn from the turning gears and are carried away by the test lubricant, which circulates through a small chamber scanned by a Geiger counter. The radiactivity picked up by the lubricant is a measure of the amount of wear that has taken place in the gears.

Before the advent of this "hot"



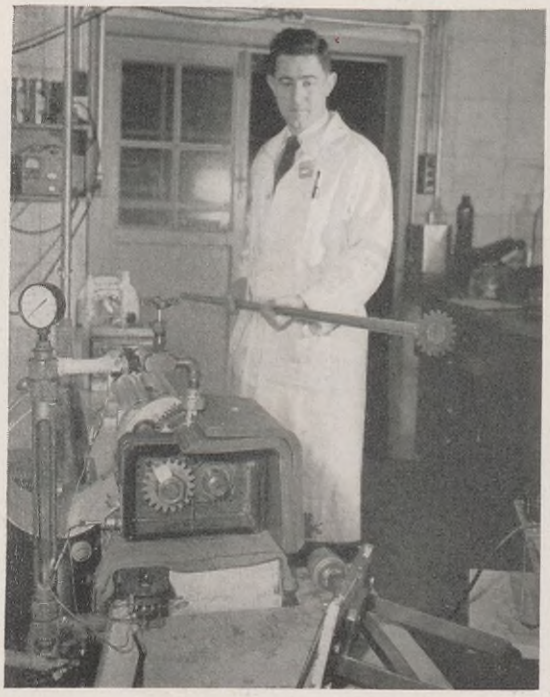
it possible to study lubrication breakdown under extreme conditions. Normally, gears are separated by a microscopically thin film of lubricant and their metal surfaces do not come in contact. Under extreme loading, however, the lubricant film is squeezed out from between the gear teeth and there is metal-to-metal contact—particles of metal are torn away and rapid wear and scoring result. In the process, there is actual transfer of metal from one gear to another. Shell's researchers have shown this by using one radioactive gear and one normal gear. After running the gears under breakdown conditions, they were taken out of the test machine and small pieces of photographic film were fastened to the teeth of the normal gear. When developed, the films showed how much metal had been transferred from the radioactive gear to the normal one.

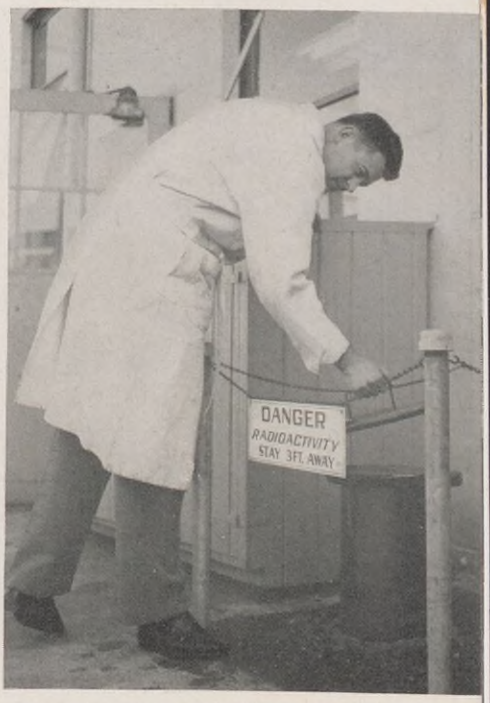
Thanks to the application of radioactive material in such tests, Shell is learning more and more about its products—and ways to improve them are continually being revealed.

TOO HOT TO HANDLE: Gears made radioactive in the atomic pile at Oak Ridge are handled with extreme care. Above, right, Shell Development Engineer F. C. Younger uses long-handled tongs to place a "hot" gear in a wear-testing machine as T. D. Sexton monitors the radiation with a Geiger counter. The wear-testing machine, below, left, is shown open to receive a test gear held on a long rod by Younger. Layers of lead cover the machine. When not in use, "hot" gears are stored in a well, below, right, to prevent radiation exposure.

gear technique, the wear had to be studied by running the gears under the test conditions for a considerable time, then disassembling, examining the gears, and determining their loss in weight. The new technique has the advantage of greater sensitivity; an amount of wear too small to be measured as loss in weight is easily detected by the Geiger counter. What's more, the rate of wear is registered almost instantaneously; the researcher doesn't have to stop the test and take out the gears for each observation, and tests can be made in a fraction of the time formerly required. Equally important, he can obtain a continuous record of the variation in wear from the instant the gears start turning until they stop, instead of just a few scattered observations spaced many hours apart.

Use of the "hot" gears also makes





WORLD-WIDE

Shell Aviation Service, Which Had a Hand In Pioneering the Air Routes of the World, Is Available Almost Anywhere Planes May Fly

AN Englishman, flying his family from South Africa to Europe, dubiously landed his small plane at the obscure airfield of Voi, Kenya, Africa, after an eight-inch rainfall and was promptly mired to the hubs. Within an hour a mob of natives appeared out of the bush, picked up the plane and carried it bodily to hard ground. The Englishman refueled and flew on to Nairobi for lunch. A Belgian lawyer, piloting his own plane from Antwerp to Leopoldville, Belgian Congo, touched down at 11 airports on two continents, yet accomplished his 7,767-mile trip with scarcely a delay. A Scandia passenger plane of Svenka Aeroplan Aktiebolaget, the Swedish SAAB aircraft company, made a recent demonstration flight to a dozen U. S. air terminals without a hitch in the schedule.

Large and small, whether in Africa, Europe or the United States, these

New York—At LaGuardia Airport, as at more than 1,500 airports in the world, Shell Aviation Service is very much in evidence.

WINGS

Venezuela—The huge Shell refueling truck at right, shown serving a DC-4 at Caracas, has a capacity of 5,000 gallons and can deliver 500 gallons of fuel into the plane's tanks every minute. It's a far cry from the "lift and pour" technique, as demonstrated in the old photo, below, taken in North Africa.

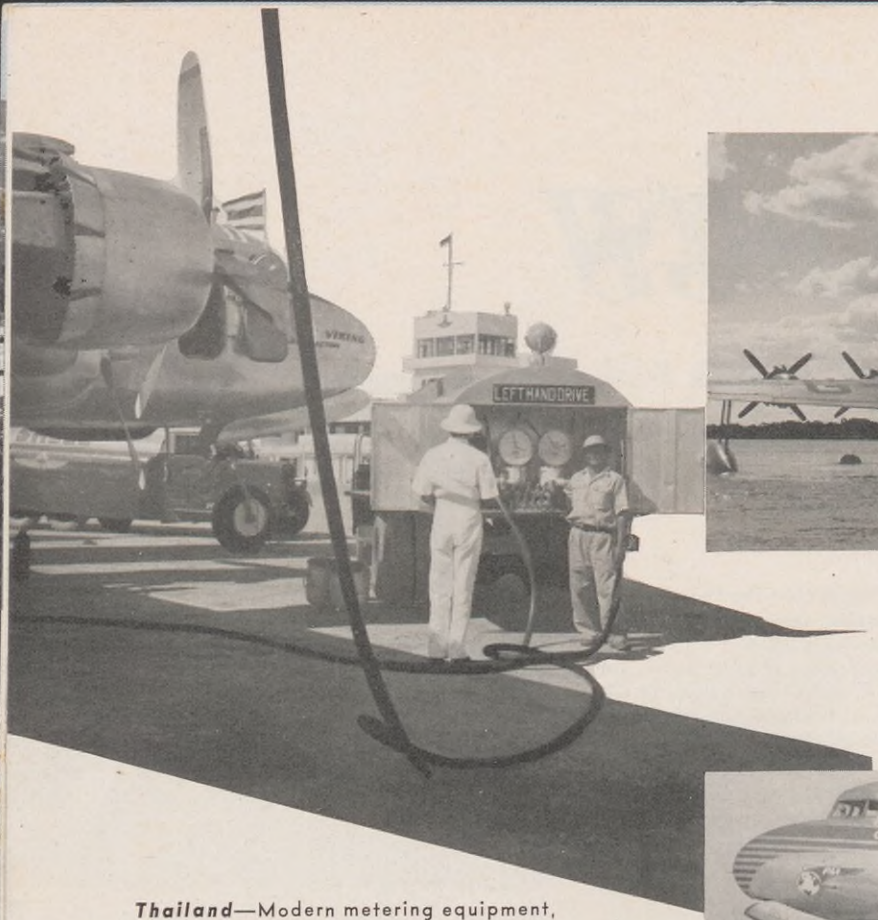
planes were serviced and sent winging on their separate ways by units of a world-wide network of installations and individuals dedicated to the advancement of aviation. It is called Shell Aviation Service, and as a pioneering organization it has initiated many contributions to private and commercial flying throughout the world. Today, after more than 30 years of official operation, Shell Aviation Service is still pioneering, but it is best known for its dependable and reassuring presence almost anywhere planes may fly.

The Service really had its beginnings in a series of isolated events shortly after the turn of the century and before an aviation gasoline or an octane number made its debut. The wood and canvas "crates" of the day flew on "motor spirits," and with this fuel Shell serviced a number of historic flights. Bleriot's flight across the English Channel in 1909 was one of the first, and Shell also fueled the winner of the first Aerial Derby in 1912 and the winner of the first Schneider Trophy race in 1913. For the first three years of World War I, every British military plane in action was fueled with Shell "motor spirits."

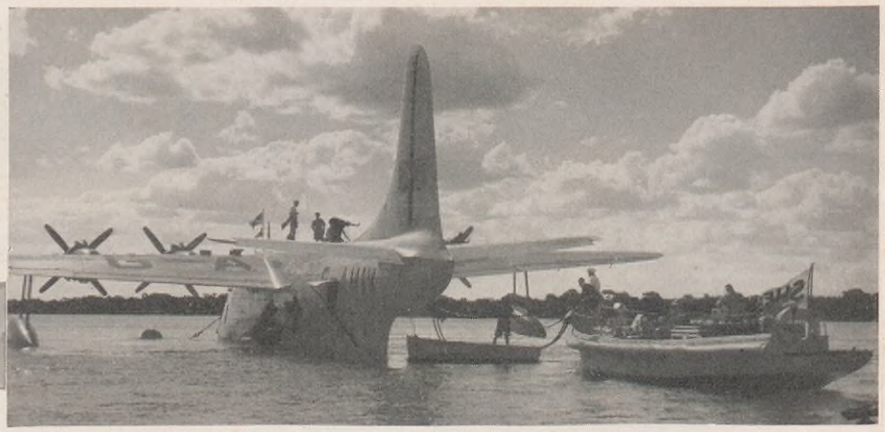
These and other great "firsts" gave a tremendous boost to aviation. Regularly scheduled commercial airlines came into being, and several of the pioneers became Shell customers. The Dutch KLM company, the world's first airline to operate internationally, used Shell fuel on its first flights in 1919. The second big international airline, Imperial Airways, Ltd. (which later became British Overseas Airways Corporation), gave its first order in 1924. The huge, sleek transports of KLM and BOAC still rely upon Shell Aviation Service around the globe. In fact, the Service is used by a greater percentage of airlines than that of any other oil company.

A creditable feature in the growth of Shell Aviation Service is that it did not wait for the expansion of civil aviation and simply go along for the ride. The Service has been a pacesetter all the way, because Shell, anticipating phenomenal air progress, began "laying down" fuel and oil stocks along possible flight routes right after the first World War. In doing so, Shell was not only ready to serve as the expansion materialized, but had a hand in pioneering new routes and extending the world-wide pattern of air lanes as well. As a companion activity, Shell was also early to initiate research programs aimed at improving aviation fuels and the aircraft engines themselves.

By present-day standards, the early Service was crude and incomplete, but it was quite enterprising for a fledgling. Regular facilities and permanent stocks were provided at airports of large cities where the first scheduled air routes tended to concentrate. But for the private aviator anticipating a cross-continent flight over untried routes, the arrangements were somewhat "a la carte." The pilot of the early 'twenties first had to estimate the points where he would be able to



Thailand—Modern metering equipment, above, is just as important to efficient handling of air line flights at Bangkok as it is at airports anywhere else around the world.



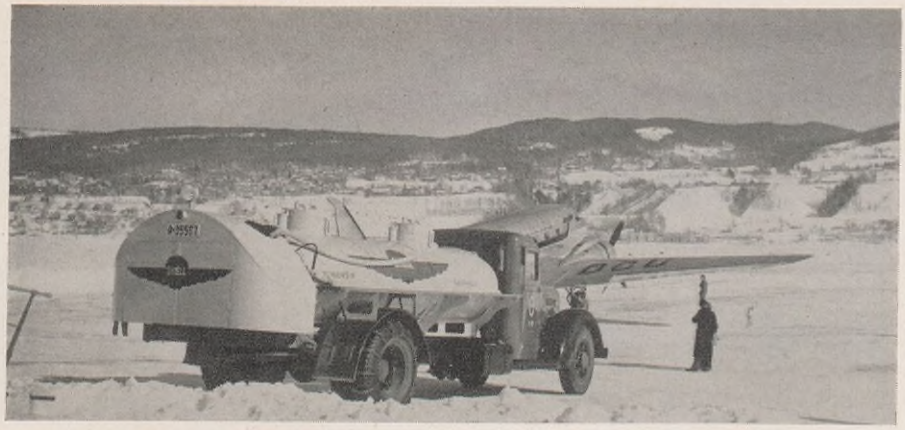
Mozambique — A big flying boat is fueled in the Zambezi River, Africa, above, from a launch carrying Shell fuel.

Japan—A bilingual sign at Tokyo, below, indicates the care taken by Shell Aviation Service at all points.

land and the quantities of fuel he would need at each location. Special arrangements were then made by Shell to deliver the required fuel on time. The fuel preceded the plane by river boat, truck, mule train, or quite often on the backs of native carriers, and frequently the pilot's name was painted on the containers.

The difficulties of such deliveries were numerous. Some remote airfields could be reached only in the dry seasons when the roads were not washed out. At others, served by river boats, the wet season was the only time the rivers were navigable. A much retold story of this period is about the native bearers hired to pack a consignment of 4-gallon cans of gasoline to a remote African landing strip. Somewhere along the route one bearer dropped a can and was surprised to see what appeared to be nothing more than plain water pouring out. He and the other bearers knew that there was plenty of fresh water at their destination, so they promptly emptied all the cans and proceeded to the landing strip at a jauntier pace.

Late in the 1920's a definite international pattern of air routes began to take shape. Shell was already on hand, each year increasing the number of airports where permanent stocks were available. But as supply problems were resolved, attention turned to the servicing of planes as they arrived and departed. In the beginning, the pilot, and perhaps his passengers, were left to the task of laborious refueling by hoisting numerous 40-pound gasoline cans up to the wing tanks of the plane. Gradually, however, Shell Aviation Service began supplying occasional local personnel to assist the pilot, and this eventually led to the practice of training local fueling crews to take over the job entirely. This progress itself was not without incident. On one occasion a Shell representative in Africa, anticipating the arrival of many participants in an international air race, carefully trained a crew of natives in the quickest methods of refueling. The crew had never seen more than one plane at a time, and when the great day came the arrival of several racing planes at once was so deafening that they fled in terror into the surrounding bush. At another African landing field, local politics were such that refueling crews sometimes arrived for work attired in full war regalia, brandishing spears and clubs. After an initial shock, arriving pilots were relieved when their gaudily painted "antagonists" dashed into a shed marked "SHELL" and emerged wearing conventional and more reassuring



Norway—In pioneering the air lanes of the world, Shell Aviation Service has extended its facilities into both metropolitan and undeveloped areas, and into all sorts of climate. Above, a Shell truck services a two-engined passenger plane on the snow packed airport at Lillehammer, inland Norwegian city just a couple of hours flight from the Arctic Circle.

khaki shorts.

Meanwhile Shell was making preparations for serving the growing air activity in the United States. Prior to 1929 the Company had manufactured a high quality automotive gasoline which was used for aviation purposes, but in its preoccupation with the large and growing automotive market no special department had been set up to handle aviation sales. When Aviation Department offices were organized at San Francisco, St. Louis and New York early in 1930, the innovation was immediately famed because of the exploits of the managers obtained to head the offices. The trio were James H. Doolittle, now a Shell Vice President, John A. Macready, and R. G. Ervin. All three were renowned as World War I fliers and all had remained in the Army Air Corps for a time after the war. In fact, Doolittle came directly from the Air Corps to Shell. Ervin had been vice president of a thriving flying service in New England, and Macready was best known as one of a team of two pilots who made the first non-stop flight across the American continent in 1923.

Shell Aviation Service has perhaps expanded more rapidly in the United States than anywhere else in the world —partly because of the high volume of civil aviation in this country, but also because the Service here has followed the example of its overseas associates by participating in a number of modern "firsts" and record-breaking flights. In 1934, for example, Shell made the first commercial delivery of 100 octane gasoline to the U. S. Army Air Corps.

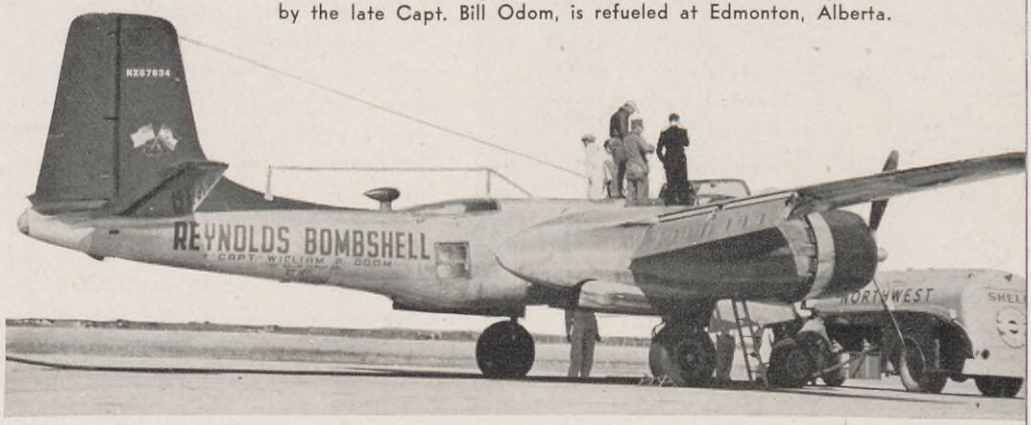
Today Aviation Departments operate in every Marketing Division and Shell Aviation Service is available at more than 500 airports in the United States. While a high volume of business is done with military and private aircraft, and with aircraft and engine manufacturers, Shell does more than its proportionate share of business with scheduled airlines. Better than one-fourth of the fuel requirements of airlines in the United States are supplied by Shell.

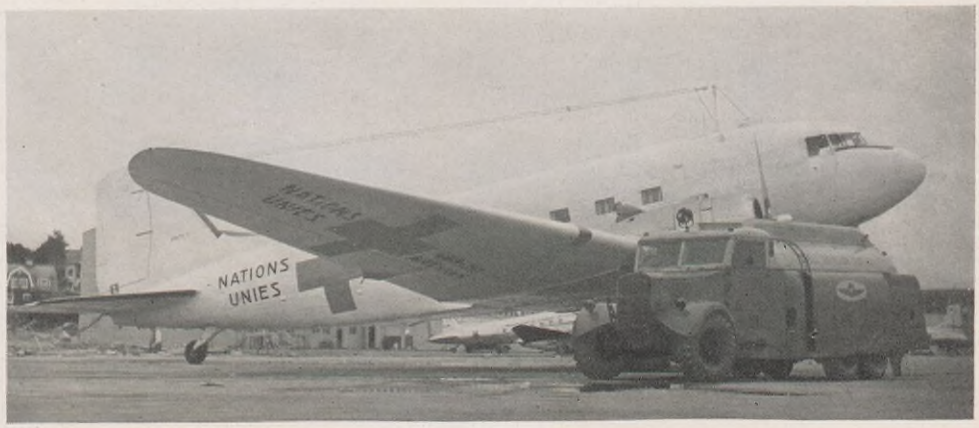
As the pattern of well-organized refueling and servicing has spread around the globe, Shell Aviation Service has equipped its installations with vehicles and facilities which through the years have undergone almost constant modification and replacement to improve the speed and efficiency of the Service and to insure purity and quality in the fuels and lubricants delivered. The huge aviation refueling trucks of today, which can dispense hundreds of gallons of fuel a minute, are a far cry from the old "lift and pour" technique when 4-gallon cans had to be hoisted up to wing tanks. At some terminals, pump outlets have been installed right in the ramps where aircraft are parked. And at seaplane bases, Shell Aviation Service is equipped with launches which operate much the same as refueling trucks do on land.

Products have also been improved and their uses extended. In addition to gasolines, jet fuels and lubricants, Shell special aviation products now include 15 fluids, 13 greases and 8 compounds with a variety of uses.

With its extended network of facilities, it was only natural that Shell Aviation was of assistance to the Allies when the second World War came. In many cases staff and equipment were at the full disposal of the military aircraft using the air bases. The Shell staff's unrivalled local knowledge of local flying conditions and routes was also utilized by planners of air transport and ferry services. For example, hundreds of fighter and bomber planes, needed to reinforce the Allies in the Middle East at a time when the Mediterranean was virtually closed, fol-

Canada—Because of its broad pattern of operations and reputation for dependability, Shell Service has handled many aviation "firsts." Below, the globe-circling Reynolds Bombshell, piloted by the late Capt. Bill Odom, is refueled at Edmonton, Alberta.





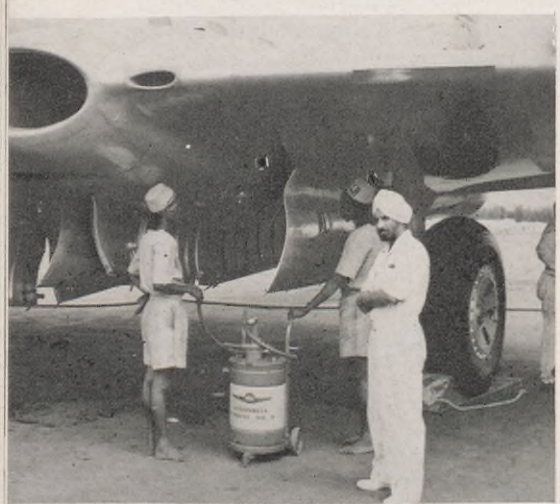
Sweden—A world organization made use of a world-wide service when the United Nations plane assigned to the late Count Folke Bernadotte was serviced at Stockholm, right.

lowed a so-called "West African Reinforcement Route" which Shell had surveyed and stocked in 1935 in anticipation of more peaceful traffic.

The usefulness of Shell-acquired flight information did not stop when the shooting was over. If anything, the upsurge of civil aviation following the war has increased the number of calls for it. The information made available by Shell Aviation Service from 40 information centers has also been extended so that a visiting flier putting down at a strange airfield can get from the Shell representative an amazing variety of facts concerning climate, prevailing winds, emergency landing fields, route maps, customs regulations and the like. The local Shell man, also being what amounts to a Duncan Hines of the Air Lanes, will direct the pilot to the best hotel accommodations and the finest food.

Through Shell Aviation Service, the globe-circling pilot can also obtain all the fuel and services he needs without laying out cash at each stop. In the early days, when language and currency difficulties sometimes caused irritating delays, some progress was made when Shell began issuing illustrated coupons against notes of credit. The coupons depicted cans of various sizes, denoting particular quantities of gasoline or oil. The pilot had merely to point to a picture of what he wanted and sign the coupon and his needs were quickly filled.

Malta—Recently a Hawker Fury fighter, being delivered to the Royal Egyptian Air Force, made the 2,204-mile flight from London to Cairo in the record time of 6 hours, 35 minutes. Shell handled all fueling and lubricating arrangements, and in the plane's only refueling stop, at the Mediterranean island of Malta, above, its tanks were refilled to capacity in six minutes.



Kenya—Local service crews in Africa (this one is at Nairobi) no longer don war paint and carry weapons. They are accustomed to the modern techniques of servicing jet planes.

The modern refinement of this picture pantomime is the Shell Carnet, a credit card instituted to avoid the necessity and inconvenience of carrying large sums in the currencies of several nations in order to get along on long distance flights. By producing the small red booklet, a pilot can obtain his supplies against signed receipts and can make a final settlement in the country where his trip originated. The Shell Carnet, the first of its kind, has come to be recognized as something more than a credit card and has assumed the semblance of a passport, at least to the extent that its presentation to the Shell representative at some far-off landing field will usually result in substantial assistance to the visitor in his customs and immigration problems. Many holders of Shell Carnets have been known to take off on long flights with no more preparation than that of obtaining maps and a permit to go. They know that Shell Aviation Service—available at more than 1,500 airfields—is prepared to ease their journey to almost anywhere—and that the Service has been doing it for years all around the world.

Operation Brrrr

Brother, It's Cold Outside During Winter In the Williston Basin, But Exploration and Production Keep On Schedule

THOUGH no records were broken for low temperatures this last winter, it will go down in the memories of Exploration and Production people in Shell's Rocky Mountain Division as one of the toughest. Sub-zero temperatures and heavy snows in that portion of the Williston Basin where they worked threatened repeatedly to put them out of business, but a stubborn will to beat the weather, plus a lot of specially winterized equipment, kept their operations on schedule.

The Williston version of a Cold War started late last November, shortly after completion of Shell's Northern Pacific No. 1 discovery in northeastern Montana, with the heaviest snowfall that state had seen in 56 years. It continued frigid week after frigid week, with the mercury occasionally sagging to 40 below. The

Surveying vehicles often had to be escorted through deep snow by bulldozers. High winds piled six-foot drifts across many of the roads.

To keep the concrete for the base of this pump on Pine Unit No. 1 from freezing before it set, a tent was erected over it.

A sheet metal cocoon surrounds the derrick floor and draw works of Shell's Little Beaver No. 1 and a canvas shield protects the derrick man on the "monkey board" from bitter winds.

This is not a rock pile on the plains of northeastern Montana, but great chunks of frozen earth pushed up by bulldozers grading the location for a new Shell well in the Glendive Field not far from the North Dakota line. The blocks of rock-hard earth are from 36 to 48 inches thick.

climax came in mid-March when parts of the region were declared "disaster areas" because of deep snow which isolated farm families and travelers and set off "Operation Haylift" in which fodder was dropped from planes to stranded cattle.

Despite these discouraging odds, Shell had five seismic crews in the field continuously. Three new wildcat wells were spudded in and four development wells were drilling in the area around Northern Pacific No. 1. In January, Pine Unit No. 1 was completed to mark a second discovery in northeastern Montana.

One of the most difficult problems of winter operations in the field is getting from one place to another. First, the automotive equipment has to be kept in shape for cold starts. This problem was pretty well taken care of by equipping most vehicles with head bolt electric heaters—devices which are screwed into the engine blocks to keep the engines warm at all times. Then, there's the problem of bucking deep snow and mud. The winds frequently built up six-foot drifts on the roads and surveying parties and trucks hauling equipment

Fur-lined parkas, a fashion "must" for men in the field, are modeled here by two members of a seismic party operating a reel truck.

Pipe fitting on the separator for Northern Pacific No. 1 was not easy for men bundled in warm clothing and wearing heavy gloves.

IF you can do 43 multiplications and additions in 10 seconds you're bound to get "A" in arithmetic—if you can do it.

The fact is, this seemingly impossible feat is accomplished scores of times almost every day by Shell people in the Houston research laboratory of the Exploration and Production Technical Division. The catch is that they use an "electronic brain" designed and created by the laboratory's own personnel—an imposing array of lighted panels, wires, vacuum tubes, plugs and switches that do complex calculations connected with gravity and geophysical surveying. The instrument is an *analog computer* and it is helping Shell exploration men to chart accurately the underground structures of present and potential oil fields, and to chart them many times faster than was ever possible before.

The analog computer relieves exploration staff personnel of the tedious and time-consuming job of working out thousands of mathematical calculations which are necessary to interpret the data obtained by gravity and magnetic parties in the field. These parties, surveying a given area, take readings at plotted intervals—which form a square grid on their map—and jot down a number at each spot where a reading is taken. From this information, Area Exploration offices plot contour maps of the area surveyed.

But this gives only a partial indication of what lies beneath the surface. By taking the figures written down on the contour map and using them in mathematical formulas, a better interpretation of the subsurface information can be obtained. This is the job of a computer in the office.

Before that electronic whiz, the analog computer, was devised, the accepted method for working out a formula was for a person to sit down with a contour map, and a device for spotting the 43 figures used in each formula, a desk calculating machine, and a bit of patience—and start figuring. An experienced computer, multiplying and adding at a steady rate, might do as many as 40 computations a day.

The trouble was, one lengthy computation gave the data for only one field location—and some surveys include thousands of them. Then, too, a computer pecking away at a calculating machine most of the day wasn't immune to errors.

There are two miles of wiring and over 15,000 soldered connections in the analog computer.

The new analog computer eliminates the tedium and guess-work. All the field location figures are put into the machine in the form of voltages, then the operator selects the desired location and plugs in a device which automatically picks out the 43 figures involved in the problem. A switch is pressed and, zing, 10 seconds later the answer appears in numbered lights. The only visible movements or sounds are the flashing of numerous small lights and the clicking of electric relays.

Because the analog computer has the faculty of "remembering" all the field location figures, no matter how many times they are used, it is more accurate than a human brain. Its speed also makes it possible to run each formula through twice to check this accuracy.

Its speed adds in another way to the accuracy of the exploration information being compiled. There are several mathematical theories and as many formulas for obtaining subsurface data from magnetic and gravity surveys. In the old, slow method of computing with a desk calculator, the custom was to work out only one formula and let the others go. With the analog computer, five formulas are now being worked out for each field survey.

Shell's analog computer has been in operation at Houston since mid-1951. Though it is a bewildering collection of two miles of wiring, 127 vacuum tubes, hundreds of lights, thousands of screws, and with more than 15,000 soldered connections, it was designed and built in an amazingly short time. The problem of devising some method of cutting down on survey calculating time was given to the Physics-Electronics Group at the Laboratory in October 1950. By the following January, the problems of voltages, double analogs, microseconds, potentiometers, resistors, and what-have-you had been neatly solved and jig-sawed together in the form of a pilot model. After extensive testing of the model, the full-scale analog computer was completed in June. It is now being used by the Technical Services Group of the Exploration and Production Technical Division for obtaining information from selected field surveys. The Technical Division plans to build more like it, to spread the advantages of speed and accuracy as far as possible.

Though the "electronic brain" is an intricate and sensitive machine, a "non-technical" person can learn to operate it in a single day.

The tenth in a new series of organization charts

Shell Oil Company

August—1952

Vice President

S. F. Bowlby

Manager Exploration

L. R. Newfarmer

Manager Land

M.W.Sheppard

Manager Legal

R. T. Patton

Manager Pers. & Ind. Relations

W. S. Gage

Area Geophysicist

H. Thornburgh

Senior Geophysicist

C. H. Gregory

Area Geologist

G. E. Miller

Senior Geologist

V. W. Finch

Senior Geologist

D. E. Taylor

Assistant Manager Land

C. I. Warren

Office Manager

C. L. LaForce

Senior Geologist (Special Assignment)

M. Birkhauser

Senior Geologist (Special Assignment)

G. C. Kuffel

Senior Geologist (Special Assignment)

L. Kehrer

Geologist (Special Assignment)

H.J.Buddenhagen

Rocky Mountain Division Manager

J. E. Clark

Division Geologist Coastal

F. W. Bell

Division Geologist San Joaquin

W. McKitrick

Division Geologist Rocky Mountain

R. B. Wing

Division Land Manager Coastal

C. T. Crewell

Division Land Manager San Joaquin

H. F. Crandall

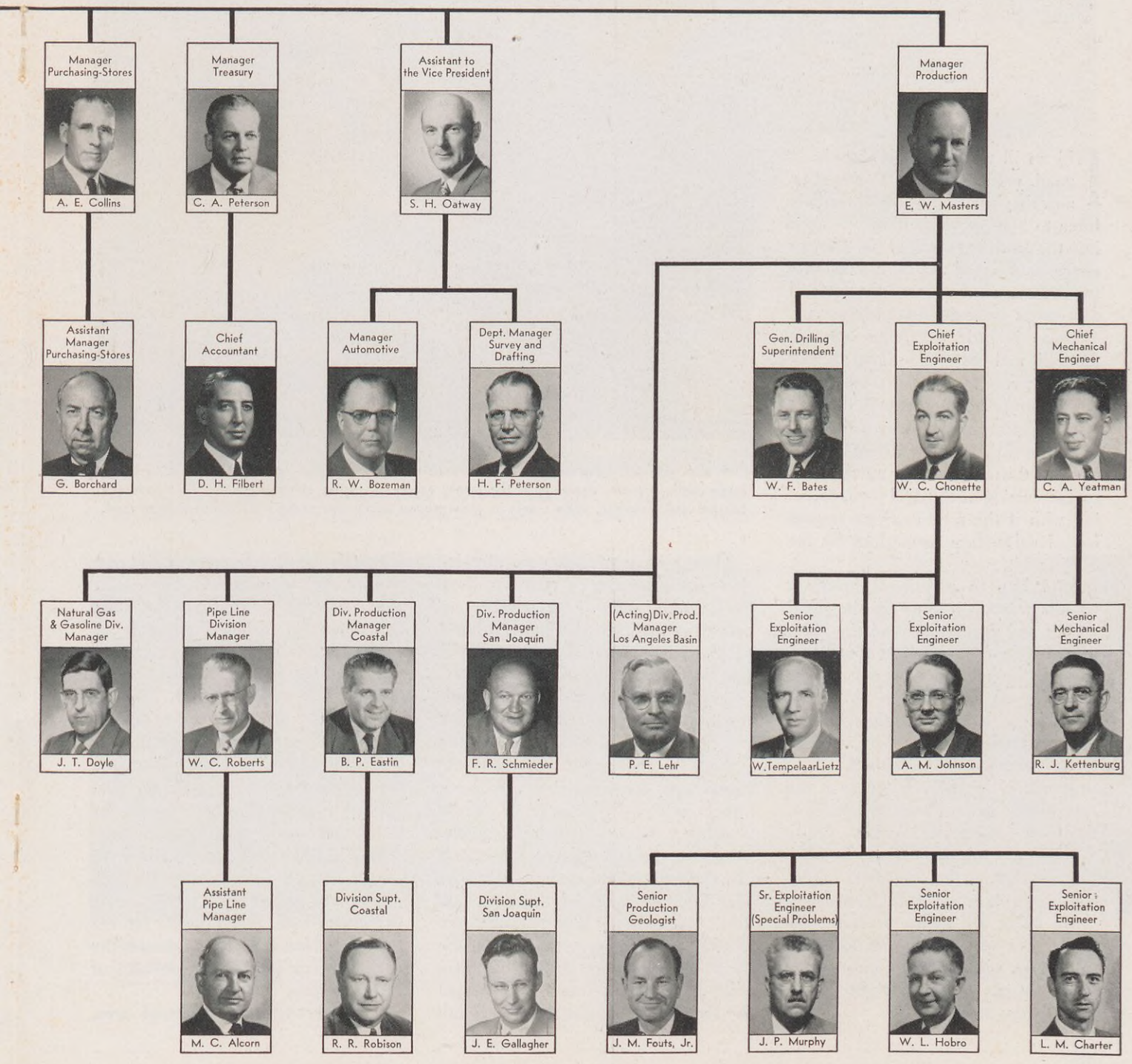
Division Land Manager Rocky Mountain

R. N. Gadbois

Division Supt. Rocky Mountain

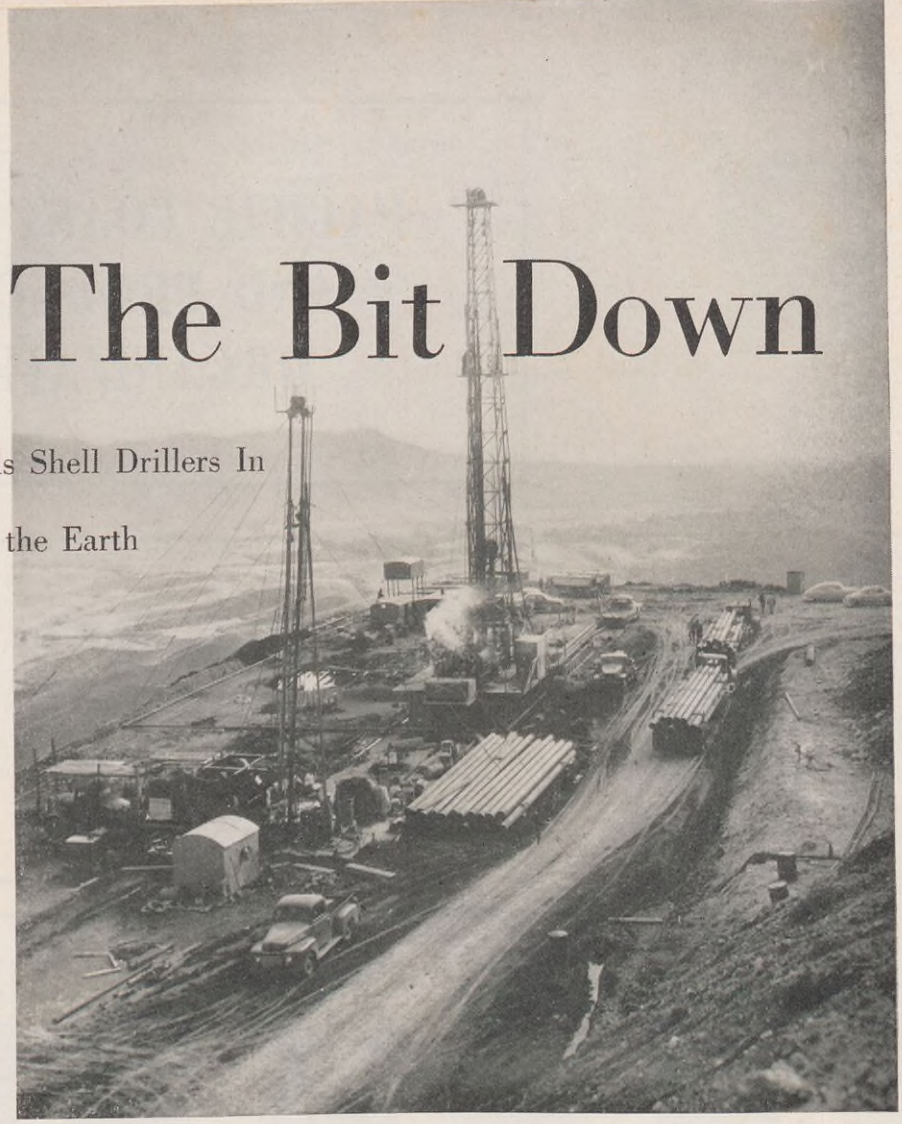
F. J. Toth

PACIFIC COAST EXPLORATION AND PRODUCTION AREA ORGANIZATION CHART



Blow The Bit Down

Compressed Air Now Aids Shell Drillers In Their Search For Oil Deep In the Earth



Old and new drilling methods vie with each other in this picture. The old cable tool rig, foreground, is much slower than the larger rotary rig using compressed air. Both methods can be used, however, when cracks in underground formations cause high loss of drilling mud.

IT'S an ill wind that blows nobody good, even in the oil business, so now they're using winds of tornado force to help drive drilling bits deep into the earth in search of oil. They're using compressed air, as a substitute for drilling mud, to cool the bit and carry rock cuttings to the surface.

There is little difference between the old and new technique. Either mud or air, when used in rotary drilling, is pumped down through the drill pipe and emerges with force through holes in the drilling bit. There it cools the bit, then flows back up the hole on the outside of the drill pipe, carrying with it the rock cuttings ground out of subsurface formations by the drilling bit.

Mud has an additional function. On the way up it seals off the small cracks and fissures around the sides of the hole. The catch is that occasionally the hole runs through a layer of fractured rock where the cracks are so large that much of the mud and cuttings are lost in them. This is called "lost circulation" and it's a costly proposition in drilling, because the special mud is an expensive item. Too, the rock cuttings which don't get to the surface might be just the ones that could give the geologists important clues to oil-bearing formations.

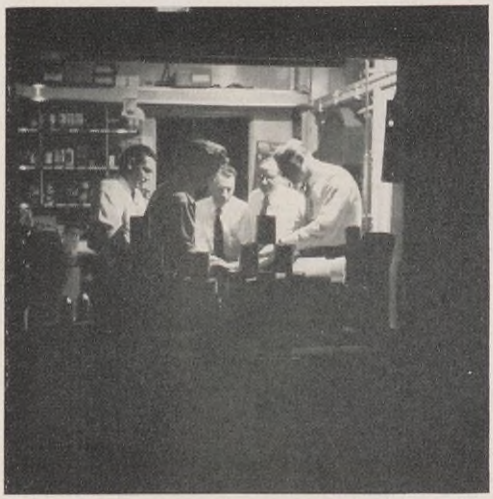
By using air under pressure, the driller can save the cost of lost mud and at the same time get most of the rock cuttings blown straight up the hole to the surface.

The problem of lost mud circulation assumed major proportions when Shell began recently to develop its properties in the South Mountain Field of California, properties purchased just last year. The field is located on the top and steep slopes of South Mountain, near Santa Paula, and for the first 500 to 1,000 feet below the surface the drilling bit must penetrate loose and fractured volcanic rock which is literally a sieve of cracks and holes. In one well, for example, loss of mud made it necessary to stop the drilling and cement off big cracks six different times in the first 600 feet. There is no way to avoid the cracks, for they occur throughout the field's area, and any drilling problem such as lost circulation is exaggerated by the fact that most wells at South Mountain are directionally drilled and require delicate control of the drill pipe and bit. Drilling can be done only from flat "islands" gouged out of the mountainside, and as many as six wells are angled out in various directions from each island.

Now, after months of experimentation, Shell uses compressed air instead of mud until each well has penetrated the troublesome strata near the surface. A battery of nine compressors substitute for the mud pumps. They supply 4,180 cubic feet of air each minute. The air reaches the bit at a pressure of approximately 100 pounds per square inch. When the air returns to the surface, a flow pipe directs the rock cuttings into a pile—instead of into mud pits.

Once through the fractured area,

Many a preliminary planning session takes place over coffee and cakes at a local restaurant. At these informal meetings, there is a constant give-and-take of advice between Scotty and such Shell men as Jack Wilder, Field Engineer (center) and Bill Critchley, Salesman (right).



A strategy meeting in Scotty's old service station. Shell men present include (l. to r.) Ed McGee, Jack Wilder, Howie Irish and Jim Davidge.

Before ground is broken for the station, traffic frequency is checked. Howie Irish (right) Shell Merchandising Representative, gives Scotty a hand.

In the Boston Office, the Davidge-Wilder-Critchley-Irish team show Scotty a model of pump island layout.

Scotty kept a watchful eye on construction proceedings, from the first survey (pictured above) to the final landscaping of the station (below).

Shell's Pete Corliss (below) Construction and Maintenance Supervisor, discusses the mechanism of one of the new pumps to be installed.

Scotty watches the porcelain trim being applied to the facade of his new station. These experienced workmen specialize in Shell's exclusive design and architecture. Throughout the construction period, Shell men were on hand to offer suggestions and advice.

Opening day is an extra busy one for Scotty McKechnie and his wife who are shown here cleaning the new station's front window.

Driver Tony Marnett, from Shell's depot in New Haven, brings in the first cans of motor oil to Scotty's station as the big day approaches.

Howie Irish, Shell Merchandising Representative, works in uniform at the new station for several days to fill Scotty in on new developments.

After a last minute check to make sure everything is in apple pie order, Scotty goes to work on banners and posters which turn the opening day of the new, gleaming station into a gala carnival occasion. The day's weather is as bright as Scotty's prospects.

Scotty's old customers, and many new ones, pour into the new Shell station on opening day and two-man service sends them speedily on their way, bearing souvenirs of the festive occasion. Scotty's off to a good start—from now on, he's on his own.

Antiques As Good As Old

A California Shell Employee Enjoys the Hobby of Recreating Attractive and Sturdy Home Furnishings of the Early Pilgrims

RUSS HARMAN is one husband who doesn't quail when he sees his antique-loving wife enter "Ye Olde Shoppe" or a museum "Period Room." In fact, he usually goes along himself, and he's happiest when they spot a piece of furniture in their favorite period and style.

Russ, Superintendent in the Oilfields District of Shell Oil's San Joaquin Production Division, can afford the enthusiasm. His skill at reproducing museum-exhibited antiques has enabled him to furnish his home with beautiful replicas of the elegant furniture of another day.

He learned the rudiments of his hobby years ago in his father's workshop.

"I was making a Morris chair," he recalls. "It looked all right to me, but my father used to laugh every time he came in to check my progress. I didn't catch on until the thing was finished. I couldn't get it out the door. He was quite happy about it, seems he'd always wanted an easy chair in the workshop."

Started in 1925

A short time after the first Harman-made antique appeared—he made it in 1925 while attending night school—Russ and his wife began investigating the different styles and periods of furniture design. They finally decided to concentrate on American furniture of the Pilgrim Century (1620 to 1760) because ". . . it is beautiful enough to blend with almost

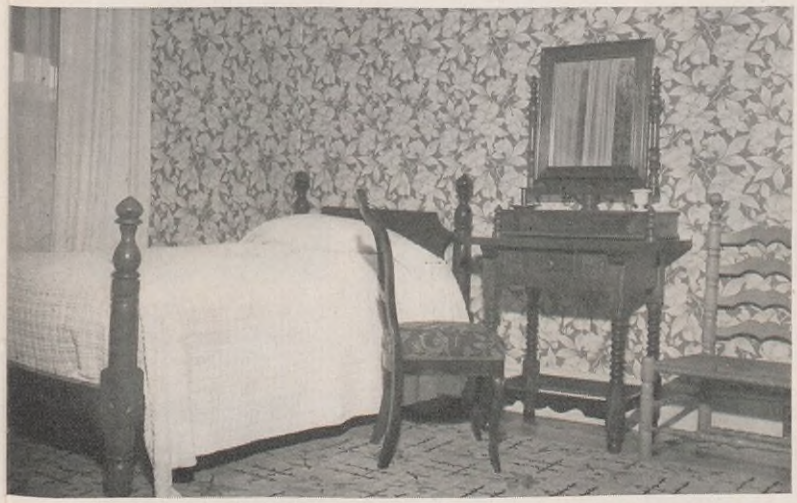
A small but well-equipped workshop enables Russ to reproduce the period furniture he and Mrs. Harman, inset, want in their home.

any setting and strong enough to have withstood the rough treatment of the Colonial home. Then too, pieces belonging to this period are relatively easy to construct because the style lines are simple."

The exact measurements needed for construction purposes have usually been easy to obtain since early American Pilgrim antiques are fairly common in museums. Some collectors, however, don't like to have their expensive heirlooms duplicated too accurately. On more than one occasion, Russ has had to undertake extensive library research to obtain photographs of a particularly famous furniture piece and then develop working measurements from enlargements of the photographs.

Another reason for deciding on early American Pilgrim was the fact that most of the woods used by the Pilgrims are still available. Russ is more fortunate than most furniture builders in that he has a supply of choice hardwoods which are as good as the best that the Colonists had back in the 17th and 18th centuries. His favorite is the native Eastern Black Walnut which comes from his family's farm in Indiana. He likes it because it works easily, finishes beautifully and lasts forever. He also works with maple, oak and pine when reproducing antiques and with figured gum when building weaving looms and certain types of cabinets.

Russ follows 18th century construction techniques to the letter, using wooden pins instead of nails or screws, mortice and tenon instead of dowel pin construction and dove-tailed joints instead of mitering. Craftsmanship of this high caliber requires the best of woodworking hand tools and his collection, filling a desk-sized chest, is as complete as his modest shop can hold. But Russ is quick to point out that a beginner doesn't need a tremendous collection of tools to enjoy the hobby and that the equipment needed can be purchased for a comparatively small outlay. It is more important that the beginner start slowly and not try to tackle anything too pretentious without obtaining initial guidance from experienced craftsmen.



Harman's fine craftsmanship shows in the above bedroom group at left and the dining room group at right. Most of the pieces are exact copies of famed museum pieces. A portion of Mrs. Harman's pitcher collection can be seen on the plate rail in the dining room.

Good Finish Hard Work

So far, Russ hasn't been able to find a suitable substitute for the elbow grease old cabinet makers applied to create the beautiful finish that distinguishes so many museum pieces. Age and use through the years are important contributing factors, he feels, but even here, experts disagree. They differ, for example, on how to put that fine honey color finish on maple furniture.

"I have two fine maple pieces to finish now," Russ says, "but I can't quite bring myself to follow one authority's recommendation to rub in old dirty crankcase oil."

Mrs. Harman shares her husband's appreciation for old and beautiful things, and her prized collection of pressed glass, antique pictures, sets of china and colorful old prints blend nicely with his handiwork. Adorning the floors of their home are numerous hook rugs that she has made. Several years ago, Russ made her a weaving loom that encompasses all the best features possessed by looms back in Revolutionary days when weaving was a major art. Today some of their furniture is upholstered with the fabrics she has woven.

His wife pleaded with him for years to make a coffee table, but Russ was reluctant, feeling that it couldn't be a true reproduction since they didn't have coffee tables back in the 1700's. She held out though, so he is now making a coffee table that is a miniature reproduction of a famous gate-legged table with two drop-leaves. Some of his carefully hoarded 30-year-old Eastern Black Walnut is going into the creation of "the Fake" as he calls it.

But, true reproduction or false, Russ says, "Woodworking is an ideal hobby. It is relaxing to work with your hands after a day in the office, and the results can be enjoyed for years with a real sense of accomplishment."

They Have Retired

G. J. BLESSINGER
Pacific Coast Area
Production

J. J. CALVIN
Shell Pipe Line Corp.
Mid-Continent Area

F. W. CHAPPELL
Shell Pipe Line Corp.
Mid-Continent Area

NELL CHAPPELL
Tulsa Area
Treasury

JOSEPH COTTON
Norco Refinery
Personnel & Ind. Rel.

G. W. CROCKETT
Wood River Refinery
Treating

E. W. DAY
Seattle Division
Administration

D. P. DEVENS
Boston Division
Operations

M. J. DOODY
Shell Chemical Corp.
Shell Point Plant

V. A. ENDERSBY
San Francisco Office
Manufacturing

J. R. EWERS
Wood River Refinery
Engineering

HARRY FENICK
Sewaren Plant
Compounding

WILLIAM FREDETTE
Boston Division
Operations

E. E. GALLI
Shell Chemical Corp.
Shell Point Plant

L. S. GARDIOL
Pacific Coast Area
Production

G. J. GARRETT
Houston Refinery
Engineering

R. W. GAUCHER
Seattle Division
Marketing Service

A. M. GIULIANY
Wilmington Refinery
Distilling

L. H. GRANT
Pacific Coast Area
Production

A. F. GUIDRY
Norco Refinery
Utilities

E. B. GWYTHER
Wilmington Refinery
Laboratory

S. A. HERBERT
Head Office
Treasury

CLARENCE JACOBS
Wood River Refinery
Engineering

W. J. KINLER
Norco Refinery
Personnel & Ind. Rel.

J. A. LEONHARDT
St. Louis Division
Operations

W. H. LUMAN
Wood River Refinery
Engineering

ROY MacDOUGALL
Martinez Refinery
Marine Loading

C. C. MAY
Shell Pipe Line Corp.
West Texas Area

M. T. MELLENTHIN
Wood River Refinery
Engineering

GUY MILLER
Wood River Refinery
Engineering

E. R. MOREY
Shell Pipe Line Corp.
Mid-Continent Area

A. D. POOLE
Shell Pipe Line Corp.
Texas-Gulf Area

W. R. RASCHERT
Products Pipe Line
Zionsville, Ind.

E. W. RYAN
Wood River Refinery
Engineering

E. R. SMITH
New Orleans Area
Production

C. W. SWARRINGIM
Wood River Refinery
Engineering

G. E. TASH
New Orleans Area
Exploration

W. R. THOMPKINS
Seattle Division
Marketing Service

H. E. THOMPSON
Wood River Refinery
Engineering

W. S. VICKERS
Shell Chemical Corp.
Dominguez Plant

J. L. WRIGHT
Tulsa Area
Treasury

J. S. WRIGHT
Wood River Refinery
Engineering

coast to coast

David Saletan, left, Martinez Chemical Plant, and Harry Evans, right, Emeryville, were cited recently by the American Institute of Chemical Engineers. Charles Nelson, also of Emeryville, made the awards.

Truck Driver Milford C. Bartholomew accepts a safe driving certificate from Oakland District Manager, Arthur Plomgren, as George Laugel, Plant Superintendent and Wilfred Tetrault, Sales Supervisor, look on.

Five new representatives were elected to the board of directors of the Shell Midland Employees Club. They are, left to right, Russell Ford, Vera Wecker, Andy Henning, Carolyn Jones and Dick Hamm.

Jack Smith, Jack Conahan, Dan Gilbrech and Art Mansure, left to right foreground, members of the San Francisco Shell Building fire brigade, manned the fire truck during a recent test air raid alert.

Shown above, talking over New Orleans Area exploration plans for 1952 are, left to right, A. J. Galloway, Vice President, Exploration and Production; B. Dykstra, Area Vice President; F. W. Oudt, Area Exploration Manager and W. M. Johnson, Area Land Manager.

Mrs. I. A. Redfox admires the Silver Beaver Award presented to her husband recently by the Boy Scouts. Mr. Redfox, Los Angeles Area Office, has served as troop scoutmaster continuously since 1928.

Seated, left to right, are six new members of the Shell Recreation Association Board at the Wood River Refinery: R. L. Graham, C. F. Stanley, C. J. Briskey, B. F. Rapp, H. E. Darr, and J. O. Harris. Standing are former and remaining board members: C. W. Andrews, R. S. Reynolds, F. W. Hagerman, W. E. Gillespie, R. C. Byron, F. E. Broadway, P. A. Ufert, R. C. Niepert, H. S. Poitz, C. E. Priest and chairman C. A. Nicolet.

Coast to Coast continued . . .

Bakersfield Engineer, Thurman Melby shows why he can put his feet on the desk and get away with it. His wife knitted the colorful socks.

Lt. Commander Anton Zagar received his Shell personal identification card from Charles Burnett, Personnel and Industrial Relations Manager, on his recent visit to the Shell Point Chemical Plant. Commander Zagar is on military leave from the Shell Point Plant.

The Calgary Exploration and Production Area's Ten-and-Over Dinner was held recently in the Sun Room of the Palliser Hotel. Thirty-three members turned out to enjoy the occasion.

S. V. "Sherm" Rogers, Joan Becker, Ruth Mulchay and Pat Coret, from left, check their scores with Dave Marshall in the Shell Oil-Shell Chemical San Francisco Bowling League. The League is operating for the first time since 1949.

Service Birthdays

Thirty-Five Years

H. H. ANDERSON
Shell Pipe Line Corp.
Vice Pres. & Gen'l Mgr.

R. W. BOZEMAN
Pacific Coast Area
Production

H. C. GOLDSTONE
San Francisco Office
Purchasing-Stores

M. J. MATHERNE
Norco Refinery
Engineering

JAN OOSTERMEYER
Shell Chemical Corp.
President

W. S. WORKMAN
Pacific Coast Area
Production

Thirty Years

V. O. ANDREWS
Sacramento Division
Operations

E. F. BAKER
Wood River Refinery
Engineering

C. A. BROWN
Pacific Coast Area
Production

B. V. CLARK
Tulsa Area
Production

R. H. FISHER
Midland Area
Gas

ARTHUR GLOVER
Midland Area
Production

W. E. HELMICK
Pacific Coast Area
Production

C. E. JOHNSON
Wood River Refinery
Engineering

C. L. LaFORCE
Pacific Coast Area
Personnel & Ind. Rel.

R. W. LOOP
Pacific Coast Area
Production

A. F. LOVE
Pacific Coast Area
Production

G. H. OVERBY
Tulsa Area
Production

M. R. PHOENIX
Pacific Coast Area
Production

H. P. SHOCKLEY
Shell Pipe Line Corp.
Mid-Continent Area

H. S. WHITE
Tulsa Area
Production

Twenty-Five Years

M. G. BARNER
Shell Pipe Line Corp.
Mid-Continent Area

G. O. BEAUDRY
Seattle Division
Operations

O. R. BENNETT
Wilmington Refinery
Catalytic Cracking

H. J. BUDDENHAGEN
Pacific Coast Area
Exploration

W. R. BUTLER
Tulsa Area
Gas

A. H. CLEVENGER
Wood River Refinery
Stores

W. H. COLLINS
Tulsa Area
Production

J. W. CONNER
Shell Pipe Line Corp.
West Texas Area

H. T. CORNELIUS
Tulsa Area
Production

G. J. DELANEY
Houston Refinery
Engineering

H. R. DONOHOO
Pacific Coast Area
Purchasing-Stores

D. E. DOONEY
Portland Division
Treasury

J. J. DOSS
Wilmington Refinery
Stores

F. L. ELLSWORTH
San Francisco Division
Sales

G. C. FAUBION
Tulsa Area
Production

R. B. FLINK
Shell Chemical Corp.
Martinez Plant

B. C. FRAKER
Shell Pipe Line Corp.
Mid-Continent Area

W. L. HUMES
Shell Pipe Line Corp.
Texas-Gulf Area

H. A. KOHFELD
Sacramento Division
Sales

F. R. LOVERING
Midland Area
Production

B. D. MARTIN
Pacific Coast Area
Production

F. J. METEER
Wilmington Refinery
Engineering

O. M. NIELSEN
Pacific Coast Area
Production

F. E. NIX
Head Office
Exploration & Production

R. F. NIXON
Houston Area
Exploration

W. S. NOVIKOFF
Products Pipe Line
East Chicago, Ind.

ORA OVERTON
Products Pipe Line
Auburn, Ill.

KARL PERMANN
Shell Development Co.
Mech. & Elec. Engr.

A. L. PETERSON
Houston Area
Exploration

R. H. ROETTGER
Shell Pipe Line Corp.
Mid-Continent Area

J. A. SCHILLINGER
Wood River Refinery
Control Laboratory

H. F. SIMMERS
New Orleans Area
Production

R. W. SMITH
Houston Refinery
Lubricating Oils

M. T. STORREY
Wilmington Refinery
Engineering

W. C. TAYLOR
Wilmington Refinery
Engineering

T. A. WILLSON
Martinez Refinery
Cracking

E. E. WINCKEL
Pacific Coast Area
Production

W. C. WOODRUFF
Seattle Division
Operations

SHELL OIL COMPANY

Head Office

20 Years

D. P. Brenz ..... Manufacturing
K. U. Campbell ..... Personnel
J. B. Lowery ..... Marketing
P. C. Thomas ..... Marketing

15 Years

J. E. Condon ..... Purchasing-Stores
T. F. Shaffer ..... Marketing

10 Years

H. L. Hendricks, Jr. ..... Manufacturing
W. A. Mitchell ..... Manufacturing

San Francisco Office

20 Years

N. Beattie ..... Marketing
J. H. Lukins ..... Treasury

Exploration and Production

TECHNICAL DIVISION (HOUSTON)

15 Years

E. F. Gay ..... Research
J. C. Hepworth ..... Research

HOUSTON AREA

15 Years

C. C. Koenig ..... Production
E. M. Moore ..... Production
M. L. Townsend ..... Exploration
J. D. Vanya ..... Production
L. O. Wirringa ..... Exploration

10 Years

H. Dickson ..... Production
M. R. Norris ..... Production

MIDLAND AREA

15 Years

W. J. McKeel ..... Gas
A. D. Meek ..... Production
D. H. Mitchell ..... Production

10 Years

A. T. Guernsey ..... Production

NEW ORLEANS AREA

20 Years

S. James ..... Production

15 Years

J. E. Carter ..... Production
I. J. Dugas ..... Production
H. R. Hebert ..... Production
H. H. Jatzlau ..... Production
N. M. Jolet ..... Production
R. F. Porter ..... Production

10 Years

J. M. Fillman ..... Production
A. T. Giroir ..... Production
B. B. Hughson ..... Exploration

PACIFIC COAST AREA

20 Years

R. H. Davis ..... Treasury
J. E. Ward ..... Production

15 Years

D. C. Erwin ..... Treasury
R. E. Millett ..... Purchasing-Stores
F. M. Morgan ..... Production
J. P. Murphy ..... Production
O. H. Niemela ..... Production
J. H. Ross ..... Production
Mary D. Williams ..... Treasury

10 Years

J. C. Cadet ..... Production
H. A. Fox ..... Production
N. W. Garner ..... Production
R. G. Hames ..... Production
E. L. Hutchins ..... Exploration
J. W. Moran ..... Production
M. W. Sherbert ..... Treasury

TULSA AREA

20 Years

A. Kern ..... Production

15 Years

G. W. Kasserman ..... Land
J. V. Pocock ..... Production
J. J. Rogers ..... Production
W. M. Veach ..... Production

10 Years

H. G. Cockburn ..... Gas
R. R. Johnson ..... Treasury
A. A. Noble ..... Production
M. L. Sessing ..... Treasury

Manufacturing

HOUSTON REFINERY

20 Years

L. A. Rein ..... Engineering
D. J. Wilson ..... Stores

15 Years

D. C. Bailey ..... Engineering
E. O. Goodson ..... Control Laboratory
N. E. Watson ..... Gas

10 Years

E. C. Ables ..... Gas
W. P. Bryan ..... Technological
J. Courvelle ..... Engineering
L. J. Hallmark ..... Personnel & Ind. Relations
E. C. Hart ..... Cracking
B. L. Jones ..... Research
A. Koy ..... Engineering
Ruby L. Pollock ..... Lubricating Oils
C. A. Schaeffer ..... Utilities
H. W. Warren ..... Cracking

MARTINEZ REFINERY

15 Years

D. H. Clemons ..... Control Laboratory
W. T. Senuty ..... Engineering

10 Years

J. A. Avila ..... Engineering
B. E. Gordon ..... Research Laboratory
R. C. Lockwood ..... Distilling
C. O. Stevenson ..... Distilling

NORCO REFINERY

20 Years

A. J. Mabile ..... Engineering

WILMINGTON REFINERY

20 Years

C. A. Mohr ..... Engineering

15 Years

L. O. Brown ..... Laboratory

10 Years

I. R. Buchan ..... Dispatching
N. A. Dean ..... Engineering
E. Fore ..... Engineering
L. G. Jackson ..... Engineering
W. M. Legg ..... Engineering
J. C. Malone ..... Engineering
G. Mathis ..... Engineering
R. L. Odom ..... Engineering
E. J. Shook ..... Engineering
G. E. Webster ..... Engineering

WOOD RIVER REFINERY

20 Years

W. Hopper ..... Research Laboratory
L. E. Scheibal ..... Dispatching
J. L. Weaver ..... Stores
I. I. Wood ..... Engineering

15 Years

C. C. Berry ..... Engineering
H. H. Dinwiddie ..... Engineering
W. E. Gillespie ..... Control Laboratory
J. B. Raines ..... Engineering
E. Sehnert ..... Engineering
J. B. Williams ..... Engineering

10 Years

A. T. Ahrling ..... Engineering
P. P. Ashman ..... Engineering
C. P. Baumgartner ..... Engineering
R. J. Bishop ..... Gas
L. W. Brakemeyer ..... Control Laboratory
E. F. Brenkendorff ..... Engineering
J. S. Bull ..... Engineering
A. L. Coalson ..... Cracking
L. W. Condellone ..... Utilities
G. S. Cornelison ..... Cracking
G. S. Crider ..... Engineering
C. L. Denton ..... Engineering
O. J. Espenschied ..... Engineering
E. L. Gillespey ..... Alkylation
J. Granger, Jr. ..... Engineering
W. L. Grove ..... Dispatching
E. D. Hanson ..... Engineering
P. J. Hardy ..... Engineering
J. O. Harris ..... Fire & Safety
H. C. Hockmuth ..... Cracking
K. J. Holmes ..... Engineering
G. R. Hudson ..... Treasury
T. O. Hughes ..... Engineering
C. L. Ingersoll ..... Control Laboratory
J. A. Jenkins ..... Engineering
C. M. Johnston ..... Dispatching
W. A. Jurgena ..... Alkylation
G. H. Koch ..... Engineering
W. E. Kress ..... Experimental Laboratory
F. H. Langwisch ..... Compounding
E. Lee ..... Engineering
G. N. Luke ..... Engineering
B. B. Magruder ..... Utilities
G. W. McClery ..... Engineering
R. H. McKenzie ..... Cracking
W. J. Miller ..... Engineering
W. R. Mott ..... Engineering
O. M. Muskopf ..... Research Laboratory
E. G. Nasser ..... Technological
R. J. Petruzza ..... Engineering
G. W. Pickerel, Jr. ..... Dispatching
C. L. Radmacher ..... Engineering
D. L. Rhea ..... Compounding
E. O. Schaefer ..... Gas
C. O. Schuetz ..... Engineering
J. H. Scott ..... Engineering
J. H. Smith ..... Engineering
E. A. Steelman ..... Cracking
L. C. Tegmeier ..... Engineering
F. Urban ..... Engineering
H. Wagner, Jr. ..... Engineering
C. E. Wise ..... Control Laboratory
O. A. Yann ..... Engineering
G. R. Zimmerman ..... Dispatching

Marketing

MARKETING DIVISIONS

20 Years

F. W. McGinnis ..... Albany, Sales
C. S. Redden ..... Albany, Sales
C. M. Shenton ..... Baltimore, Marketing Service
W. G. Westgate ..... Boston, Operations
A. J. Paul ..... Chicago, Operations
V. D. Skinner ..... Cleveland, Treasury
A. B. Overmohle ..... Los Angeles, Operations
K. J. Larson ..... Minneapolis, Treasury
J. A. Maroldy ..... New York, Sales
J. D. Pace ..... New York, Operations
F. E. Passarella ..... New York, Operations
W. W. Stevens ..... Sacramento, Sales
A. Q. Obert ..... St. Louis, Sales
S. J. Sontheimer ..... St. Louis, Operations
T. G. Lindner ..... San Francisco, Operations

15 Years

Marjorie Hoag ..... Albany, Treasury
M. B. Robinson ..... Atlanta, Sales
M. T. Mello ..... Boston, Operations
P. Nanes ..... Boston, Sales
J. J. Sullivan ..... Chicago, Sales
P. Zvara ..... Cleveland, Operations
H. E. Winkler ..... Indianapolis, Marketing Service
F. H. Staub ..... Minneapolis, Sales
J. A. Ohlert ..... New York, Operations
H. J. Rasmussen ..... Portland, Operations
M. L. Andrews ..... Sacramento, Treasury
H. H. Gebhardt ..... San Francisco, Operations

10 Years

W. J. Dash ..... Atlanta, Operations
C. M. Swagler ..... Cleveland, Sales
L. S. C. Ing ..... Honolulu, Marketing Service
L. W. Mulert ..... Minneapolis, Operations
C. G. Upham ..... Minneapolis, Sales
R. L. Fisher ..... St. Louis, Operations
D. W. Parker ..... San Francisco, Operations

SEWAREN PLANT

20 Years

B. Petrik ..... Compounding
M. Ramalho ..... Engineering
J. J. Schicker ..... Compounding

15 Years

D. P. Montazzoli ..... Compounding
S. J. Sorensen ..... Engineering

Products Pipe Line

20 Years

H. C. Bacastow ..... Vandalia, Ill.
O. R. Batty ..... Barnett, Ill.
W. H. Smith ..... East Chicago, Ind.

15 Years

F. E. Andrew ..... Zionsville, Ind.

10 Years

A. W. Hanfland ..... Zionsville, Ind.

SHELL CHEMICAL CORPORATION

20 Years

D. V. Cook ..... Houston
J. P. Barlow ..... Shell Point
W. E. Gibson ..... Torrance

15 Years

B. C. Quackenbush ..... Dominguez
F. S. Du Bose ..... Shell Point
H. J. Enea ..... Shell Point

10 Years

G. E. Ely ..... Dominguez
J. E. Penick, Jr. ..... Head Office
B. M. Clark ..... Houston
J. H. Cook ..... Houston
S. T. Hancock ..... Houston
A. E. Kachel ..... Houston
J. R. Lacy ..... Houston
E. S. Martin ..... Houston
N. H. McKay, Jr. ..... Houston
W. B. Milner, Jr. ..... Houston
J. H. Ponder ..... Houston
F. S. Smith ..... Houston
B. P. Watt ..... Houston
T. James ..... Martinez
H. J. Robbins ..... Martinez
C. C. Groves ..... Shell Point
R. E. Lewis ..... Shell Point

SHELL DEVELOPMENT COMPANY

15 Years

L. L. Gore ..... Service Engineering
W. H. Peterson ..... Lubricants & Fuels
D. H. Sarno ..... Process Engineering
C. G. Schwarzer ..... Organic Synthesis
G. A. Stenmark ..... Analytical

10 Years

C. Barter ..... Physics
G. M. Good ..... Catalytic Refining
J. M. Gordon ..... Spectroscopic
A. E. Handlos ..... Physical Chemistry
W. B. Hartsock ..... Service Engineering
D. L. Johnston ..... Process Engineering
D. Melillo ..... Fuels & Lub. Engr.
H. K. Peck ..... Service Engineering
Rose-Marie Seeberger ..... Analytical
D. P. Stevenson ..... Physics
G. T. Williamson ..... Process Development
W. B. Wilson ..... Asphalt

SHELL PIPE LINE CORPORATION

20 Years

A. R. Harper ..... Mid-Continent Area

15 Years

R. W. Clemmons ..... Bayou System
M. M. Maxwell ..... West Texas Area
J. D. Williams ..... Bayou System

10 Years

B. H. Berry ..... Mid-Continent Area
H. H. Burnett ..... West Texas Area
E. C. Gray ..... West Texas Area
H. C. Herring ..... Mid-Continent Area
J. R. Hughes ..... Mid-Continent Area
A. E. Ingram ..... Mid-Continent Area
C. H. Martin ..... Mid-Continent Area
C. A. Niswonger ..... Mid-Continent Area
O. J. Sappington ..... West Texas Area

matters of *Fact*

TO SEE OURSELVES AS OTHERS SEE US

Many of us will see ourselves—and nearly all of us will recognize our jobs—in a new book to be published soon by Rinehart & Company. Called *The Oilmen*, the book includes more than 150 photographs of men and women doing all the main jobs needed in finding, producing and transporting crude, making and distributing Shell products. It is the first picture book of its kind about the people in a large industry. The photographs were taken by Thomas Hollyman, nationally known photographer and photo editor of Holiday Magazine. The book will be sold at leading book stores throughout the United States, but special distribution plans are being drawn up for Shell employees.

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6510 Brookside
Houston, Tex.

SCC

FAMILY PORTRAIT

THAT old axiom about the whole equalling the sum of its parts is particularly important in an oil refinery. A pound of crude oil ought to yield about a pound of refined products and by-products. If it doesn't, something's wrong, and it's up to men like Roy Schroeder, Yield Clerk in the Houston Refinery Gas Department, to find out where the trouble lies.

Roy's job is one of checking and cross-checking the yield efficiency of refinery units. Working with day-to-day data on tank inventories and stock movements, he provides his department manager with a running account of how individual units are operating.

A Shell employee since 1935, Roy Schroeder has been Yield Clerk at the Houston Refinery since 1946. He and his wife Inez and their two young sons, Ken and Bill, live in Houston. Roy is an active Boy Scout Commissioner, with five troops under his leadership.

YIELD CLERK • ROY E. SCHROEDER