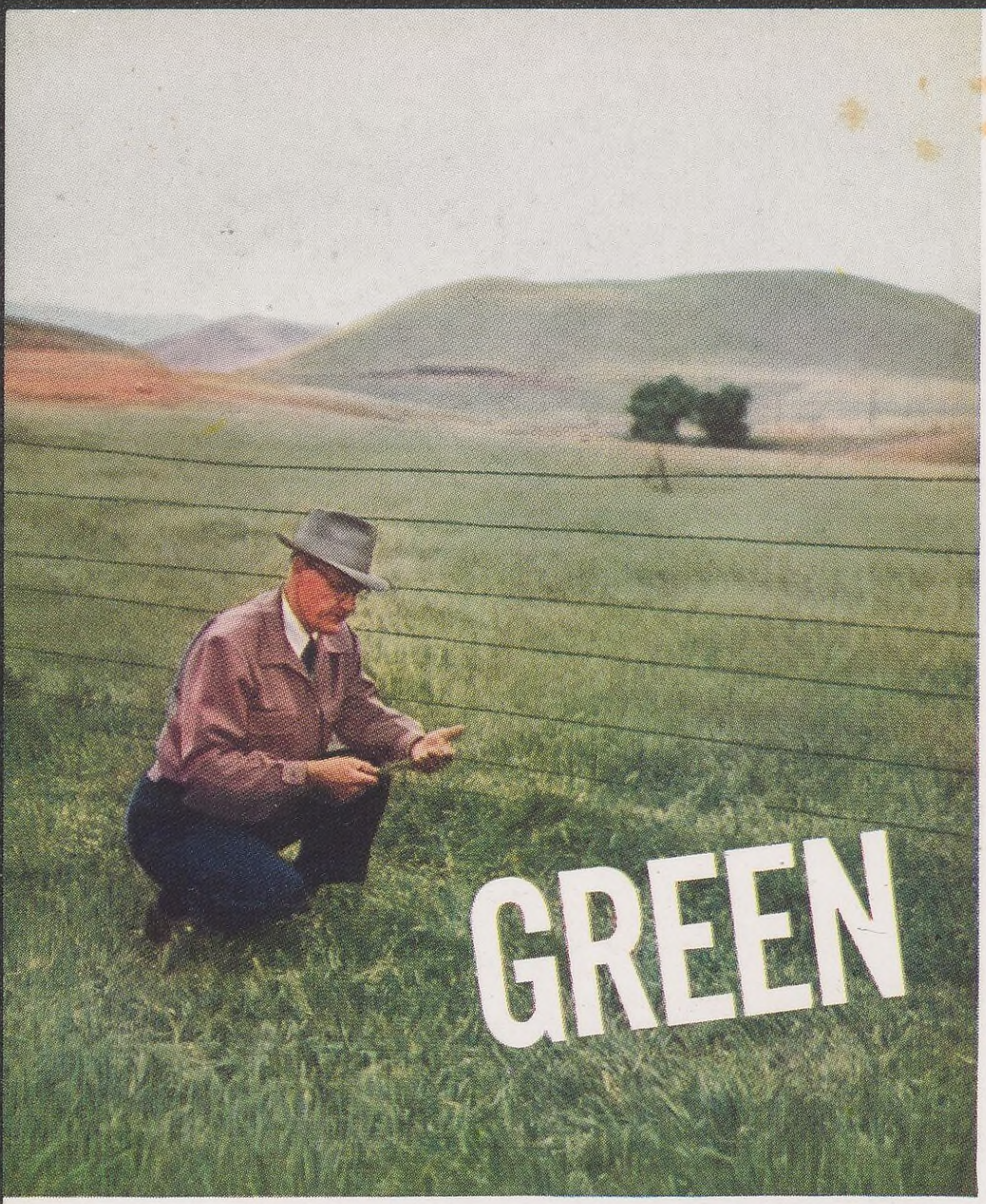
SHELL NEWS

AUGUST 1956

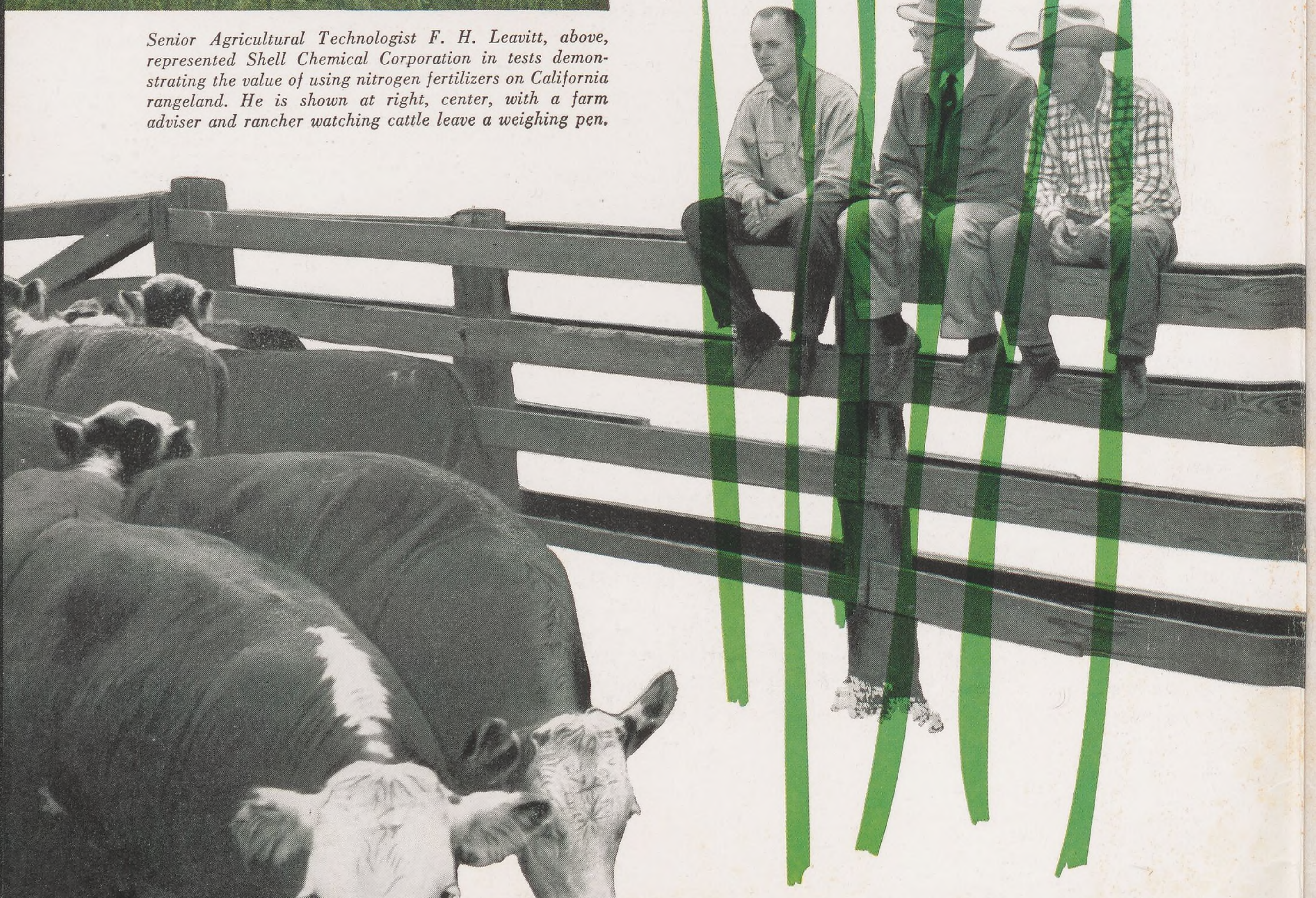
NEW TWIST ON TORNADOES

Tests Prove Shell Chemical's

GREEN Grows the Grassland



Senior Agricultural Technologist F. H. Leavitt, above, represented Shell Chemical Corporation in tests demonstrating the value of using nitrogen fertilizers on California rangeland. He is shown at right, center, with a farm adviser and rancher watching cattle leave a weighing pen.



Ammonium Sulphate Boosts the Quality and Lengthens the Growing Season of Grass on California's Cattle Ranges

THE West Coast has become one of the country's agricultural leaders largely because of its imaginative approach to crop production. Such large-scale irrigation and reclamation projects as the All American Canal—which moves Colorado River water more than 100 miles across the Imperial Valley—have turned deserts into highly productive farm acreage, many under cultivation the year around.

Today's western farmer, a combination businessman and soil specialist, relies heavily on mechanization, and places special emphasis on nitrogen fertilization for his consistently heavy yields.

Twenty-five years ago, Shell Chemical Corporation introduced (in California) the use of anhydrous ammonia as a nitrogen fertilizer on a commercial scale. Advances in ammonia fertilization techniques and equipment, the major share of them developed by Shell Chemical, have brought about what LIFE Magazine recently called "A Nitrogen Revolution." Today, ammonia is America's most used source of this essential plant nutrient, and its popularity is spreading in other countries.

During the last three years, Shell Chemical's role as pioneer in nitrogen fertilization has been re-affirmed. This time the focus is on beef production—the west's biggest dollar-volume farm commodity. Annual livestock production in California alone is valued at nearly one billion dollars.

Most western beef and some dairy cattle are raised on native rangeland—pastures left to grow as they will. This land is not, and usually can't be, cultivated. Producing sufficient forage grass on the rangeland is of major concern to cattlemen.

The problem has several facets. When soil fertility is depleted, forage production is both low in quantity and poor in quality. What's more, grass and clover growth is largely confined to the spring months. This uneven seasonal growth necessitates the growing or buying of supplemental feeds for the cattle during the remainder of the year.

A practical way to increase forage production and improve quality appears close at

Small biplanes were used in the California tests to scatter fertilizer on plots located in rough terrain or where rains made the ground soft. Shell's ammonium sulphate was carried in hoppers lashed to the underside of the planes.

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Employee Communications Department
New York, N. Y.

contents

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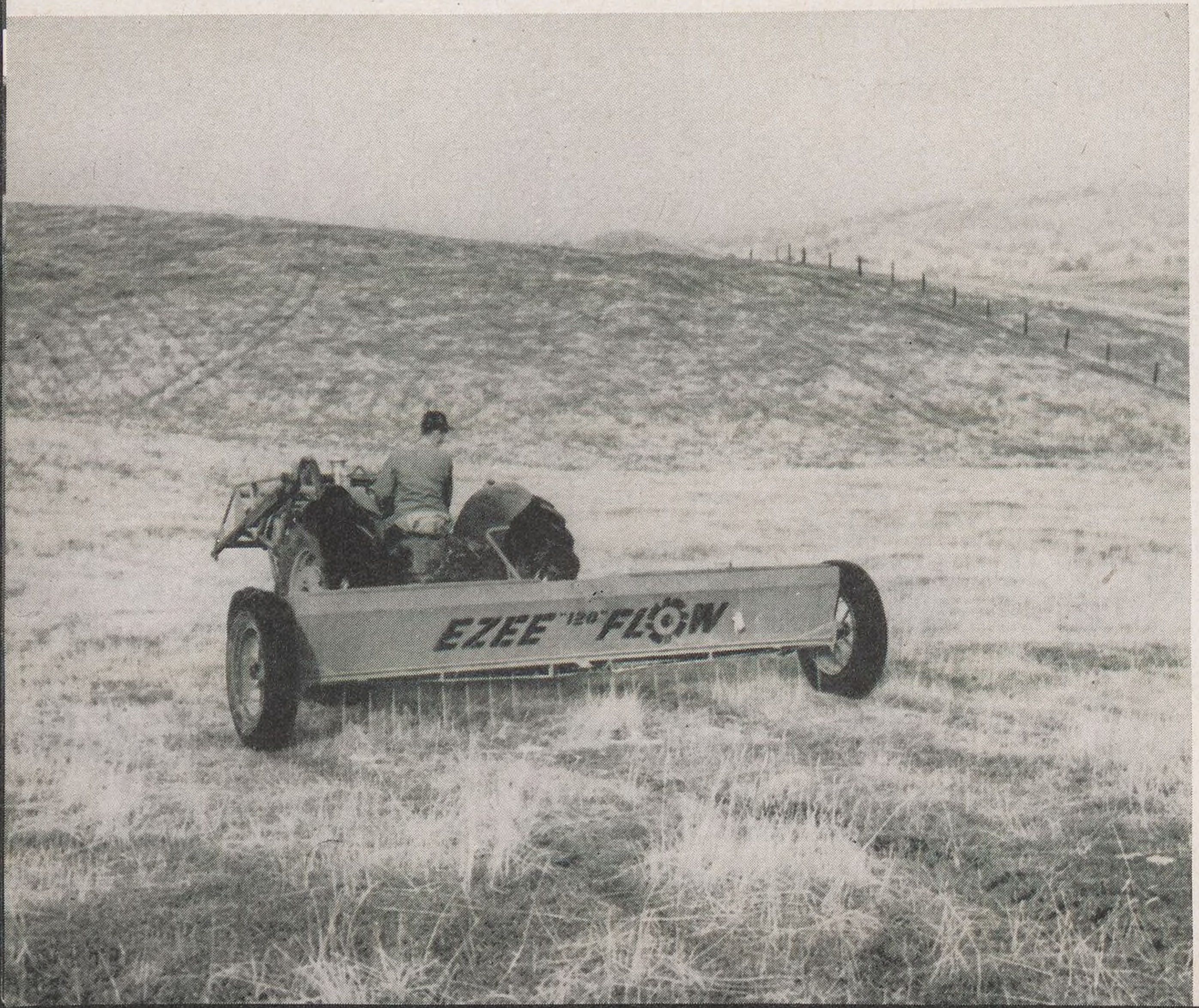
NEW TWIST ON TWISTERS

The people on this month's front cover, two U. S. weathermen and four Shell employees, are launching a weather balloon in a purposeful study of ways to operate the tornado warning system of the West Texas Volunteer Weather Warning and Observation Services. An article about how Shell employees and other volunteers alert the countryside when tornados approach begins on page 7.

In the cover picture Forecaster S. A. Teel of the Abilene, Texas, Weather Bureau prepares to launch the balloon. Watching, left to right, are: C. E. Sitchler, the Bureau's Chief Meteorologist, and Shell's B. D. King, R. M. Carter, J. F. Ireland and Jan Boyd.

The cloud behind this plane is ammonium sulphate, which is being scattered over a hilly, tree-studded test plot used in the University of California dry nitrogen fertilizer tests.

On relatively flat grazing land, ammonium sulphate fertilizer is applied with tractor-powered spreaders, such as this one, which meter out the crystallized chemical evenly.



hand. The answer is nitrogen fertilization—long an established practice with cultivated crops, but an entirely new concept in putting new life into the rangelands.

During recent years, the University of California Agricultural Extension Service, in cooperation with ranchers and members of the fertilizer industry, has been conducting a program of extensive field tests of rangeland fertilization.

Agricultural technologists of Shell Chemical's Ammonia Division have been active in this experimental program, working with university specialists to establish the most effective fertilizer materials and techniques. To date, one of the most successful materials under test has been ammonium sulphate, another Shell Chemical nitrogen fertilizer. Shell Chemical contributed hundreds of tons of its ammonium sulphate for the experiments, and provided personnel for technical participation.

Unlike the many agricultural experiments which simply compare plant response on fertilized with unfertilized plots, these rangeland fertilization tests were conducted on a commercial scale. Cooperating ranchers made two adjacent fields available, each averaging more than 50 acres in size and comparable in soil and terrain. One was fertilized, the other was not.

The fertilizer was applied by powered ground-spreaders except when the land was too rough or tended to be boggy. In the latter cases, the fertilizer was spread by low-flying airplanes.

Individual soil deficiencies determined the most profitable fertilizer material, and the amount of application. Shell Ammonium Sulphate, containing both nitrogen for grasses and sulphur for clovers, which attained wide success on the plots where it was used, was applied 250 pounds per acre.

Normal grazing procedures were

followed on both fertilized and unfertilized fields, although increased forage growth on the fertilized field enabled a larger number of cattle to be grazed on those acres.

Cattle going into both fields were tagged for identification, and weighed before and after several months of grazing on the test acres. The difference in total beef gains, and in the cattlemen's net profit per acre were the measures of the experiments.

During the course of the experiments, and at the end of each, the local county farm advisor held meetings at the test sites, giving neighboring cattlemen a chance to see the results for themselves. At the outset, many cattlemen were openly skeptical of this new approach to beef production. When they saw the results of the tests, they began to change their minds.

The ten or more test sites used each year are representative of California rangeland, taking into account differences in terrain, annual rainfall, and types of soil. The experimental program will not be completed for several years, but these are the indications so far:

- Fertilized rangeland produces more beef. Net profit per acre, after subtracting all fertilizer and application costs, varied from $1.00 to $18.00 more on fertilized fields than on unfertilized.
- Fertilizer made range grasses grow earlier, providing a longer grazing season and lower supplemental feed costs.
- Fertilizer increased forage production sufficiently to enable more cattle to graze per acre—or to graze the same number of cattle on fewer acres.
- Fertilized grass was more resistant to frost damage and had a higher protein content.

For western cattlemen, the results are of vital interest, holding as they do the promise of an answer to some of their most perplexing production problems. For Shell Chemical, the experimental program is also of vital interest, since its continued success and leadership in the chemical fertilizer field is directly dependent on the success of the farmers and cattlemen it serves.

During the filming of a Shell motion picture about the use of dry nitrogen fertilizers on California rangeland, Leavitt, kneeling at left, watches the work of the cameraman and R. W. Emerson, Copy Writer in the Marketing Service Department of Shell Chemical's Ammonia Division who wrote and directed the new film.

One scene from the motion picture shows ranchers gathered near a test site listening to agricultural experts tell how nitrogen can increase their profits. The demonstration includes the weighing-in of cattle which fed on treated and untreated test plots of grassland, the extra pounds of beef proving the dollar and cents value of the fertilizer.

The Battle That Saved a Continent

Australia Annually Celebrates the Battle of the Coral Sea, Which Stopped a Japanese Invasion and Changed the Course of War in the Pacific

EACH year in early May Australia celebrates an Allied naval victory that saved the continent down under from invasion and marked the first time a decisive sea duel was fought solely with aircraft.

The clash was the Battle of the Coral Sea, fought near the Solomon Islands northeast of Australia on May 4-8, 1942. It halted Japanese plans to invade Port Moresby, New Guinea, and later Australia—only about 200 miles to the south. Australians began celebrating the victory anniversary as soon as World War II was over, and in 1950 began to invite leading U. S. military men to be guests of honor. This year the U. S. military representative at the Coral Sea Celebrations held at six major Australian cities was Lieut. Gen. J. H. Doolittle, a Vice President and Director of Shell Oil Company, who led the war's first air raid over Tokyo. General Doolittle participated in commemoration ceremonies in each state in Australia, including appearances at the cities of Brisbane, Sydney, Canberra, Melbourne, Adelaide, Perth, Newcastle and Freemantle.

The Battle of the Coral Sea was the first carrier-against-carrier engagement in which all damage on both sides was inflicted by planes. If there were any doubts before that battle of the effectiveness of carriers, the Coral Sea results wiped them out. Yet only 14 years later, as General Doolittle pointed out in one of his Australian speeches, it is most unlikely that there will ever be another major war whose course could be significantly affected by a battle such as that fought in the Coral Sea.

"Progress in the development of nuclear weapons and the methods of delivering them make it quite unreasonable to expect a repetition of the earlier type of relatively limited engagement," he said.

Not only is another such relatively limited battle unlikely in the event of another war, but it is equally improbable that any future sea-scrapes will hinge on a series of events such as ultimately decided the Coral Sea outcome.

According to official U. S. Naval records, the Coral Sea engagement was fought by Japanese forces accompanying an invasion fleet, and U. S. Naval Task Force 17, which sailed out to stop it. The invasion force—11 troop transports with escorts and naval support—was aimed at adding Port Moresby (New Guinea) and Tulagi (in the Solomon Islands) to the string of Japanese bases. Port Moresby, only about 200 miles from the Australian

U. S. ships return to Noumea Harbor, New Caledonia, after the Battle of the Coral Sea.

Official U. S. Navy Photo

U. S. Navy planes score a direct hit on a Japanese carrier of the SHOKAKU *class during the battle. Low on the ship's bow, a fire is also burning. Near-misses explode in the foreground. Ship's wake shows its evasive course.*

Australian News & Information Bureau Photo

Lieut. Gen. J. H. Doolittle, guest of honor at Australia's Coral Sea Celebration, talks with workmen at Melbourne putting final touches on the 1956 Olympic games main stadium.

coast, was particularly vital because it would bring Australia within easy range of Japanese bombers, and could serve as a jumping-off point for an invasion of Australia itself.

The major battle actually should have begun on May 6, when the two opposing forces were only 70 miles apart. But neither force knew where the other was. The Japanese commander, for some unknown reason, neglected to send out scouting planes, and American scouts missed the Japanese ships because they were hidden by clouds.

But the next morning scouts from both sides were busy. American pilots located a Japanese destroyer and two minesweepers and sank them. The Japanese found what they thought were an American carrier and a cruiser, and launched an air strike against them. The "carrier and cruiser" actually were the destroyer SIMS and the oiler NEOSHO. Both were sunk.

In the meantime, American pilots had spotted two light carriers and four destroyers. Unfortunately the scouts' report was garbled and the message read "two carriers and four cruisers." American commanders, thinking they had found the main Japanese force, sent 93 planes from the LEXINGTON and YORKTOWN to attack. On the way to the given location, the pilots spotted the light carrier SHOHO. The SHOHO was sunk in minutes in the first U. S. carrier plane attack on an enemy carrier. After the battle, Lieut. Comm. R. E. Dixon radioed one of the war's most famous reports:

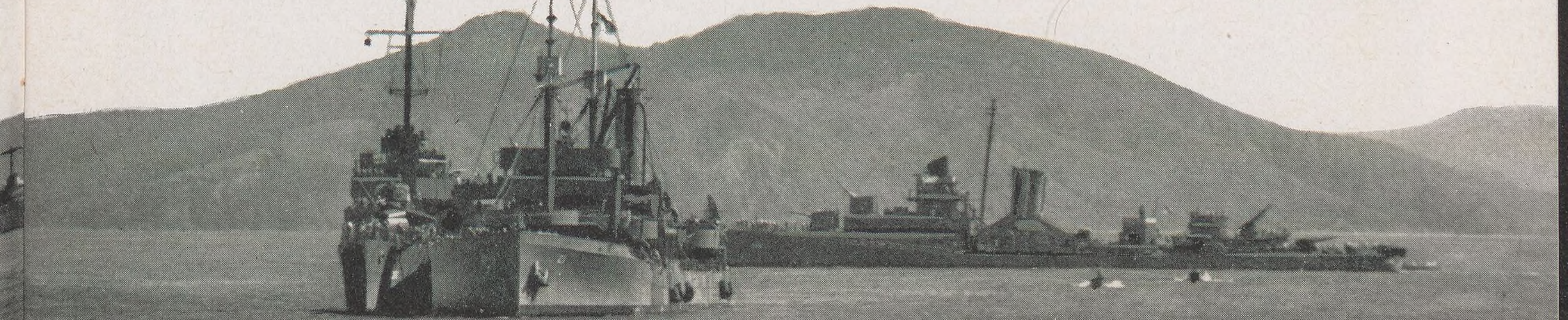
"Scratch one flattop!"

Evening was approaching as the American planes, returning to their ships, encountered Japanese aircraft which had been searching for the YORKTOWN. Nine Japanese and three American planes were shot down in the ensuing melee. The darkness and fighting apparently confused six Japanese pilots; three tried to land on the YORKTOWN, thinking it was their ship, and three others joined the YORKTOWN'S landing circle. One was shot down.

During the night the Japanese invasion troop ships were ordered back to Rabaul—marking the beginning of the Japanese retreat that was to end more than three years later.

On the morning of May 8, the Battle of the Coral Sea reached its climax. A force of 90 Japanese planes attacked the LEXINGTON and YORKTOWN while 56 U. S. planes were blast-

Official U. S. Navy Photo



ing the Japanese carriers ZUIKAKU and SHOKAKU.

Planes from the YORKTOWN scored two bomb hits on the SHOKAKU. In the meantime, planes from the LEXINGTON tallied a bomb blast on the ZUIKAKU. While neither carrier was sunk, the SHOKAKU was damaged badly enough to force it to return home for repairs.

While the U. S. planes were attacking the Japanese carriers, the Japanese planes were returning the fire to the American carriers. Because most of the U. S. carriers' aircraft were taking part in the attack, relatively few were left to defend against the Japanese air strike. The fight quickly became one of Japanese aircraft against anti-aircraft gunners.

Japanese torpedo bombers and dive bombers attacked the LEXINGTON simultaneously. Eleven torpedoes were fired at the carrier; two struck, one on each side. Dive bombers scored two hits at the same time, one of them on a main deck ammunition store. The fight was over in 19 minutes.

The YORKTOWN fared far better. It evaded all torpedoes and was hit by only one bomb.

Though the LEXINGTON was badly damaged, its fires were under control and the ship had returned to normal flight operations shortly after the attacking planes were driven off. It was then that the U. S. forces suffered their greatest loss—after the battle was over.

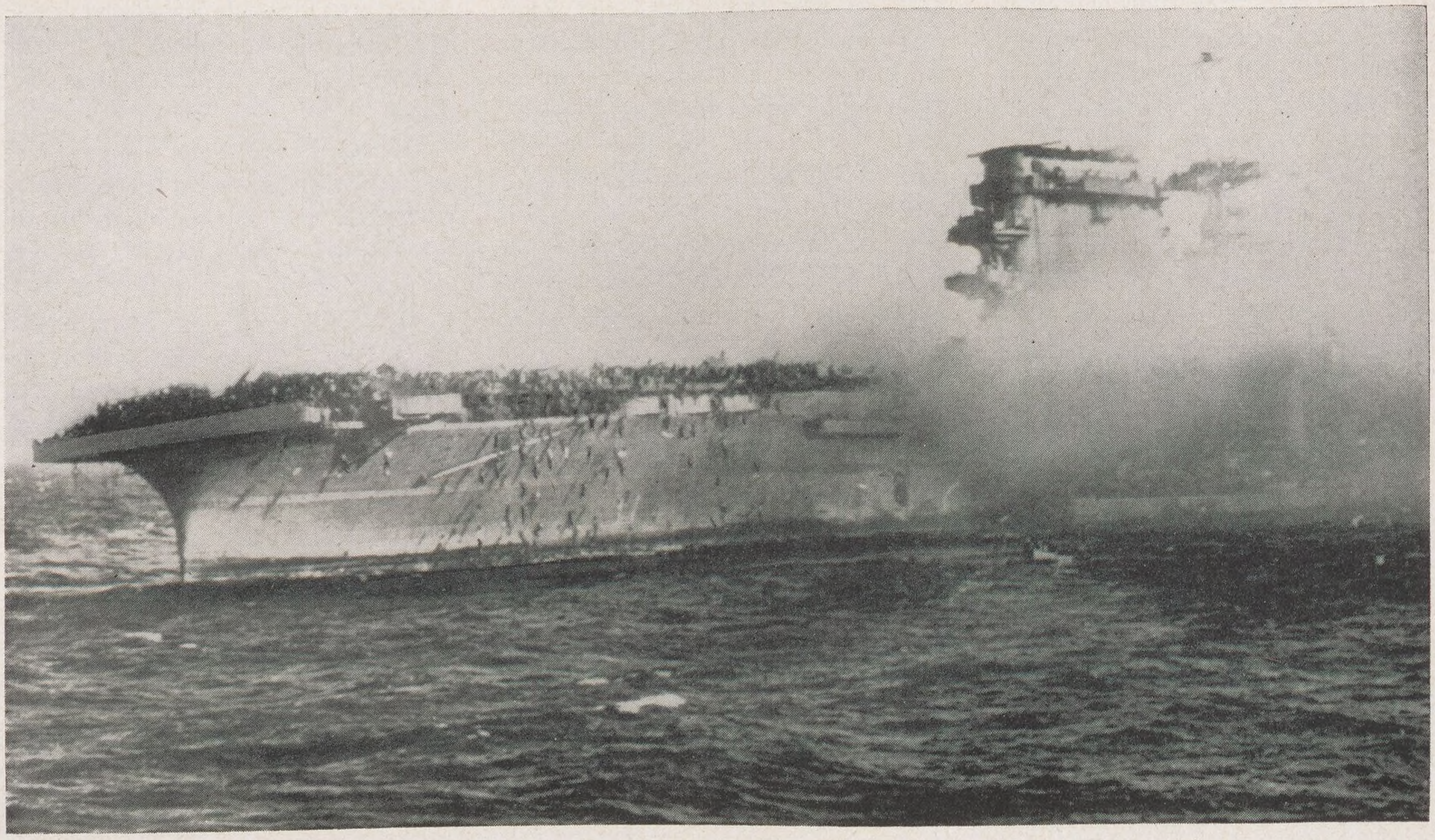
The torpedo blasts had released gasoline fumes from storage tanks deep within the ship. Sparks from a generator below decks ignited the fumes and a hull-cracking explosion ripped through the LEXINGTON. The blast signaled the end of the carrier.

More explosions followed. Soon the fires raged out of control and the order was given to abandon ship. Nineteen planes were flown to the YORKTOWN. Marines and sailors took off their shoes, lined them up in rows on the deck and went over the side on lifelines. Discipline was so good that radiomen dusted their instruments before leaving. Even the captain's dog was saved.

During the two days of fighting in the Coral Sea, the Japanese lost one light aircraft carrier, a destroyer and several minecraft, while one carrier was put out of action and sent home for repairs. The U. S. Navy lost an oiler, a destroyer and an aircraft carrier. The Japanese lost 43 planes from all causes, while the U. S. lost 10 less. The box score actually gave the Japanese a tactical victory, but the U. S. won the strategic triumph. The damage to the SHOKAKU and the planes lost by the ZUIKAKU kept both carriers out of the Battle of Midway a month later, where the Japanese were badly beaten. The presence of these two carriers could have tipped the scales against the Allies.

But the most important victory of all, and the reason for the annual Australian celebration, was that the Battle of the Coral Sea ended Japanese efforts to invade Australia.

"Abandon ship" had just been ordered aboard the LEXINGTON *when this picture was taken. A destroyer, right, is picking up the crew.*



Volunteer spotters for the tornado warning service in West Texas, two Shell Pipe Line Corporation men radio an observation from a maintenance truck in the field. They are: Pipeliner Truck Driver Ira Butler, standing, and R. L. Adams, Station Chief Engineer at Hamlin, Texas.

TORNADO TRACKERS

The U. S. Weather Bureau and a Host of Volunteers With Their Eyes to the Sky Are Giving Their Neighbors Ample Warning When Twisters Are on the Prowl

A GENTLE wind blows from the south across the plains, and dies away. Then, as a hot and oppressive calm lies over the land, a solid line of greenish-black thunderheads tower and advance from the southwest.

"Perhaps a rainstorm," say the uninitiated who don't know the signs of one of weather's most destructive forces.

"TORNADO!" shout weather-wise farmers, oil men and others who work in the open and have lived through the awesome spectacles of twisters before. By the time the thunderhead looms high, they have battened down their tools and equipment, corralled what livestock they can round up, and are sticking close to storm cellars, listening to radios for possible reports.

Such weather wisdom saves thousands of lives in the more than 150 tornadoes which cut paths of ragged ruin across the countryside each year—many of them in the southwestern plains. But at best the farmers' personal observation and "feel of the weather" can warn of severe thunderstorm conditions only an hour ahead, usually less.

This is not enough time to alert the thousands of people who cannot watch the sky. For these potential victims, the U. S. Weather Bureau, with the aid of state and local agencies and thousands of citizen volunteers, is developing a system that warns of tornado conditions hours ahead—and broadcasts an alarm when the "conditions" spin themselves into the real and roaring thing.

In simple outline, the system works like this:

- Meteorological data are collected at a U. S. Weather Bureau station almost at the exact center of the United States and forecasts are made of the general location of severe weather conditions in which tornadoes breed.
- Local weather bureaus in the threatened areas track heavy cloud masses with radar and a volunteer team mans a control center to collect eye-witness reports from an army of spotters in the field.
- If the dreaded funnel of a twister is sighted, the spotters report its direction and progress and the weather bureau passes the word to the communities in its path to take cover.

When two twisters threatened Abilene last May the Shell team in the warning service's command center worked like this. Receiving radioed reports on a twister's progress and transferring it to a map are, left to right: J. N. Slaughter, E. L. Dillon and R. E. Farmer.

Requesting and receiving eye-witness observations from filter centers, the group in the command center includes, left to right: Boyce Sims, a local bakery engineer, and Shell's R. E. Farmer, Mrs. Doris Lynch and E. L. Dillon. Dillon reports to the weather bureau.

Under this system, local severe weather forecasts (which don't necessarily mean a twister is on the way) can be broadcast through newspapers, radio and television stations as much as three to six hours in advance of an actual tornado. Thus forewarned, residents of the threatened area keep aware of how the storm is shaping up through frequent radio and television bulletins. If a twister does materialize, they are told exactly where it is, its direction and rate of travel.

A pioneer unit in this nation-wide network of tornado trackers is the West Texas Volunteer Weather Warning and Observation Service headquartered at Abilene, Texas, and serving 27 counties. The service was organized early this year and is supervised by C. E. Sitchler, Chief Meteorologist at the U. S. Weather Bureau's Abilene office; Maurice Cole, Chief Radio Operator at Abilene for the Texas Department of Public Safety, and Lew Holle, Abilene's Civil Defense Director. They rely heavily on the cooperation of about 700 volunteers scattered throughout the area. A group of Shell employees in the Abilene District Office of the Midland Exploration and Production Area play key roles in the service.

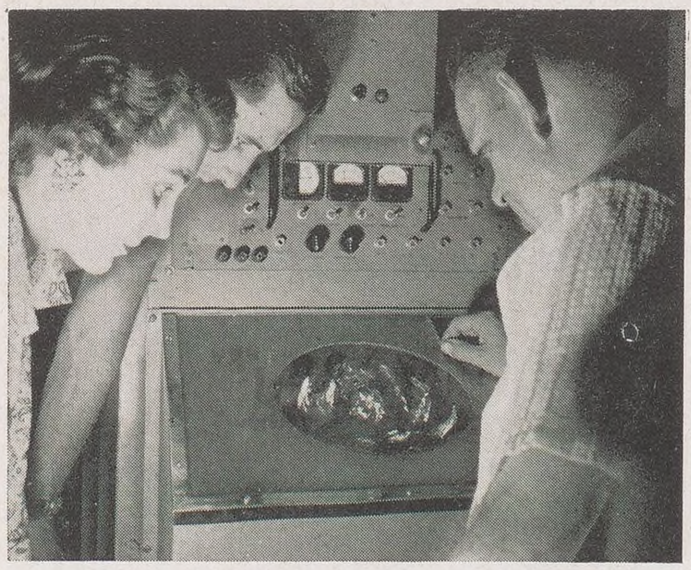
The warning service is in operation 24 hours a day on a skeleton basis, and goes into full operation when a severe weather forecast is issued for West Central Texas by the nation's Local Severe Storm Warning Center at Kansas City. The weather bureau at Abilene immediately issues a severe weather alert locally and its radar equipment tracks the position and progress of cloud masses in the area.

Radar can spot and follow the clouds, but it can't tell a thunderhead from a tornado—so at this point the volunteers swing into action. Upon being notified of the severe weather forecast, a Command Control Center is manned at the Texas Department of Public Safety Office in Abilene. There the department's radio, the sheriff's radio and an amateur radio control station alert other volunteers at filter centers located strategically throughout the 27 counties and ask for "eyewitness observations" of the clouds reported on the weather bureau's radar. These filter centers usually are located in law enforcement offices, but may be set up at any place where there is a radio transmitter—such as an amateur's unit, an oil field drilling rig or a pipe line maintenance truck.

The filter centers, in turn, telephone the alert to their own group of volunteer spotters, also requesting eyewitness observations. The spotters are necessary to pin-point the location of the storm—or the tornado, if, indeed, there actually is one.

Spotters may be law enforcement officers, ranchers, farmers, "ham" radio operators, roustabouts—anyone who has access to a telephone. They telephone their observations to the filter centers, which radio reports to the command control center. The command center assembles the reports and relays pertinent data by direct wire to the weather bureau. Thus the bureau receives a single report at intervals—this from the command center —instead of 30 to 40 reports from filter centers or several times that many from individual spotters.

Under such conditions, forecasts of storms making up are issued carefully by the weather bureau. In this twister-conscious region, it is necessary to keep the people informed without alarming them unduly. While a severe weather forecast is in effect, the volunteer warning service makes accurate information available around the clock for radio and television stations and newspapers. The radio stations stay on the air 24 hours a day while the severe weather forecast is in force, broadcasting bulletins about every 15 minutes. A TORNADO WARNING IS NOT ISSUED UNTIL ONE IS ACTUALLY SIGHTED —AND THE TAKE-COVER ALARM IS ISSUED SPECIFICALLY FOR THOSE AREAS IN ITS PATH. Thus, though the word to take cover may come on short notice, the people are prepared.



In training, Jan Boyd and R. M. Carter watch the weather bureau's Chief Meteorologist C. E. Sitchler, right, as he tracks nearby cloud masses on a radar screen.

J. F. Ireland, left, and B. D. King center, study weather reports at the Abilene bureau under the guidance of Forecaster J. T. Doty. Tornado tracking is becoming a science.

The warning service's command center at Abilene is almost a Shell club. Aside from Radio Operator Maurice Cole and a "ham" radio operator, Boyce Sims, who is an engineer for a local bakery, all others of the 11 volunteers at the command center are from Shell's Abilene District Office. They are: Jan Boyd, Receptionist and Radio Operator; Mrs. Doris Lynch, Clerk; R. M. Carter, District Production Superintendent; E. L. Dillon, District Geologist; R. E. Farmer, Geologist; W. H. Haughey, Geologist; J. F. Ireland, Geologist; B. D. King, District Office Supervisor, and J. N. Slaughter, Senior Draftsman. At least five are available for emergency duty at all times.

In preparation for their emergency tours of duty with the weather warning service, the Shell volunteers were trained at the Abilene weather bureau in several aspects of weather forecasting and of twisters in particular. Whirling tornado funnels, they learned, usually move from southwest to northeast, roaring along at 25 to 40 miles per hour. The spiralling winds within the funnel reach speeds of up to 500 miles per hour.

The twister's tail leaves a path of destruction usually 15 to 40 miles long and 300 to 400 yards wide, but some have been known to move forward as many as 300 miles, cutting swaths over a mile in width.

Because of the great differences in air pressure within the funnel and around it, the twisters pull some fantastic tricks—like impaling tree trunks in brick walls, perching automobiles atop their own garages, and collapsing whole buildings in an instant. When conditions are favorable for them, they sometimes work in groups.

They can occur anywhere, anytime in the United States, but tornadoes are most frequent in the Southwest and from March to September.

Many of the people of the West Texas Volunteer Weather Warning and Observation Service learned these things the hard way. They grew up in tornado country and have seen them come and go. That's why they got real satisfaction from their performance in the service's first real test last May 27 and 28. After a severe weather forecast was received, the volunteers spent eight hours of the night plotting the courses of 22 tornadoes! Some did minor damage in sparsely settled rangeland, and two closely missed Abilene—one a mile north and the other a half-mile to the east. If either had struck the town, its citizens would have been prepared because of ample warning by the volunteer tornado trackers.

Community Volunteers

Shell Employees Are Among the Millions of Americans Who Devote Much of Their Time and Effort Toward Benefiting Others

The opening of the 1956 Greater New York Red Cross Campaign for Members and Funds was saluted at colorful ceremonies in front of City Hall. Mayor Robert F. Wagner, second from left in foreground, raises the Red Cross flag as Shell President H. S. M. Burns, Fund chairman of the New York drive, at right, looks on with other officials.

As the Antique and Classic Car Cross-Country Tour rocketed, purred and piston-popped its way across south Texas, two Shell employees proudly maneuvered their aging horseless carriages in the caravan. On the sides of each polished automobile were signs advertising the March of Dimes campaign for polio funds.

The incident was less a demonstration of America's dual love for showmanship and ancient autos than it was for another American trait as common as hot dogs at a baseball game. The cross-country tour illustrated a sincere interest in the welfare of fellow-citizens and a desire to do something about it. This aspect of the American personality is the reason why millions of citizens annually give their own time, effort and money for the benefit of others.

The nation's business firms also are active in community relations, providing millions of dollars for charitable, educational, and public service activities. (Shell, for example, through the Shell Companies Foundation, Incorporated, will give more than $1,000,000 to such causes this year alone.) Although corporate gifts are made in large denominations, more than 70 per cent of the total sum received each year by philanthropic organizations comes from civic-minded individuals.

There is no way of estimating the amounts contributed by thousands of Shell employees, although they consistently give substantial sums to local charities. However, their contributions cannot be measured in terms of money alone. They also make important donations of time and effort in everyday community activities.

Shell citizens are members of school boards, parent-teacher organizations, civic clubs, civil defense groups, church organizations, fire fighting teams, safety and traffic committees and many other organized community groups. Some are Boy Scout and Girl

Scout leaders. Others are volunteer nurses in hospitals. Many serve as leaders and door-to-door solicitors in charity drives. And a large number serve their communities in elective or appointive offices. Seven Shell men at the Wood River Refinery are mayors of their local communities and other Shell-mayors are scattered throughout the country.

Adding another and an important job to the long list of Shell citizens' activities, H. S. M. Burns, President of Shell Oil Company, recently accepted an appointment as National Chairman of the 1957 American Red Cross Campaign for Members and Funds. Mr. Burns, who served as Chairman of the Greater New York 1956 Red Cross Campaign, will name this summer more than 50 national vice-chairmen who will assist him in organizing next year's campaign in 3,700 Red Cross chapters throughout the country.

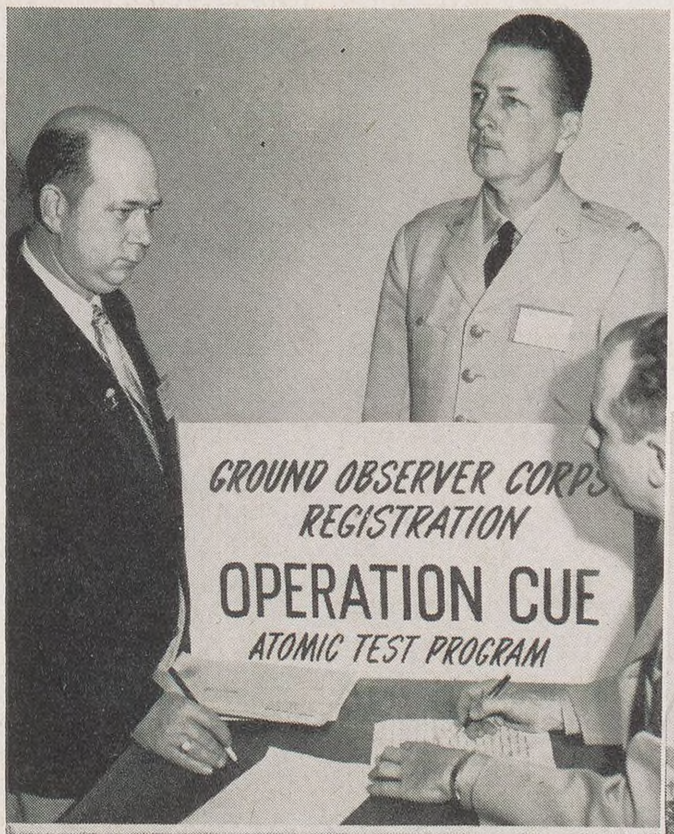
Like the Red Cross, the main driving force behind the hundreds of service and philanthropic agencies in America are community volunteers—people willing to contribute their money, time and effort. For example, one large health organization with 3,100 chapters of voluntary workers throughout the United States received donations this year from approximately 90,000,000 persons. Today, despite the fact that the Federal Government has vastly increased its social services during the last 20 years, the responsibilities of such organizations are greater than they have ever been.

Since the population is steadily increasing and people are living longer, the need for private support of all types of charity continues to grow. Also, constant efforts are being made to raise standards of health, education and general security—the goals of which cannot be met without aid of

fight CANCER

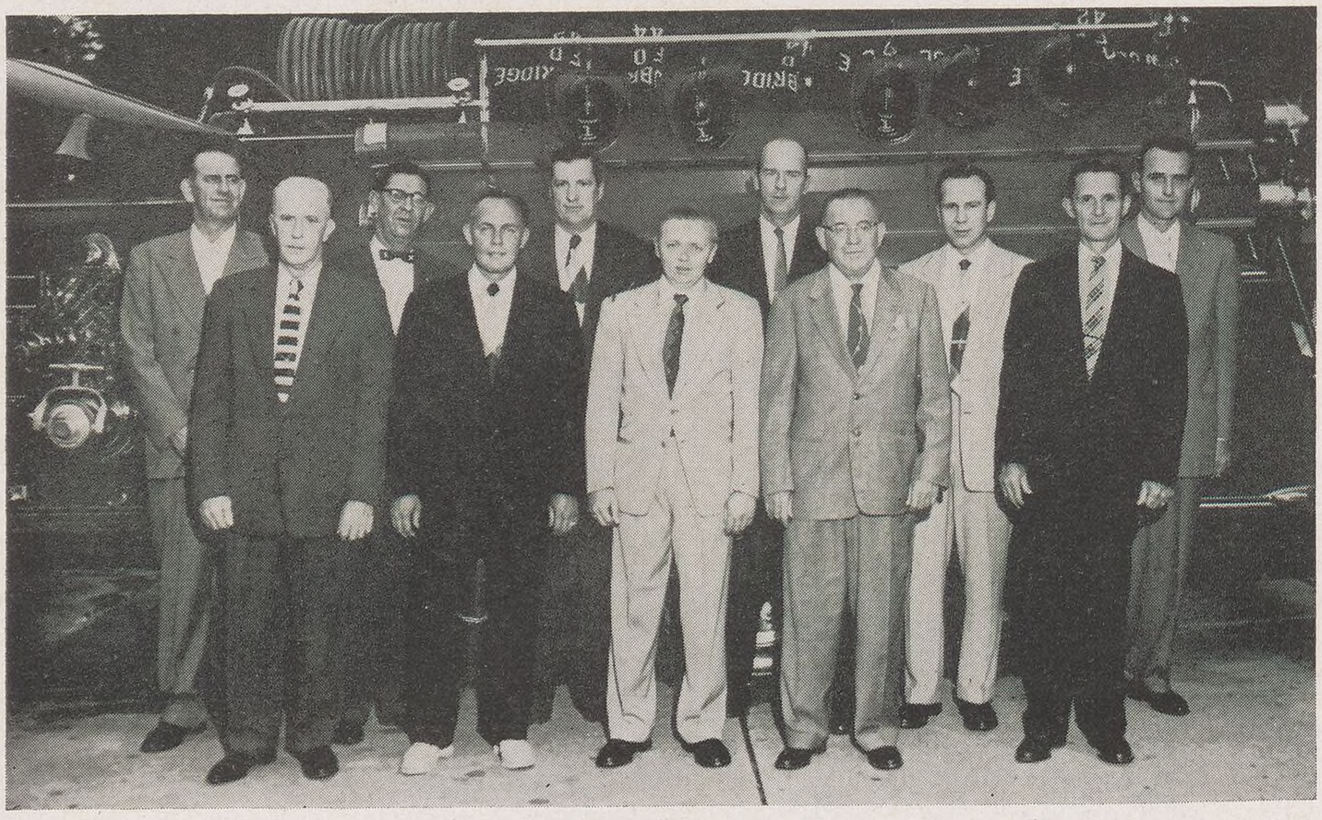
MEDICAL EDUCATION KEEPS AMERICA HEALTHY

Instrumentman J. R. Ellis, left, of the Houston Chemical Plant mounts a poster on his 1924 Ford touring car which he drove in the Antique and Classic Car Cross-Country Tour for the March of Dimes. With him is Houston Refinery Laboratory Photographer S. F. Davis, who led the long tour for polio funds from Louisiana to Texas in his 1929 Packard convertible.



While working as a Production Department Draftsman in Casper, Wyoming, W. D. Kidd, left, now in the Billings (Montana) Division, served as the Casper Air Defense Filter Center Supervisor. He was invited last year to witness the explosion of an atomic device at Yucca Flats, Nevada. He is shown registering for the event.

During a Red Cross Armed Forces Blood Donor Campaign, Real Estate Representative C. A. Schley of the New York Marketing Division, who organized the local drive in Levittown, New York, pins an orchid on a blood donor who lives on Orchid Road.



Eleven Shell employees at the Sewaren Compounding Plant are serving as volunteer firemen for the Woodbridge, New Jersey, Fire Department No. 1. They are, left to right, E. L. Olsen, W. T. Smith, J. E. Zehrer, J. F. Allgaier, T. J. Fitzpatrick, J. F. Leahy, M. O. Hunt, T. F. Kath, E. W. Cheslak, J. J. Kellner and E. J. Larson.

philanthropic agencies.

Recent statistics demonstrate the growth of voluntarily supported institutions and services. During the last two decades, the number of independent hospitals has increased from 2,646 to 3,169 and their annual admissions have jumped from about 4 million patients to more than 11 million.

The number of privately controlled institutions of higher education also has grown during the last 20 years, from 917 to more than 1,200 colleges. The number of students has been growing steadily as well. In 1930, enrollments in privately supported primary and secondary schools totaled 2,300,000, and the Office of Education, Federal Security Agency, now estimates this figure will increase by more than 1,600,000 by 1960.

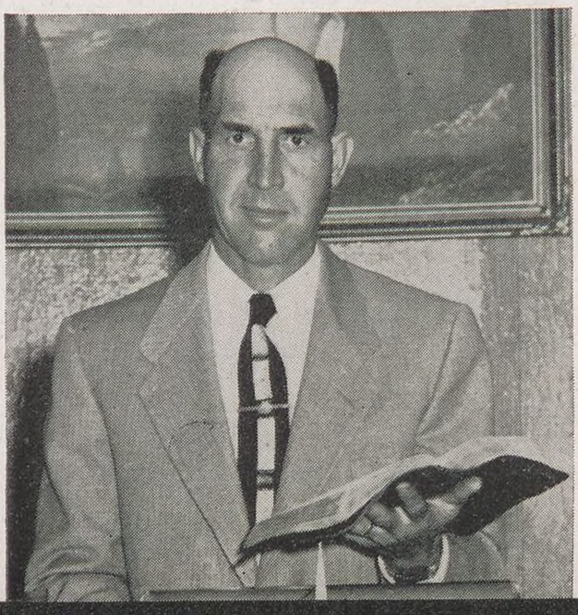
Contributions to social and health service organizations are also on the upgrade. For example, in 1932 The New York Times received $265,000 in response to its Christmas appeal for the "100 Neediest Cases." The 1955 contributions amounted to more than $438,000. The "neediest cases" now exceed 100 each year.

In 1941, the American Red Cross received $23,400,000 in donations for national and chapter objectives. Last year, Americans gave the Red Cross about $90 million, including special disaster relief funds.

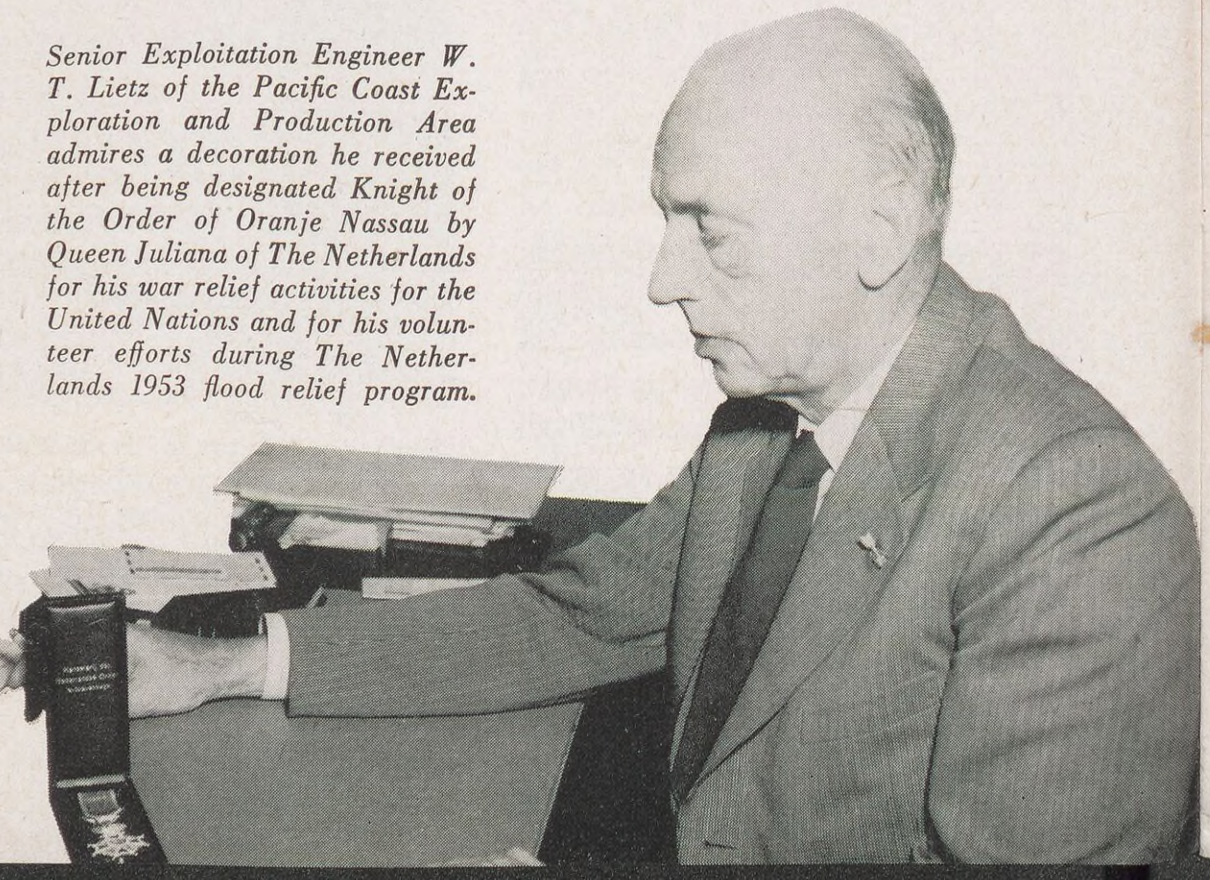
Even more dramatic is the growth of the Community Chest and United Fund drives. In 1934, voluntary contributors gave $70 million to 399 community campaigns. Last year there were 1,939 local drives and gifts totaled $399 million.

Figures for most philanthropic organizations also are impressive, revealing their great and growing importance to the American community. As each of these organizations grows, the need for volunteers to maintain them increases. Each year

Among the many Shell employees who volunteer their services to communities is A. C. Bird, Pumper in the Tulsa Exploration and Production Area, who fills in for vacationing pastors in his hometown of Russell, Kansas, and several nearby communities.



Senior Exploitation Engineer W. T. Lietz of the Pacific Coast Exploration and Production Area admires a decoration he received after being designated Knight of the Order of Oranje Nassau by Queen Juliana of The Netherlands for his war relief activities for the United Nations and for his volunteer efforts during The Netherlands 1953 flood relief program.



the demand is greater for nurses, blood donors, fund raisers, first aid experts, scout leaders and other volunteer aides. Naturally, as their numbers grow so do the benefits to their community.

Benefits to community life also grow as more and more individuals become interested in activities other than philanthropic. Equally important are the mayors, the school board members, the civic leaders, the organized parents and teachers, the fire fighters and others. All are contributing to a single cause—better community life.

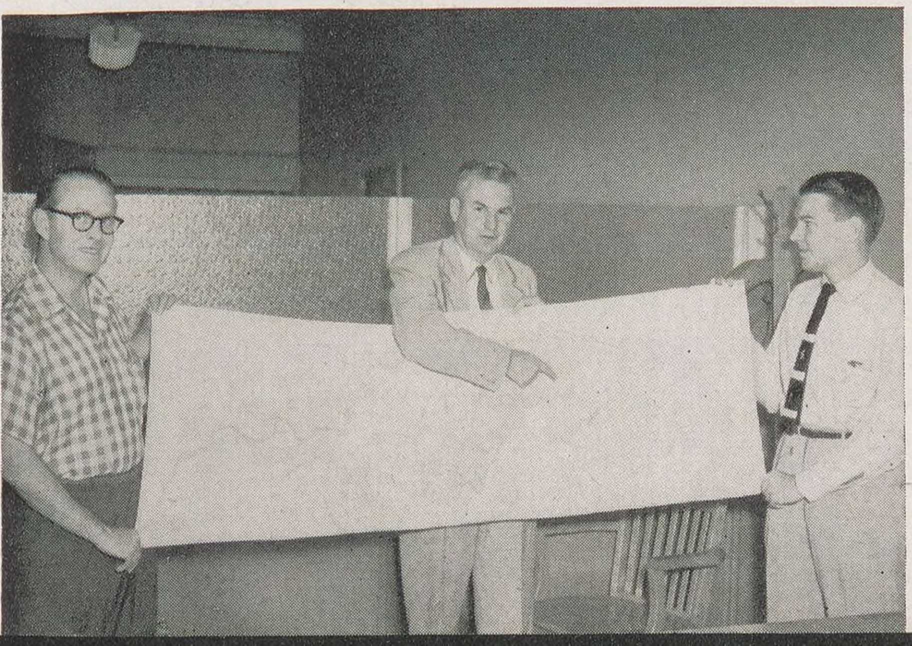
Voluntary community efforts have no geographical bounds. Shell employees are active in community affairs from Seattle, Washington, to Miami, Florida, and from Portland, Maine, to Los Angeles, California. The photographs on this and the three preceding pages are exemplary of their efforts for the benefit of fellow-citizens.

P. F. McLoughlin, right, of the Personnel and Industrial Relations Department in the Calgary Exploration and Production Area, pauses in his role as civil defense warden to answer questions during a practice air raid alert which evacuated thousands of citizens from the city of Calgary.

Three women in the Denver Exploration and Production Area Office—left to right, Jean Finney, Betty Brooks and Alice Roche—serve as volunteer Red Cross Gray Ladies at Fitzsimmons Army Hospital. Their duties are primarily recreational, so they spend spare time practicing their cribbage game in order to play it well with patients.

Emeryville Research Center employees are taking part in a series of radio programs in Berkeley, California, discussing "New Horizons in Chemistry." Among those assisting in the programs are W. J. Eisenlord, center, of the Personnel and Industrial Relations Department, and Chemist R. A. Johnson, second from right.

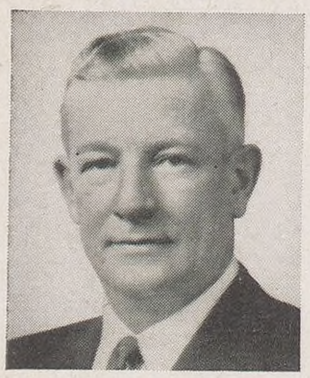
Recently appointed by the Abilene (Texas) City Commission to the Park and Public Recreation Board, Shell's Abilene District Geologist E. L. Dillon, right, is shown with city officials displaying a map which he prepared showing possible expansion of parks near the city.



Active in Boy Scouting, Houston Refinery Manager J. A. Tench, left, and Refinery Chief Engineer Robert Haldane, right, Scout District Commissioner, watch Pat Brady of the Roy Rogers show, center, sign autographs for a Cub Scout pack in Deer Park, Texas.

Shell People in the News

Vice President N. J. McGaw Retires


N. J. McGAW

N. J. McGAW, Vice President-Economic Development, retired on June 30 after 31 years of Shell service. Mr. McGaw, a graduate of Glasgow University in Scotland, joined Shell in 1925 as a Clerk in the San Francisco Office. In the years that followed he made rapid advancement through a number of assignments, being elected Vice President of Transportation and Supplies in Shell Oil Company's East of Rockies territory in 1939. In 1948, Mr. McGaw organized the Economic Development Organization and assumed its management.

The Economic Development Organization as presently constituted will be reorganized as a special staff group reporting to M. E. Spaght, Executive Vice President.

Personnel and Industrial Relations Organization


R. J. SORENSON

R. J. SORENSON has been named Assistant Manager of the Head Office Personnel Department. Mr. Sorenson, who holds a Bachelor's degree from Butler University and did graduate work at Northwestern University, joined Shell Oil Company in 1946 in New York. He has served as Assistant Manager of the Head Office Industrial Relations Department, and in September, 1954 he was named Manager, Marketing Personnel Administration, in which position he assisted in the installation of Personnel Managers in Shell Oil Company's Marketing Divisions.

Shell Oil Company Financial Organization

L. L. SARCHETT has been named Treasury Manager of the Tulsa Exploration and Production Area, succeeding G. A. Clark who is retiring. Mr. Sarchett, who holds a B.S. degree in commerce from the University of Iowa, joined Shell in 1936 as a Clerk at Des Moines. After serving in Minneapolis, Minnesota, and in New York, he was named Chief Accountant at the Wood River Refinery in 1948. Mr. Sarchett was appointed Treasury Manager of that refinery in March 1949.


L. L. SARCHETT

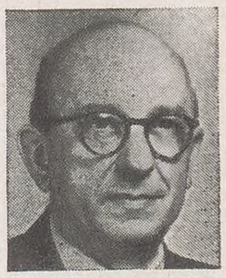
G. M. McCAWLEY has been named Treasury Manager of the Wood River Refinery, succeeding Mr. Sarchett. Mr. McCawley, who holds a B.S. degree in commerce from the University of Dayton, joined Shell Oil Company in 1933 as a Clerk in Head Office, then in St. Louis. In 1936, he transferred to the Houston Refinery and was named Chief Accountant there in 1946. A year later he moved to New York as a Supervisor in the Head Office Treasury-Accounting Department and was named an Auditor in 1948. Mr. McCawley was appointed Treasury Manager of the Norco Refinery in 1950. In recent months he has been on special assignment in Head Office.


G. M. McCAWLEY


C. L. LORY

C. L. LORY has been named Treasury Manager of the Norco Refinery, succeeding Mr. McCawley. Mr. Lory, a graduate in accounting from St. Louis University, joined Shell as a Clerk at St. Louis in 1927. After serving in various production and financial positions in Texas, Louisiana and California, he was named an Auditor in Head Office in 1950. He was named a Senior Accountant in 1951 and two years later transferred to the Calgary Exploration and Production Area as Chief Accountant. Mr. Lory was named Chief Accountant at the Norco Refinery in October, 1954.

Exploration and Production Organization



A. F. VAN EVERDINGEN

A. F. VAN EVERDINGEN has been named Manager of the newly created Production Economics Department in Shell Oil Company's Head Office Exploration and Production Organization. He will be responsible for long-range studies of the economics of production in the United States and Canada. Mr. van Everdingen, a graduate in mining engineering from a technical university at Delft, Holland, joined the Shell organization in 1925 as a Hydrologist in the Manufacturing Organization. In 1937 he was named Area Production Engineer at Houston. He served in several production and exploitation assignments and in August, 1952 was named Chief Reservoir Engineer in what is now the Production Technical Services Division in Houston.

G. E. ARCHIE

G. E. ARCHIE has been named to the new position of Assistant Manager of the Production Technical Services Division in Houston. Mr. Archie, who holds B.S. and M.S. degrees in electrical and mining engineering from the University of Wisconsin, joined Shell in 1934 in the Production Department at Lucine, Oklahoma. After serving in various production engineering positions in Oklahoma and Kansas, he was named an Exploitation Engineer at Houston in 1939. In July, 1951, Mr. Archie was appointed Chief Logging Engineer in what is now the Production Technical Services Division at Houston.

Shell Development Company

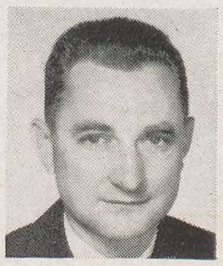
F. M. McMILLAN

F. M. McMILLAN has been named Manager of the Polymer and Chemical Applications Department at Shell Development Company's Emeryville Research Center. Mr. McMillan, who holds a B.S. degree in chemistry from Monmouth College and a Ph.D. in organic chemistry from Stanford University, joined Shell Development Company in 1937 as a Research Chemist at Emeryville. Following various assignments, he was named Assistant Head of the Organic and Applications Department in 1953. In September 1954, Mr. McMillan was appointed Technical Assistant to the President in New York.

C. W. SMITH

C. W. SMITH has been named Technical Assistant to the President of Shell Development Company, succeeding Mr. McMillan. Mr. Smith, a graduate of Southern Illinois Normal University and holder of a Ph.D. in organic chemistry from the University of Illinois, joined Shell Development Company in 1943 as a Chemist at the Emeryville Research Center. He was named a Research Supervisor in 1952 and in 1955 was appointed Assistant Head of the Plastics and Resins Department.

Shell Chemical Corporation



K. R. FITZSIMMONS

K. R. FITZSIMMONS has been named Sales Manager of Shell Chemical Corporation's Chemicals Sales Division. Mr. Fitzsimmons, who holds a Bachelor's degree from the University of California, joined Shell Development Company in 1939 as a Laboratory Assistant at Emeryville. In 1947 he joined Shell Chemical Corporation as a Technologist at San Francisco, transferring to New York the following year. He was promoted to Senior Technologist in 1949. Mr. Fitzsimmons was named Manager of the Resins and Plastics Department in 1952 and became Manager, Industrial Chemicals Department, in June, 1954.

W. E. KEEGAN

W. E. KEEGAN has been named Manager, Industrial Chemicals Department, in Shell Chemical Corporation's Chemicals Sales Division. Mr. Keegan, who holds B.S. and M.S. degrees in chemistry from Holy Cross College, joined Shell Chemical Corporation in 1946 at New York as a Technical Salesman in the Eastern Division. He was named Manager of the Detroit Marketing District in 1949 and three years later was appointed Assistant to the Vice President, Marketing. He was named Assistant to the Sales Manager, Eastern Division, in 1953 and was promoted to Sales Manager, Eastern Division, the following year. In February, 1956, Mr. Keegan was named Sales Manager of the Chemicals Sales Division.

QUIET NEIGHBORS

Oilmen Are Using Soundproofed Derricks and Hidden Pumping Equipment To Tap Rich Fields Under Los Angeles Lawns

IN the century since the petroleum industry started as a 69-foot hole in Pennsylvania, the spreading search for oil has spurred engineers to learn how to drill on the ocean floor, in freezing temperatures, in desert heat—and within 100 feet of a sleeping baby without waking it.

The nearly noiseless drilling is going on within the sprawling city limits of Los Angeles. That city, now fanned out over 455 square miles, is built above some of the West Coast's richest oil sands. California's growth during the past decade has meant a rising demand for petroleum at a time when new fields were becoming more difficult to find, and at the same time has created new problems in tapping the oil sands of the thickly-settled Los Angeles basin.

To overcome urban drilling obstacles, oil men are drilling with equipment wrapped in blankets to make operations practically inaudible 50 feet away. With wells completed, they are landscaping production sites within the city to make them resemble parks. With these methods the industry is demonstrating that oil wells can be drilled and produced in residential and industrial areas without disturbing normal community life or marring the view.

In the last two years Shell has drilled about a dozen soundproofed wells in locations ranging from the semi-industrial area of Signal Hill to the fringe of a residential area over the Brea-Olinda oil field. Other wells in the region, draining the Salt Lake and Los Angeles fields, have been completed from locations that include a corner of a motion picture studio lot.

Preliminary work before such wells can spud in is a great deal more complicated, however, than with a well drilled in open country. First, oil men hold meetings with residents of the community where the well may be drilled to explain by talks and films how the drilling would be silenced and the derrick's appearance disguised. Once a community agrees, Los Angeles city officials then must approve a zoning variance to give a legal green light to the drilling.

Landmen then start contacting property owners to get leases on what usually is a small area of land. That part of the process often presents the most problems, because of the large number of property owners. One oil company's land office needed 18 months to get permission from all the owners of a 210-acre tract.

A muted rig drills an oil well in a Los Angeles residential area, without disturbing nearby residents. Heavy blankets pinned on the derrick keep sound from escaping.

The complications don't stop with the preliminary steps. Picking a drilling site and reducing noise and dust from the operations present equally difficult—and expensive—problems. Still more pop up in producing the oil after the well is completed.

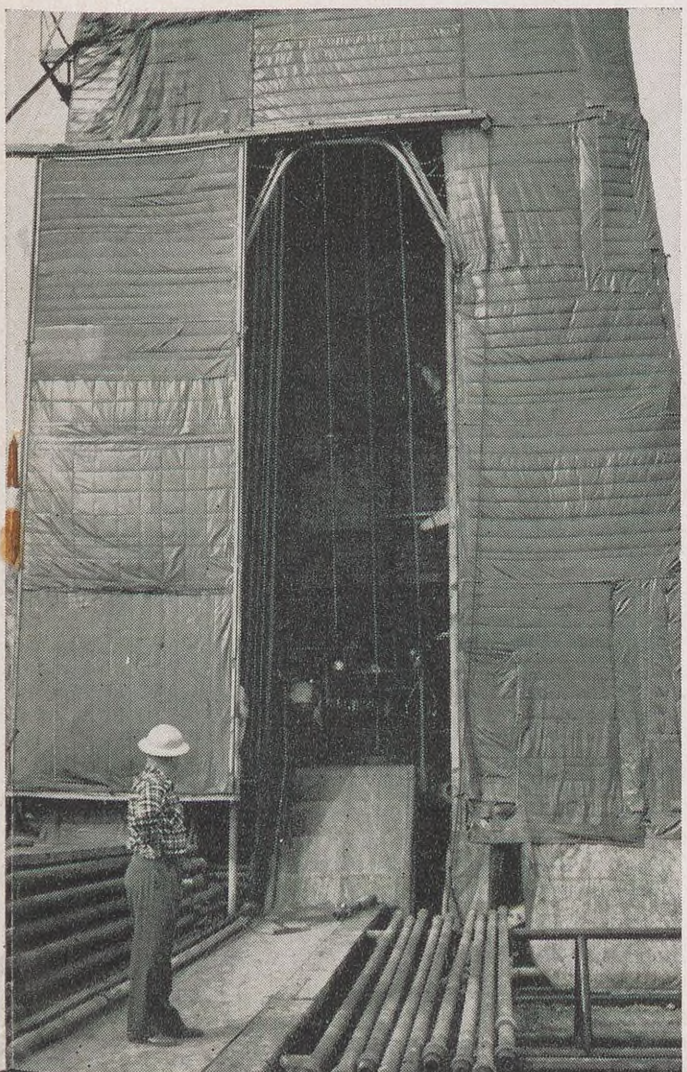
To cut down the number of well sites, companies usually drill several wells from the same location. By using expensive directional drilling techniques, different wells are deflected in any direction and completed at varying depths. One company, for example, drilled 11 wells from a single location.

A normal steel rig is used to house these drilling operations, but with one important extra: It is shrouded with soundproofing blankets. Each seven-by-twelve foot blanket is made of two layers of fire-resistant canvas or plastic stuffed with hair, felt or glass fiber. The blankets are colored green on the outside and bright yellow inside, to reflect more light for the drilling crew. Panels at the top of the derrick are more brightly colored or striped, and have lights attached at night to warn off low-flying aircraft. The blankets are pinned around the derrick from top to bottom with three-inch safety pins, except for space left for doors at the front and rear of the derrick floor. These doors, too, are covered with padding and kept closed during drilling from 6 p.m. to 6 a.m. Usually the doors are left open for ventilation during daytime drilling hours.

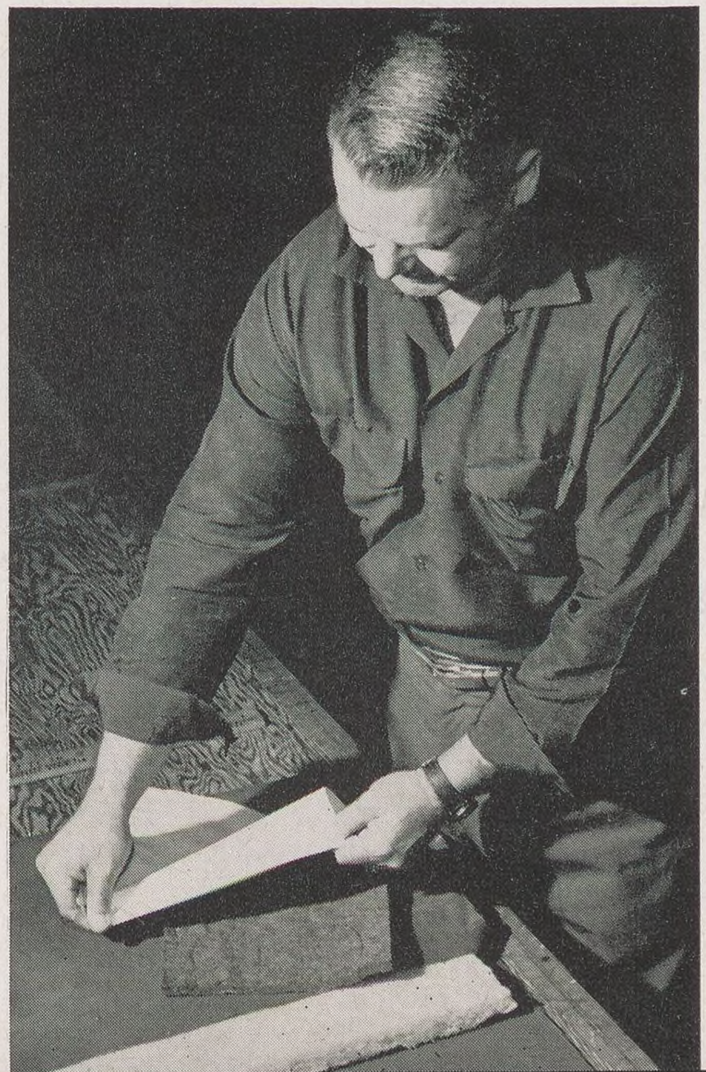
The drilling machinery itself is sometimes modified for quieter operation by installing a shaft-driven rotary drilling table instead of the usual chain-driven type. Mufflers for the motors which power the machinery also cut down noise.

These urban wells must use drilling muds and dispose of wastes like their country cousins. But they substitute metal tanks for the usual sump pits normally dug beside a rig. The tanks are used for cuttings, for fresh mud and for waste mud. Trucks haul the waste materials away.

When a well is completed, noiseless electric-powered production equipment, which pumps the oil out of the ground, is set up in a concrete pit and covered with a grill. Pipe lines carrying the oil from the well also may be placed underground. The area is then fenced, trees and shrubs are planted around it, and the well site assumes the aspect of a small park.

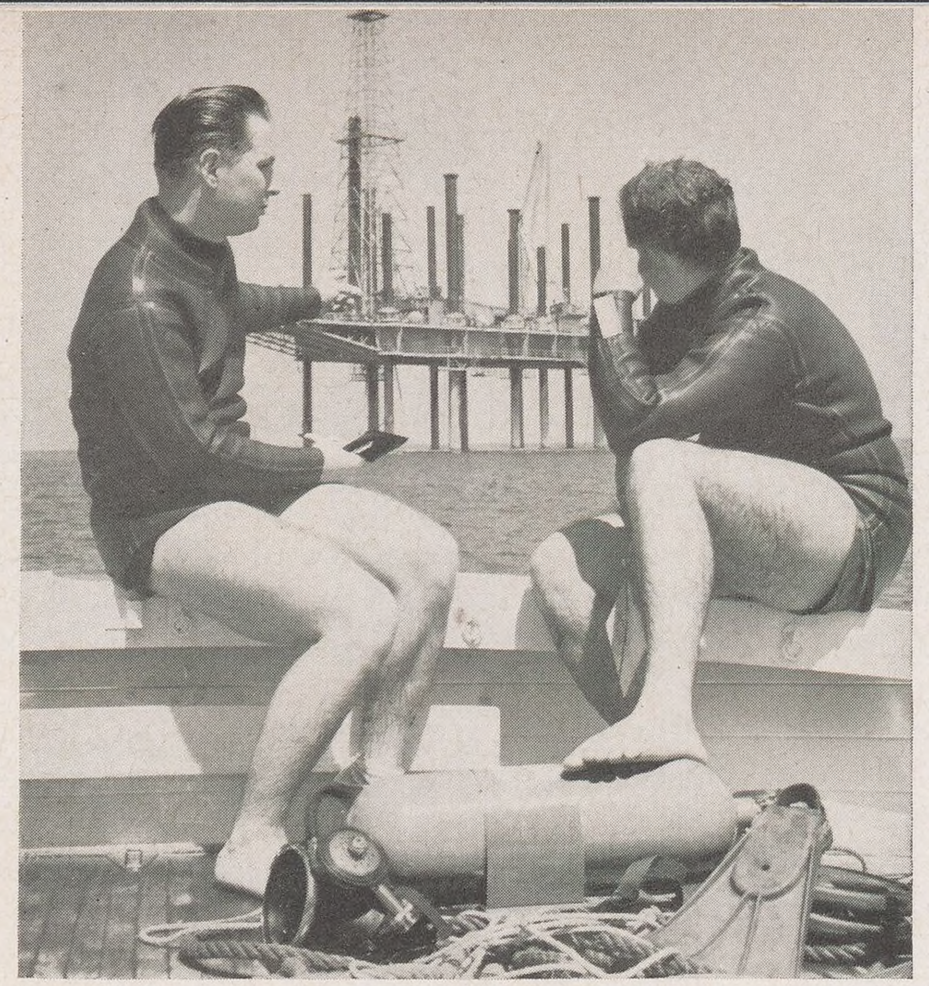


C. H. Sterling, Engineer's Assistant in the Pacific Coast Area, stands at a padded derrick's door, opened to service the rig.



Sterling tests a new tear-proof vinyl fabric used in making the derrick blankets. Hair, felt or glass fiber is used as insulation between layers of vinyl or canvas.

Sterling uses a large safety pin to fasten a blanket to the derrick. The blankets are seven by 12 feet in size.



In the Gulf of Mexico, Production Technical Services Engineers L. E. Borgman, left, and B. M. Krieger discuss a prospective dive to inspect the lower portion of the portable drilling platform, Mr. Gus. Below left, fully togged with protective suits, breathing apparatus, fins and other gear, they jump from the rail of a crew boat.

UNDERWAT

They—and a Team of Geologists—Are Literally Diving Into Their Work in the Gulf of

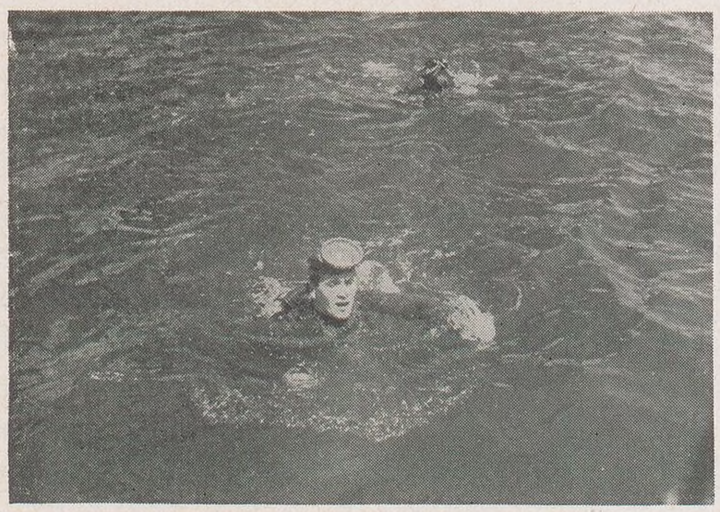
ENGINEERS, accustomed to thinking in the precisest of terms, regard second-hand information with distaste.

But, in the mounting offshore activity in the Gulf of Mexico, there have been times when the engineers concerned with projects and problems there were forced to rely on reports from professional divers sent 40 to 50 feet down to look at bottom conditions or submerged equipment. The method of obtaining information was only partially satisfactory. A diver could report, for example, that the steel piling of an offshore platform was corroded and needed repair. But, unless he were a specialist in corrosion problems, he could not tell the curious engineers much about the cause or effect of the corrosion—information which could help them devise methods, metals or machines to prevent such damage in the future.

Today, however, a group of Shell engineers in Houston are literally diving into offshore problems and getting first-hand information by swimming down in the murky waters of the Gulf to inspect bottom conditions and the drilling and production equipment anchored there.

Armed with air tanks, face masks, and swimming fins, the group operates out of Shell Oil Company's Production Technical Services Division and is giving practical aid and advice in the offshore drilling and production operations of the Houston and New Orleans Exploration and Production Areas. A team of geologists in the Shell Development Company Exploration and Production Research Division at Houston is also becoming adept at diving so that Shell's underwater investigations can be extended to cover basic research.

These aquatic fact-finders, all volunteers, use free diving equipment—Self-Contained Underwater Breathing Apparatus, usually called SCUBA for short. They use it as a tool in engineering and scientific studies, enabling them to make personal investigations of underwater problems. Their free diving activity is not a full-time job. It is simply a technique used from time to time as an aid in solving some of many technical problems with which they are confronted.



Swimming back from their dive, they now have obtained technical information through first-hand observation.

On the lower float of Mr. Gus, now above water at low tide, Mechanical Engineer F. H. Culver of the Houston Exploration and Production Area (back to camera) helps Krieger fill air tanks with compressed air in preparation for another dive.

ER ENGINEERS

f Mexico and Bringing up Technical Information

SCUBA is especially suited in such specific assignments as:

1) Environment inspection of the Gulf bottom for geological, biological or oceanographic purposes.

2) Underwater geological mapping.

Dwarfed by the massive columns of Mr. Gus' foundation, one of Shell's aquatic fact-finders, lower right, approaches for a dive in which he will check for damage.

3) Placement of geophysical or oceanographic instruments.

4) Underwater photographic and television studies.

5) Inspection of drilling and production equipment underwater.

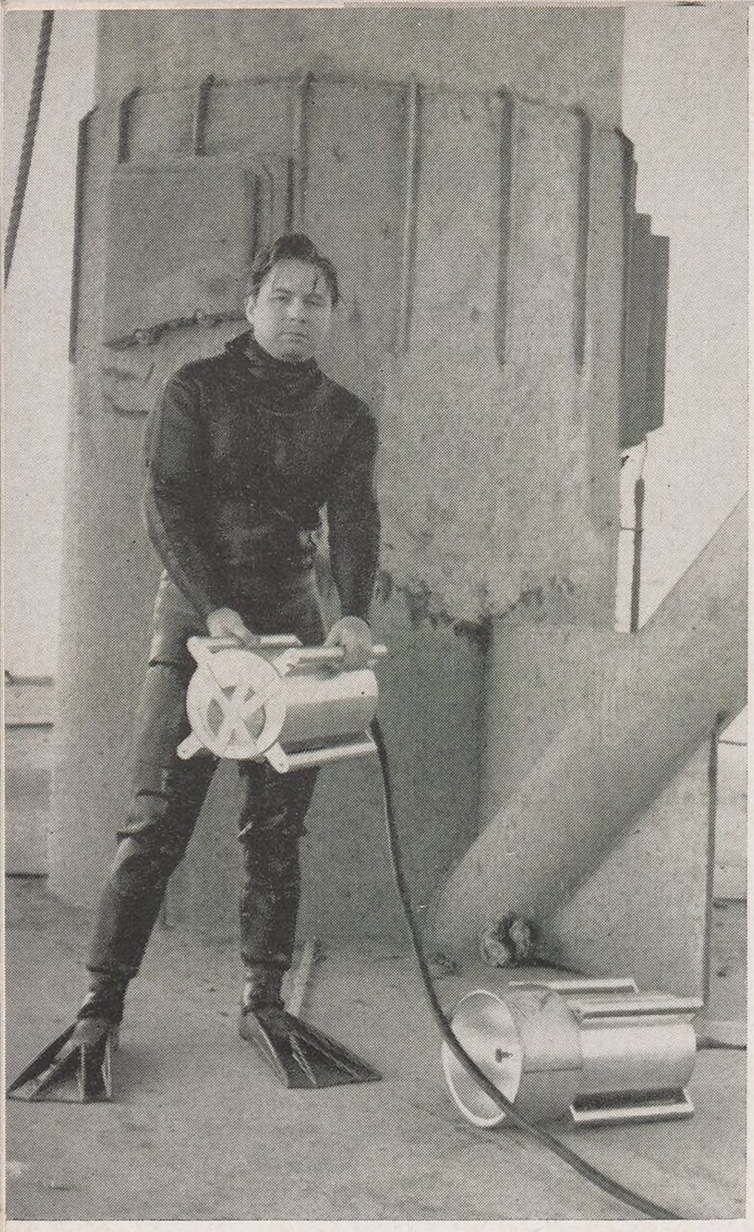
6) Inspection of the work of commercial divers.

7) Other tasks, usually assigned to commercial divers but sometimes undertaken by Shell's free divers, such as underwater searches for sites to station mobile drilling platforms, and underwater search for lost objects.

SCUBA is best suited for fair weather, inspection-type diving of short duration where first-hand observation by technical personnel is important. In the Gulf, observation is sometimes difficult because of the murkiness of the water. This is a result of almost constant wave action, which keeps a certain amount of silt stirred up from the bottom of the comparatively shallow Continental Shelf. Pilots flying over the Gulf report that an almost unbroken line can sometimes be seen where the turbid water ends and clear, deep water begins.

Shell's active interest in the use of free diving as an aid in oil production and research goes back to late in 1954 when L. E. Borgman began to think about how helpful it would be to swim down in the Gulf and get some of the facts he wanted in his work in the Engineering Development Section of the Production Technical Services Division. A recent graduate of the Colorado School of Mines, where he became interested in oceanography, Borgman is Shell's only engineering oceanographer (his official title is Mechanical Engineer). He was among the first to recognize the importance of free diving to certain phases of oil operations—especially in view of the increasing emphasis on offshore drilling.

In December 1954, Borgman obtained permission to attend a course in free diving at the Scripps Institute of Oceanography in California. Returning to Houston steeped in the techniques of using SCUBA and al-



Borgman holds a watertight television camera (with a protective shield taped over the lens) used in recent TV inspection trials in the Gulf. A watertight light is at his feet.

Krieger (facing camera), a boat crewman and Borgman discuss a dive. Divers' protective suiting is made of foam rubber. Though not watertight, it keeps a diver warm in cold water and protects against jellyfish stings.

ready possessing a Red Cross Water Safety Instructor's certificate, he immediately began to train other interested Shell Oil engineers and Shell Development geologists to use the diving techniques in their work.

The first man to take the training with SCUBA was B. M. Krieger, a Shell Oil Development Engineer. He was selected because he is a good swimmer and Borgman was anxious to get his program under way—and under water. The pair have teamed to do most of the dozen free diving assignments carried out in the Gulf.

Next to take SCUBA training were two Shell Development men: H. A. Bernard, a Senior Marine Geologist, and Laboratory Assistant G. D. Peterson. Currently in training are: Mechanical Engineers E. W. Wallace and J. A. Haeber of Shell Oil, and Laboratory Assistant L. L. Hinton and Geologists C. F. Major and Blair Parrot of Shell Development.

Their training program consists of approximately six two-hour periods in a pool and two or three dives in open Gulf water under actual underwater working conditions. Emphasis is placed on developing confidence

through experience—since the greatest danger in free diving occurs when a diver becomes illogical in a moment of stress. Consequently the divers spend much time learning to clear their breathing tubes and masks under water, learning to take the SCUBA units off under water and put them back on, to share and exchange units with other divers while submerged. They practice rhythmic breathing, and even study diving psychology (30 feet down in dark water is no place for a man with claustrophobia).

There are exercises in entering the water—forward, backward and jumping from heights. A good portion of the training covers safety and rescue techniques and diving hazards.

"I've never seen a shark," says Borgman, "but I understand the sharks commonly encountered won't attack unless you appear to be wounded." He and Krieger have carried knives when diving—as tools, not to do battle a la Hollywood.

"Small cuts caused by barnacles, and these are very minor, are probably the most common injury involved," Borgman points out.

Since January 4, 1955, when Borgman, accompanied by a commercial diver, carried out his first diving assignment for Shell, he and Krieger have been in the swim on a variety of tasks—spaced from one day to three months apart. In the main, these have been assignments which engineers would ordinarily be called on to do—except that they were done under water. For example, they twice inspected the base of Mr. Gus, a huge mobile drilling platform, to check the soft soil under the submerged structure. A number of dives were made over a period of a week to inspect construction of one of Shell's permanent drilling platforms in the Gulf.

Perhaps the most interesting assignment so far is one which illustrates that new possibilities already are being envisioned for these underwater fact-finders. Last March Borgman and Krieger put aside the slates on which they ordinarily jot their aquatic notations and became television cameramen—25 feet below the surface of the Gulf! With the guidance of a representative of the Underwater Surveys Company of San Diego, California, they focused a watertight television camera and lights on the base of Mr. Gus to show viewers on the surface some damage to the steel.

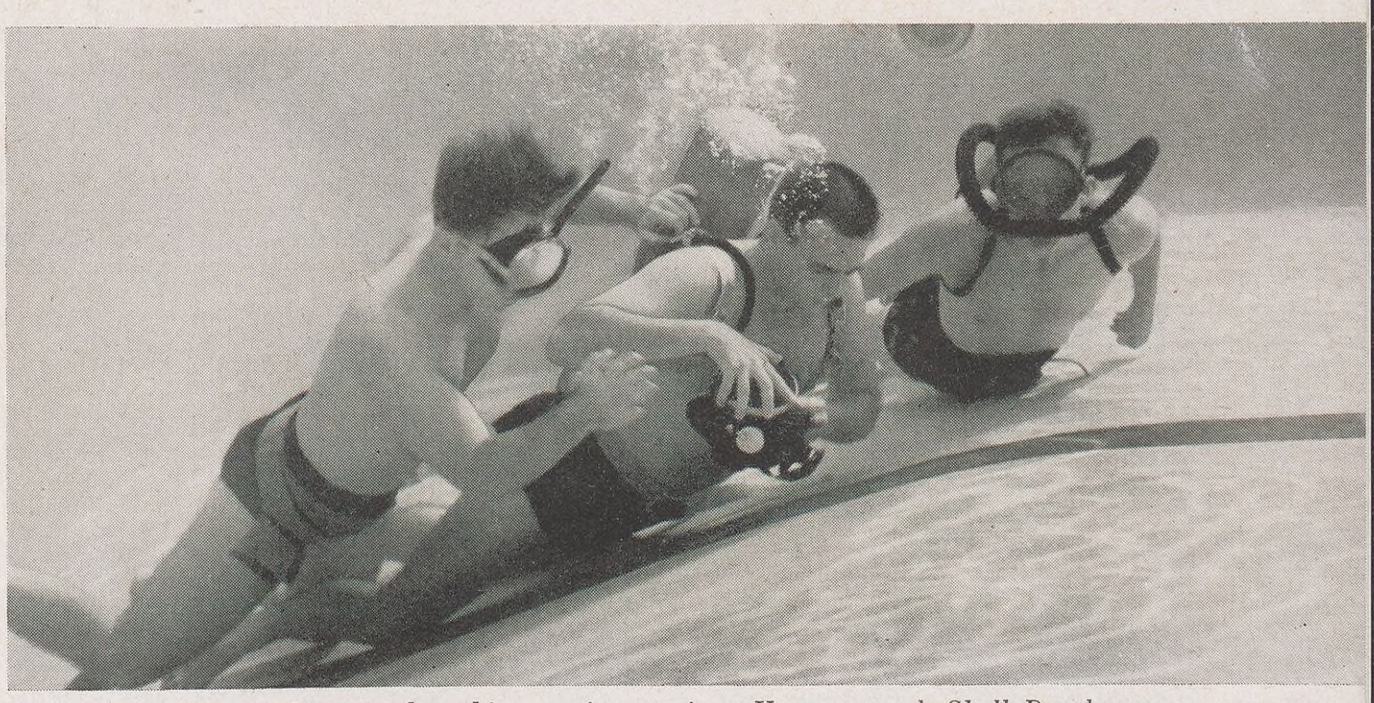
Results of the test were negligible because of trouble in the monitor TV set at the surface (it happens at home, too). However, visibility in the turbid waters was increased from six to 18 inches by the lighting equipment.

A second television trial was made several days later from another company's drilling platform, with two Shell men on hand as observers. This time suited divers took the camera and lights to a depth of 35 feet and televised platform pilings and other equipment for nearly an hour.

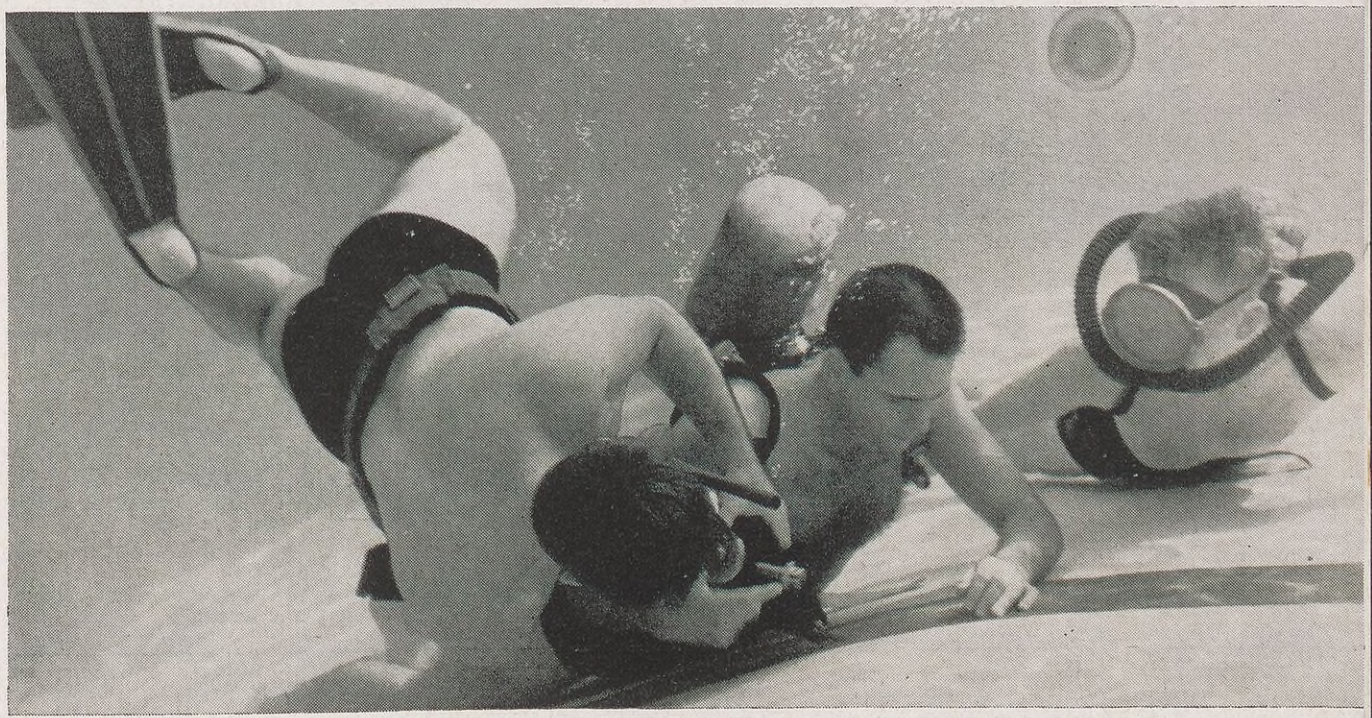
Excellent results have also been obtained in recent underwater television tests in which Shell had an interest in the clear, deep waters off the coast of California. There, a camera and lights were attached to a framework and lowered 200 feet from a boat.

Borgman feels that such methods will never entirely replace the need for technically-trained free divers. The underwater engineer, he points out, can "get the feel" of his subject by actual contact and can focus the camera on areas which will give scientists at the monitor screen the best view of their problem.

Further, Borgman feels that SCUBA will play an increasingly important role in the oil industry's investigations of the Continental Shelf, both in the Gulf and on the Pacific Coast, and that more and more technically-trained men will become interested in this diving technique. After all, he says, it is easier to teach an engineer to get his feet wet, than to teach a diver to be an engineer!



Learning to share underwater breathing equipment in a Houston pool, Shell Development Geologist G. D. Peterson, center, removes his mask and passes it to Instructor Borgman, left.



Borgman puts the breathing tube in his mouth while Peterson keeps the air tank on his back. C. F. Major, another Shell Development Geologist, right, observes the maneuver.

Peterson holds his breath as Borgman takes a supply of air through the breathing tube. Face mask will then be passed back to Peterson and Borgman will again wait his turn.

Clive Halliday—He's a

That Is, He's A Character Actor Who Has Adapted A Life-long Hobby

CLIVE HALLIDAY didn't know it, but his retirement plans started taking shape the day he hopped onto the stage at a school play and made his acting debut as a small frog.

He recalled that early version of Britain's traditional Christmas Pageant, staged at Witham, Essex, England, when he sat down to discuss his retirement plans in the Los Angeles Marketing Division last summer. Halliday, a man of many talents, retired on January 1 of this year after more than 26 years of Shell service.

Halliday had little difficulty in choosing to adapt his life-long hobby of character acting into a retirement vocation. Besides the frog, he could recall scores of other roles in plays, motion pictures and network radio.

His command of French, German and Spanish—along with a variety of English dialects—has helped him make stage characters so true to life that foreign playgoers have often approached him after shows as a "fellow countryman."

But one of Halliday's favorite roles was as a British naval officer. He played it in a movie and in real life —in fact he is still living it to some degree: as a Commander, Royal Navy, Retired.

Frederick Clive Loch Halliday was born to and grew up in the military role. His father was a career soldier with the British army in India. When the young Halliday left prep school at Bilton Grange (scene of "Tom Browne's Schooldays") he went into the Royal Navy.

During World War I he was a Navy interpreter. In 1939, years after he came to the United States and joined Shell, he was called back to the Royal Navy to serve in the North Sea, in the South Atlantic, in Scotland — and Texas!

As a British liaison officer to the U. S. Navy at a Texas base, Halliday received special permission from the King to "splice the main brace." Traditionally, every British sailor aboard one of His Majesty's vessels (now Her Majesty's), receives a tot of rum each day. On special occasions, a double issue is given and the event is called splicing the main brace. Texas' first official splicing at the end of the war with Germany was a high

As the money-mad uncle in "My Three Angels," Halliday confronted the convicts from Devil's Island. He has been an actor since he was a toddler, first taking to the stage as a small frog.

Halliday has played the role of a British Naval Commander, left, both in real life and as an actor. In the Royal Navy he went to sea—and to Texas.

Character!

Into A Retirement Vocation

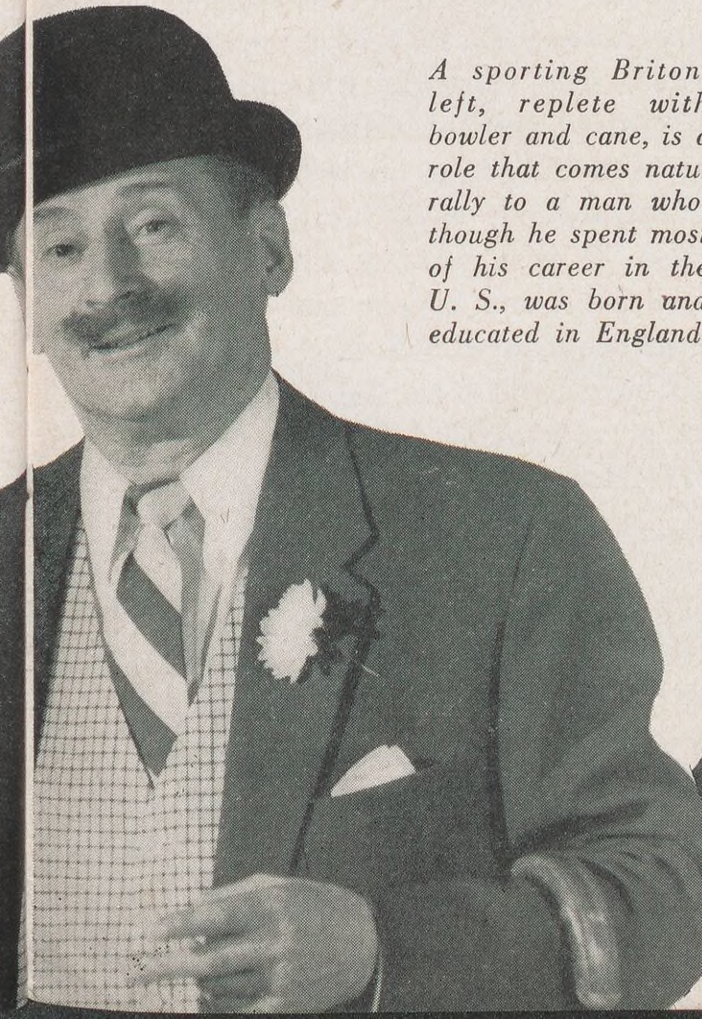
point in Halliday's career.

Another was the day he set sail from England in 1927 for the U. S. He joined Shell in the St. Louis Office and subsequently served in Marketing Divisions at Sacramento, San Francisco, Honolulu and Los Angeles.

Throughout his career he was as familiar with grease paint as he was with Shell greases. Before leaving London for St. Louis he had made a good start at a stage career with the Liverpool Repertory Theatre, the Windsor Strollers and the London Strolling Players, whose members included many top British players; Dame May Whittey, for example.

In the United States, much of Halliday's personal-time stage work has been at the famous Pasadena Play-

Clive Halliday, left, portrayed a romantic French suitor in the Pasadena Playhouse production of "Sabrina Fair," which was also a Broadway and movie hit. In spare time from his Shell job, Halliday also appeared in movies and on radio programs.



A sporting Briton, left, replete with bowler and cane, is a role that comes naturally to a man who, though he spent most of his career in the U. S., was born and educated in England.

Multi-lingual Halliday played British Prime Minister Benjamin Disraeli, left, and a Frenchman, right. French, German and Spanish, help him in portraying the roles of many nationalities.

house in California. He made his debut there in 1935 as Dr. Parvan in "Judgment Day," starring Victor Jory, Mischa Auer and Akim Tamiroff.

In two recent roles at the Playhouse he has portrayed Frenchmen. The first was as the mean, money-mad uncle in "My Three Angels." The play, whose locale is France's Devil's Island, revolves around three convicts who are assigned to repair a leaky roof and remain to remodel the lives of the family that lives beneath it.

His latest Playhouse role was in "Sabrina Fair," in which he played the French suitor of Sabrina, the chauffeur's daughter who returns from Paris and marries one of the sons of her father's wealthy employer.

Frenchmen, however, aren't Halliday's only specialty. At the Playhouse he has also come on stage as an English bishop, a cockney, a German and a famous Briton of the 19th Century — Prime Minister Benjamin Disraeli.

Perched on the naval officer's sea chest he took to sea at 18, Halliday displays family heirlooms: medals won by his great-great-grandfather, the first Lieutenant-Governor of Bengal; his own medals from World Wars I and II; pictures and mementos of famous acting friends. The cane was given to him by a famous actor, the late C. Aubrey Smith.

Press clippings about his work in the Playhouse include such phrases as: "One of the best portrayals was that of Clive Halliday." Describing one of his dance routines in "The Rose and the Ring," a Los Angeles drama critic said: "The audience refused to let the show go on without an encore."

Radio gave Halliday further histrionic rewards—and his wife. The former Myrtle A. Smith was present as the client's advertising agency representative when Halliday auditioned for a role in the Lux Radio Theater Show series. He played several leading parts in the series and also married Miss Smith.

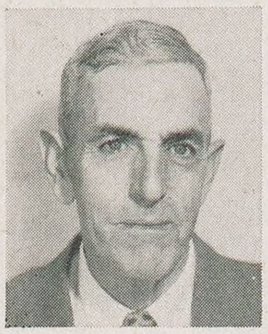
The theater is among Mrs. Halliday's wide and active interests, which include designing wallpaper and silk screen printing. She has received help from her husband in her position as speech director at her church. And during World War II she went to England with him and appeared on programs of the British Broadcasting Corporation designed to help acquaint Britons with American ways of life.

A prized possession linking Halliday with his acting—as well as with the Royal Navy—is not a critic's rave notice. It is a walking stick made from wood and copper out of that illustrious ship, H.M.S. Victory. The stick was a gift from his friend, the late, great actor, C. Aubrey Smith.

In these retirement days, between character acting roles, Halliday relaxes with his wife on the patio of their Altadena, California, home. From that vantage point he can follow the hops of any frog that happens by—and think of the more satisfying roles he has played and will play.

The Hallidays have tea on the patio of their Altadena, California, home. He built the fireplace in the background —and is also skilled at carpentry (learned at sea), and plumbing (learned through trial and error). Besides his acting career in retirement, he plans to build a house some day. Mrs. Halliday's interests include silk screen printing, designing wallpaper and her church work as a speech director.

They Have Retired



L. E. BALDWIN
Shell Chemical Corp.
Shell Point Plant

C. G. BROWN
Martinez Refy.
Engineering

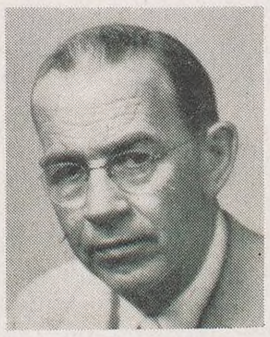
D. W. CARROLL
Wood River Refy.
Engineering

A. J. CARSTENS
New Orleans Div.
Operations

E. A. COMBS
Albany Div.
Operations

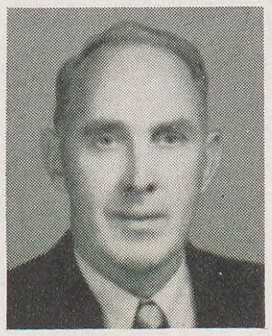
B. CUMMING
Shell Chemical Corp.
Shell Point Plant

W. A. CUMMINGS
Sewaren Plant
Compound

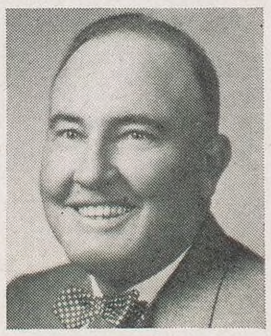


W. C. DOBBYN
Head Office
Financial

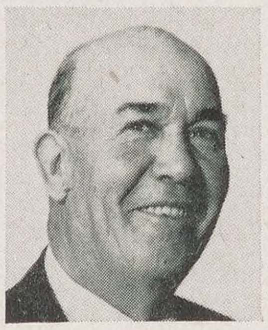
H. C. DONNELLY
Detroit Div.
Operations



P. DUGGAN
New York Div.
Operations

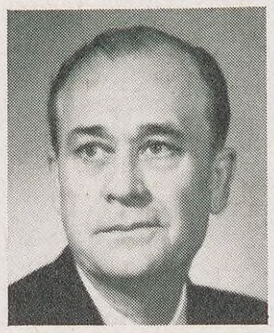


R. M. HEAD
Shell Pipe Line Corp.
Texas-Gulf Area



G. W. LANGSTON
Wilmington Refy.
Engineering

W. C. McPHERON
Wood River Refy.
Utilities



I. R. MJOEN
Tulsa Area
Treasury

F. A. NELSON
Head Office
Expl. & Prod.

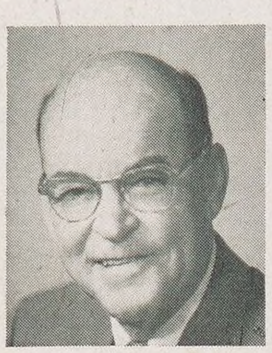
W. C. NOWLIN
Midland Area
Production

A. I. PLOMGREN
Sacramento Div.
Administration

E. H. SPARKS
Portland Div.
Operations

J. O. SWEENEY
Pacific Coast Area
Production

L. D. THALHEIMER
Pacific Coast Area
Gas



C. B. WATERS
Pacific Coast Area
Production

J. C. WEBER
New York Div.
Operations

SHELL COAST TO COAST

H. S. M. Burns, President of Shell Oil Company, is capped an Honorary Doctor of Laws, above, by Sir Thomas Murray Taylor, Principal of Aberdeen (Scotland) University, Mr. Burns' alma mater. Sir Thomas was a classmate of Mr. Burns' in 1922. At right Mr. Burns leaves the college hall after the ceremony in which he was the only American among 11 persons honored

Multi-Lingual Center

IF the mail brings in a technical paper in Swahili from a Zanzibar seminar or a scientific transcript in Sanskrit, Emeryville researchers are all set.

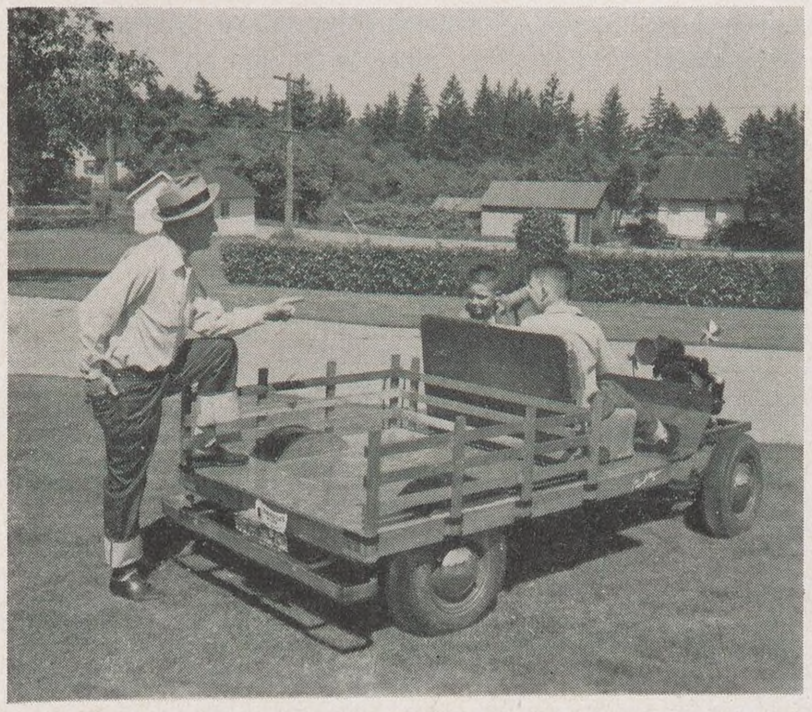
This reassuring information came from a survey of staff linguistic skills made recently at Shell Development Company's Emeryville Research Center. The Center's professional library staff all read French and German. Technical, periodical literature in other languages is translated by outside professional translators as they are needed. But occasionally a foreign phrase crops up which is unfamiliar to the librarians—in a letter, perhaps, or a document. The librarians wanted to know who to turn to for a quick answer when that happens. So the survey was made to find out how many languages are spoken, and by whom, among staff members.

The survey turned up 61 persons who among them read and speak 26 different languages in addition to French and German. Spanish topped the list with 13 familiar with it. Other leaders were Italian, Chinese, Russian, Latin, Dutch and Greek. Two or more read Danish, Finnish, Hebrew, Hungarian, Japanese, Norwegian and Swedish. At least one speaks Basque, Bohemian, Gaelic, Icelandic, Yugoslavian, Lithuanian, Polish, Portuguese, Serbian, Slovene, Sanskrit—and Swahili! This latter tongue-twister is spoken by P. R. Hoyt, Assistant Head of the Instrumentation Department, who learned it while a child living in Africa.

by the university. The degree citation read by Sir Thomas referred to Mr. Burns as "one of the most distinguished of our emigrants" and described Shell Oil as "one of the great American corporations."

Junior Achievement

Miss Phyllis Curvey of Alton, Illinois, second from right, is congratulated by L. A. Lohman, Wood River Refinery Administrative Superintendent, for being awarded a college scholarship by Junior Achievement, Inc., for her work in a Junior Achievement small-business enterprise sponsored by Shell. Its advisors are Inspector R. B. Snell, extreme left, Telephone Operator Beverly Burger, center, and Materials Analyst J. H. Beam.



Hole in One'r

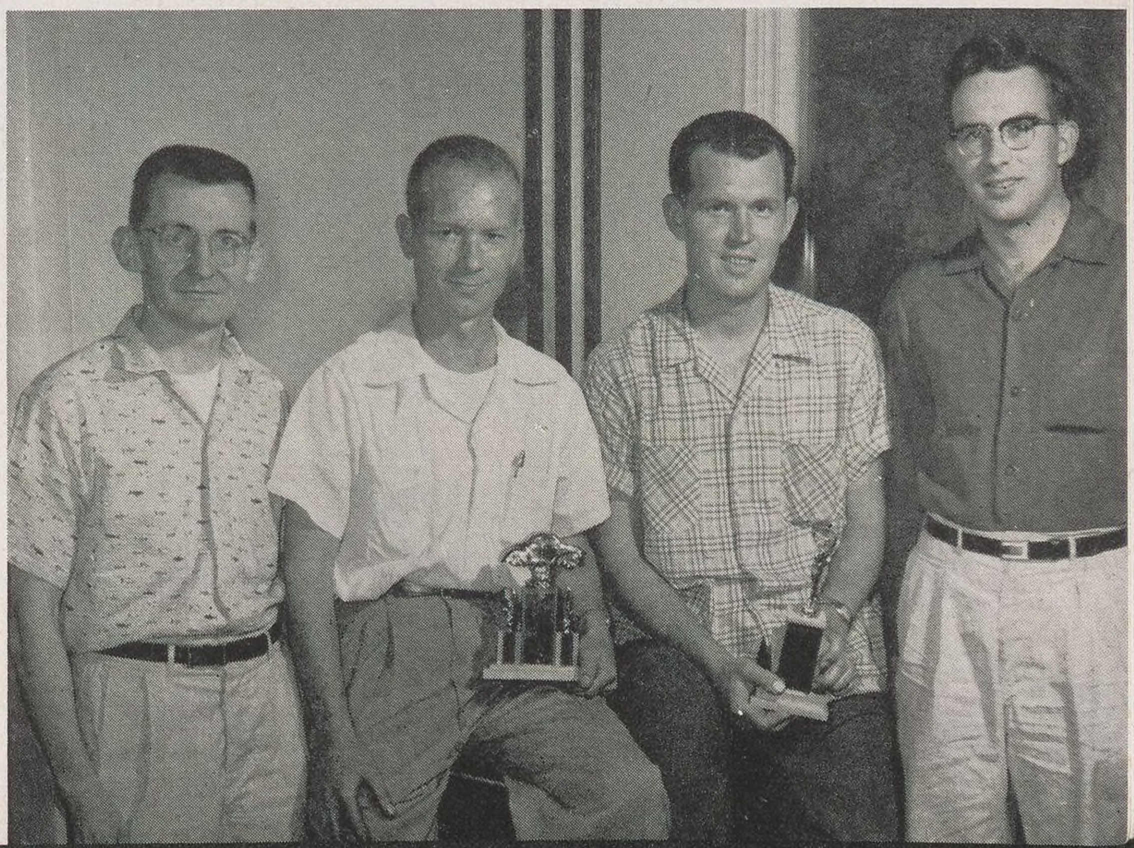
Harry McCurdy, Manager of the Marketing Service Department of the Baltimore Marketing Division, kisses the club he used recently to stroke a hole-in-one at the Carolina Country Club course in Raleigh, North Carolina. Using his No. 4 wood on the course's 170-yard eighth hole, McCurdy's tee shot carried to within 20 feet of the hole and then rolled in.

Model Drivers

E. F. Bartnik, Truck Driver at the Portland Marketing Division's Willbridge Terminal, gives driving instructions to his two sons, Wayne, 12, and Glen, 10, in the small-scale truck he built for them. The low-speed vehicle has all the accessories needed to teach the boys to drive properly. Bartnik made most of the parts for the model.

Mileage Marathon

Research Engineer E. R. Lane, second from left, won first place in the Wood River Refinery's 1956 Mileage Marathon by averaging 42.85 miles per gallon over the course. Other winners were, left to right, Research Engineer B. M. Henderson, third; Senior Laboratory Assistant M. V. Reedy, second, and Research Engineer J. E. Peat, fourth.



Resins Writer

R. W. Martin, Plastics and Resins Supervisor at Shell Development Company's Emeryville Research Center, is the author of a recently-published book entitled "The Chemistry of Phenolic Resins." It is the only book in English making a detailed study of the field.

USO Singer

Loyce Wisenbaker, daughter of H. R. Wisenbaker, Field Automotive Operator at the Houston Refinery, was one of four winners of a national USO contest to pick talent to entertain U. S. troops overseas. She spent a month singing in Europe and North Africa.

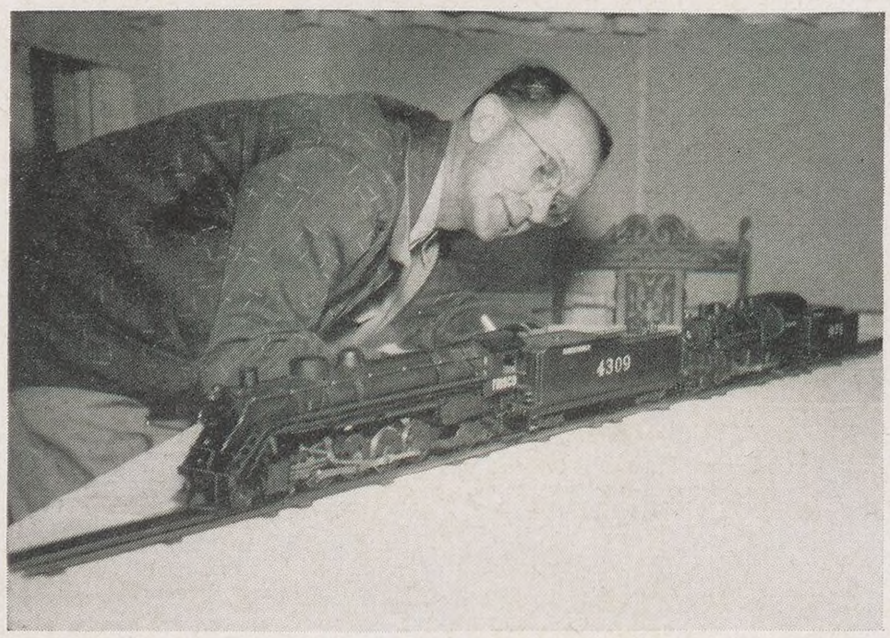
Rail Detail to Scale

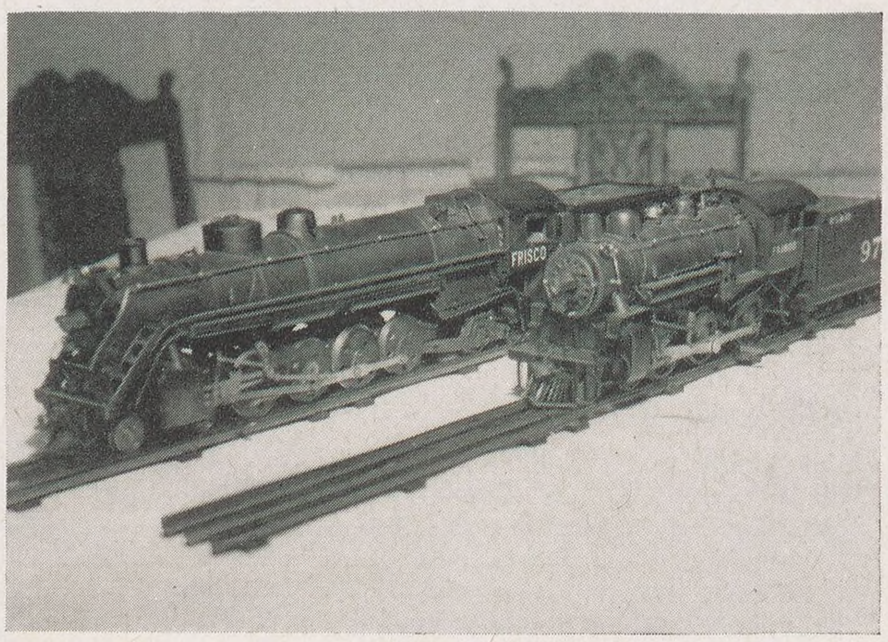
SPARE-TIME shop courses at a junior college more than 10 years ago started R. M. Cleveland on the track of turning scrap metal into scale railroad models.

Cleveland, below, Chief Engineer at Shell Pipe Line Corporation's Goodrich (Texas) Pump Station, has hand-turned three model locomotives, and eight freight cars. The two engines he finished first are patterned after St. Louis-San Francisco (Frisco) railroad rolling stock, and one he completed this summer is a replica of one owned by the Texas & Pacific railroad.

Cleveland uses a scale of a quarter-inch to one foot, and includes the most minute of details. He makes his models in his home workshop, using a lathe, drill press and other metal-working tools.

He puts an electric motor into each locomotive, but he has no track because of lack of space. "If I had enough track to run the trains, I'd need a place as large as a pump house," he said. But when his work is on display on his front porch, he meets any challenge of the models' ability to run by putting the engines on blocks and letting the tiny electric motors spin the wheels.





Service Birthdays

Thirty-Five Years


C. L. ACKER
Los Angeles Div.
Sales


K. M. ALVISO
Pacific Coast Area
Production


E. ANDERSON
Wilmington Refy.
Engineering

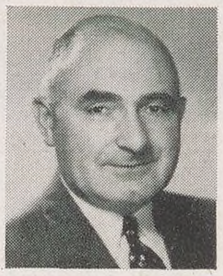

W. M. DUNCAN
Tulsa Area
Production

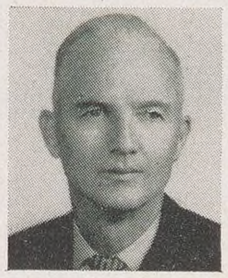

M. F. DURAPAU
Norco Refy.
Engineering


G. D. HARPER
Martinez Refy.
Dispatching


W. P. HOTARD
Norco Refy.
Distilling


H. L. JOHNSTON
Pacific Coast Area
Production


J. RYSDORP
Shell Chemical Corp.
Head Office


R. H. STRONG
Pacific Coast Area
Gas


E. A. SUNDLOF
San Francisco Office
Purchasing


F. E. WALTER
San Francisco Office
Purchasing

Thirty Years


M. E. AVERY
Los Angeles Div.
Operations


J. G. BEJARANO
Shell Chemical Corp.
Denver Plant-Mgr.


W. J. BENNETT
Pacific Coast Area
Gas


V. G. BREWER
Tulsa Area
Production


F. H. BURKE
Shell American Div.
Operations


A. J. CLARK
New Orleans Area
Purchasing-Stores


C. G. COOPER
Midland Area
Exploration

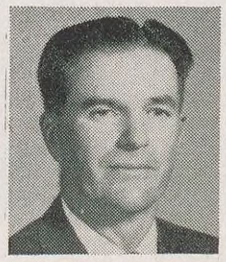

N. M. CROSBY
Pacific Coast Area
Gas


H. E. DISCHINGER
Head Office
Pipe Line Dept.


H. C. EELLS
Tulsa Area
Production


V. L. FOX
Sacramento Div.
Marketing Service


R. L. GERAGHTY
Head Office
Marketing


R. J. GILWORTH
Wood River Refy.
Thermal Cracking


J. L. HARRIS
Sacramento Div.
Operations


L. P. HAYNES
Shell Pipe Line Corp.
Texas-Gulf Area


D. B. HODGES
Head Office
Vice Pres.—T & S

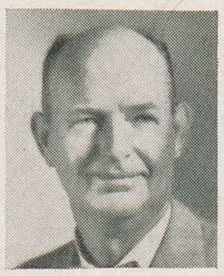

T. G. KELLY
Portland Div.
Operations


A. C. KRUEGER
Wood River Refy.
Engineering


J. R. LEE
New Orleans Area
Gas


A. L. LEENERMAN
Pipe Line Dept.
Sibley, Illinois


H. LORENZEN
Martinez Refy.
Cracking


C. M. MARTIN
Shell Pipe Line Corp.
Texas-Gulf Area


F. W. MATTSON
Martinez Refy.
Engineering


A. Y. McCOY
Wood River Refy.
Control Laboratory

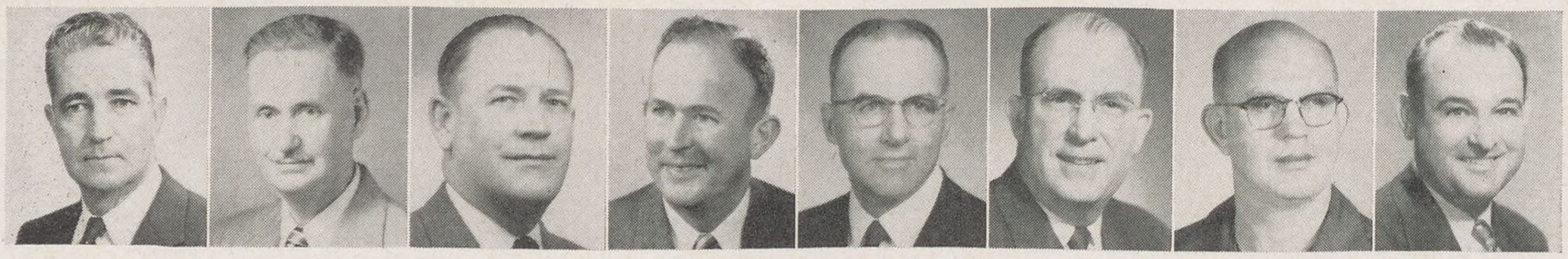
Thirty Years (cont'd)

L. E. McGONIGLE	W. MELLENBERGER	W. A. MILLS	A. C. MUELLER	W. E. NOBLE	J. W. OWEN	W. H. REYNOLDS	S. R. ROBICHEAUX	F. N. ROBINSON
San Francisco Office	Pipe Line Dept.	Indianapolis Div.	St. Louis Div.	Head Office	Houston Refy.	Tulsa Area	Norco Refy.	Tulsa Area
Trans. & Supplies	Bourbonnais, Ill.	Operations	Sales	Personnel	Engineering	Exploration	Engineering	Legal

R. A. RONALD	H. O. SMITHSON	L. J. SPRUILL	E. TEMPLE	R. E. THOMAS	W. H. WALKER	R. M. WALTON	A. N. WEBRE
Martinez Refy.	Wood River Refy.	Tulsa Area	San Francisco Div.	Norco Refy.	Wood River Refy.	Head Office	Norco Refy.
Treasury	Lubricating Oils	Production	Operations	Treasury	Engineering	Financial	Engineering

Twenty-Five Years

J. P. ALLARD	N. P. BECK	F. E. CADDY	J. R. CARROLL	E. H. CONN	W. F. DAVIDSON	R. S. DeLAY	H. E. DEWEY
Shell Chemical Corp.	Wood River Refy.	Shell Chemical Corp.	Cleveland Div.	Shell Pipe Line Corp.	Shell Pipe Line Corp.	Boston Div.	Wood River Refy.
Martinez Plant	Engineering	Norco Plant-Mgr.	Operations	Texas-Gulf Area	Mid-Continent Area	Operations	Engineering



T. O. EDWARDS	D. H. GALLUP	J. G. GRAY	G. T. HOPKINS	H. V. HOUSE	E. P. HUDSON	S. MAHER	S. M. MARTENAK
Portland Div.	Minneapolis Div.	New York Div.	Boston Div.	Shell Pipe Line Corp.	Pacific Coast Area	Wood River Refy.	Sewaren Plant
Sales	Operations	Operations	Sales	Texas-Gulf Area	Treasury	Engineering	Eng. & Maint.

J. C. MASH	J. H. PREUSS, JR.	D. H. ROWE	R. B. SNYDER	L. A. SPENCER	F. B. THACH	W. J. VAN ES	F. WILLIAMS	H. H. WILLIAMS
Shell Pipe Line Corp.	Head Office	Shell Development Co.	Cleveland Division	Shell Pipe Line Corp.	Pacific Coast Area	San Francisco Div.	Wood River Refy.	Shell Pipe Line Corp.
West Texas Area	Financial	Emeryville	Sales	Texas-Gulf Area	Exploration	Operations	Utilities	Texas-Gulf Area

SHELL OIL COMPANY

Head Office

20 Years

J. A. Horner........... Corporate Secretary
J. H. Minnick.................... Marketing
W. J. Spravale............ Trans. & Supplies

15 Years

C. W. Hentschel.......... Purchasing-Stores
G. G. Hughes.................. Marketing
H. C. Hurley, Jr................ Financial

10 Years

P. J. Cunningham................ Personnel
C. F. Dexheimer................. Marketing
W. M. Fly...................... Financial
C. E. Gruen.................... Marketing
Edith M. Gruen.................. Financial
A. J. Hurt...................... Marketing
Sylvia Lasoff................... Financial
J. C. Oberdorf.................. Financial
Margaret M. Pellegrino........... Financial
C. Stahl................. Trans. & Supplies

San Francisco Office

10 Years

D. M. Gilbrech, Jr. .... Marketing
J. W. London.................. Purchasing

Exploration and Production

CALGARY AREA

20 Years

R. Martin...................... Production

10 Years

T. W. Barron................... Production

DENVER AREA

20 Years

C. B. Metcalfe................. Exploration

15 Years

Marion H. Hix................... Treasury
J. W. McDonald............... Exploration
E. R. Mott.............. Purchasing-Stores

10 Years

H. M. Buchanan, Jr. .... Land
R. E. Scullion................. Exploration
H. M. Walley........................ Land

HOUSTON AREA

20 Years

M. C. Birran................... Production
C. E. McNiel................... Production
T. E. Weisinger, Jr. .... Production
A. C. Wood.................... Exploration

15 Years

J. E. Jones..................... Production
G. Uptgraft .... Gas

10 Years

G. K. Johnston................ Exploration
W. N. McShan......................... Gas
G. S. Olsen.................... Production
E. J. Parma.................... Production
R. L. Renick, Jr. .... Production
B. Roberts .... Treasury
J. A. Williams.................. Production
S. J. Wisdom.................. Production

MIDLAND AREA

20 Years

E. R. Godbout......................... Land

15 Years

R. B. Cravens.................. Production
H. L. Skinner, Jr. .... Treasury

10 Years

B. F. Ales...................... Production
E. B. Lilly............................ Gas
J. H. Roos....................... Treasury

NEW ORLEANS AREA

20 Years

A. A. Bergeron................. Production
D. H. Duke..................... Production
L. J. Giroir.................... Production
O. G. Holekamp.............. Exploration

15 Years

C. I. Amason.......................... Gas
E. P. Brady.................... Production
W. T. Crumhorn................... Treasury
B. W. Hare............................ Gas

10 Years

W. R. Bourg................... Production
C. H. Hernandez.............. Production
F. Kalisvaart.................. Exploration
J. L. Montero.................. Production
H. J. Myres.................... Production
M. P. Rodrigue................ Production
J. T. Sargent.................. Production

PACIFIC COAST AREA

20 Years

H. E. Hopson.................. Exploration
M. H. Purtle............. Pers. & Indus. Rel.

15 Years

J. H. Jowell.................. Exploration
R. W. Lincoln......................... Gas
L. Mitchell..................... Production
D. M. Parker..................... Treasury
E. W. Quayle............ Purchasing-Stores
B. A. Yancey.................. Exploration

10 Years

G. W. Caldwell................ Production
K. K. Clow..................... Production
J. C. Dimon.................... Production
L. D. Eaton.................... Production
J. R. Griffiths................ Exploration
J. E. Herndon................. Production
J. E. Mohr........................... Land
V. E. Stoney................... Production

TULSA AREA

20 Years

J. M. Garlick.................. Production
C. E. Seely.............. Purchasing-Stores

15 Years

E. H. Kelso.................... Production
E. R. Lydick................... Production
E. V. McKown.................. Production
P. R. Myers.................... Production
C. M. Osmon................... Production
R. H. Singleton................ Production

Manufacturing

HOUSTON REFINERY

20 Years

B. Allen, Jr. .... Control Laboratory
E. Bickley.......................... Utilities
E. E. Craig.......................... Stores
R. D. Dunderdale.............. Engineering
T. W. Shields.................. Engineering
J. H. Smith.................... Engineering

15 Years

L. W. Berry.................... Engineering
F. H. Christensen.............. Engineering
J. E. Garrison......................... Gas
J. A. Gregg................ Lubricating Oils
B. A. Mueller.................. Engineering
C. B. Nolan........................... Gas
L. C. Presswood............... Engineering
G. G. Ramsey.................. Engineering
W. E. Rasco................... Engineering
F. J. Schindler................ Engineering
F. J. Smith.................... Automotive
M. C. Syfert............... Lubricating Oils
J. D. Waggoner.......... Thermal Cracking
I. C. White................. Fire & Safety

10 Years

L. Bigham..................... Engineering
J. P. Bonnette, Jr. .... Gas
C. E. Davis............ Research Laboratory
R. A. Foster........... Research Laboratory
A. Hagerty.................... Engineering
G. L. Hatfield................. Engineering
M. P. Hunter.................. Engineering
L. Johnson.................... Engineering
J. McCray, Jr. .... Engineering
A. J. Morant.................. Engineering
B. J. Normand........... Catalytic Cracking
G. E. Pribble.................. Engineering
C. A. Robertus, Jr. ...... Control Laboratory
G. W. Robinson................ Automotive
L. R. Schultheis................... Treasury
W. Tatman, Jr. .... Control Laboratory
J. C. Tucker................... Engineering
S. Woods...................... Engineering

MARTINEZ REFINERY

15 Years

F. M. Barrett.......... Research Laboratory
G. A. Kelly...................... Cracking

10 Years

E. M. Bony...................... Distilling
D. L. Carrillo................. Engineering
H. Frisby..................... Engineering
J. A. Liggett, Jr. .... Engineering
C. C. Phillips.................. Dispatching
L. A. Salvatori, Jr. ..... Research Laboratory
R. E. Wages................. Compounding
S. E. Woodall.................. Engineering

NORCO REFINERY

15 Years

C. T. Gaudet.................. Engineering
E. J. Guidry................... Engineering

10 Years

R. J. Goodspeed............... Laboratory

WILMINGTON REFINERY

20 Years

G. F. Eastwood..........Control Laboratory
W. H. Howe..................Engineering
E. R. Younker..................Engineering

15 Years

Y. E. Holt.....................Engineering
W. H. Meissner....................Stores

10 Years

K. L. Elvert....................Engineering
S. Ferris......................Engineering
H. J. Hillig...................Engineering
A. E. Powell...................Dispatching
E. C. Smith...................Engineering
G. W. Starkey.................Engineering
J. H. Weddle...........Control Laboratory
A. C. Wolfe........Experimental Laboratory

WOOD RIVER REFINERY

20 Years

A. M. Amburg.............Lubricating Oils
J. A. Bowman..........Research Laboratory
W. F. Burian.....................Treasury
H. J. Krapf...................Engineering
J. L. Lanzerotte................Engineering

15 Years

F. F. Alberter...................Aromatics
D. M. Bail.................Compounding
R. G. Boyer..............Thermal Cracking
K. R. Harrison.................Dispatching
W. E. Heinz...........Research Laboratory
P. F. Hertel..............Thermal Cracking
R. D. Pope....................Engineering
H. E. Rutherford................Alkylation
G. D. Smock...................Engineering
R. H. Young.................Compounding

10 Years

P. L. Bissell.......................Treasury
C. K. Bransford........Products Application
S. R. Sprague..........Research Laboratory
R. W. Wheeler................Dispatching

Marketing

MARKETING DIVISIONS

20 Years

R. K. Cowhig............Atlanta, Personnel
J. R. Ives.....................Atlanta, Sales
E. C. Norfolk.........Baltimore, Operations
W. J. Roach............Boston, Operations
T. J. Byrne............Chicago, Operations
Clare A. Smith...........Los Angeles, Sales
T. D. Stewart.........Los Angeles, Treasury
S. Bild..................Minneapolis, Sales
T. P. Postol...............St. Louis, Treasury
V. R. Axelson...........San Francisco, Sales

15 Years

E. D. Guy............Chicago, Operations
R. C. Maas............Chicago, Operations
P. P. Poladian...........Detroit, Operations
F. E. Wilsberg..........Detroit, Operations
J. C. Aguiar.........Honolulu, Operations
Doris M. Hurl......Honolulu, Administration
T. Yamashiro..........Honolulu, Operations
E. A. Ingham.......Los Angeles, Operations
J. J. Bejblik........Minneapolis, Operations
C. A. Axelsen..........Portland, Operations
E. M. Gregg...........Portland, Operations
G. J. Renken...........Portland, Operations
L. Y. Shiach...........Portland, Operations
W. H. Van Den Berg.........Portland, Sales
C. R. Strother.........St. Louis, Operations

10 Years

J. W. Grimes...........Albany, Operations
Edna W. Powers......Albany, Administration
E. C. Conn.............Atlanta, Operations
T. L. Hoban...........Baltimore, Operations
W. R. Stephens....Baltimore, Marketing Serv.
W. H. Richards...............Boston, Sales
A. H. Hallberg........Chicago, Operations
C. Venarde...........Chicago, Real Estate
W. L. Rockwell...........Cleveland, Sales
R. L. Olle..............Detroit, Operations
R. C. Brendemuhl..Honolulu, Marketing Serv.
R. Black.............Indianapolis, Treasury
O. G. Elfreich......Indianapolis, Operations
J. P. King...............Indianapolis, Sales
D. F. Hersey....Minneapolis, Marketing Serv.
C. B. Dunne...............New York, Sales
D. F. Knowlton.............New York, Sales
A. V. Minanskas.......New York, Operations
D. M. Libby...........Portland, Operations
J. B. Perry...............Portland, Treasury
J. E. Pope..............Portland, Operations
A. P. Panos...........Sacramento, Treasury
Geraldine A. Rush....San Francisco, Treasury

SEWAREN PLANT

20 Years

S. W. Dyckman.....................Depot
T. J. Fitzpatrick....................Terminal
B. S. Hancock..............Engrg. & Maint.
Z. Izso........................Compound
S. Simon......................Compound

15 Years

A. J. Decker...............Engrg. & Maint.
M. Fedun..........................Depot
J. J. Hegedus..................Compound
J. A. Stasko......................Asphalt

10 Years

E. W. Cheslak.................Laboratory

Pipe Line Department

20 Years

O. C. Groff..............Bakersfield, Calif.
R. E. Sheldon............Los Angeles, Calif.

15 Years

C. J. Gisler................Simi, California
E. L. Karraker..........Indianapolis, Indiana
A. R. Kelso.............Corral, California
R. E. Mitchell.............Waltham, Mass.

10 Years

R. M. Boudreaux............Simi, California
L. P. Clear.............Wilmington, Calif.
D. A. Langel..............St. Elmo, Illinois
M. E. Morgan.............Holliston, Mass.

SHELL CHEMICAL CORP.

20 Years

Kathleen V. Bannister..........Head Office
M. A. Smith.......................Norco
K. L. Tegland...................Torrance

15 Years

K. H. Walker................Head Office
L. P. Falgout.....................Houston
E. C. Sivley......................Houston
G. J. Samuels...................Martinez
L. Bardsley, Jr..................Torrance

10 Years

E. T. Glover...................Dominguez
Jean R. Boland...............Head Office
L. B. Frye....................Head Office
R. R. Keenan.................Head Office
R. L. Browning...................Houston
R. L. Denson.....................Houston
O. B. Hicks......................Houston
R. C. Rice.......................Houston
G. B. Richardson.................Houston
C. H. Rusk.......................Houston
J. A. Salyers....................Houston
M. Juul.........................Martinez
W. D. Jackson.................Shell Point
B. McGhee.....................Shell Point
E. R. Perkins..................Shell Point
A. L. Propersi.................Shell Point

SHELL DEVELOPMENT CO.

20 Years

R. C. Castner..................Emeryville
K. D. Detling...................Emeryville
M. Elizabeth Test...............Emeryville
J. F. Waller....................Emeryville

15 Years

E. R. Barnum...................Emeryville
E. M. Frazee...................Emeryville
B. P. Geyer....................Emeryville
M. L. Healy....................Emeryville
W. M. McPherson...............Emeryville
F. T. Weiss....................Emeryville
C. H. Fay........................Houston

10 Years

W. A. Kreutzer....................Denver
A. R. Stiles.......................Denver
E. J. Gronlund.................Emeryville
R. M. Schwyhart...............Emeryville

SHELL PIPE LINE CORP.

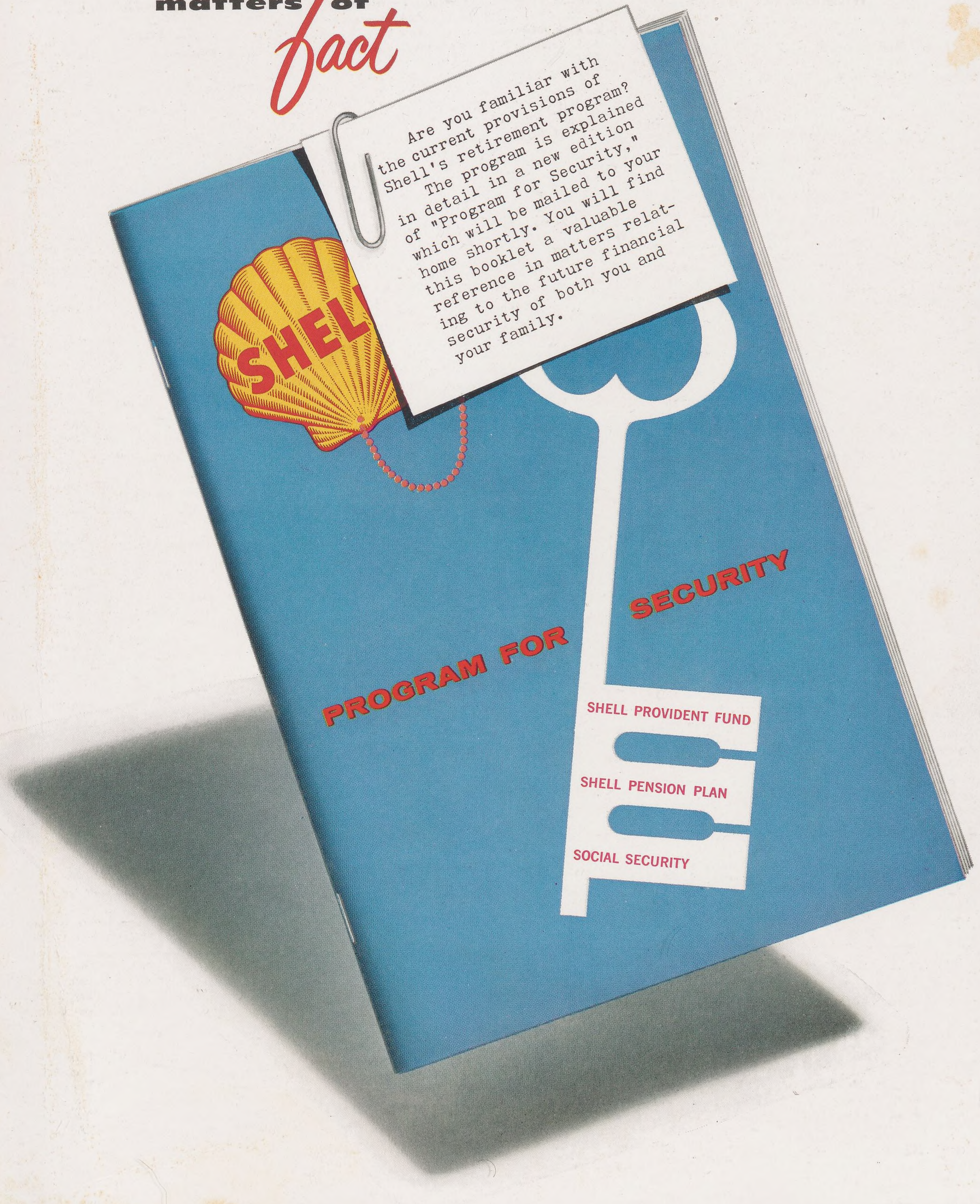
15 Years

S. S. Green, Jr. ....Mid-Continent Area
A. H. Hall...................Head Office
J. F. Herron..........Mid-Continent Area
L. R. Hudson..........Mid-Continent Area
H. E. Huffman.........Mid-Continent Area
T. C. LaGree..........Mid-Continent Area
H. L. Nichols..........Mid-Continent Area
W. W. Plentl.................Head Office
W. A. Scott, Jr. ....Head Office

10 Years

W. D. Chesney............West Texas Area
B. H. Crockett............West Texas Area
W. J. Mayfield............West Texas Area
R. L. Miller..............West Texas Area
C. E. Pyle...............West Texas Area
H. H. Webb..............Texas-Gulf Area

matters of *fact*



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4710 Bell
Houston, Texas

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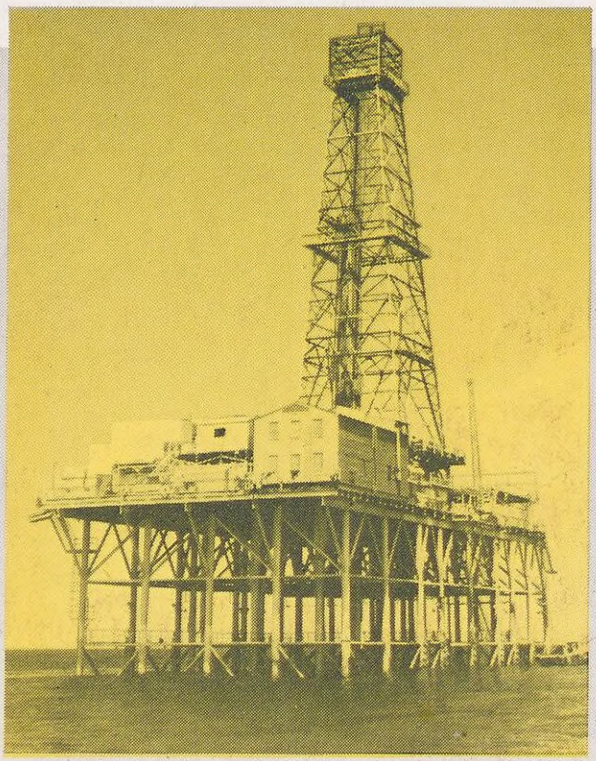
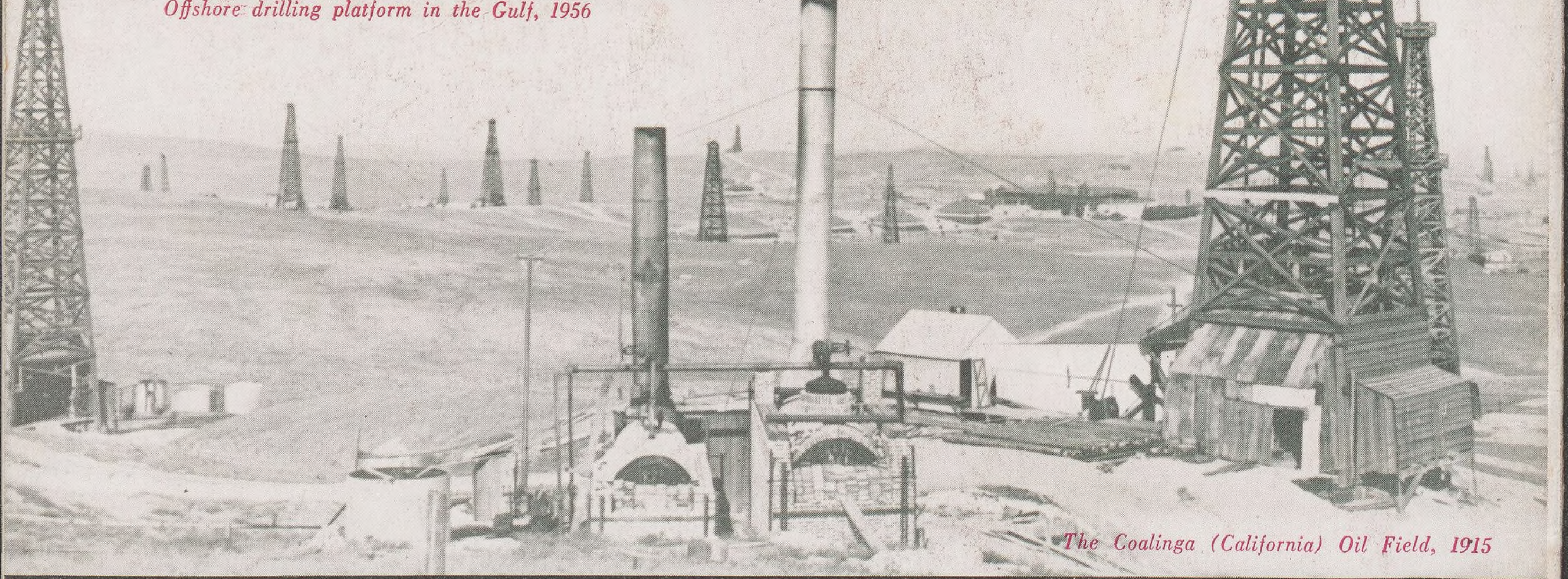


Offshore drilling platform in the Gulf, 1956

PRODUCTION PROGRESS



The Coalinga (California) Oil Field, 1915

1st SHELL

Forty-four years ago — in September, 1912 — Shell entered the oil producing business in the United States. In that month wells and properties capable of producing about 4,500 barrels per day were purchased in northeastern Oklahoma. A year later properties at Coalinga, California, producing a little more than 10,000 barrels a day were purchased by Shell.

Today, Shell's aging Coalinga leases, with the aid of modern techniques, are still capable of producing about as much oil as they did in 1913. However, they contribute only a small part of Shell's current production. At the beginning of this year, Shell leases in the United States and Canada were yielding an average of more than 300,000 barrels of oil and almost a billion cubic feet of gas each day. And Shell's proven crude oil reserves still in the ground totalled more than a billion barrels!