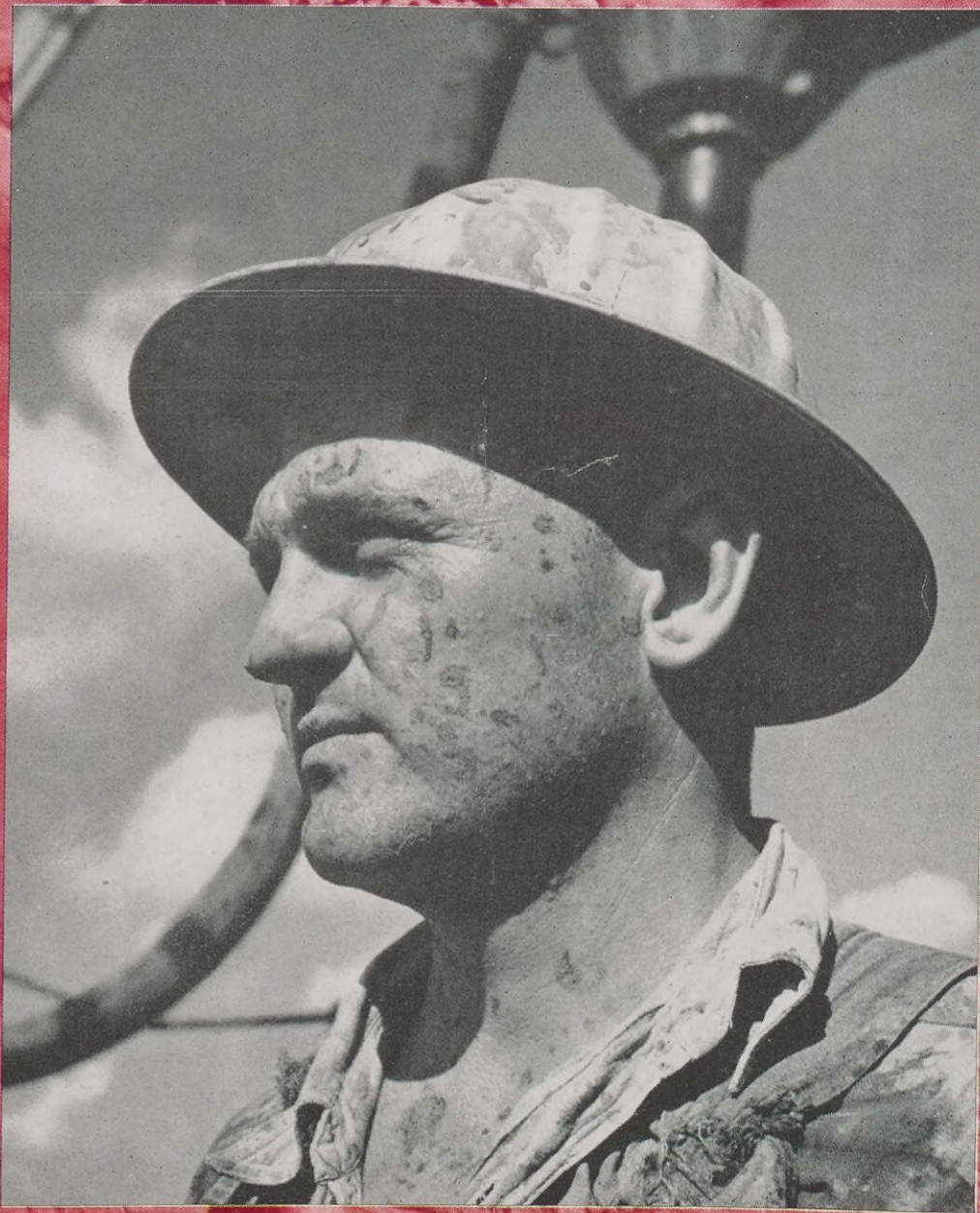




SHELL NEWS

SEPTEMBER 1950

MILLION DOLLAR



No beauty preparation, but just as costly, mud like that on the face of this drilling rig crewman, cost Shell nearly 2 million dollars in 1949.

MUD CAKE

Great Quantities of Time and Money Have Gone Into the Development of Versatile Drilling Muds. Today Some of Them Aren't Mud at All!

MUD isn't dirt cheap when a thin layer of it costs 90 cents a foot.

Yet that's the average price Shell paid for mud last year in every foot it drilled in 339 new producing wells. Over-all costs for drilling the new wells ran to just over 36 million dollars. Out of that, about \$1,870,000 went for the multi-purpose muds so necessary to obtaining oil and gas.

But when you pay a high price for mud, and the chemicals and weighting materials that go into it, you're hiring a versatile servant that does a lot more than just plaster the walls of a well hole. Mud lubricates and cools the drilling bit, carries off the rock cuttings ground out of the earth, keeps the hole walls from caving in, and prevents the hole from clogging up when drilling stops. For each well the mud must have a personality of its own—and a personality that can change as rock formations vary in the hole.

This variable personality is regulated by the mud engineer who makes periodic tests of the mud at the drilling rig to determine such properties as specific gravity, viscosity and gel strength. If trouble occurs in the drilling, he may recommend that a different type of mud be used or he may make chemical alterations in the mud already in the pits.

The clay base from which muds are made contains many ingredients, but just how good a drilling mud is depends almost entirely on certain clay minerals which are only a small fraction of the whole. When mixed with water, these clay minerals disperse to tiny plate-like particles. Adhering to the

SHELL NEWS

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

Employee Publications Division
Personnel Department, New York

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NITROGATION IN ACTION

Shown on this month's cover regulating the flow of Nitrogation Ammonia into a cabbage field irrigation ditch in California is Eric Heuermann, a man long experienced in agriculture on the Pacific Coast. These days Mr. Heuermann does his regulating behind a desk in New York as Manager, Agricultural Products, Eastern Division, of Shell Chemical Corporation.

The painting is also being used on the cover of an attractive Shell Chemical booklet being distributed to farmers to tell them about the uses of anhydrous ammonia, which literally guarantees better and more bountiful crops. The story of ammonia as a fertilizer is told in the article beginning on page 8.



< To suspend rock cuttings when circulation stops in the well, mud must have a trait called "thixotropy", which means it will "set" to a jelly-like consistency when not in motion. Glass beads suspended in a mud gel (left) demonstrate this trait. The mud won't even slide down in the graduate. If graduate is spun, mud becomes fluid again.

icals which will mix with those on the clay particles and re-establish favorable properties.

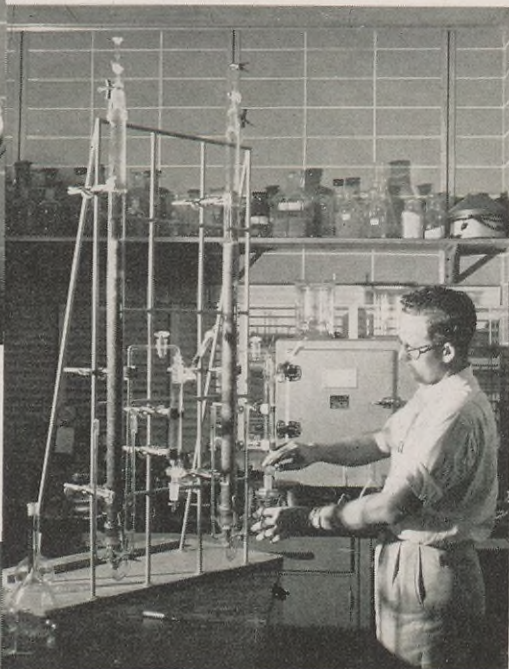
For example, salt water—often encountered in drilling—causes clay particles to flocculate. One way to reduce this bad effect is to add ordinary starch, the kind used in the weekly wash, to the mud. However, as any housewife knows, starch sours when left standing, and additional chemicals must be added to prevent the starch from putrifying.

Weighted Mud

To prevent blow-outs when the bit encounters high pressure gas or oil, mud is often weighted with inert materials such as ground oyster shells or powdered limestone, galena or baryte. But, obviously, there is a limit to how thick a mud can be and still be pumped. More water can't be added, or the purpose of weighting the mud will be defeated. In such cases it is possible to add small quantities of certain chemicals which cause a reaction making the drilling mud almost water thin but retaining its weight. Among them is another old kitchen stand-by, calgon—a common water softener.

In some areas, the clays encountered in drilling make such good mud that there is nothing much to do but keep a steady stream of water on it. In other wells, however, it is necessary to import the necessary basic clays. As a result, special clays like the popular "Wyoming bentonite" have been hauled all over the world to keep drilling bits turning.

A great deal of research has been done to develop methods for chemically treating the clay encountered by the drill so that it will not be necessary to buy mud. It is obviously easier and cheaper to transport a small quantity of chemicals to a well site than it is to provide large sacks of dehydrated mud. Today only 5 per cent of mud operations costs is money spent for bentonite. Five years ago the amount was 20 to 30 per cent. These figures point up the fact that researchers are making real progress in the treatment of clays found at the well site.



^ To study dilute clays, no foreign matter can be permitted in their solutions. Above, water in its purest form is obtained for this purpose from a purifying apparatus.

The "ultracentrifuge" (below) was developed at Houston to obtain photographs from which the size and molecular weight of clay particles are found. V



surface of the tiny particles are certain chemical elements which cause attractive and repulsive forces between the particles and determine how they behave. Some chemicals cause the particles to flocculate—they lump together like curds of cottage cheese. Others cause them to disperse evenly throughout the water to form a stable suspension. Whether a mud is thick or thin, as well as its ability

to thicken to a jelly-like mass strong enough to support rock cuttings when the drilling stops, depends largely upon these attractive and repulsive forces, and hence on the chemical elements clinging to the surface of the tiny plate-like particles of clay.

If chemicals encountered in the well cause any change in the drilling mud so that it cannot perform properly, it is possible to add other chem-



Dehydrated clay samples from all over the world are stored in this mud "library" at Houston for study of their physical and chemical properties.

At the Exploration and Production Research Laboratory in Houston a number of other basic studies are also being made in the methods of preparation and control of drilling mud. In one section the nature of clay minerals is being probed by such modern methods as X-ray and differential thermal analysis. Farther down the hall, the reactions involved in the exchange of chemicals adsorbed on clay particles are being studied through exacting chemical methods. In still another section, the physical properties of drilling mud are investigated. Special apparatus has been developed for this research and clays from all over the world are studied.

Worldwide Research

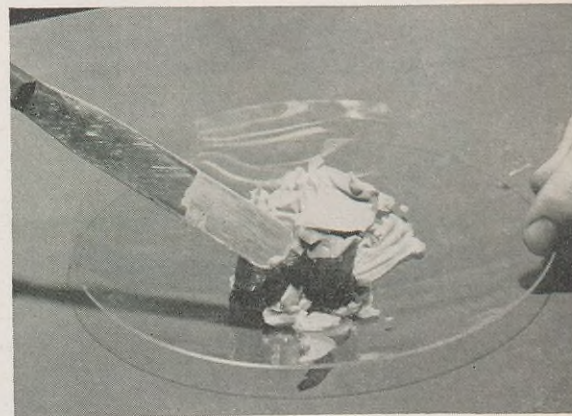
The laboratory in Houston is still relatively new, but research on drilling muds has been carried out for many years in Shell Group laboratories around the globe. *Oil* base muds as distinct from *water* base muds are, in fact, a major contribution of Shell chemists to the drilling industry. When water seeps out of the mud and

into the walls of a well, it sometimes hinders the flow of oil into the well. Even though water base muds can now be produced which allow very little seepage, some oil sands require that *no* water infiltration take place. In Amsterdam and California drilling fluids have been made which use oil instead of water, combined with such substances as lampblack, asphalt and soap to imitate the action of clay. The result is a drilling fluid which acts like clay mud, but when seepage occurs oil enters the oil sands instead of water. Today, oil base muds have passed into general use as a direct result of Shell's pioneering work.

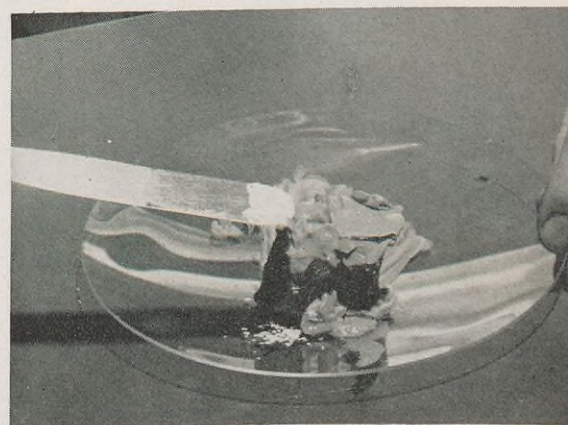
In Venezuela, another Shell chemist has developed an emulsion mud composed of oil, clay and an emulsifying agent. It is simple and cheap to produce and is particularly suited to certain drilling conditions. It, too, is now used all over the world.

It is impossible to predict what present research will hold for the future, but it seems certain that original successes will be followed by more such synthetic muds. Soon "drilling muds" may not be mud at all.

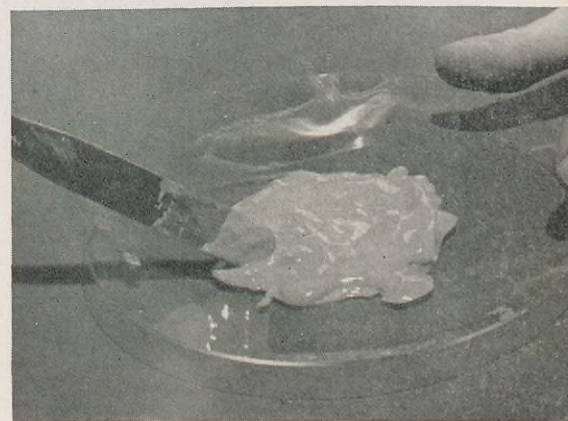
Dry chemicals, not water, can be used to thin mud and make it do its job better.



Lump of drilling mud, above, is almost as thick as modeling clay, can't be pumped.



A small portion of dry white chemical on the spatula tip is added to the mud lump.



It runs! The chemical stirred into the mud thins it down to make pumping easier.

The Great American Game

BEGINNING in late March and extending through the summer into October, "Take me out to the ball game" is the theme song for millions of Americans. Armed with hot dogs and cold drinks, they rain "razzberries" on every "wrong" decision . . . and the cheers and jeers are as raucous at the neighborhood sandlot as they are at Ebbets Field in Brooklyn.

course, didn't just happen. In the 111 years that have passed since Colonel Abner Doubleday set up the first rules, tons of printed matter and millions of words have been devoted to helping it grow. And the ball player never lived who hasn't added his own choice story to the snow-balling saga.

A generation ago, when most of Shell's diamond stars were playing, baseball was a fierce game. Pitchers

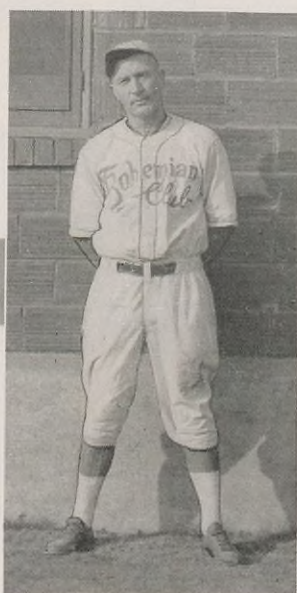
down their pants legs a few times, they added the ingredient for another sharp breaking pitch.

In those old days, says Tom Estell, Pipeliner at Kilgore, Texas, pitchers used everything but magic to get the batter out. The spitball was one of their favorite methods.

"You couldn't develop the 'spitter' overnight," Tom explains, "but once you mastered it, it was great. It was



J. C. Perkins—New Orleans Area. All-Southeast Conference pitcher compiling 19-1 record for Vanderbilt University.



L. S. Taylor—Seattle Division. Played shortstop for Chicago White Sox and San Francisco Seals in Pacific Coast League.



L. S. "King" Cole—Portland Division. Pitched for Longview, Washington, and other strong Northwest semi-pro teams.



Allen Thurman—Houston Chemical Plant. Infielder for Southern and Western Association and Nebraska State League teams.

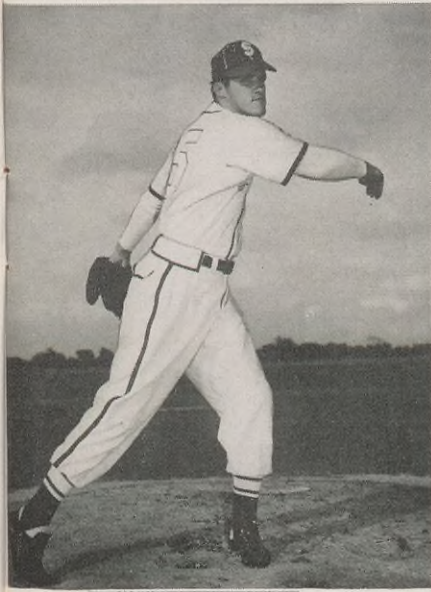
There's something about the great American game that attracts men and women of otherwise widely divergent interests and activities. It is the thing that makes Joe DiMaggio of national concern when he's deep in a batting slump. It is the thing that caught and held the fancy of the Japanese long after Babe Ruth and his barnstorming baseballers returned from their historic exhibition tour to Japan.

The game's great mass appeal, of

shoved needles and other weights into the ball before the game, causing the ball to break sharply toward the heavy side when thrown. Balls were sometimes frozen overnight, a procedure that made it almost impossible to hit them beyond the infield. Tacks, bottle caps and other implements were secretly used to roughen the outer surface of the ball. Some pitchers even applied paraffin to their trouser seams; by rolling the ball up and

like a fast knuckler. You could make it break in, out, down or up just by varying your fingers as you delivered."

Babe Ruth nudged a couple of Tom's spitters over the center field fence in an exhibition game, but hitters generally had trouble. Infielders had problems with them, too. The pitcher couldn't tip them off when he was going to throw the spitter, either, so they had to grab dirt each time the



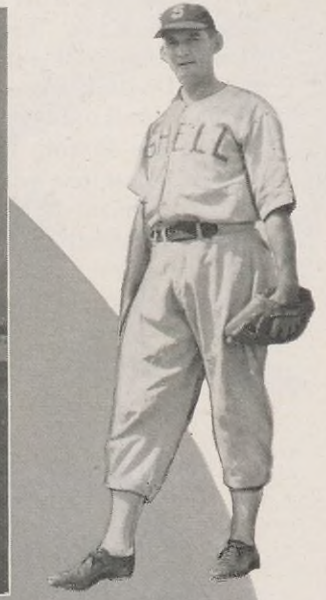
W. H. Telschow—Houston Refinery. Pitched for the Rice Institute team and subsequently for the Detroit Tigers and several Tiger farm teams.



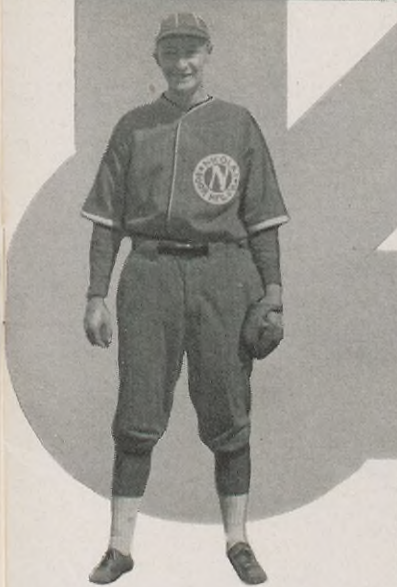
W. G. Murphy—Atlanta Division. Pitched for Georgia Tech and later for strong semi-pro baseball teams in the Chattahoochee Valley League.



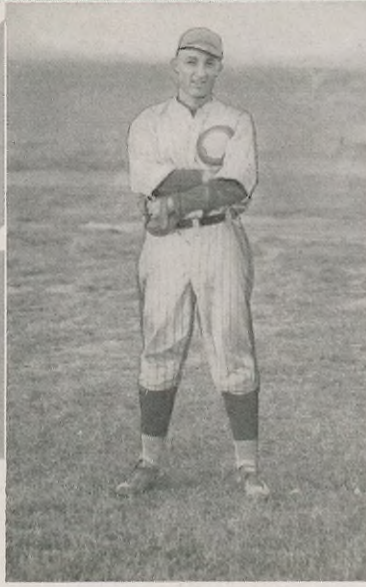
E. "Al" Schaack—Houston Chemical Plant. Pitched briefly for Chicago Cubs . . . also hurled for teams in the Three I and the Big State Leagues.



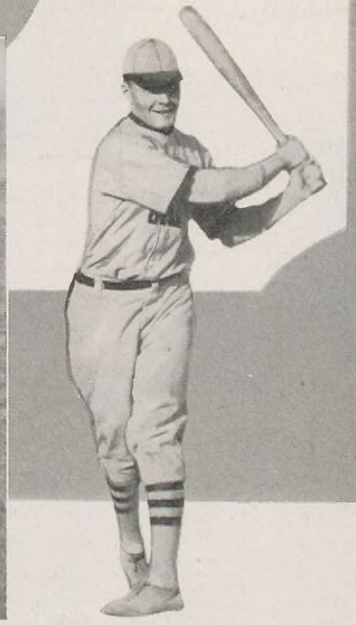
Percy Bourgeois—Norco Refinery. Veteran pitcher for the New Iberia team in the Evangeline League . . . Shell Oilers in East Side River League.



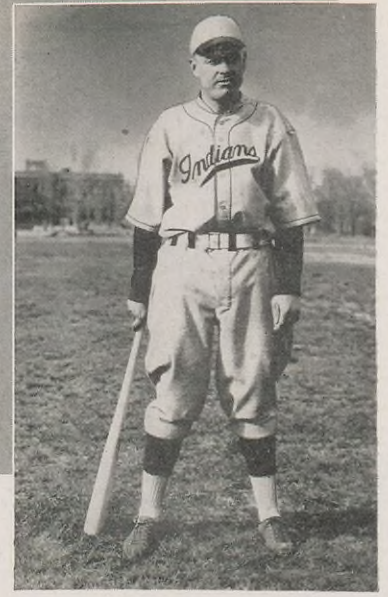
Bill Bottler—Portland Division. Home-run hitting outfielder for teams in the Portland Valley League and other fast semi-pro leagues in the Northwest.



L. H. Tomlinson—Seattle Division. Played third base for the Oakland team in the Pacific Coast League and numerous other West Coast teams.



R. R. O'Reilly—Atlanta Division. Played outfield for Missouri University nine . . . Ft. Smith, Arkansas and other St. Louis Cardinal farm teams.



Toley Talley—L. A. Basin Division. Played infield on Shell's powerful semi-pro baseball team at Los Angeles, California during the mid-twenties.

ball was hit so that their throw to first base would not be wild.

Not that the pitcher always had the best of it. C. A. "Frenchie" Burke, twenty-year Shell veteran with the Boston Division, was a pitcher with a lot on the ball until the day, in a game against the Detroit Tigers, he tried to fire a fast one past the slugging Harry Heilman. It came back twice as fast and smashed a finger on the hand he threw up to defend himself.

Everything about the old game was rough . . . even the umpires. Walt Frome, Production Foreman in the

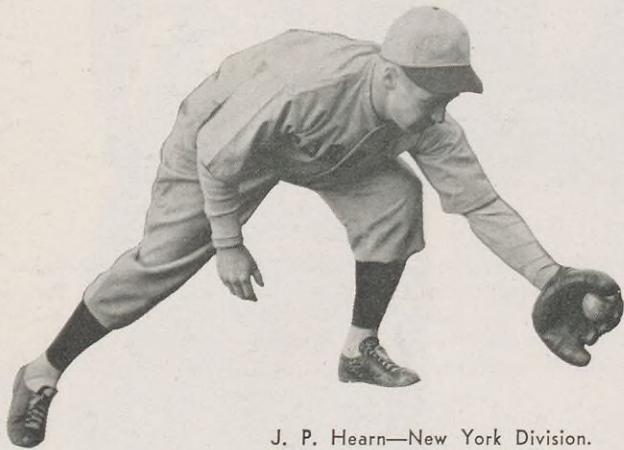
Los Angeles Basin Division, recalls the time when he was playing with a team in the Iowa-South Dakota League, in a game umpired by Frank Gotch, World's Wrestling champion of the day.

"I was about to take my turn at bat during the game," he reminisces, "and jokingly tried to put a half-nelson on Gotch who was home-plate umpire. I came up behind him and got the half-nelson on all right, but before I knew what had happened, Gotch . . . without putting a hand on me . . . threw me clear over his shoulder."

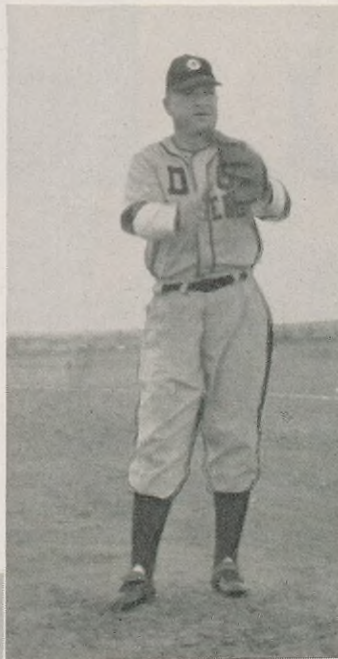
Walt, and the other players on Shell's Los Angeles team a few years later, clowning around a lot, but they did pretty well, holding their own with strong Pacific Coast league teams, and playing several close ones with the Pittsburgh Pirates.

Shell's baseball veterans didn't always play on the strongest teams. Leo Tomlinson, General Salesman for the Seattle Division and a veteran of several triple "A" minor league teams, cites a case in point. It happened toward the end of his active baseball career, when he was playing with a Class B league team. One night, after a particularly long streak of one-run losses, fans and players alike were mystified before the game by the appearance of a fleet of panel trucks which circled the field and stopped near home plate. The drivers hauled tables and chairs out, covered the tables with cloths and then proceeded to set out a bowl and spoon for each player. Out of the last truck came huge boxes of a famous breakfast cereal. The entire team was seated, and anyone who didn't eat fast enough was gently reproved by the manager, bat in hand. It would have been something if the team had come through with a resounding victory, but it didn't. The Lewiston (Idaho) Indians were downed again, losing their 27th straight game.

Working for Shell are many talented baseball and ex-baseball players. There's no way in the world to judge their relative worth as players, past and present. SHELL NEWS isn't going to try. But you can bet that they were or are plenty good.



J. P. Hearn—New York Division. Played shortstop for Fordham University . . . Bushwicks in the fast New York City Metropolitan League.



E. H. Gorman — Midland Area. Played centerfield for teams in Piedmont, New Mexico and Oil Belt Leagues.



F. D. Leigh—Midland Area (above). Played centerfield for Rice Institute. S. P. Chapman—New Orleans Area, is pictured (right) scoring winning run for Texas A. and M.

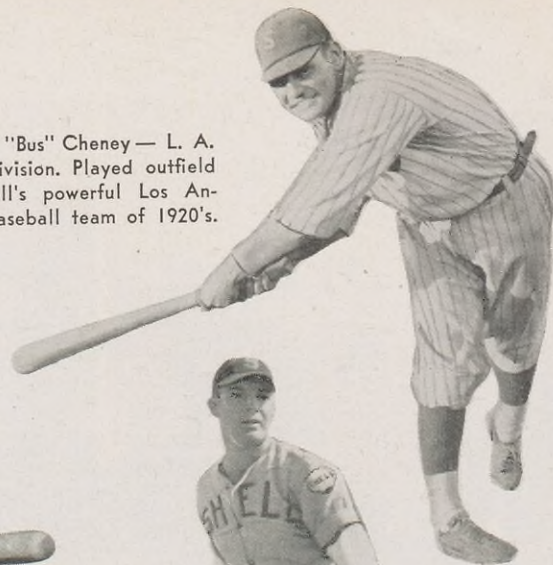




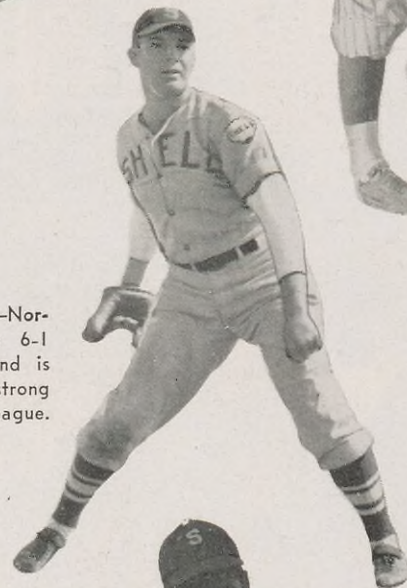
B. A. Woodson—Martinez Refinery (above). Caught for San Francisco in the Pacific Coast League; (right) Kemper Kaiser of Houston Refinery was all-Southwest Conference first baseman playing for Rice Institute.



Percy Gauthreaux—Norco Refinery. Has 6-1 pitching record and is batting .384 in strong East Side River League.



W. M. "Bus" Cheney—L. A. Basin Division. Played outfield for Shell's powerful Los Angeles baseball team of 1920's.



Sam Costa—Houston Refinery (above). Pitched in Texas Valley and West Texas Leagues. Walt Fromme, L. A. Basin Division (below) played in the Western Association.



IN ADDITION TO THOSE PICTURED, THE FOLLOWING SHELL EMPLOYEES PLAYED A GOOD GAME OF BALL

CATCHERS

W. L. Carlson.....Boston Division
 R. F. Fazio.....Shell Chem. Head Office
 A. Howard.....Head Office
 A. A. Kent.....LA Basin Division
 H. J. Obbe.....Head Office
 J. F. O'Connell.....Martinez Refinery
 M. L. Pierce.....Midland Area
 Roy Rea.....Seattle Division
 F. E. Rehm.....San Francisco Office
 W. K. White.....Midland Area

L. N. Mancuso.....Houston Refinery
 J. F. McLain.....Midland Area
 Frank Metz.....LA Basin Div. (Retired)
 Ed Metzger.....Tulsa Area
 C. A. Nicolet.....Wood River Refinery
 A. R. Pustejovsky.....Houston Refinery
 H. Satterfield.....Midland Area
 J. G. Schuepbach.....Midland Area
 R. A. Sebesta.....Midland Area
 Stanley Sonnier.....New Orleans Area
 A. E. Walkup.....Midland Area
 D. J. White.....Midland Area

OUTFIELDERS

J. V. Campo.....Houston Refinery
 W. E. Collum.....Midland Area
 H. F. Cuyler.....LA Basin Division
 J. W. Hammond.....Midland Area
 J. T. King.....Midland Area
 W. S. Little, Jr.....Head Office
 J. E. O'Neill.....Boston Division
 Al Patton.....Wood River Refinery
 D. L. Stevenson.....Midland Area
 J. O. Sweeney.....LA Basin Division

PITCHERS

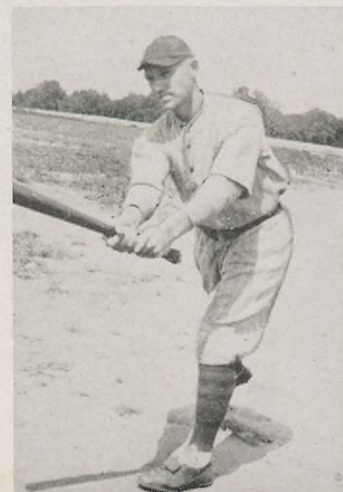
J. W. Anschutz.....Wood River Refinery
 E. A. Behnen.....Sewaren Terminal
 Mike Berta.....Midland Area
 R. L. Bouchet.....Wood River Refinery
 C. A. Burke.....Boston Division
 L. J. Clark, Jr.....Midland Area
 R. L. Clemens.....Midland Area
 D. J. Clowe.....Head Office
 A. J. Diorio.....Head Office
 H. W. Eglit.....Sacramento Division
 J. I. Graves.....Houston Refinery
 C. B. Gray.....Midland Area
 W. B. Howells.....Boston Division
 H. W. Peet.....Seattle Division
 A. H. Rathert.....Head Office
 L. F. Scheibal.....Wood River Refinery
 L. C. Seward.....New Orleans Area
 W. A. Simpson.....Midland Area
 R. B. Soule.....Boston Division
 W. H. Wade, Jr.....Midland Area
 L. F. Wilson.....Boston Division

INFIELDERS

H. E. Boer.....Houston Refinery
 K. E. Crandall.....LA Basin Division
 H. A. Curtin.....New York Division
 F. E. Davis.....Boston Division
 J. A. Fitton, 2nd.....Boston Division
 F. G. Garofalo, Jr.....New York Division
 J. B. Harrell.....Midland Area
 J. W. Key.....Atlanta Division
 C. A. LaJoie.....Seattle Division
 Warren Lederhos.....Boston Division
 J. L. Ledger.....Head Office

MANAGER

W. E. Feistner.....LA Basin Division





Youngsters strolling between two string bean fields help illustrate the advantages of Shell's anhydrous ammonia. Fertilized beans on their right tower over them. The scrubby plants opposite are unfertilized.



The newest type 1730-pound trailer ammonia tank is being used, above, on an irrigated tomato field at Modesto. The valve head and controls are recessed with a hinged cover, for greater handling safety.



The prize grapefruit, above, were grown with the aid of Nitrogen Ammonia in an irrigated orchard on Yuma Mesa in Arizona. They're very large and sweet.

Food For The Earth

Anhydrous Ammonia, a "Wonder Gas" Fertilizer Produced by Shell Chemical Corporation, is Helping Pacific Coast Farmers Increase Their Annual Crop Yields

ALONG the Pacific Slope from Arizona to Washington, farmers are talking these days about a phenomenal fertilizer—anhydrous ammonia. The reason is plain: Ammonia produces bigger crops at less cost. Dollars invested by the farmer in ammonia usually bring back many more in extra profit. What's more, the quality of more than 150 crops—ranging through fruits, grains and produce—is always improved.

Agricultural ammonia was first introduced by Shell more than 17 years ago. Today it is in such great demand that Shell Chemical Corporation, manufacturer and marketer of the life-giving fertilizer, has at times been hard pressed to produce adequate supplies and has had to constantly expand its manufacturing and marketing facilities.

Anhydrous ammonia has gained its popularity with farmers because it contains the highest nitrogen content—a minimum of 81 per cent—of any com-



Together, Nitrogation and Nitrojection Services can meet every farm fertilizing need. Above left, a Nitrojection rig uses three small ammonia "bottles" on prepared ground near Pittsburg, Calif. Another rig, above right, utilizes a bulk tank. The pole beans, center, and orange grove, below, get Nitrogation in irrigation ditches.





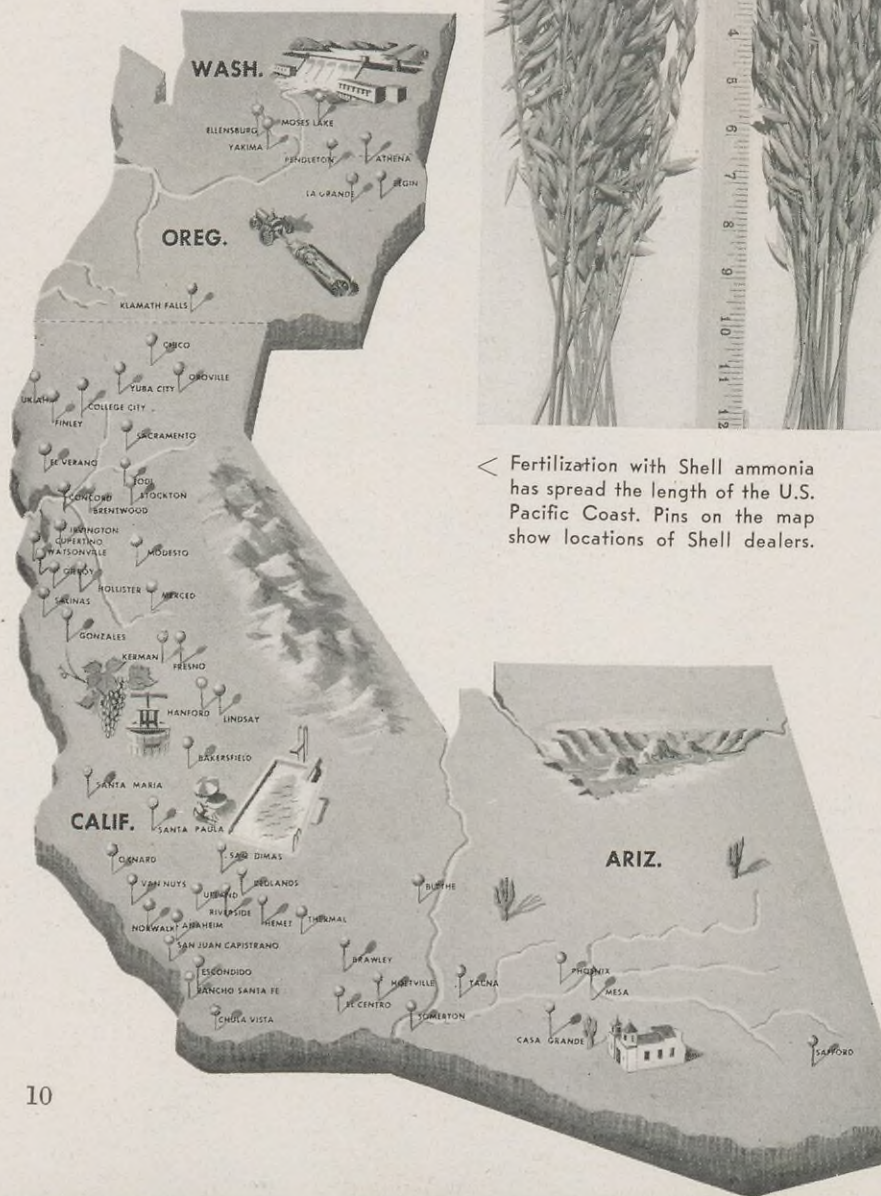
Luscious boysenberries and crisp celery, above, were raised with aid of ammonia.



Healthy oats on left of the ruler got an assist from ammonia. The other didn't.



< Fertilization with Shell ammonia has spread the length of the U.S. Pacific Coast. Pins on the map show locations of Shell dealers.



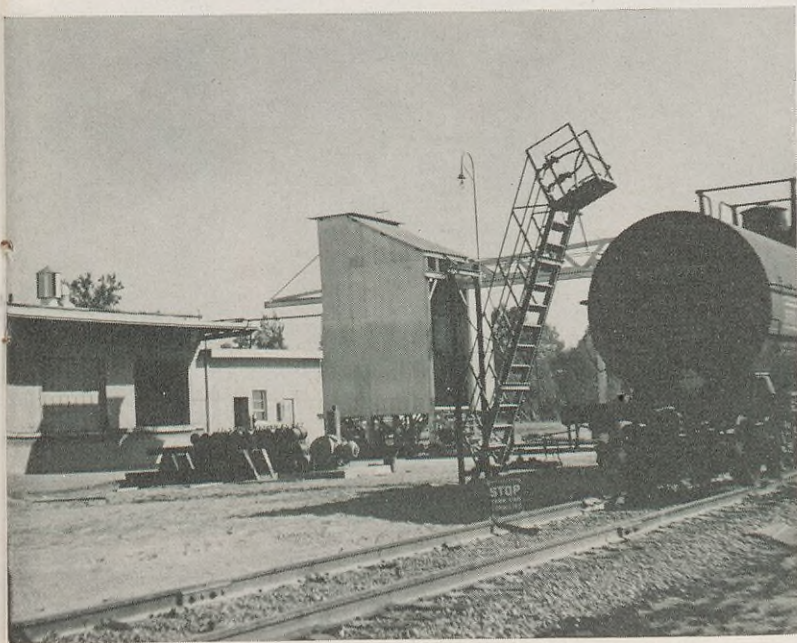
mercial fertilizer. Nitrogen is necessary to good crops and must be replenished in areas of intense cultivation or arid regions. The "gas," as some farmers call the anhydrous ammonia, is the best way of rebuilding the soil—literally a healthy food for a hungry earth.

Availability through increased production resulted in the spread of ammonia use to the Pacific Northwest last year when Shell Chemical technical advisors were called to the Klamath River Valley to counsel farmers troubled by a short growing season. The Klamath area, where potatoes are the most important crop, has an average elevation of 4,000 feet. Planting begins in May and when the young plants are just getting under way in mid June, severe frosts often ravage them. Klamath farmers wanted to know if ammonia would revive them.

When Shell representatives demonstrated with 50 to 75 pounds of ammonia to an acre, results were good enough to convince the most skeptical grower. The plants responded quickly and at maturity produced an average of 50 to 75 more hundred-pound sacks of potatoes per acre than ever before. That's an increase of a hundred pounds of potatoes for every pound of ammonia used.

Thus, in July 1949 a new market was born in the Pacific Northwest. This year Shell Chemical expects to double deliveries to the Klamath area, and meanwhile has stepped up operations in the dry farming lands of the northeast section of Oregon and the southeast corner of Washington, and farther north and west in Washington's Yakima Valley. The dry farming areas, for which Pendleton, Oregon is a center, specialize in grains and peas. The Yakima Valley raises great quantities of irrigated crops, including beans, corn, grapes, hops, cane berries, cherries, apples, peaches and grains.

To service these areas, Shell Chemical has opened a new cylinder and tank filling plant at Yakima with portable filling facilities at Pendleton, Walla Walla and various other points. Ammonia arrives at the plants in tank cars. Supplies for the Klamath area



Shell's largest ammonia cylinder filling plant, above left, is located at Kerman in the San Joaquin Valley. The trucks, above right, are loading cylinders at Shell Point for distribution to farms in the San Francisco Bay and Klamath River areas.

are delivered from Shell Point near Pittsburg, California, by truck.

This expansion in the Northwest extends Shell Chemical's coverage to include the entire Pacific Coast, for the Company is already well established farther south. Distribution first began in California when Shell introduced agricultural ammonia there in 1932. Today thousands of tons are used annually, partly explained by the fact that the Central Valley of California has a growing season of nearly ten months for a wide range of crops.

In the Modesto area, for example, more than 125 crops are fertilized annually with Shell ammonia. Thousands of tons of ammonia are used each season in the Fresno cotton fields and in the Salinas Valley, the "salad bowl" of the nation. Southern California citrus growers are the largest single group of growers using ammonia to increase their yields. The irrigated farms of the Imperial Valley along the Mexican border and the Salt River Valley in Arizona have depended upon ammonia for years to grow out-of-season produce.

Another reason for the popularity of Shell's anhydrous ammonia is that, in addition to supplying the fertilizer,

Shell agents do the actual application work as well, thus insuring expert usage. This is done through two specialized services: Nitrogation Service* and Nitrojection Service*.

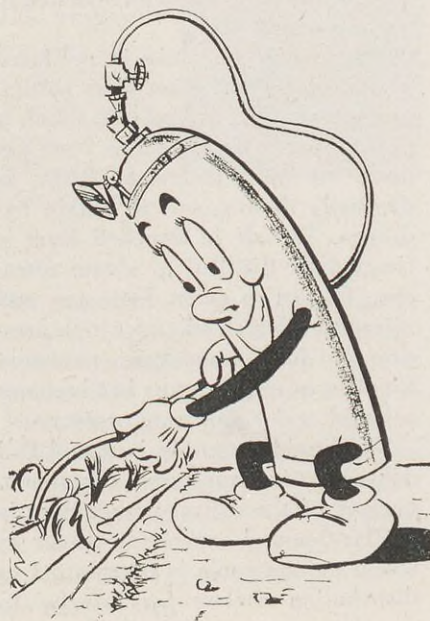
In Nitrogation Service, the ammonia is applied to irrigation water and distributed uniformly through-

out the field or orchard. When a farmer buys ammonia, he indicates the amount, time and place. Shell's agents deliver the "gas" in cylinders to the site, cooperate with the farmer in controlling the irrigation, set up their equipment and manipulate the controls for applying the right amount of ammonia to the irrigation ditches. It takes an average of one to two hundred pounds of ammonia per acre for a typical orange grove.

When hard water is encountered in the irrigation system, Shell offers an exclusive feature in the use of Rosestone*. This chemical prevents certain solubles in the irrigation water from becoming insoluble, settling in the underground line and clogging valves and outlets.

Nitrogation Service is used, of course, only during irrigating seasons. Nitrojection Service supplements it during the rainy seasons and is especially designed for use in nonirrigated farming. In the latter method ammonia is injected directly into the soil with special equipment designed by agricultural engineers. Shell Chemical began experimenting with nitrojection in 1939 and, after delays caused by

Cartoons like the one below help sell anhydrous ammonia to western farmers.

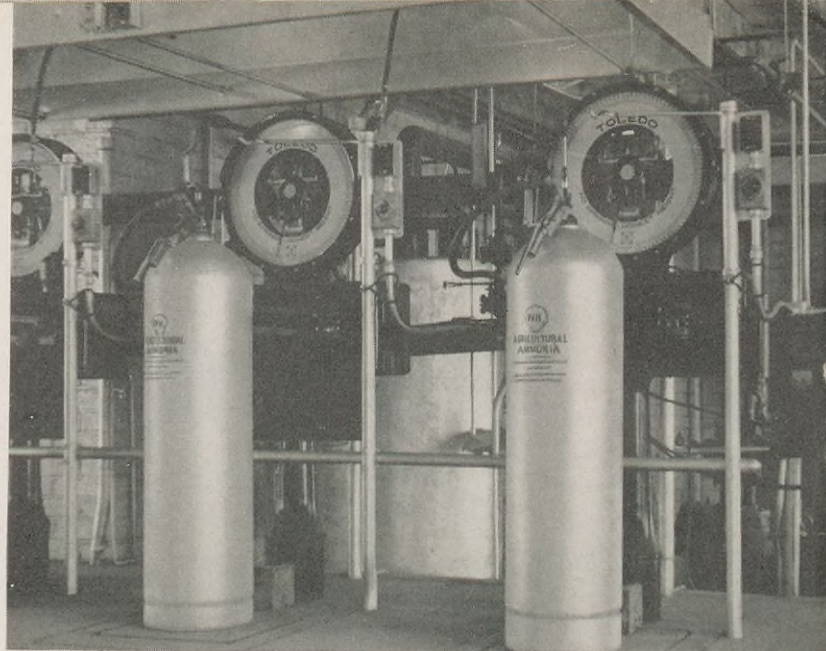


*Trademark Registered, U. S. Patent Office

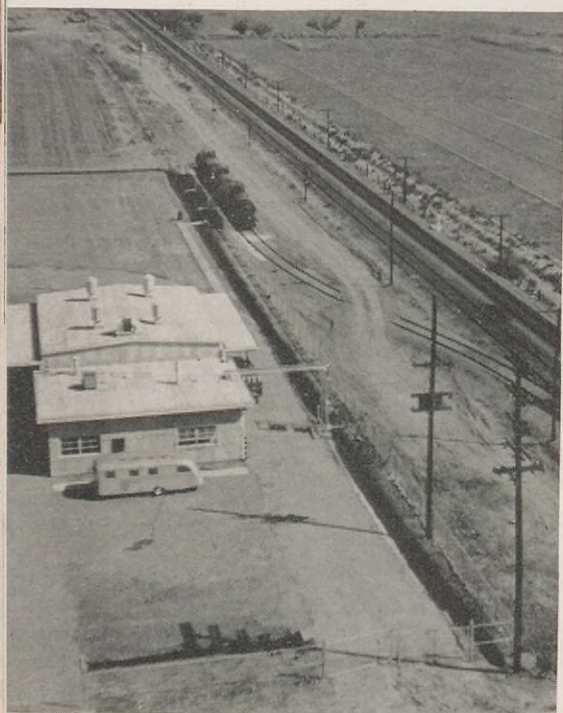
Food For The Earth (continued)



Cylinder filling scales at the Imperial Valley ammonia plant, right, are equipped with photo electric cut-offs which make contents exactly 150 pounds of ammonia.



The Shell ammonia filling plant at Phoenix, Arizona, left, was opened in 1946. Most recent Shell ammonia expansion has been in the fields of the Pacific Northwest around Yakima, Wash., and through most of Oregon.



World War II, put it into commercial use in 1943.

The injection equipment varies with the acreage to be fertilized, but a usual type is a trailer mounting a rack of ammonia cylinders. These are connected by tubes to special cultivator shanks which stab the soil as the trailer is towed behind a tractor. A simple backfilling device closes the openings made by the injector blades as the equipment moves along. The largest rigs have 24 injection blades, spaced out along a 36-foot bar. Using a bulk ammonia tank, such a rig can fertilize up to 200 acres in a day.

A number of engineering developments have been introduced in connection with nitrojection. An important one is a valve metering system which permits accurate regulation of the amount of ammonia injected regardless of temperature or pressure variations. Another development is a side injection blade which attains complete absorption of ammonia into the soil. Shell engineers have also adapted two types of farm equipment to Nitrojection Service—the standard offset double disk and the moldboard plow. These units can accomplish soil preparation and ammonia injection in a single operation.

Anhydrous ammonia is produced at the Shell Point plant from natural gas and air. The natural gas, which is piped directly from the Rio Vista gas fields on the Sacramento River, is thermally decomposed to obtain hydrogen. The air in liquefied form is fractionally distilled to obtain nitrogen. These two gases, hydrogen and nitrogen, are reacted under high pressure to form anhydrous ammonia which is normally a gas but becomes a liquid under moderate pressures.

The liquid ammonia is stored and delivered in pressure containers. Largest of the delivery containers is a 50,000-pound capacity tank car in which the ammonia is transported to distribution centers for transfer to

smaller containers used in the fields. The most widely used field container is a pressure cylinder which holds 150 pounds of ammonia.

As in the field of injection equipment, Shell agricultural engineers have pioneered in the design of safe and efficient pressure containers and in the safety valves and other attachments used with them. They have also made improvements in the equipment and techniques of transferring liquid ammonia from one tank to another, and have developed cylinder filling plants which are among the most efficient of their type. For example, 150-pound cylinders are now filled directly from tank cars and in about two-thirds the time it used to take under former methods. In 1948, Shell Chemical undertook experiments which helped in the development of national safety regulations governing the design and use of pressure containers.

With a safe "wonder fertilizer" at his command, it is easy to understand why the western farmer is turning to Shell when faced with crop problems. Anhydrous ammonia apparently has no equal in producing greater yield and better quality. Ammonia not only brings added income, but helps him in greater production per acre and man hour at a time when food may well be the key to many international problems.

SHELL PEOPLE IN THE NEWS



C. R. PATTERSON, a Production Foreman in the McCamey District of the Midland Exploration and Production Area, was presented the Joseph A. Holmes Medal of Honor and Certificate at a luncheon in Midland on July 10. The presentation was made by Albert A. Munsch, Safety Representative of the U. S. Bureau of Mines.

Patterson received this high honor for heroic action performed September 21, 1949 at Barnett No. B-1 in the Benedum Field during drilling operations. He closed a valve at the drilling head inlet following an explosion and fire when the well blew out.

During drilling operations high pressure gas had been encountered. Heavier drilling mud had been prepared for the purpose of displacing the gas cut mud in the well. While pumping the well full of the new mud a connection in the mud fill-up line failed, and released gas under the rig floor. Patterson, along with J. C. Smith, Drilling Superintendent for the Midland Area, and J. D. Moren, Driller in the McCamey District, rushed under the floor to close a valve at the drilling head inlet. By this time a large amount of gas had escaped, which was ignited by an unknown source. The flash explosion knocked the three men to the ground. They all suffered severe shock and burns ranging from first to third degree.

A slug of drilling mud forced from the well effected a momentary throttling of the fire. At this time Patterson, despite his injury, got up and made his way to the well head and closed the valve, thereby extinguishing the flames.

This timely action by Patterson doubtless saved not only his own life but that of Smith, Moren and possibly others at the well site.

H. J. OLYMPIUS has been named Manager of the Stores Department at the Wood River Refinery of Shell Oil Company. Trained in purchasing and stores control at the University of Southern California, Mr. Olympius began his Shell career in the Los Angeles Marketing Division in 1924. In the years that followed he held a number of sales and purchasing positions in the Los Angeles Division and in the Los Angeles Regional Office. Appointed Manager of the Stores Department of the Wilmington Refinery in 1947, Mr. Olympius held this position at the time of his new assignment.



W. H. MEISSNER has replaced H. J. Olympius as Manager of the Stores Department at the Wilmington Refinery. Mr. Meissner came to Shell Oil Company in 1941 as a priority clerk in the Purchasing-Stores Department in New York Head Office. He was appointed Senior Clerk at that location three years later and in 1946 was transferred to the Albany Marketing Division as Purchasing-Stores Supervisor. Moved to the St. Louis Marketing Division in the same capacity the following year, Mr. Meissner served there until his new assignment.

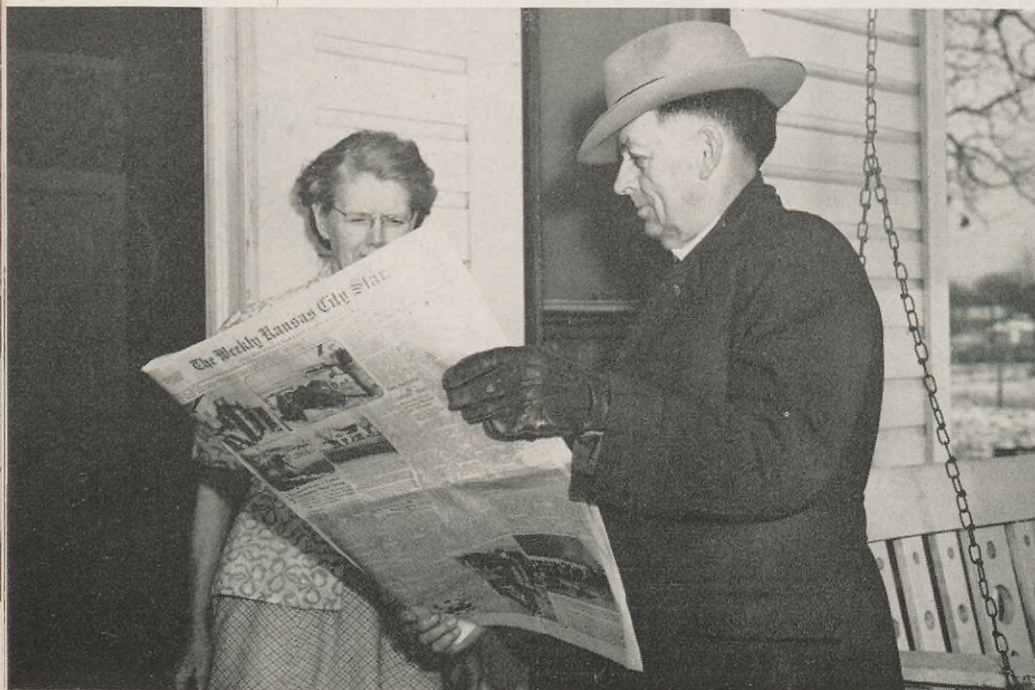


New Products Pipe Line in Ohio

Shell and The Standard Oil Company (Ohio) have organized a new pipe line company to acquire Sohio's eight and six-inch line between Lima and Toledo, Sohio's six-inch line between Springfield and Dayton, and Shell's six-inch line from Lima to Springfield and Columbus. In the past, each company has been making shipments through the other's lines under contract, and the new arrangement has been made to assure continuation of pipe line transportation for both to the various pipe line terminals. The new company, Essaness Corporation, is jointly owned and managed. No personnel transfers will be involved as Shell and Sohio will continue to operate the pump stations and maintain and service the lines as at present.

For the past year there has been insufficient capacity in the six-inch line from Lima to Springfield, and a new eight-inch pipe line costing approximately \$1,300,000 is to be constructed between these two points. Shell will supervise the construction of the new line, and will maintain and service it after completion.

PLANNED RETIREMENT:



He's Sold On It

ROY WAGNER always thought he had a knack for selling. But he liked the kind of work he had with Shell and stayed 19 years—until May 1947, when he retired as General Clerk of Shell Pipe Line's Mid-Continent Area Office in Cushing.

Today Mr. Wagner, or Wag, as he is better known, has achieved his ambition. He has become a salesman. Not only that, he's his own boss. In his leisure he sells real estate and magazine and newspaper subscriptions.

Wag achieved this ideal situation because long before he left Shell Pipe Line Corporation he and his wife started planning a profitable program that would keep them active during retirement. They investigated a number of types of business that would give Wag the selling opportunity he wanted. Then, Roy and Mrs. Wagner concluded that his early law background fitted him for the real estate business.

With their decision made, they began week-end trips into neighboring states, looking for a prospective location for a real estate business. They found it in Gravette, Arkansas, a pleasant little town of 600 people in Benton County. This farming community in the foothills of the Ozarks offered all the things they were searching for—beautiful country, friendly people, good farmland, and prospects for developing the kind of real estate business they wanted. Two months before retiring, Wag closed the deal for property and other assets and the Wagners were ready to go into business.

As Wag puts it "We turned over a few 'rocks' in our backyard to wrap up the deal without touching our Provident Fund."

The Wagners were busy from the beginning. They had a cottage and a small one-room office building, both on a 10-lot tract in Gravette. They re-

A fondness for dealing with people makes Roy Wagner a natural salesman, consequently the transition from his Shell job was easy. Here (above left) he sells a newspaper subscription to a neighbor. Roy and Mrs. Wagner (above) show J. L. Mooney (r) Shell Pipe Line's Mid-Continent Area Personnel Representative, around their place.



Foresight, Planning and a Desire to Try His Hand at Salesmanship Enable Roy Wagner to Deal Successfully In Real Estate and Magazine Subscriptions

modelled these and put in a big garden. For the past four seasons, there have been plenty of vegetables and strawberries.

Before opening the real estate business formally, Wag interviewed the leading citizens of the town and surrounding farms. The local newspaper published a feature story about him. He finds now, that he can successfully kill two birds with one stone quite frequently while making excursions about the country-side selling subscriptions to magazines and newspapers. He can at the same time let the farmers know where to turn when they want to sell or buy land. Sometimes it works the other way around. While calling on a client about real estate, Wag can also interest him in a subscription.

Part of the money for each of the subscriptions Wag sells goes to a local veterans' organization to buy wheel chairs and other equipment for veterans' hospitals. Making a sale isn't always easy, however—one of the strongest arguments of would-be subscribers being that there isn't any money in the house.

On one occasion a farm woman finally relented after insisting there was no money in the house, saying: "I think we do have some money in Sonny's piggy bank." She returned with a twenty dollar bill—which Wag says only goes to prove that they raise fat pigs in Arkansas.

Both Mr. and Mrs. Wagner are active in civic organizations and church affairs. He sings in the Methodist church choir and she is a member of several clubs. In addition, having fulfilled his ambition to sell, Wag now wants to satisfy another latent urge of long standing—to play the piano. He really means it when he says that he wants to stay out of the "rocking chair brigade."

Successfully running both of his businesses still leaves Mr. Wagner plenty of leisure time. He and Mrs. Wagner (below) engage in one of their favorite pastimes—gin rummy. Below right, the Wagners are shown with a friend in front of their house. Remodeling the house and planting a garden were among their first projects after retirement.





The twenty-first and twenty-second in a new series of organization charts

Shell Oil Company

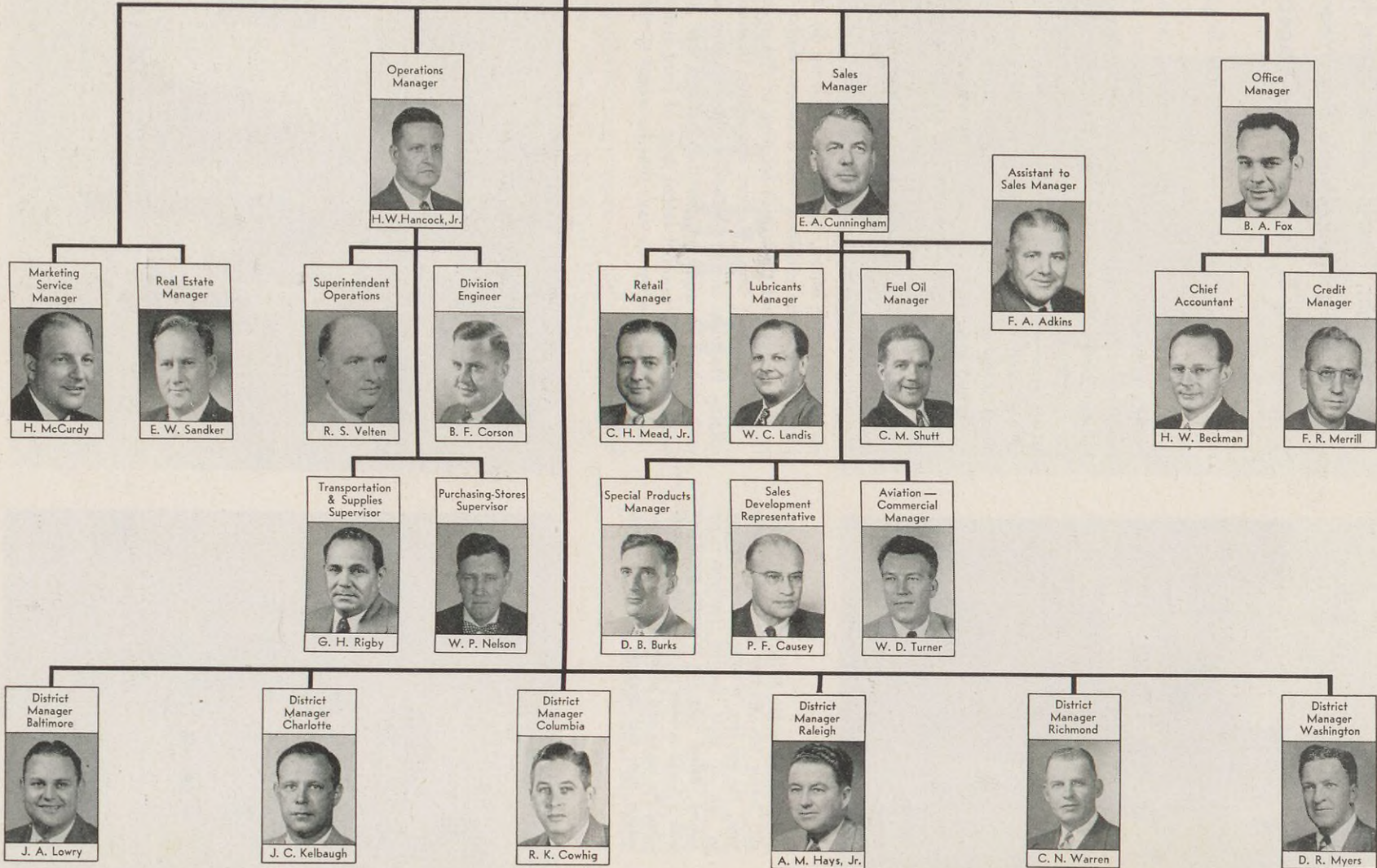
September—1950

BALTIMORE MARKETING DIVISION ORGANIZATION CHART

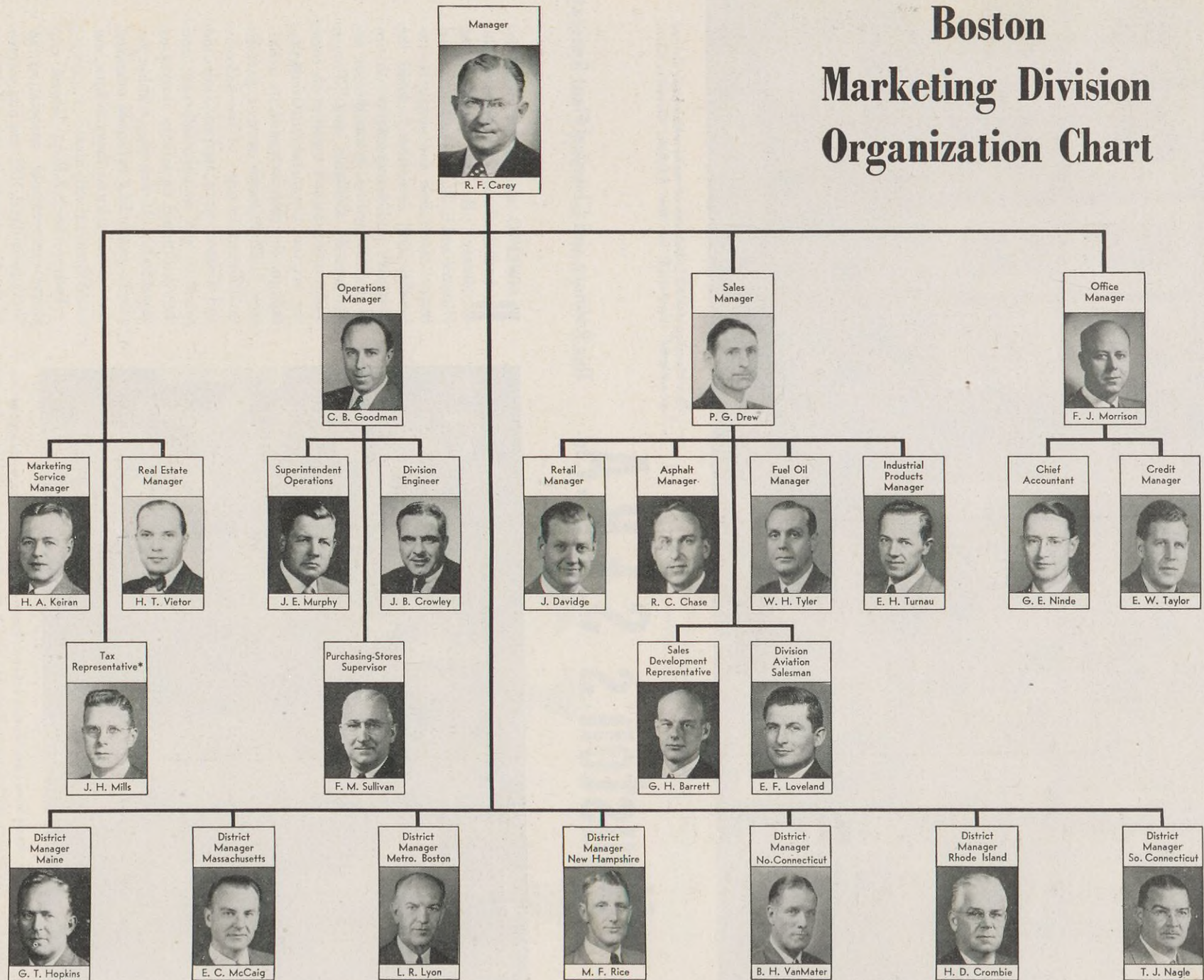
Manager



R. D. Kizer



Boston Marketing Division Organization Chart



* Boston & Albany Divisions



This Houston exhibit is but one of many which have gained a national reputation for the S.E.R.A. Camera Club.

Houston's S.E.R.A.

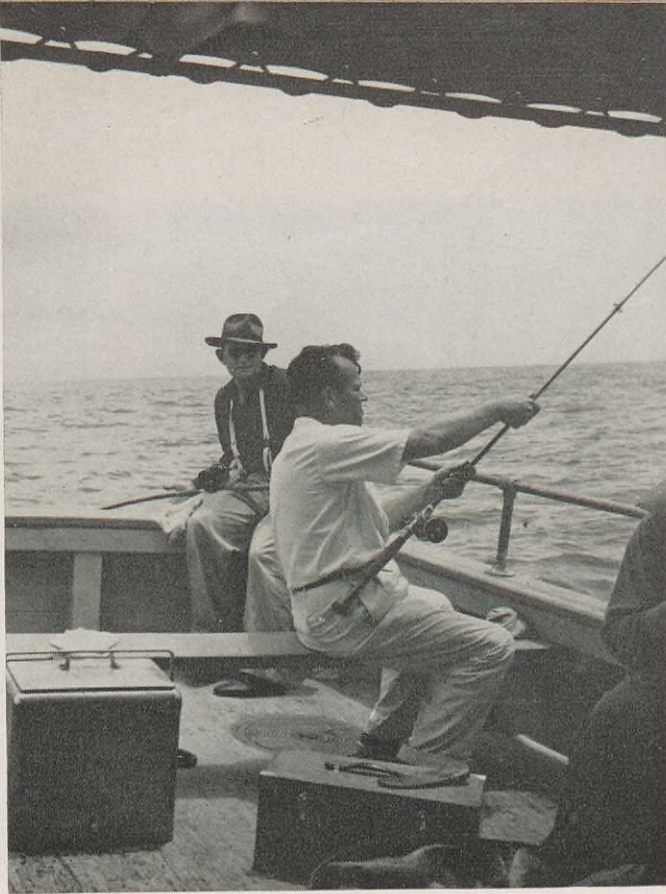
This Refinery and Chemical Plant Recreation A



The Shell Employee Recreation Association's huge open-to-the-public square dance in the Houston City Auditorium netted more than \$4,100 for the Polio Fund of Harris County.

BOWLING was the big activity back in 1943 when Houston Refinery's R. H. Haldane, Fay Hilliard and C. R. Brockmeyer started their "association for employee fellowship and recreation." Amid the shortages and transportation tie-ups of that war period, it was the one activity easily available, and, 70 men and women joined together to form the original organization. Gradually, though, the club extended its activities. Softball teams were organized in different sections of the Refinery and leagues were formed. Golf and social events quickly followed, and the additional activities increased membership. It was like a chain reaction; expanding activities attracted more members and they, in turn, demanded more activities.

Today, the S.E.R.A., largest employee recreational association in Shell, provides 2,100 men and women in the Houston Refinery and Chemi-



Frequent excursions to the Gulf of Mexico, feeding grounds of the red snapper, highlight the popular fishing activities.



"Dedee" Blackham puts the finishing touches on one of the finer canvases to come from the Association's Art Club.

Association is Typical of Many in Shell

cal Plant with an almost inexhaustible list of things to do. Some, like the picnic held last June, are annual events. Others, particularly golf, swimming, fishing and other sports are seasonal activities. Still others . . . the dances, parties, and numerous club meetings and contests . . . go on all year long. The pictures on these pages show some of the more popular activities.

Now in its eighth year, the S.E.R.A. has an Executive Committee composed of ten members plus the immediate past Executive Chairman. The members of this committee, which is elected by a popular vote of the membership, appoint a Business Manager, Secretary-Treasurer, and Chairman of the Finance Committee. Serving as Business Manager in 1950 is A. D. Dunaway; Wendy Groves is Secretary-Treasurer, and Jack Bell is Chairman of the Finance Committee.



Fifteen to twenty foursomes tee off regularly in the once-a-month golf tournaments played over municipal courses in Houston.

Thelma Swanson, left, > and Juanita Price registered the 2,000th S.E.R.A. member, R. W. White of the Shell Chemical Plant on May 17, 1950.

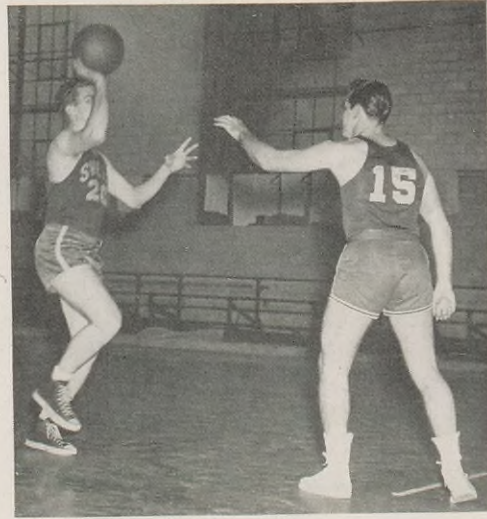


Children's games (such as the one pictured below) and numerous contests for adults were features of the annual barbecue and picnic held in June. Miss Gayle Harlan (left) was crowned Miss S.E.R.A. of 1950 in the Association's first beauty contest.





^ The Shell Oilers are an annual powerhouse in semi-pro baseball circles in the Houston vicinity. S.E.R.A. softball and amateur baseball teams are also strong in their leagues.

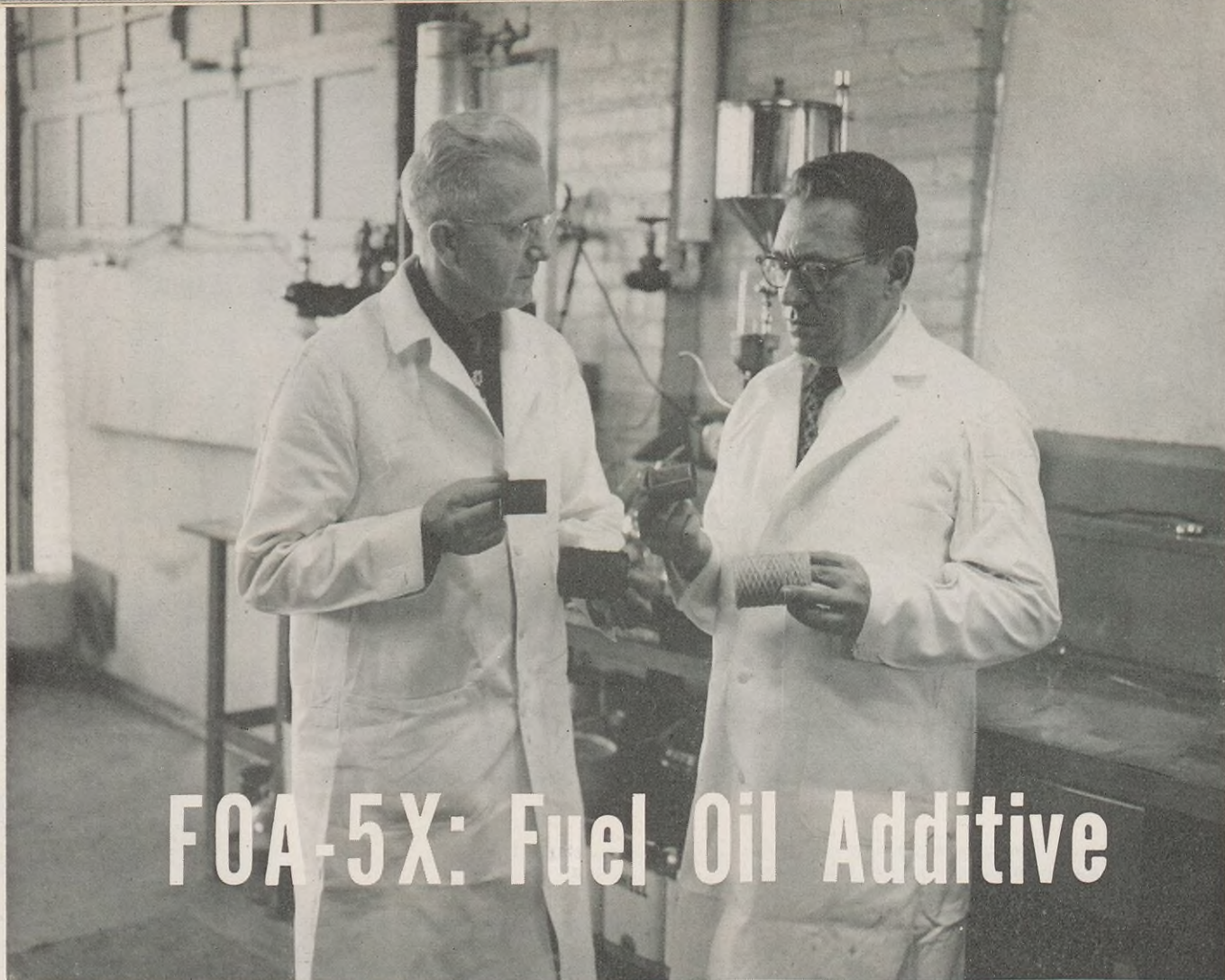


^ Grover Noonan (20) and Jack Minter are two of the players who make the S.E.R.A. basketball team a strong contender in the Houston and Pasadena city league.



S.E.R.A. women members > and wives of members were entertained recently in the Empire Room of the Rice Hotel in Houston, at a luncheon and style show. The event is sponsored annually by the Association.





FOA-5X: Fuel Oil Additive

Shown above, in Sewaren's P.A.D. Laboratory where FOA-5X was developed, are E. B. Glendenning (left), Manager of the Laboratory and C. Wies, Chief Chemist in the Control Laboratory.

TO thousands of fuel oil users across the country FOA-5X is more than a marketing catch word for Shell's new additive to fuel oil—to them it means a virtual end to clogged filter screens, the most common cause of oil burner shutdowns requiring emergency service.

In almost all home heating fuel oils there are substances which under certain conditions may form deposits on the fine wire mesh of oil burner filter screens. The new additive is designed specifically to prevent the formation of such deposits, so that with ordinary summer maintenance the screens will remain clean during an entire heating season.

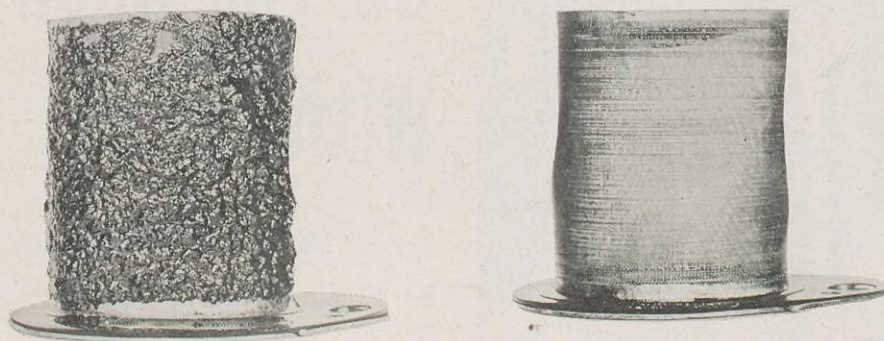
The problem of clogged filter screens has been annoying, to a varying degree, since the oil heating industry began. Prior to the war, oil companies were manufacturing home heating oils which were either

Shell Fuel Oil Containing New Additive Gives Better Performance in Home Heating Units.

straight-run or a blend containing very little cracked products. But with the advent of the war, catalytic cracking was widely adopted to meet the demand for high-octane aviation gasoline. The most desirable raw materials for the catalytic cracking units were found to be the distilled straight-run products, formerly making up the bulk of burner fuel oils. Since catalytic cracking is still widely used in manufacturing today's high-octane gasolines, the volume of straight-run stocks available for fuel oil has been greatly reduced. Fortunately, there is a distinct advantage to fuel oils containing cracked products—they have

a greater weight per gallon and consequently more heat value when burned. But at the same time these fuel oils sometimes cause trouble in domestic heating units by forming sludge with resulting line, screen and nozzle clogging. This is the problem for which Shell researchers were seeking a "cure."

During the 1945-46 heating season complaints of filter cloggings rose sharply. However, in 1944 Shell had discovered the "germ" which caused the infinitesimal substances to clot and clog up. The following year FOA-5X was developed, culminating 10 years of research during which time four



Filter screen on left was covered with sludge after one month's operation with ordinary fuel oil. Screen on right was perfectly clean after entire season's operation with fuel oil containing new additive FOA-5X.

major attempts to find the right additive had met with little success. Thus, as each major attempt involved an additive of a different formula, FOA-5X got its name—a laboratory hold-over standing for "Fuel Oil Additive-5th Formula."

After laboratory tests with the new additive showed promising results, field tests were conducted in several of the country's principal oil-burning areas. The tests substantiated laboratory findings. In burners where FOA-5X was used, sludge deposits did not appear. Under the same test conditions with ordinary oils, the main line strainers and nozzle screens were in many cases completely plugged after less than a season's operation.

Fuel oil containing FOA-5X has been so successful that by the end of

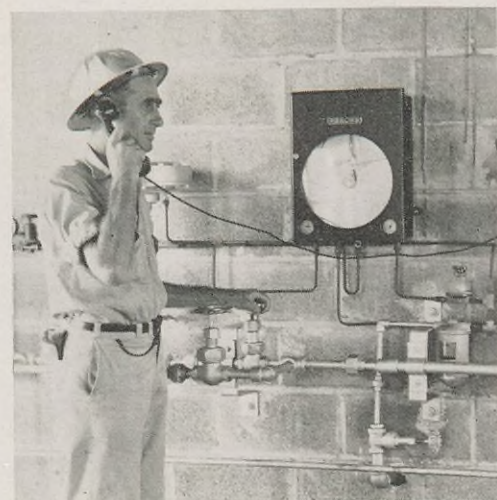
last year Shell could say that thousands of domestic installations had used the new fuel oil without one single case of oil burner failure because of filter screen clogging being reported.

Another outstanding characteristic of FOA-5X is that it retards the formation of rust, scale and sludge inside home and commercial storage tanks. Recently at Sewaren Terminal a 110,000 barrel tank which had been in fuel oil service for 2 years was opened to be cleaned because of a change-over in product storage. The tank was in very good condition with respect to cleanliness. Sludge depth was estimated to be an average of $\frac{1}{4}$ "— $\frac{1}{2}$ ", whereas ordinarily a depth of 4"—6" would be expected after a similar length of service.

Exactly what comprises FOA-5X is of course a Company secret. Shell has a patent pending on the additive and it is expected the patent will be granted in the near future.

Much of the credit for the development of FOA-5X goes to the groups in Sewaren's Products Application Development Laboratory, its Control Laboratory and to the personnel conducting the P.A.D. field tests. With the largest fuel oil and oil burner laboratory in the U. S. at their disposal, Shell scientists in the Products Application Development Laboratory have made many contributions to the oil and oil burner industries. For it was here also that the Shell Combustion Head was developed, a device which when installed on a domestic oil burner will effect a fuel oil saving of over 20 per cent.

FOA-5X which may prove as important to the domestic heating field as tetraethyl fluid is to gasoline, is another example of value received from Shell's continuing research program.



Carol Landry, Norco Refinery Gauger, prepares to set the controls for injecting FOA-5X into a wharf loading line, through which No. 2 fuel oil is being pumped to a tanker.

W. A. Sullivan (left), Senior Engineer, New York Head Office, and E. B. Glendenning, inspect bulk plant loading line filter cartridges at Sewaren, previously changed each million gallons, now still clean after passing 13,000,000 gallons of FOA-5X fuel oil.

On The Road With Rover

Travel With Your Dog Can
Be Pleasant and Comfortable
If You Follow Sensible Rules

Dogs are better travelers than many human beings, in the opinion of Carol Lane, Woman's Travel Director of the Shell Touring Bureau. An old hand at making travel more comfortable for people and pets, Miss Lane has rounded up a group of practical suggestions for canine comfort on the road.

If you discipline Rover, and treat him with elementary consideration, you'll never find him in the position of running—or ruining—your trip. Regular exercise and proper diet will keep him healthy and make him less restless while you're at the wheel. Most restaurants are willing to give table scraps for pets, and Miss Lane, as shown at left, uses paper or wax bags to carry the scraps back to the car.

Here's what you need to keep Rover happy: a supply of his favorite dog biscuit, an indestructible bone to chew, a sweater or coat for rough weather, an oversize collar tag, disinfectant, collar and leash, currying comb and brush, flea powder and a water and food dish.

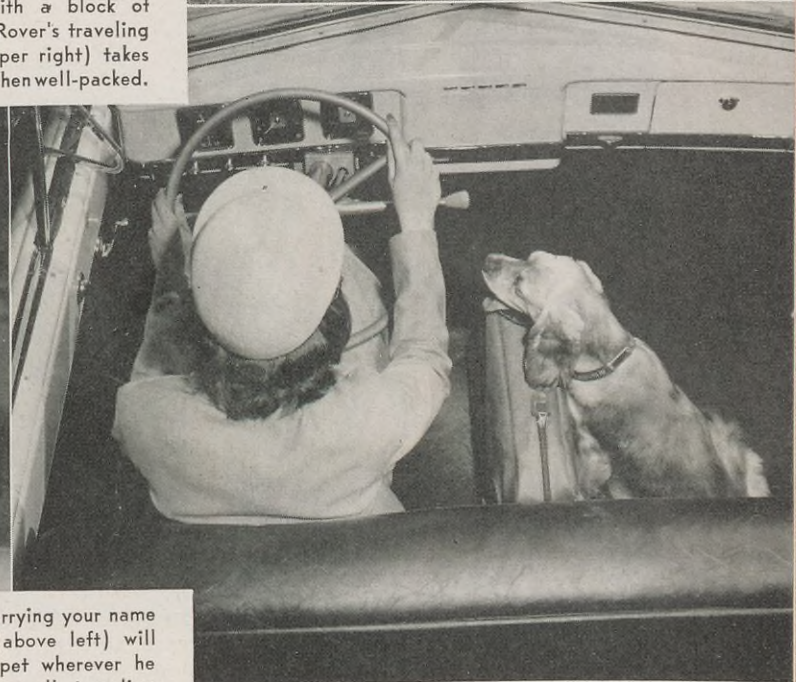
You'll find it fun to have your pet accompany you to faraway places. And the travel tips pictured on the opposite page will help smooth the way for a pleasant journey.

When the windows are down, don't leash >
your pet to the steering wheel; he may slip
out the window and hang himself. It's better
to leave the dog free, with the windows open
just enough for air. For rainy days and cool
nights, a combination blanket and rain cape
(far right) helps keep the pup warm and dry.





At night, you can put your dog in the luggage compartment (upper left) and prop the cover open with a block of wood, for air. Rover's traveling equipment (upper right) takes up little space when well-packed.



A trunk tag carrying your name and address (above left) will identify your pet wherever he may stray; a small traveling bag (above right) will keep him away from the driver, a most important safety factor.



They Have Retired



A. A. BARNES
Wood River Refinery
Engineering



L. T. BURLINGAME
Tulsa Area
Exploration



C. L. BLEVINS
Martinez Refinery
Cracking



P. P. CZERKAS
Products Pipe Line
East Chicago, Ind.



R. R. FIFIELD
Boston Division
Operations



EARL GILES
Tulsa Area
Production



E. J. JONES
Wood River Refinery
Engineering



JOSEPH MARINO
Norco Refinery
Laboratory



S. W. MUSGROVE
Shell Pipe Line Corp.
Texas-Gulf Area



J. A. NELSON
Seattle Division
Operations



F. R. RICHARDS
Sacramento Division
Operations



W. J. ROUSSEL
Norco Refinery
Engineering



C. B. STOTTS
Tulsa Area
Production



C. W. VINEYARD
Shell Pipe Line Corp.
Mid-Continent Area



W. D. WALL
Wood River Refinery
Engineering



J. S. WILHOIT
Shell Pipe Line Corp.
Mid-Continent Area



ERWIN WOODWARD
Products Pipe Line
Doraville, Ga.



W. S. WRIGHT
Wood River Refinery
Engineering

coast to coast



To climax one of its most successful seasons, the baseball team of Shell Development Company's Laboratories at Emeryville, California, captured the 1950 Oakland Industrial Athletic Association CC-League championship by winning all seven of its league games.



Enjoying the Houston Exploration and Production Research Laboratory's open house were, left to right, adults Frank Lozo, Jaimie Laverde and Bob Nanz, and children Ellen Lozo, Jane Lozo, Rickey Lozo and Michael Laverde, who found the microscopes intriguing.

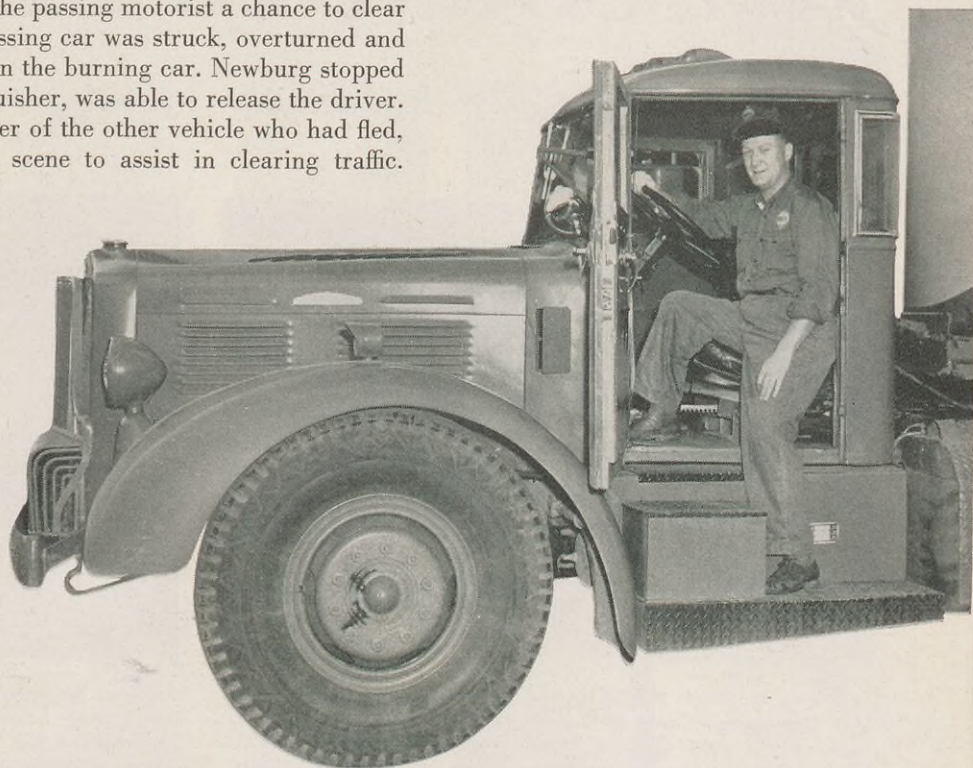


Ten-and-Over employees of Shell Chemical Corporation's Dominguez Plant held their annual service award banquet this year at Mike Lyman's famous Hollywood Restaurant. Afterwards, the group was taken to the American Legion Hollywood Stadium to watch prize fights.



Pictured at a recent dinner-business meeting are the administrators of Shell's Kilgore, Texas, Credit Union. From left: M. J. Kramer, J. C. Tucker, F. P. Cline, John Strawn, F. E. Wertz, O. O. Morgan, J. B. Watson, C. E. Slater, B. D. Beasley, R. G. Akers and F. Powell.

DONALD NEWBURG, Detroit Marketing Division Driver Salesman, has been cited by the Michigan Trucking Association. Last May, Mr. Newburg was driving a petroleum transport from Flint to Detroit. Going over a hill near Clarksburg Junction he noticed he was being passed by a car from the rear. At the same time a speeding car approached from the front weaving from side to side. Newburg braked and pulled over to the right to give the passing motorist a chance to clear the oncoming car. However, the passing car was struck, overturned and caught fire. The driver was pinned in the burning car. Newburg stopped his truck and, after using his extinguisher, was able to release the driver. He helped police search for the driver of the other vehicle who had fled, and then returned to the accident scene to assist in clearing traffic.



CLIFFORD B. O'HARA of the Traffic Department, Transportation and Supplies, in the New York Head Office of Shell Oil Company, has been awarded first prize of \$500 in the New York Railroad Club's second "Roy V. Wright Prize Competition." The contest is held annually for essays relating to various important transportation subjects.

At the recent Open House of the Martinez > Refinery control laboratories, B. E. GORDON, Research Technologist, drew a large crowd with his unusual demonstration of the radioactivity of a wrist watch. More than 300 employees, their families and friends, attended the affair, first of its kind to be held at Martinez.

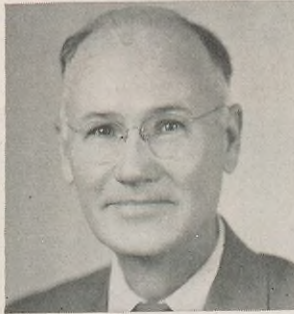




Service Birthdays



Thirty Years



J. T. BUTTS
Tulsa Area
Gas



F. S. CLULOW
Head Office
V. Pres.—Manufacturing



L. C. GEILER
Shell Pipe Line Corp.
Head Office



J. B. HOWELL
Production
Pipe Line Div. (Calif.)



L. A. JONES
Sacramento Division
Sales



J. D. MATHESON
Martinez Refinery
Engineering



C. F. MERANDA
San Joaquin Division
Production



IVAN THOMAS
Martinez Refinery
Engineering



F. M. WEST
Wood River Refinery
Railroad Section

Twenty-Five Years



W. W. AMOS
Seattle Division
Operations



A. G. ANDERSON
Martinez Refinery
Cracking



J. O. AVERY
Seattle Division
Sales



R. L. BEDWELL
Wood River Refinery
Compounding



M. E. BENNETT
Los Angeles Basin Div.
Production



A. H. BERENDSEN
Production
Pipe Line Div. (Calif.)



MAX BIRKHAUSER
Los Angeles Office
Exploration



C. R. BITTING
Los Angeles Basin Div.
Production



J. S. BLANCHARD
Norco Refinery
Dispatching



A. C. BOTT
Wood River Refinery
Control Laboratory



J. R. BRASHIER
Norco Refinery
Treating



A. A. BROWN
Wilmington Refinery
Engineering



O. W. BROWN
Atlanta Division
Sales



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



W. H. CLARK
Los Angeles Office
Treasury



W. B. CRANE
Tulsa Area
Production



GEORGE DAVIDSON
Head Office
Manufacturing



S. W. DICK
Wilmington Refinery
Cracking



O. A. DODSON
Wilmington Refinery
Distilling



M. W. DORE
San Francisco Office
Marketing



SELWYN EDDY
New York Division
Manager



H. A. EICHEN
Wood River Refinery
Lubricating Oils



H. B. ELLIOTT
Wood River Refinery
Engineering



G. H. FELDMILLER
Shell Pipe Line Corp.
Mid-Continent Area



J. R. FERGUSON
Wood River Refinery
Engineering



F. R. GIBSON
Wood River Refinery
Cracking



R. C. GORDON
St. Louis Division
Treasury



W. E. HARPER
Wood River Refinery
Dispatching



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



G. C. HILL
Martinez Refinery
Cracking



VIRGIL HOUTS
Los Angeles Basin Div.
Production



G. C. HUEY
Martinez Refinery
Dispatching



G. S. IRWIN
Houston Area
Exploration



J. C. JOHNSON
Los Angeles Basin Div.
Production



R. T. JOHNSTON
Tulsa Area
Production



H. B. KEATING
San Francisco Office
Manufacturing



C. L. KEITH
Los Angeles Basin Div.
Production



F. O. KING
Wood River Refinery
Engineering



J. W. KING
Tulsa Area
Production



A. C. LANDECHE, Sr.
Norco Refinery
Utilities



L. F. LONGMAN
Wood River Refinery
Dispatching



MARIO LOPES
Martinez Refinery
Engineering



A. J. LORENZINI Shell Chemical Corp. Western Division
 S. H. OATWAY Los Angeles Office Administrative
 OTTO OWENS Wood River Refinery Utilities
 J. H. PARKER Shell Pipe Line Corp. Mid-Continent Area
 LOUIS PEREIRA Martinez Refinery Distilling
 C. V. POWELL Shell Pipe Line Corp. San Francisco Office
 L. I. RENNER Marketing



F. B. RODGERS Seattle Division Operations
 R. M. SAVAGE Wilmington Ref'y Engineering
 J. A. SMITH Wood River Ref'y Utilities
 G. J. SPRUILL Head Office Manufacturing
 I. E. STULL Wood River Ref'y Utilities
 G. L. WADE Wood River Ref'y Cracking
 C. H. ZIMMERMAN St. Louis Division Operations

SHELL OIL COMPANY

Head Office

20 Years

A. Taylor *Marketing*

15 Years

H. A. Buss *Treasury*
 T. D. May, Jr. *Transportation & Supplies*

10 Years

Mae J. Dennison *Personnel*
 Ellen V. Dickson *Personnel*
 P. J. Downey *Treasury*
 Rowena J. Easop *Treasury*
 R. O. Ford *Transportation & Supplies*
 Marion E. Gleason *Treasury*
 Helen C. Goldfuss *Personnel*
 Ruth S. Hawes *Transportation & Supplies*
 Johanna W. Huth *Treasury*
 Katie Janassen *Treasury*
 Genevieve M. McKeon *Personnel*
 Amelia M. Myskow *Marketing*
 Mary J. Raftery *Transportation & Supplies*
 Dorothy F. Schmidt *Manufacturing*
 W. G. Schnetzer *Transportation & Supplies*

San Francisco Office

20 Years

Sally H. McGowan *Purchasing-Stores*
 W. B. Stuebinger *Treasury*

Exploration and Production

HOUSTON AREA

20 Years

V. W. Spangler *Gas*

15 Years

E. M. Elrod *Production*
 H. M. O'Connor *Land*
 L. D. Potter *Production*

MIDLAND AREA

15 Years

H. B. Brooks *Production*
 L. W. Deets *Production*
 M. O. Gibson *Exploration*
 W. E. Owen *Production*

10 Years

H. J. Jauz *Production*

NEW ORLEANS AREA

15 Years

F. G. Broussard *Production*
 I. J. Duval *Production*
 F. J. Marcantel *Production*
 P. S. McClure *Exploration*
 J. C. Witherwax *Production*

10 Years

A. D. Aitken, Jr. *Production*
 J. C. Brown *Production*
 C. F. Hymel *Production*
 B. Retzlaff *Production*

TULSA AREA

15 Years

L. Alley *Production*
 E. A. Davenport *Production*
 G. D. Lambert *Exploration*

R. C. Linke *Production*
 H. A. Meljo *Production*
 J. E. Orrell *Production*
 E. Richter *Production*
 M. W. Sieker *Production*
 J. G. Voelm *Exploration*
 F. A. Wagner *Exploration*
 D. S. Wartick *Production*
 A. H. Wieder *Production*
 Yolonde Wilson *Treasury*

10 Years

S. L. James *Exploration*

LOS ANGELES REGIONAL OFFICE

20 Years

L. L. Bartron *Production*

10 Years

R. W. Hester *Personnel & Ind. Relations*

LOS ANGELES BASIN DIVISION

10 Years

L. E. Eubanks *Production*

EXPLORATION AND PRODUCTION

RESEARCH

15 Years

N. D. Smith, Jr. *Administrative*

Manufacturing

HOUSTON REFINERY

15 Years

Cathrine V. Barbe.....*Treasury*
T. L. Massey.....*Utilities*
J. L. Murphy.....*Research Laboratory*
E. D. Williams.....*Engineering*

10 Years

C. W. Reid.....*Distilling*

MARTINEZ REFINERY

10 Years

M. M. Cunha.....*Compounding*
R. S. Urner.....*Research Laboratory*
N. B. Wilson.....*Research Laboratory*

NORCO REFINERY

20 Years

L. Decoteau.....*Personnel & Ind. Relations*
A. E. Haydel.....*Engineering*
J. K. Jackson.....*Engineering*

15 Years

H. A. Cassagne.....*Engineering*
J. L. Sellers.....*Cracking*

WILMINGTON REFINERY

15 Years

J. E. Whittaker.....*Engineering*

WOOD RIVER REFINERY

20 Years

J. Kerwin.....*Engineering*
R. R. Ruedin.....*Control Laboratory*
G. Rozum.....*Engineering*

15 Years

R. L. Autery.....*Engineering*
L. C. Enloe.....*Gas*
A. W. Hamm.....*Compounding*
W. G. Kovarik.....*Engineering*
J. G. Ryan.....*Research Laboratory*
R. G. Schaller.....*Cracking*
J. A. Stricklin.....*Compounding*
V. F. Walker.....*Experimental Laboratory*

10 Years

N. J. Arnold.....*Engineering*
W. D. Groves.....*Lubricating Oils*
W. H. Lamkin.....*Control Laboratory*
A. J. Rosy.....*Engineering*
D. J. Shaffer.....*Utilities*
D. H. Young.....*Treasury*

Marketing Divisions

20 Years

C. M. Simpson.....*Atlanta, Operations*
G. F. Legg.....*Boston, Operations*
E. H. Small.....*Boston, Marketing Service*
J. F. Lyng.....*Chicago, Sales*
H. A. Schlosser.....*Chicago, Operations*
J. C. Harper.....*Cleveland, Sales*
J. B. Crittenden.....*Detroit, Operations*
S. Cummings.....*Indianapolis, Treasury*
F. Lengenfelder.....*New York, Operations*
J. J. Lengenfelder.....*New York, Operations*
E. C. Martin.....*New York, Operations*
J. S. Bally.....*Portland, Sales*
C. F. Abbott.....*St. Louis, Treasury*
D. G. Gascoigne.....*St. Louis, Operations*
P. A. Houser.....*St. Louis, Sales*
R. S. Mitchell.....*St. Louis, Manager*
C. M. Williamson.....*St. Louis, Operations*

15 Years

B. Alexander.....*Atlanta, Treasury*
R. D. Armsbury.....*Atlanta, Sales*
C. C. Hurst.....*Baltimore, Sales*
Dorothy L. Muirheid.....*Baltimore, Sales*
W. F. Reynolds.....*Baltimore, Operations*
L. J. Cooley.....*Boston, Operations*
E. P. Rumann.....*Chicago, Operations*
L. G. Norton.....*Detroit, Marketing Service*
W. D. Ramsey.....*Indianapolis, Sales*
D. H. Evans.....*Portland, Sales*
D. S. Schlegel.....*Sacramento, Treasury*

10 Years

R. D. Bettman.....*Albany, Sales*
A. Z. Gdula.....*Albany, Sales*
A. M. Haigney.....*Albany, Treasury*
H. C. Haralson.....*Atlanta, Treasury*
Fern D. Moonaham.....*Baltimore, Treasury*
H. D. Vandenberg.....*Chicago, Sales*
R. W. Saporà.....*Cleveland, Sales*
K. J. Downing.....*Detroit, Marketing Service*
W. A. MacLaurin.....*Detroit, Sales*
C. O. Sherer.....*Indianapolis, Operations*
N. O. King.....*Los Angeles, Treasury*
J. K. Mraz.....*Los Angeles, Operations*
R. A. Mannix.....*New York, Treasury*
W. J. McGloin.....*New York, Sales*
C. B. Pierce, III.....*New York, Sales*
L. M. King.....*Portland, Operations*
Florence Reverman.....*Portland, Treasury*
W. H. Harrison.....*Sacramento, Operations*
J. S. Smith.....*Sacramento, Treasury*
T. F. Kremer.....*St. Louis, Purchasing-Stores*
D. W. Nichols.....*St. Louis, Operations*
C. I. Wade.....*San Francisco, Sales*

Products Pipe Line

20 Years

H. Eaton.....*Fall River, Mass.*
R. E. Rieffer.....*Carlinville, Ill.*

10 Years

L. J. Ferrari.....*East Chicago, Ind.*

Sewaren Plant

10 Years

A. C. Jensen.....*Terminal*

SHELL CHEMICAL CORPORATION

20 Years

A. J. Ricketson.....*Shell Point*
H. S. Thomson.....*Shell Point*

15 Years

A. O. Newman.....*Shell Point*
I. I. Shultz.....*Head Office*
A. K. Vance.....*Dominguez*

10 Years

M. B. L. Butler.....*Houston*
R. A. Lewis.....*Dominguez*
J. Tenconi.....*Martinez*

SHELL DEVELOPMENT COMPANY

15 Years

L. C. Anderson.....*Emeryville*
H. K. Caldow.....*Emeryville*
D. B. Lutten, Jr.....*Emeryville*
K. E. Marple.....*Emeryville*
R. H. Stewart.....*Emeryville*
W. H. Thurston.....*Emeryville*
C. H. Wilcoxon, Jr.....*Emeryville*

10 Years

R. L. Herrin.....*Emeryville*
E. D. Katona.....*Emeryville*
Eleanor J. Wayne.....*San Francisco*

SHELL PIPE LINE CORPORATION

20 Years

M. B. Dickey.....*Bayou System*
W. J. Henderson.....*West Texas Area*
A. L. Johnson.....*Texas-Gulf Area*
E. F. Pryor.....*West Texas Area*
C. G. Standlee.....*Mid-Continent Area*
R. F. Statham.....*Mid-Continent Area*

15 Years

E. G. Sewell.....*West Texas Area*

10 Years

A. E. Bailey.....*Mid-Continent Area*

matters of *Fact*

there's more than

meets the eye



A symbol of service with Shell—a watch, a 25, 20, 15, or 10-year pin—has value beyond its monetary cost. The friendships which tie each of us closer to other men and women who make up our organization; the problems we have shared in the past and the hopes we have for the future; these are some of the things which give added meaning to Shell service emblems.

At the end of 1949 *more than 40%* of all Shell Employees had completed 10 or more years of service:

10 to 14 years	4,189
15 to 19 years	3,560
20 to 24 years	3,664
25 years and over	1,535

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FAMILY PORTRAIT

ROBERT SELBY MAC DUFF is one of Shell's 296 Technologists who draw on backgrounds of technical training and experience to investigate, and recommend remedies for, the many operating problems in petroleum refining and chemical manufacturing. As part of their duties, these men prepare flow diagrams of new plants and plant changes and make the analyses and engineering computations essential to design of the equipment. Long before any new processing unit goes on stream, Technologists have pre-determined the operating conditions which will lead to the efficient production of products to meet required specifications.

Bob, a Senior Technologist at Wood River, has been with Shell for 17 years. With Mrs. Mac Duff, and son, Dan, 7, he lives in nearby Alton. Bob likes to play golf and has recently gone in for photography as a hobby. He is also active in civic affairs, serving on the Advisory Board of the Illinois Childrens Home and Aid Society, a Community Chest agency.



TECHNOLOGIST



ROBERT SELBY MAC DUFF