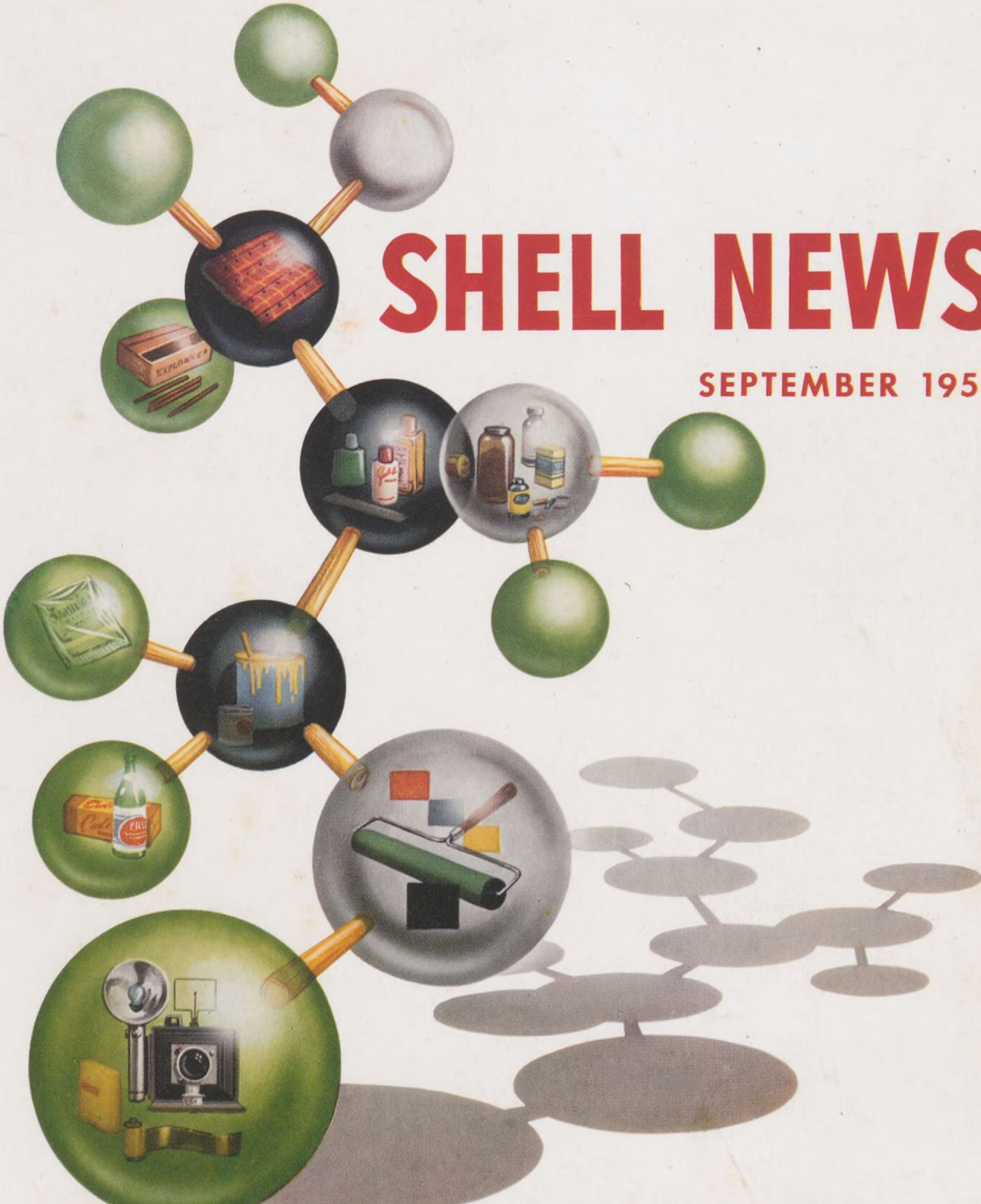
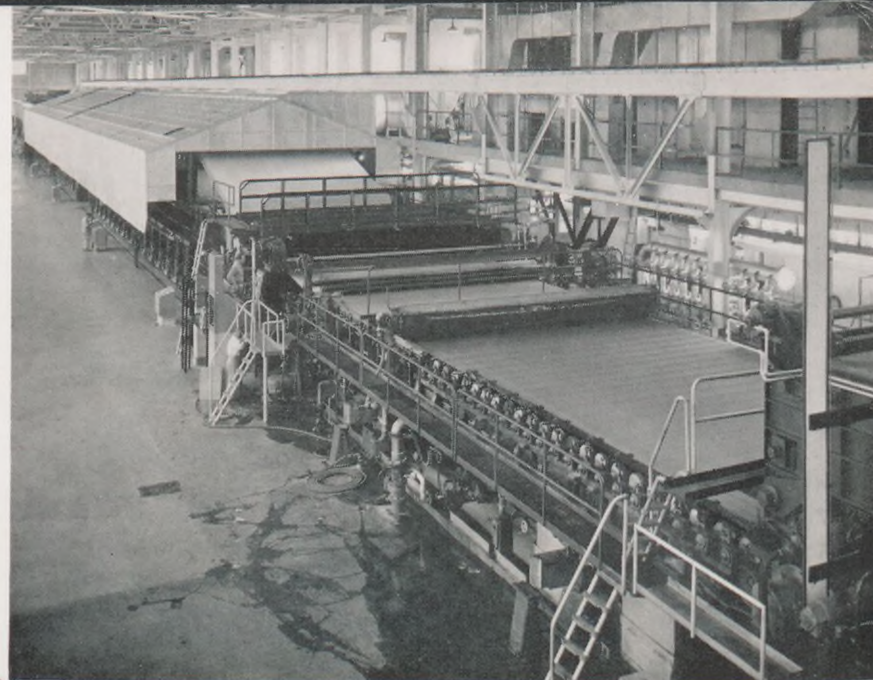
SHELL NEWS

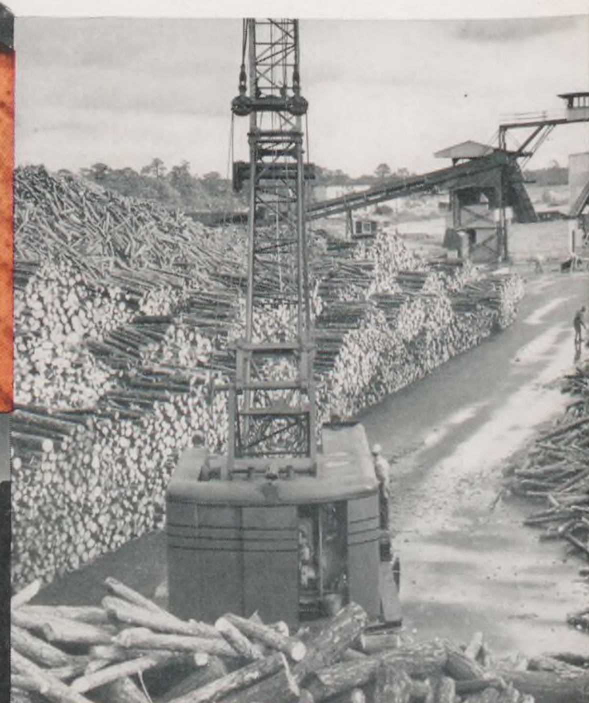
SEPTEMBER 1955



VERSATILE GLYCERINE



From Pi



Southern pines, like those above in the Suwannee Forest of southeast Georgia, take as many as 25 years to grow from seedling to full-sized tree. This 220,000 acre tract is a major source of pulpwood for St. Regis Paper Company's Jacksonville Mill.

A crane grapple, left, moves pulpwood logs from the mill's wood storage yard into one of two flumes, or metal inclines, down which 32,000 gallons of circulating water float them to conveyor belts. They then are ready for "de-barking."

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When lubricating difficulties developed in the block-long papermaking machine, left, Shell solved the problem and developed Paper Machine Oil 68. In the foreground is the wire-mesh screen section which carries dilute pulp stock to the dryers, background, at a speed of half a mile per minute.

Shell Developed a Brand New Oil in Answer to Lubrication Problems in a Block Long Machine at This Florida Paper Mill

ines to Paper

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The Jacksonville Mill's pulpwood supply is stored in the five-acre yard, left, which is paved with asphaltic concrete. Paving helps prevent deterioration of the wood through contact with the bare ground.

DURING the South's postwar industrial boom, Florida has become almost as widely known for its paper production as for its many sunny beaches. One of the largest producers there is the St. Regis Paper Company whose Jacksonville Mill—one of some 50 mills and plants the company operates in the United States and abroad—covers 200 acres and turns out more than 2,000,000 feet of paper daily in rolls approximately 18 feet wide.

In a few hours' time, huge stacks of southern pine logs are "de-barked," washed, crushed into pulpwood and converted into tons of kraft paper—the sturdy brown paper of which such things as grocery sacks, corrugated boxes and wrappings for heavy industrial tools are made. This ends a production cycle which began as many as 25 years before with the planting of the pines in vast southern Georgia and western Florida forests. St. Regis controls more than half a million acres of pine forest in the neighborhood of Jacksonville.

Cut down to five-foot lengths, the logs are kept in a paved storage yard at the mill. As the transformation from pine to pulpwood begins, they are stripped of their bark. In a matter of seconds, whirling saws reduce them to piles of chips which resemble outsize soap flakes. The chips are stored in tall silos until

SHELL NEWS

VOL. 23—No. 9 SEPTEMBER, 1955

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

Employee Communications Department
New York, N. Y.

contents

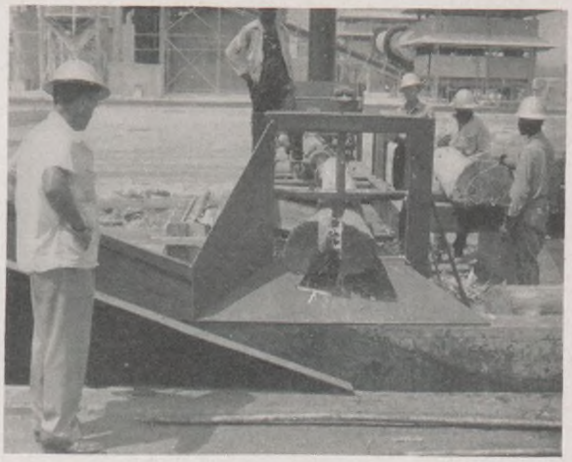
Published by Shell Oil Company (H. S. M. Burns. President; A. G. Schei, Treasurer; J. A. Horner. Secretary) for its employees and those of Shell Chemical Corporation, Shell Development Company and Shell Pipe Line Corporation. Address communications to Employee Communications Department, Shell Oil Company, 50 W. 50th St., New York 20, N. Y.

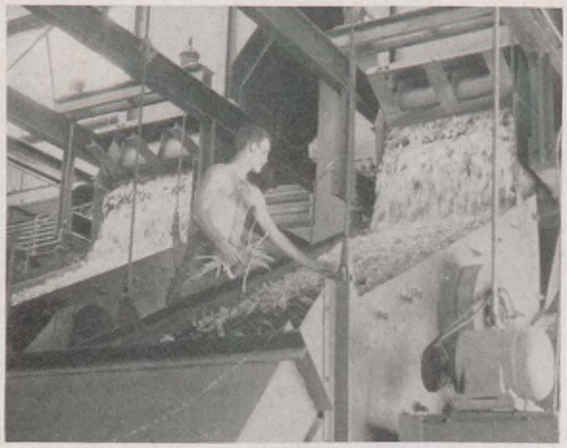
VERSATILE GLYCERINE

The molecular model on this month's front cover, containing carbon (black), oxygen (white) and hydrogen (green), is that of one of industry's most resourceful and widely used chemicals. Discovered in 1779, glycerine is used today in well over a thousand manufacturing processes and products. Once obtained solely as a by-product of soap making, it is now produced in large quantities from petroleum through a process pioneered by Shell Development Company and Shell Chemical Corporation. An article about glycerine, its origins and uses, begins on page 12.

Pine seedlings, left, are being harvested at a St. Regis tree nursery in Florida. Most will be transplanted in forests to replace cut trees. <

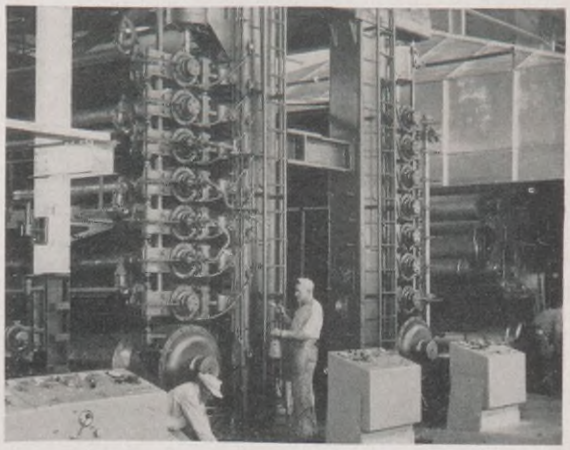
> Logs more than 17 inches in diameter are split lengthwise, right, before they are chipped and turned into pulp.

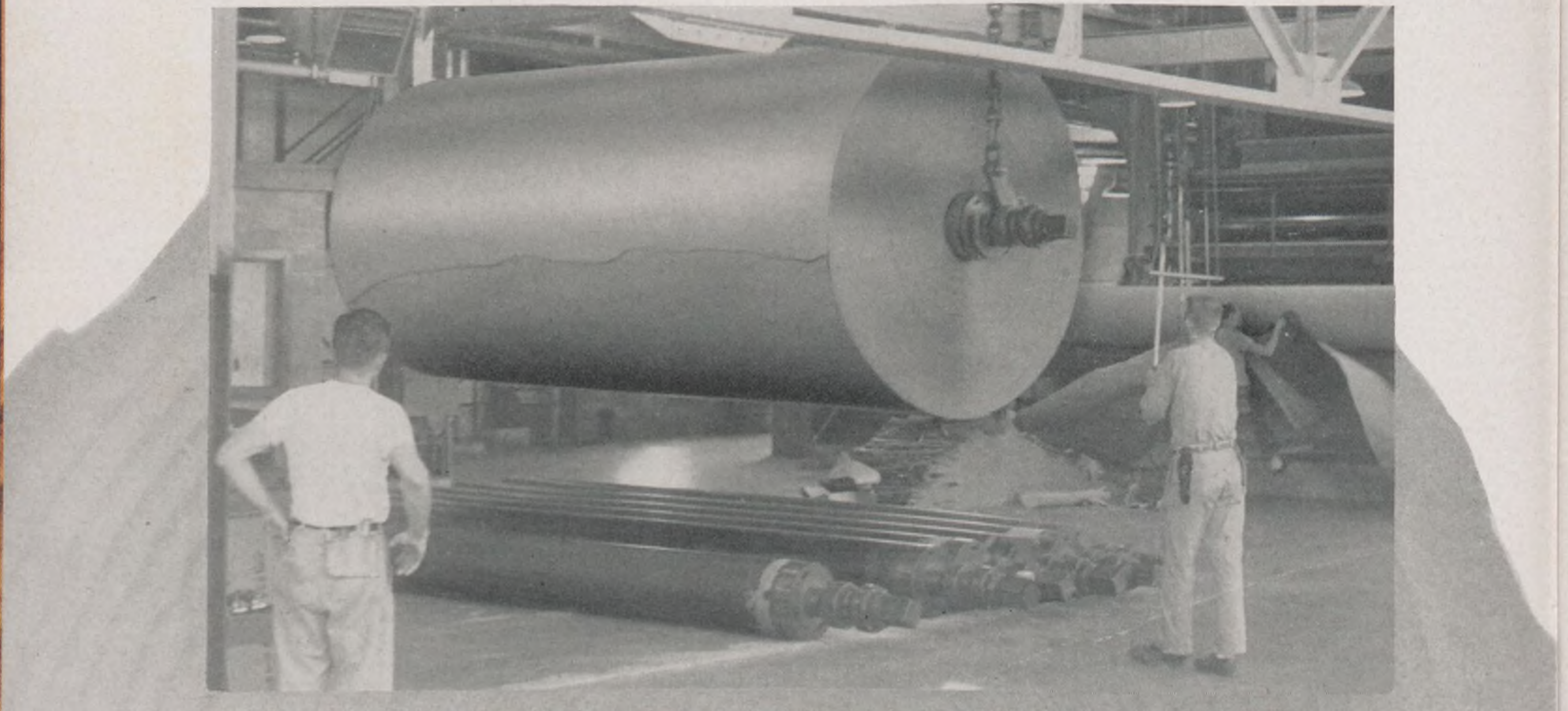




Pulpwood chips, left, flow into screens which accept only correct sized chips. Mill employee picks off oversize shreds. <

> A final phase of papermaking is "calendering," right. Near-finished paper goes through batteries of steel rollers. These give paper the desired surface.





Without any slow-up of production, employees change paper-winding spools, above. Roll of kraft paper in foreground, weighing 18 tons, is hoisted off the machine, ready for cutting and shipment. At the same time, employee in far background guides the continuous sheet of finished paper onto a fresh spool. Water sprayed on the empty spool will make the paper adhere to it.

they are needed. Then they are transferred to vast tanks, called "digesters," in which they are steam-cooked for one and a half hours under intense heat and pressure in 10,000 gallons of chemicals. The resultant pulpy mass is washed, automatically sorted according to fiber size, mixed by huge beaters, diluted with water and flattened into long, continuous rolls of paper on a machine that is as long as an average city block.

At the heart of the production operation, this huge paper-making machine is an intricate arrangement of gears, bearings, rollers, wheels and wire-mesh screens, every part of which must function in harmony with all of the others. Every minute, nearly half a mile of the watery mass of pulpwood races across the Fourdrinier—or wire-mesh screen—section of the machine where some of the water is squeezed out. It continues through dryers, and, after it is "calendered" or ironed smooth by a series of solid steel rollers, it emerges as finished paper. Then it is weighed and wound into huge rolls or sometimes cut into sheets, after which it is ready for shipment to St. Regis customers.

Despite the enormous volume of pines required by the mill, scarcely any part of the trees goes to waste; and St. Regis conducts a vast replanting program to replace the trees cut down. At the mill, bark is burned in boilers to supply part of the steam needed to cook the chips of wood that eventually become pulp. Vapors resulting from chip-cooking yield valuable turpentine.

The mill's machines run at such high speeds and generate such tremendous heat that rigid requirements are placed on the oils and greases used to lubricate them. In fact, all of the pulp processing and paper-making operations are so closely integrated at the Jacksonville Mill that the breakdown of a single bearing could conceivably cause a loss of valuable production and time throughout the plant.

Since the mill's opening in 1952, the machines housed in its 27 buildings have been lubricated exclusively by Shell products. Twenty Shell lubricating oils and greases, combined with the on-the-job assistance of Shell lubrication engineers and a detailed part-by-part lubrication guide prepared by Shell's Atlanta Marketing Division, have been helping to maintain the mill's paper production level at about 100,000 tons a year.

Moreover, to solve one thorny lubricating problem in the big papermaking machine itself, Shell developed an entirely new lubricant called Shell Paper Machine Oil 68. It has subsequently been used so succesfully by the St. Regis Mill that Shell is now preparing to offer the new oil to other paper manufacturers.

The problem at Jacksonville was this: The central lubricating system for the mill's papermaking machine carries 10,000 gallons of circulating oil. But, even though Shell originally supplied a lubricant of the quality and specifications recommended by the machine manufacturer, it was soon noticed that excessive water was destroying the effectiveness of the additive-type oil in the circulating system. This meant it had to be replaced relatively often.

Shell's Atlanta Marketing Division turned the problem over to the Lubricants Department of the Head Office Marketing Organization. In such cases, Head Office lubrication engineers first evaluate the seriousness of the problem, then try to find a suitable lubricant from among Shell's regular products. In this case, no suitable line product was available.

The problem's solution called for the development of a new oil—one which was not only moisture resistant but which also contained all of the other lubricating qualities needed to keep the big machine running smoothly. The Products Application and Research Departments, working closely with the Head Office Lubricants Department, set out to develop such an oil. After nearly a year of extensive laboratory and field tests, Shell was able to announce that Shell Paper Machine Oil 68 was the answer.

Perhaps the best testimony to the effectiveness of Shell's new oil and the on-the-spot assistance of Shell lubrication engineers is the fact that the Jacksonville Mill has enjoyed six months of trouble-free operation since Shell Paper Machine Oil 68 was installed in the machine. In fact, with the help of this and other Shell lubricants, the mill set a new production record earlier this year when 557 miles of kraft paper was manufactured in a single 24-hour period.

Mill employee, above, draws off a quantity of Shell Vitrea Oil 33, one of 20 Shell lubricants in use there. Below, Mill Manager J. A. McDermott, wearing coat, goes over Shell lubrication guide with Jack McDermott of St. Regis, seated left, P. T. Ellard, Shell's Industrial Products Representative, and K. H. Nonweiler, Atlanta Division Industrial Products Manager.

What's Happening

Recent Unpredicted Improvement in the National Economy Has Resulted in Upward Revisions in Estimates of How Much Oil U. S. Consumers Will Use This Year

THIS year, for the first time in history, an estimated three billion barrels of petroleum products will be consumed in the United States. This will represent a two-thirds increase in the nation's consumption of petroleum in the comparatively short span of years following the end of World War II. It will also mean that this year the United States alone will use more oil than the entire world produced in as recent a year as 1947.

This is not too surprising in view of the almost routine annual increases in oil consumption since World War II. Economists have maintained all along that topping the three-billion-barrel mark would be inevitable; but most of them frankly admit that last January they would not have picked 1955 as the year in which it would happen. Today, eight months later, three billion barrels and upward are standard predictions.

This is not to say that the economists did not feel that 1955 would be a good year for the oil business. On the contrary, they had, as usual, forecast an increase in petroleum demand—even predicting an increase somewhat higher than that which was experienced in 1954. What is surprising about this year's consumption of oil is that it is surpassing expectations. By mid-year it had become apparent to business forecasters that their estimates would have to be revised upward.

What has happened in the first eight months of 1955 makes it clear that the mild dip in general business activity last year was not a forerunner of recession or depression. The healthy upward trend in the general economy over the last several years was only slightly arrested and this year business has rebounded to an even more favorable position than before. In view of the fact that the oil industry provides approximately 68 per cent of the nation's domestic energy requirements, the repercussions of this rebound have found direct expression in the demand for oil products.

Last year, when the total value of gross national product declined by 2 per cent, the oil industry was affected to the extent that it experienced a smaller increase (1.9 per cent) than usual in demands for its products. (Shell did better than average, recording a 3 per cent increase.) However, with the business outlook for 1955 generally favorable, early estimates of this year's increase in oil products demand were scaled upward —to between 3½ to 6 per cent. Shell's Economic Development Organization, a group which keeps a sensitive finger on the pulse of the nation's economy, made an original prediction last fall of a 5.8 per cent increase for 1955 oil demand.

At mid-year, as current business remained healthy, forecasters took a second look. Even the most pessimistic were inclined to raise their sights, and some estimated an increase of as high as 7.5 per cent over last year's record demand. Shell's Economic Development Organization now estimates the increase will be 7.4 per cent over 1954.

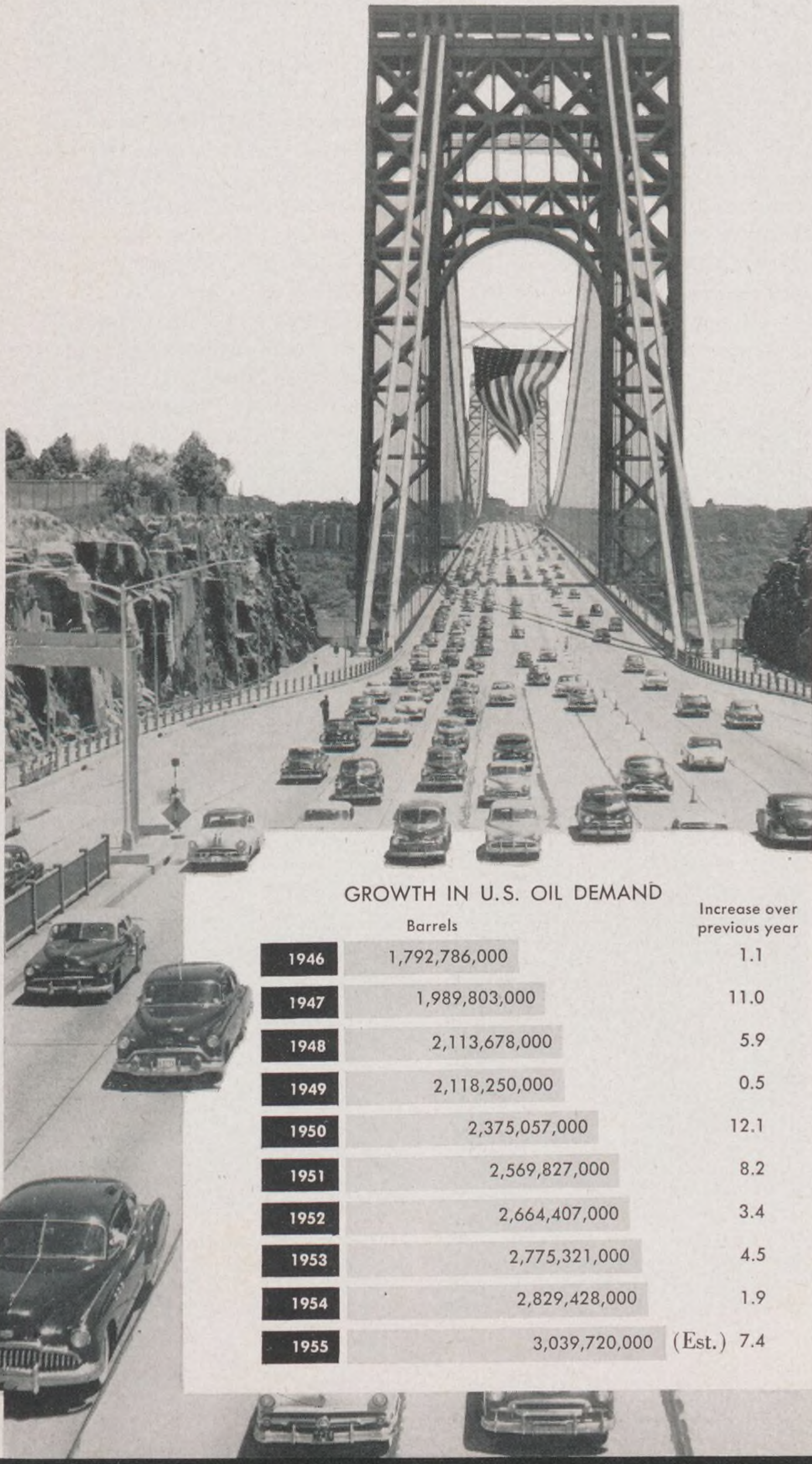
Lest the difference between the newest and the earlier forecasts seem of little consequence, note that an increase of 1 per cent represents an additional annual consumption of 30 million barrels or one and a quarter billion gallons of oil. This would supply every automobile with an additional 20 gallons of gasoline.

Naturally, the economists do not represent their predictions as irrevocable. They caution that unforeseen events, such as abnormal weather conditions during the remainder of the year, can alter demand. If winter temperatures run above normal for any length of time—as they have in several recent years—the new forecasts will have to be pared because they assume "normal" weather.

The 7.4 per cent increase in oil demand now expected this year indicates a sharp recovery from last year's "leveling off" period. It does not match some annual gains made since World War II, but nevertheless is above average. In 1947, for example, oil demand soared 11 per cent. In 1950 it made a 12 per cent gain. In the nine years through 1954 oil consumption in the United States has shown an average annual increase of 6 per cent.

There are several factors which explain the present record demand for oil products. A leading one is the fact that automobile sales are at all-time peaks. More cars on the road automatically mean more gasoline and lubricants consumed. Further, the average mileage per car is rising. "A

to Oil Demand?



GROWTH IN U.S. OIL DEMAND

	Barrels	Increase over previous year
1946	1,792,786,000	1.1
1947	1,989,803,000	11.0
1948	2,113,678,000	5.9
1949	2,118,250,000	0.5
1950	2,375,057,000	12.1
1951	2,569,827,000	8.2
1952	2,664,407,000	3.4
1953	2,775,321,000	4.5
1954	2,829,428,000	1.9
1955	3,039,720,000 (Est.)	7.4

proud owner of a shiny new car," says one observer, "is just naturally going to drive it more than he would the aging old family sedan he traded in." It has been estimated, for example, that during May and June of this year, American motorists used 8 per cent more gasoline than during the same months in 1954.

American industry of all types, often working overtime to keep pace with the business activity, burned heavy fuel oil also at an 8 per cent faster rate during May and June than a year ago. Diesel oils are in greater demand because railroads and trucks are using them in greater volume. The use of asphalt has climbed sharply in the current upsurge of building and highway construction. The greatest percentage gain, although in a product of minor sales volume, is shown by jet fuels. Sales of jet fuels for both military and civil aircraft in the first half of 1955 ran more than 30 per cent above the previous year.

The developments and predictions discussed above are concerned only with domestic oil demand in the United States. It is interesting to note, however, that elsewhere in the free world oil demand is also increasing. In fact, because there are still many undeveloped regions where the use and sale of oil products are just beginning to hit their stride, recent increases in foreign oil demand have risen at a faster rate than in the United States. Last year, while the consumption of oil products increased by 1.9 per cent in the United States, foreign free world use of oil jumped by 9 per cent. In 1955, it is expected the free world outside the United States will again increase its total demand for oil by about 9 per cent.

A Jughustler's Day

On the Move from Dawn to Late Afternoon, Men Like Jim McKenzie are Responsible for the Geophones, or "Jugs," Which Help Shell Detect Underground Oil Structures

JIM McKENZIE, 20, is a "jughustler"—or, more officially, a Geophysical Helper in Shell's Seismic Party 3-S, presently exploring the Big Horn Basin in north-central Wyoming. Like jughustlers working with Shell exploration crews in dozens of localities, McKenzie is one of the young men in charge of planting and gathering geophones. These are cylindrical shock detectors which, when linked with long wire cables and connected to a recording apparatus in the party's seismograph truck, relay reflected vibrations caused by dynamite charges set off in the field. They thus reveal the presence of underground structures in which oil may lie buried. Seismic parties generally work in remote areas. Their "trailer cities" provide bunks, showers, kitchens and recreation space. Here, photographically, is how McKenzie spends a typical day.

1. Quarters are a little cramped in the shower trailer as Jughustler Jim McKenzie, above, begins his day with a wash and shave—at 6 a.m.

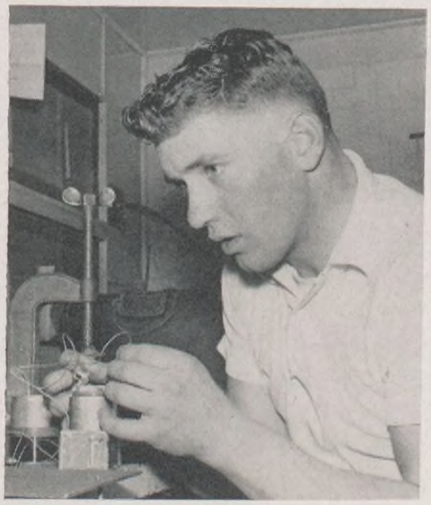
2. Before setting out for the field, he has a breakfast of sausage, eggs and coffee, below.

3. Helping out in the seismograph truck, McKenzie checks supply of the chemicals needed to develop seismic graphs. Such graphs offer a record of seismic tests conducted in the field.

4. After digging holes with a tool called a post hole digger, McKenzie "plants" jugs and connects them to cables like this one, which run to the seismograph truck stationed nearby.

5. After a morning of climbing up and down gullies along the countryside, he takes time out to eat the lunch he carried from camp.

6. In the field, McKenzie works as a team with another jughustler. Part of the time, he reels out cable from the back of a recording truck, above, while his partner plants the jugs and connects them to cables. Jughustlers must work fast, following lines determined by the party's surveyors.



7. After returning to camp, McKenzie sometimes repairs jugs that aren't working properly. He took special shop courses in high school.

8. Dinner over, McKenzie occasionally joins a card game with other party members. Evening trips to town, 35 to 40 miles away, are rare.

9. Left, magazines are popular fare, too. McKenzie is an avid reader of publications dealing particularly with electronics, one of his favorite subjects.

10. Below, bedtime comes early in a seismic camp—usually around 10 p.m. And, as McKenzie demonstrates, a day outdoors encourages sound sleep.

Shell People


S. A. BALLARD

S. A. BALLARD has been named an Associate Director of Research in the field of chemical products at Shell Development Company's Emeryville Research Center in recognition of the Company's increasing efforts in chemical research. Mr. Ballard, who received B. S. and Ph. D. degrees in organic chemistry from Yale University, joined Shell in 1937 as a Research Chemist at Emeryville. In 1944 he was appointed Department Head of the Organic Synthesis Department and in 1952 became Department Head of the Petroleum Refining Department.


W. F. ROSS

W. F. ROSS has been named Department Head of the Emeryville Research Center's Petroleum Refining Department, succeeding Mr. Ballard. Mr. Ross, who received an A. B. degree in chemistry from the University of Virginia and A. M. and Ph. D. degrees in chemistry from Harvard University, joined Shell in 1943 as Chief Research Chemist at Shell Oil Company's Wood River Refinery. In 1949, following assignments of increasing responsibility at the Wilmington Refinery, in the San Francisco Office, and at the Martinez Refinery, he joined Shell Development Company at the Emeryville Research Center. Earlier this year Mr. Ross was made Department Head-Lubricants General at Emeryville.


C. G. CLEAR

C. G. CLEAR has been appointed Department Head of the Emeryville Research Center's Lubricants General Department, replacing Mr. Ross. Mr. Clear, who was graduated from the University of California with B. S. and Ph. D. degrees in chemistry, joined Shell Oil Company in 1937 as a Technologist at the Wilmington Refinery. He was named a Senior Technologist in the San Francisco Office in 1945 and later served as Chief Technologist at the Martinez and Wood River refineries. In 1953, he joined Shell Development Company as Assistant to Vice President-Development and Engineering. Last year, Mr. Clear rejoined Shell Oil Company as Assistant Manager of the Manufacturing Organization's Head Office Technological Department.


H. K. SUTHERLAND

H. K. SUTHERLAND has been named Assistant Manager of the Shell Oil Company Manufacturing Organization's Head Office Technological Department, replacing Mr. Clear. Mr. Sutherland, who received a B. S. degree in chemistry from the University of Wisconsin and a Ph. D. in organic chemistry from the University of Illinois, joined Shell in 1938 as a Chemist at Shell Development Company's Emeryville Research Center. In 1951, following assignments in the New York Office, he was named Assistant Laboratory Director of Shell Development's Laboratory at Modesto, California. In 1953, he was appointed Technical Assistant to the President of Shell Development Company.


P. E. PORTER

P. E. PORTER has been named Manager of the Shell Development Company Agricultural Research Division's Physical and Analytical Chemistry Department in Denver, Colorado. Mr. Porter, who holds an A. B. degree in chemistry from San Diego State College and a Ph. D. in physical chemistry from Iowa State College, joined Shell Development in 1941 as a Laboratory Assistant at the Emeryville Research Center. In 1943 he joined Shell Chemical Corporation as a Chemist and two years later rejoined Shell Development at Emeryville in a similar capacity.

in the News

J. ANDERSON

JOHN ANDERSON has been named Research Director at the Torrance Research Laboratory, in connection with Shell Chemical Corporation's Manufacturing research effort in the synthetic rubber field. Mr. Anderson, who received a B. A. degree in chemistry from Georgetown University and a Ph. D. in organic chemistry from the University of Illinois, joined Shell in 1938 as a Research Chemist at Shell Development Company's Emeryville Research Center. In 1948, he was named Research Director of Shell Chemical's Houston Research Laboratory.

R. MAYCOCK

RUSSELL MAYCOCK has been appointed Research Director of Shell Chemical Corporation's Houston Research Laboratory, succeeding Mr. Anderson. Mr. Maycock, who received a Bachelor's degree in chemistry from the University of California and a Ph. D. degree in physical chemistry from the University of Illinois, joined Shell in 1943 as a Chemist at Shell Development Company's Emeryville Research Center. In 1952 he was made Assistant Department Head of the Physical Chemistry Department. For the past year Mr. Maycock has been on a special assignment with associates in The Netherlands.

J. J. McKENZIE

J. J. McKENZIE has been appointed Chief Expediter in the Shell Oil Company Head Office Purchasing-Stores Organization. Mr. McKenzie, who received an A. B. degree in economics from Washburn College, joined Shell in 1928 as a Gauger at the former Arkansas City Refinery. Following assignments of increasing responsibility, including service with Shell Pipe Line Corporation, he was named a Purchasing-Stores Representative in Head Office in 1941. Mr. McKenzie was appointed a Head Office Buyer in 1950 and was made a Senior Head Office Buyer in 1951.

E. D. UNDERWOOD, Jr.

E. D. UNDERWOOD, Jr., has been named an Assistant Chief Engineer at Shell Oil Company's Wood River Refinery. Mr. Underwood, who received a B. S. degree in petroleum refining engineering from the Colorado School of Mines, joined Shell in 1944 as an Engineer at the Norco Refinery. Following assignments in a similar capacity at the Houston Refinery and in the Head Office Manufacturing Organization, he was appointed an Assistant Chief Engineer at the Martinez Refinery in 1954.

H. H. SCOTT

H. H. SCOTT has been named an Assistant Chief Engineer at Shell Oil Company's Martinez Refinery, replacing Mr. Underwood. Mr. Scott, who received B. S. and M. S. degrees in chemical engineering from Oregon State College, joined Shell in 1947 as an Engineer at Martinez. He was named Chief Inspection Engineer at that refinery in 1953 and was appointed a Senior Engineer the following year.

Seeing Is Believing — In Safety

Visual Aids Help Exploration and Production Men Learn the Techniques

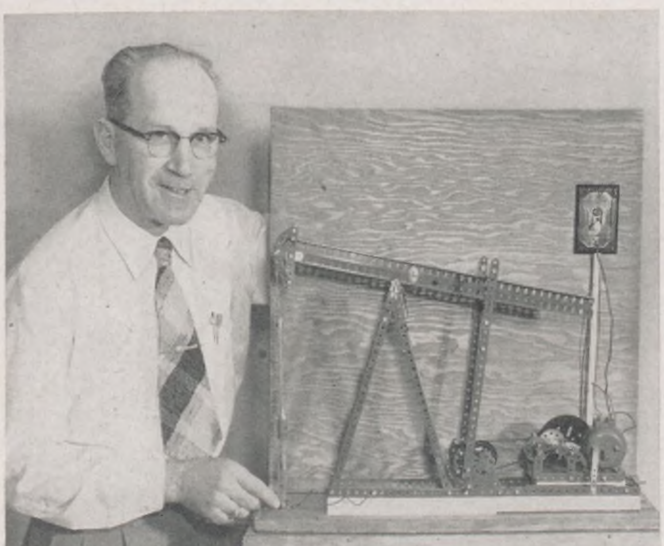
IN their constant war against accidents, Shell Safety Representatives stress the importance of making full use of safety equipment and techniques. One of the best ways to sell accident prevention, they've found, is to give demonstrations so that people can see for themselves what might happen in unsafe situations and how safety consciousness can prevent it. Hard hats, safety goggles and shoes, fire fighting equipment, and other protective devices are frequently demonstrated to show how they can ward off or minimize the effects of accidents.

In the Calgary Exploration and Production Area, for example, a number of "safety visual aids" have been devised and are taken on periodic tours of field locations. A safety hat "tester" is one of those most frequently demonstrated. It is a tripod device from which heavy weights can be dropped from a height of eight feet. A safety hat is placed on a dummy wooden head at the base of the tripod, and when a 10-pound metal weight is dropped on it the blow dents the hat but doesn't fracture the "skull." A 10-pound weight dropped eight feet strikes at a velocity of about 15 miles per hour. On the other hand, a 1-pound weight dropped 80 feet—for example, a wrench dropped from the top of a drilling rig—strikes at a velocity of about 50 miles per hour. The velocity is an important factor in safety, for as the speed of a falling wrench increases so does its ability to dent or penetrate a protective hat—and perhaps to fracture a skull.

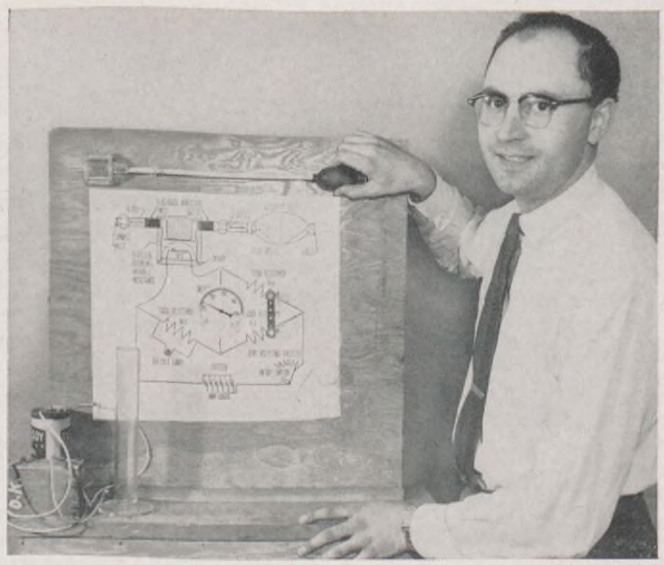
After a safety hat is used in the demonstration, an unprotected coconut is placed under the tripod—nothing personal intended, of course—and the 10-pound metal weight shatters it.

In another demonstration, air pistol pellets are fired at the lenses of goggles on a dummy head to show that goggles with safety glass will not shatter while ordinary glass will. Several mechanical and electrical models are also demonstrated to show the use of such things as safety valves, techniques in grounding electrical equipment, and the detection of flammable vapors by using explosimeters.

The safety visual aids in the Cal-



Hall, who built the visual aids shown on these pages, demonstrates a small pumping unit to show the proper way to ground electrical equipment to prevent possible sources of ignition or accidental shocks to personnel.

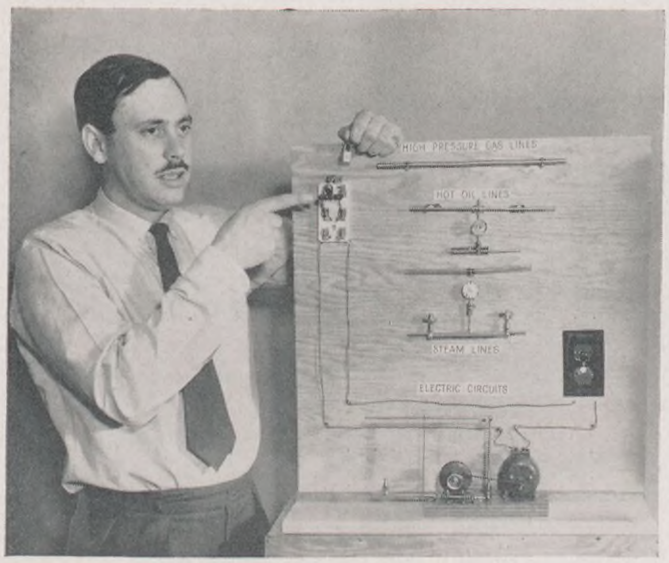


Tone demonstrates the operation of an explosimeter, used to determine the flammability of vapor-air mixtures. The plastic tube at the lower left is used to show how a source of ignition can set off a flammable mixture.

In the Calgary Exploration and Production Area's safety hat tester, right, a falling 10-pound metal weight dents the hat, but not the wooden "skull" beneath. Safety Representatives A. V. Tone (holding the weight), Frank Hall (pointing to hat) and M. E. Falby are shown preparing a demonstration. Extra pipes on the floor can extend the tripod to its full eight feet.

of Accident Prevention

gary Area have as their origin safety demonstrations which have been given in the Tulsa Exploration and Production Area. The safety hat testing device, which approximates the hat testing specifications set by the U. S. Bureau of Standards, goes back more than 20 years when similar tests using this technique were first made at the Wood River Refinery. Last year, Frank Hall, a Safety Representative in the Tulsa Area temporarily assigned to Calgary, made some of the devices like those he had used at Tulsa. With the assistance of M. E. Falby and A. V. Tone, Calgary Area Safety Representatives, Hall constructed the visual aids which are helping Calgary Area employees see safety in action.



The visual aid shown here by Falby is designed to show safe methods of blocking the control mechanism on various equipment as a safeguard to employees who may be doing maintenance or repair work on the equipment.

Falby fires an air pistol pellet at unsafe goggles on a dummy head. An ordinary glass lens has shattered and particles of glass are embedded in the modeling clay "eye" of the dummy. A safety glass lens does not break.

Glycerine:

Nature's Product Comes of Age

Shell Chemical Corporation's Production of Synthetic Glycerine Is Proving a Boon to Industry

Operator John Ramsey, left, records a feed meter reading in the Houston Chemical Plant's glycerine synthesis unit. Increasing demands for synthetic glycerine have resulted in two expansions of Shell Chemical's manufacturing facilities which have more than doubled the Corporation's original production capacity.

FEW chemicals hold as important a place in industry as glycerine—both the natural variety refined from fats and the synthetic, but identical, product made from petroleum. For few chemicals are used in so many and in such varied ways. In fact, glycerine's uses are so extensive (one technical publication lists 1,583 specific processes and products ranging from marshmallows to TNT) that demand for it is considered an excellent barometer of industrial activity.

The paint industry using resins made from glycerine are the largest consumers, requiring about one-third of the more than 250 million pounds used annually. About 30 million pounds are used in explosives each year, and tobacco companies use about the same amount to moisten their products. Cellophane manufacturers use only slightly less glycerine for without it, cellophane would be as brittle as glass. Other important major consumers include cosmetic and drug manufacturers.

Shell Chemical Corporation holds an unparalleled position in providing glycerine for these and many other users. The Corporation, through a process developed by Shell Development Company, is one of the nation's largest producers of this important chemical, accounting for nearly one-third of the over-all U. S. production. Shell Chemical is the pioneer manufacturer of synthetic glycerine from petroleum.

In addition to providing a substantial part of the nation's glycerine supply, Shell Chemical and Shell Development have touched off a chain of developments that have been enthusiastically approved by glycerine users. Before the Corporation began producing synthetic glycerine in 1948, most glycerine was produced as a by-product of soap manufacturing. And because glycerine supplies depended on the production of soap, there were widely fluctuating cycles of shortage and abundance. Shell Chemical's production has assured a dependable supply, and, in doing so, has stimulated industrial research and developments leading to new uses of glycerine. These developments might never have been inaugurated in the absence of a stable glycerine supply. In return, increasing demands have resulted in two expansions of Shell Chemical's glycerine manufacturing facilities that have more than doubled the Corporation's original production capacity.

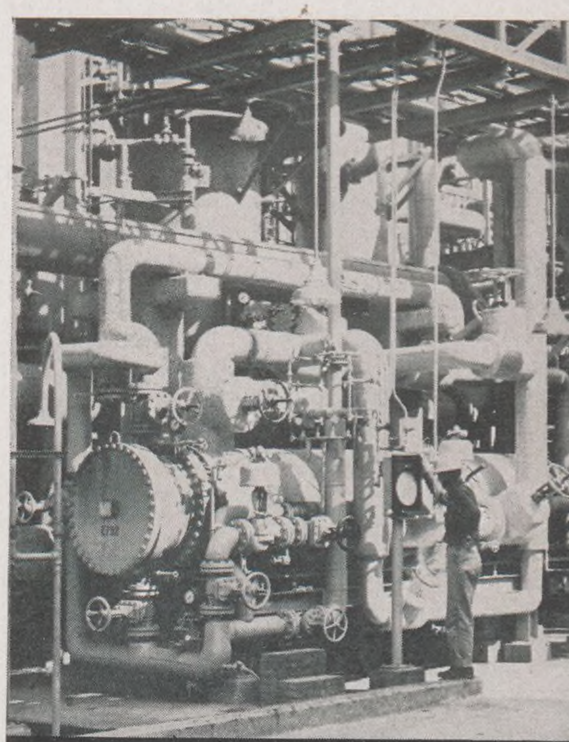
Glycerine is a product of nature. Though it doesn't exist in a free state, it may be derived from many growing things, both vegetable and animal. In 1779, Karl Wilhelm Scheele, a young German chemist working in Sweden, isolated the first glycerine while heating a mixture that included a quantity of olive oil. By similar tests on other fats and oils, he confirmed that glycerine was present in both animal and vegetable life. Because of the product's sweet taste, Scheele named it "the sweet principle of fat." It wasn't until 1811 that the product was named glycerine—derived from the Greek word *glykeros*, meaning sweet.

But Scheele and his generation failed to see the full importance of his discovery. Glycerine was little more than a laboratory novelty for many years, and demands for it in industry were negligible until 1866. It was then that Alfred Nobel of Sweden succeeded in adapting nitroglycerine to safe industrial use in the form of dynamite and blasting gelatine. Nobel's developments gave great impetus to the present era of industrial progress by making it possible to mine tremendous and previously inaccessible underground ore deposits of various kinds. These, in turn, sparked further technical and industrial progress.

During Nobel's time the bulk of glycerine was produced as a by-product of the manufacture of candles from hard fats, such as tallow. The soap industry displaced candle makers as glycerine suppliers at the turn of the 20th Century and accounted for virtually all production in the United States at the time Shell Chemical completed its initial glycerine plant at Houston.

Twenty years of painstaking research at Shell Development's Emeryville Research Center preceded Shell Chemical's first production of synthetic glycerine. Scientists there made countless experiments in developing a commercially feasible process for making pure glycerine from petroleum. The results were so successful that *Chemical Engineering* magazine in 1948 presented Shell Development Company with the publication's annual Award for Chemical Engineering achievement.

The Shell Development process employed by Shell Chemical uses propylene, a product of catalytic cracking, as the feed stock in its synthesis of glycerine. The propylene is reacted with chlorine, water and an alkali in a series of steps that require precise control of high temperatures, pressures and reaction concentrations. The resultant dilute solution contains salt, which must be removed. The solution is then concentrated and further refined to produce a product that is more than 99 per cent pure. Several other petrochemicals are produced in glycerine manufacture, including D-D®, one of Shell Chemical's effective nematicides.



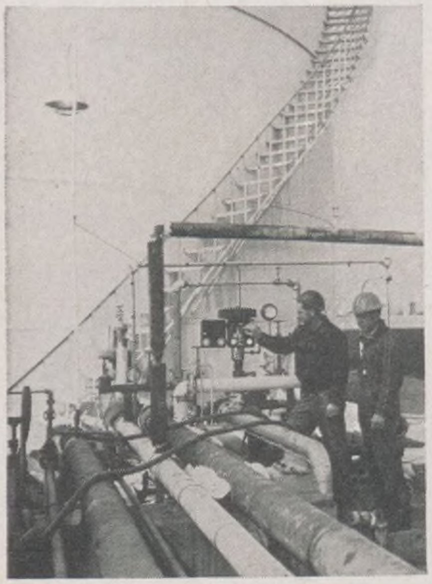
The unit, above, is part of the new expansion of glycerine facilities at the Houston Plant. Operator J. E. Blankenship checks a flow meter.

The new facilities at the Houston Plant include a compact, console type instrument panel, below, in the synthesis control room from which Operator F. E. Howard calculates the rate of flow.

Glycerine (cont'd)

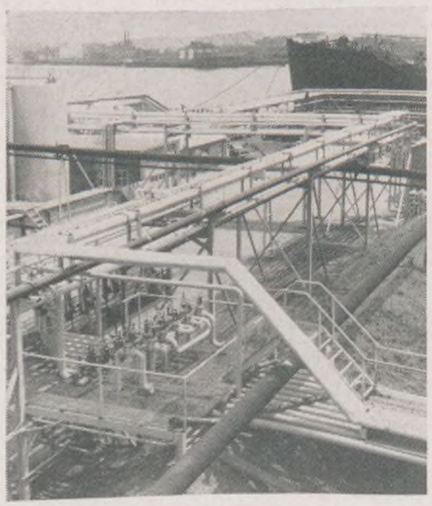
>

Operator E. J. Powell, right, draws off a sample of finished glycerine which may be destined for any of hundreds of end uses. Glycerine demands are so varied that its sales record is considered an excellent barometer of industrial activity. One technical publication lists 1,583 specific processes and products in which it is used, ranging from marshmallows to TNT, and there are many more.



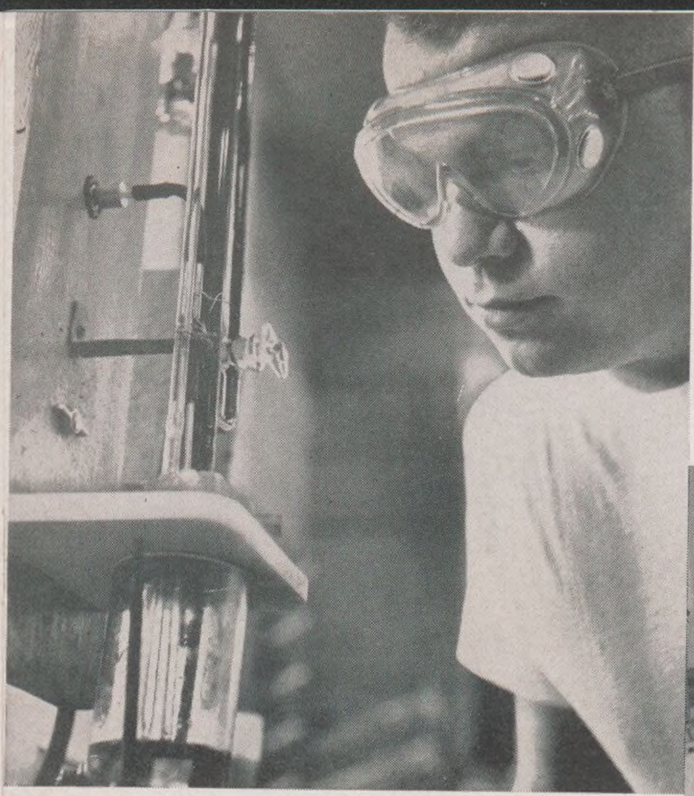
In the finished glycerine storage area at Houston, above, Instrumentman J. F. Hill, left, accompanied by Pipefitter C. E. Kinion, checks instruments that will regulate the product's temperature as it flows through a 7,500-foot aluminum pipe line to the dock area when it is eventually shipped by ocean tanker.

In preparation for increased glycerine production, Shell Chemical is installing specially designed handling and storage facilities. New aluminum pipe line, below, left, running across the foreground, is already in place at Shell's Sewaren, New Jersey, Terminal to receive tanker shipments of glycerine. At right, Mechanic David Tappen checks a special zinc coating inside one of two new glycerine storage tanks at Sewaren. Special pipe and tank coating prevents contamination.

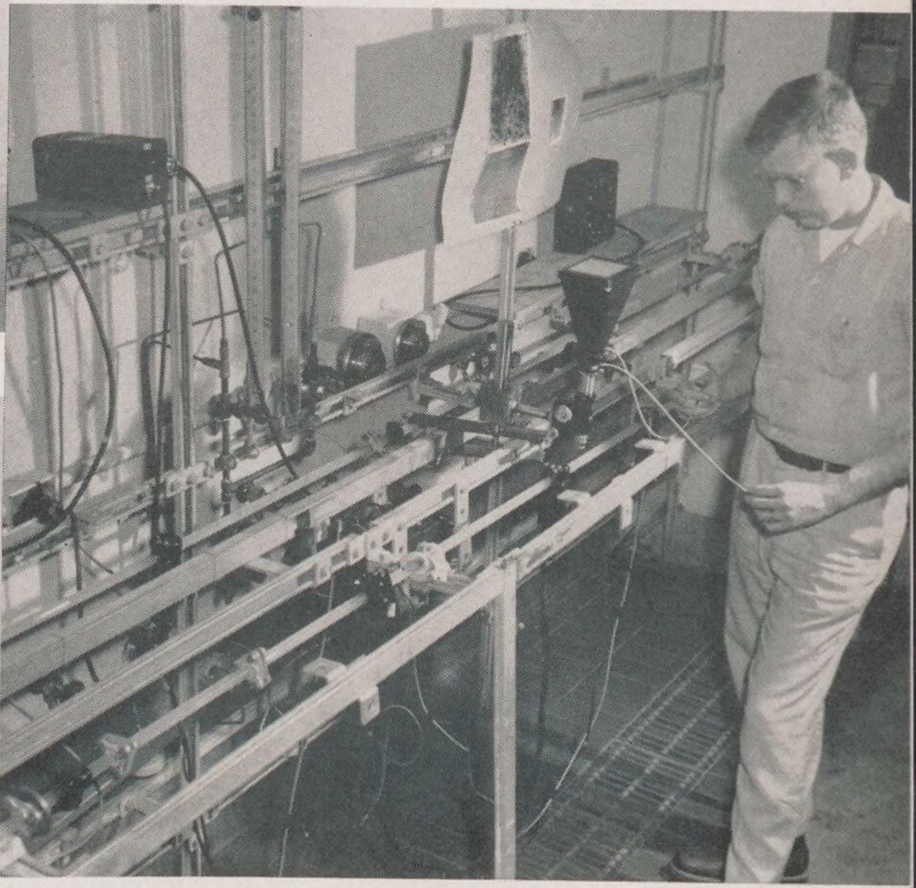


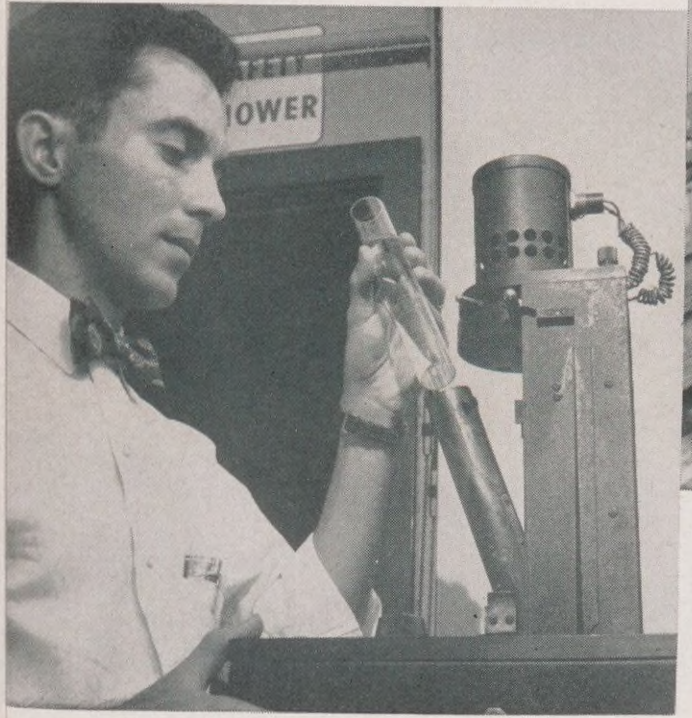
Shell Chemical has twice expanded its Houston Plant to keep up with the demand for synthetic glycerine. In 1951, additional processing equipment was added to increase production by 50 per cent. Another 50 per cent boost was made possible earlier this year when more new facilities were put into operation and the new chemical plant went on stream at Norco. Process improvements developed through the combined efforts of Houston research and plant forces played a primary role in both expansions. The Norco Chemical Plant is producing intermediates in glycerine manufacture. They are barged to the Houston Plant where still other new facilities have been added to process them into glycerine. Norco's production also is used to boost the Houston Plant's output of EPON® resins.

Shell Chemical recently announced still more plans to provide greater quantities of synthetic glycerine to meet constantly growing demands. The plans will employ an entirely new production method that also was developed by Shell Development Company. The new process—which will combine acrolein, a compound somewhat between an acid and an alcohol, and hydrogen peroxide to make glycerine—will supplement existing facilities rather than replace them. Construction already has started at Norco on a hydrogen perox-



Production of versatile synthetic glycerine from petroleum requires precise control to insure that it is more than 99 per cent pure. One control test conducted during synthesis is a water analysis of samples of dilute glycerine being conducted, left, by Operator L. L. Born. Tests are conducted throughout the manufacturing process.





Color analysis, left, conducted by Chemist R. E. Ciuzio, is one of the many extensive tests made on finished glycerine. Ciuzio uses a "lumetron," which determines if the glycerine's color is up to specifications. Finished glycerine is molasses-like and generally is kept under heat to make it much easier to handle.

In a tiny glass pilot plant, above, Research Technologist Laddie Macha Jr. takes a microphotograph of droplets of a component that goes into the production of synthetic glycerine. Research Laboratory studies such as this at Houston are contributing to increased glycerine production and plant efficiency.

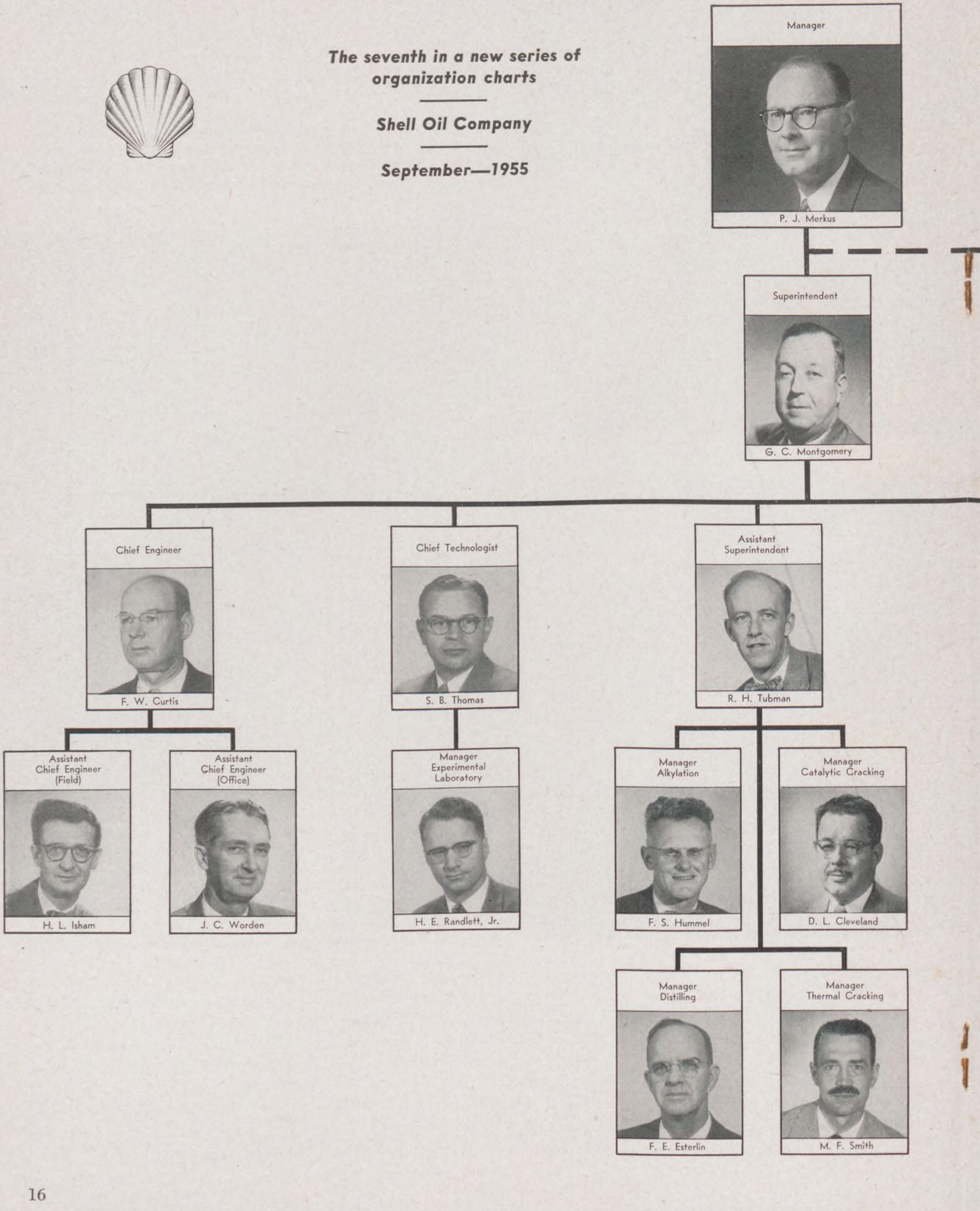
ide plant, the first step in the new plan. An acrolein plant will follow, and then a third plant which will process the two chemicals into glycerine.

At some time in the future, Shell Chemical will record still another first in the glycerine field when shipments of glycerine will be made by ocean tanker. As part of a long term planning program, one cargo compartment aboard the S.S. Cherry Valley, a tanker under contract to haul Shell products, has been converted so that the ship will be able to haul the chemical from Houston to Shell's Sewaren, New Jersey, Terminal in a pure state. New facilities, including specially designed tanks and aluminum pipe lines, have been added at Houston and Sewaren for future handling of the tanker shipments. Meanwhile, current demands for glycerine are being supplied by shipments in specially designed aluminum or zinc-lined tank cars which preserve the product's high purity.

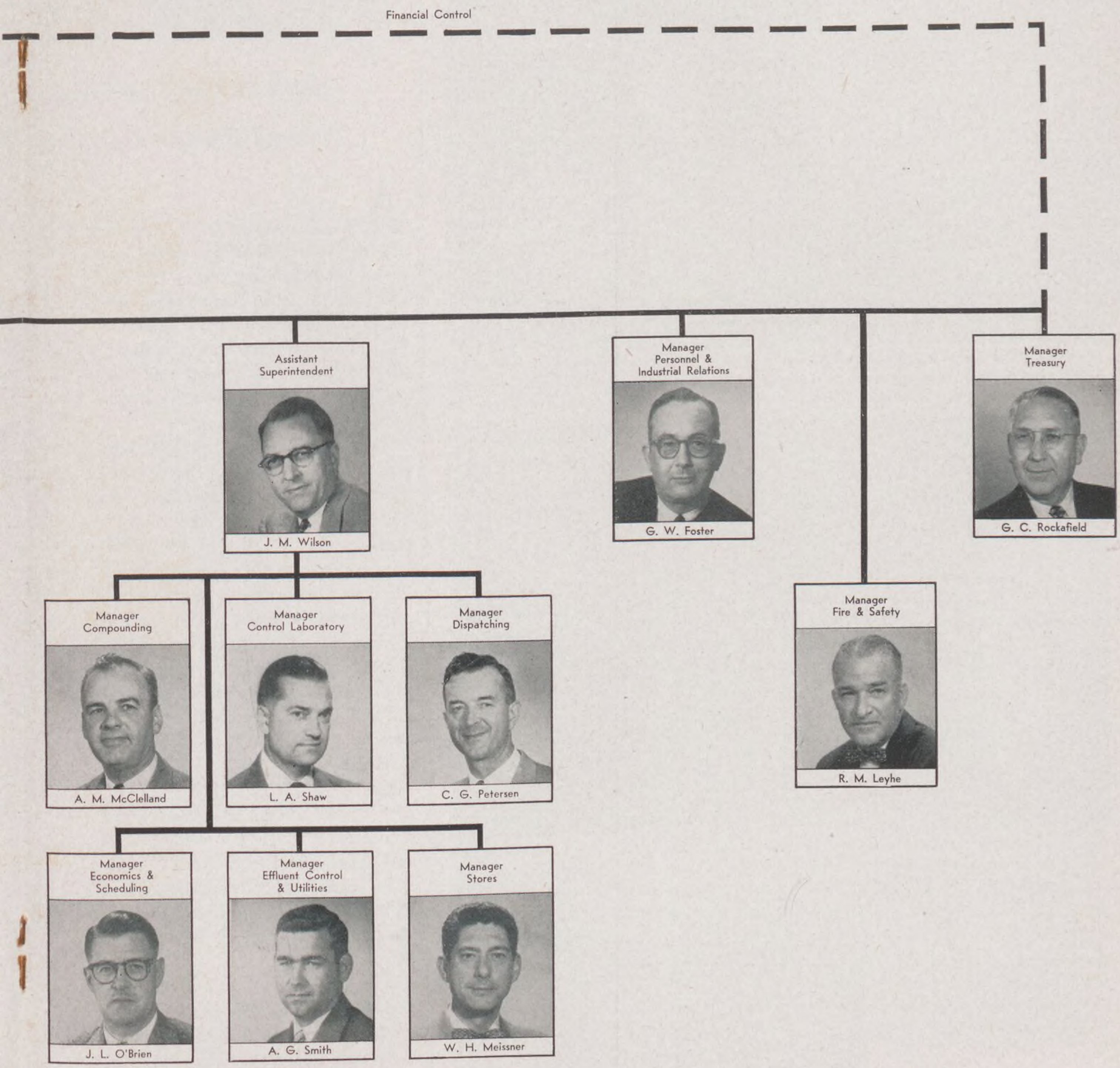
The seventh in a new series of organization charts

Shell Oil Company

September—1955



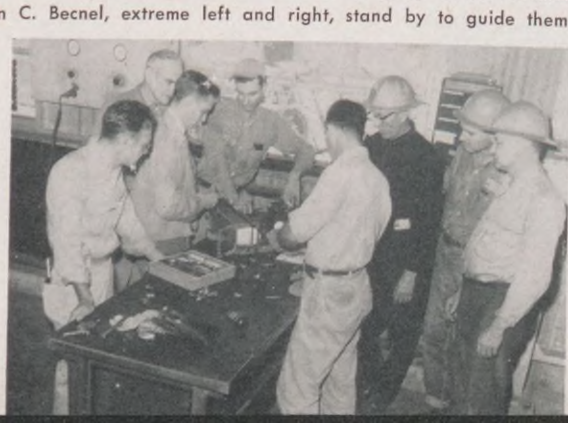
Wilmington Refinery Organization Chart



In the time-proven tradition of training craftsmen, employees in training at the Norco Refinery primarily learned-by-doing. Welder Foreman W. F. Gubert watches L. D. Madere cut a section of pipe with an acetylene torch.

Craftsman training also consisted of classroom study in blueprint reading and in mathematics. In left photo, above, a group work on a problem given to them by their instructor. At right, they listen to instructions in a class in blueprint reading conducted by Draftsman C. L. Monnot.

Men training to be machinists learned about many types of equipment by actually working on them. Above, a group of men in a class for machinists work over a pump while Foreman Louis J. Babin and Inspector John C. Becnel, extreme left and right, stand by to guide them.



Engineer C. A. Caillet, Jr., third from left, and Craft Foreman A. R. Lambka, third from right, dismantle an instrument to show the men in training how it works.

School
EXPA

Job Training Effectiveness

Year of Efficient Operation

AN oil refinery is an amazing complex of processing vessels and pipes, but expanding one of them involves a lot more than adding new pipes to the intricate mass. Men must be trained to operate and maintain the additional equipment, and how well this is done can affect the success of an expansion program.

The last year at Shell Oil Company's Norco Refinery has proved this once more. Several new units were added there to boost the refinery's capacity by 50 percent—to 75,000 barrels per day. A well planned training program provided the skills to get these units on stream rapidly, and to operate and maintain them. Effectiveness of the program is reflected in the fact that the refinery's throughput for last year exceeded expectations and that the safety record was excellent.

Expansion of the refinery opened new jobs for about 260 operating and maintenance employees and 80 staff employees and, under Shell's traditional policy of "advancement from within," the training program directly resulted in promotions for at least 155 of them.

Norco's training program was carried out in two phases—one for operators and the other for craftsmen.

Because of long training required,

for

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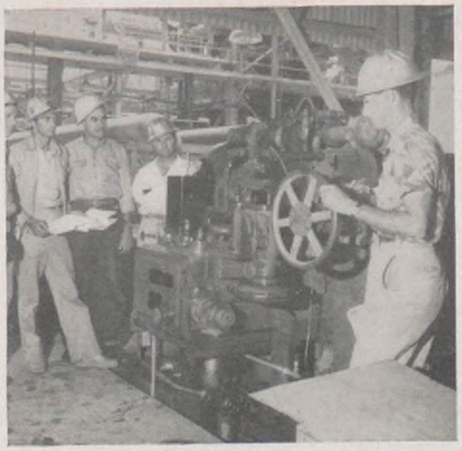
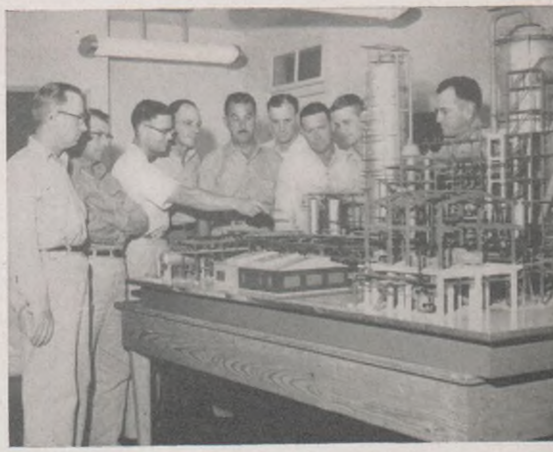
n of New Units at Norco





The training of operators for the new Norco units consisted largely of classroom instruction in design and operation of the units. But the men also studied the equipment itself, like those in left photo, above, observing an air compressor. In photo at right, R. H. Bartholomew, Assistant Manager, Catalytic Cracking Department, points out a detail on a model of the Norco catalytic cracker.

the craftsman phase of the training was started more than four years ago, long before ground was broken for the new units. Part of the training was provided on routine construction and maintenance around the existing plant. Some was given on that portion of the expansion construction which was separate from the bulk of the multimillion dollar project that was handled by contractors. Welders, pipefitters and other craftsmen learned-by-doing, guided by experienced senior employees. The program also included classroom instruction in blueprint reading and in mathematics.

The training of operators of new units—a catalytic cracker, a distilling unit, a vacuum flasher, extensions to the alkylation and polymerization units, and steam generating facilities —began a few months before the units went into operation. Planned around a core of experienced operators of existing Norco units, the training consisted largely of classroom instruction to familiarize the men with operations and processes which were to be used for the first time at Norco. As the new units neared completion, the men went through "dry runs" in starting them up and shutting them down. This experience helped them to operate the units safely and efficiently from the beginning.

Classroom instruction of operators included study of blackboard sketches illustrating operation of new units. At left, William Romanow, Assistant Manager, Catalytic Cracking Department, traces the flow diagram of the refinery's new catalytic cracker.

J. D. Davis, Manager, Catalytic Cracking Department, below, right, conducts one of the training classes, attended by approximately 50 men. Various Shell engineers and training representatives spent months preparing the training material used in instructing operators of Norco's new units.

Hob-Nail Boots and

Club Say Their Idea of a Good T

THE 8,000 members of the Sierra Club believe in "taking life easy" the hard way. It is not unusual, of a week-end, to find large contingents of them in hob-nail boots scrambling up the rocky ledges of a mountain peak, hiking long distances into California's scenic wilds, or camping outdoors in sleeping bags. Often blistered and sunburned, but invigorated by their airy holiday, these week-end adventurers—including a large number of Shell people—turn up at work on Monday morning just as if they'd spent a quiet Sunday at home.

The Sierra Club draws its membership entirely from the West Coast, although it does count among its 11 chapters one composed of expatriates now living in New York City and vicinity. The club was founded in 1892 with the special purpose of studying and protecting the natural beauty of the Sierra Nevada Mountains in upper California. As its membership expanded, however, so did its purposes. Today the club concerns itself with almost anything having to do with the conservation or use of natural scenic resources. Besides qualifying as expert hikers, skiers, campers and mountaineers, members also are ardent letter writers when it comes to furthering conservation legislation or encouraging public appreciation of U. S. scenic wonders.

An example of the club's lasting accomplishments was the laying out of the John Muir Trail, stretching southward through the heart of the snow-capped Sierras for 150 miles from Yosemite National Park to Mount Whitney, highest point in the

During a Sierra Club climbing practice not far from the Emeryville Research Center, E. E. Roper helps Mrs. W. H. Phillips up a cliff. In the inset photograph are: standing, E. D. Oliver, Mrs. Phillips, H. H. Voge; seated, W. H. Phillips and Roper.

Blisters—for Fun *Shell People in the Famed Sierra*

d Time Is a Lengthy Hike or Mountain Climb. The Rougher the Trip, the Better They Like It!

United States. One of the most popular U. S. mountain trails, it was named in honor of Muir, a world-famed naturalist who was the club's first president.

Other club activities center around the publication of scientific, literary and educational material. A recent addition to the roster of club publications, for example, is the "Climber's Guide to the High Sierra," edited by Hervey Voge, a Supervisor in the Catalytic and Surface Chemical Department of Shell Development Company's Emeryville Research Center.

Besides the 31 Sierra Club members at Emeryville, there are sizeable Shell contingents at Shell Chemical Corporation's Martinez and Shell Point Plants; at Shell Oil Company's Martinez, Wilmington and Anacortes Refineries; and in the Pacific Coast Exploration and Production Area. Many Shell sons and daughters also belong, as junior members. Moreover, there is an active "alumni" group at Head Office in New York. Like West Coast members, they receive regular bulletins of club activities, although their ascents are largely restricted to the elevators in Rockefeller Center.

Sierra Club activity runs the year round. Typical of the extended trips through the Sierras sponsored each year was one in which R. R. Breckenfeld, Assistant Manager of the Distilling Department in Shell's Wilmington Refinery, took part two summers ago. For two weeks, he was one of 150 club members who set out on a circular trip from Army Pass near the spectacular 14,495-foot Mount Whitney. A pack train of 50 mules hauled the party's food, cooking gear, sleeping bags and personal items. The party moved in two sections because of its large size and because of the scarcity of grazing land for the mules.

As they tramped through Sequoia National Park, the men and women

R. R. Breckenfeld of the Wilmington Refinery, above, scans the horizon from atop 14,190-foot Mount Russell in the Sierras. Right, R. P. McGillicuddy of Shell's Martinez Refinery takes a jump at Signal Hill, the club's ski run near Clair Tappaan Lodge.

Above, R. O. Pearl of the Martinez Refinery hauls skis and camping tools on a trek to one of the huts maintained by the club in ski areas.

Right, R. E. Koski of the Martinez Chemical Plant signs club register at the top of Mount Dana, two-mile-high peak in the Sierras. He has covered nearly 300 miles of Sierra trails.

Outside the club's Clair Tappaan Lodge, Chinook, the club's Husky mascot, is petted by Mary Newell, former Shell employee. R. P. McGillicuddy and R. L. McAndrews, right, both of the Martinez Refinery, help to prepare dinner in the lodge's kitchen.

viewed weather-marked pines and other scenic wonders. In Kings Canyon National Park, they swam in cold, roaring streams and glacial lakes. Perhaps the most challenging part of the trip was climbing Mount Russell, a peak of more than 14,000 feet. Because of its steep precipices, Russell is said by many mountain climbers to be even more formidable than the better known Whitney.

Esprit de corps runs high among club members. They have adopted a share-the-work policy which enables members to tour many miles of scenic wonders at small cost. Breckenfeld, for example, was one of a dozen volunteers serving in the commissary group—responsible for preparing the party's meals and shifting camp sites from one place to another. Through such economies as this, it cost the party an average of $75 per member for the entire two weeks' trip.

Sierra Club members report that the thin atmosphere in the lofty heights of a mountain peak play tricks with the eyes; other ranges which are many miles distant seem but a stone's throw away. In addition, non-existent figures and forms often take shape and seem as real as the traffic in a city street.

"We were bivouacking one evening well up on Mount Whitney," related Sierra Club member S. T. Abrams of Emeryville's Instrumentation Department, "and, looking down, I was sure I saw fireworks—the big, splashing, Roman candle sort of display. I reported this to my fellow hikers who could not see any fireworks. This might have been an embarrassing situation but for the fact that strange visions are so often experienced by high-altitude hikers. I know one Sierran who 'saw' a Bengal tiger approaching him on a narrow trail, another who 'smelled' bacon and eggs cooking on a peak where there was little possibility of a fire, much less a hot breakfast."

Much of the club's winter ski-and-snowshoe program centers around Clair Tappaan Lodge near Norden, California, about 175 miles east of San Francisco. It is one of several Sierra Club lodges spotted through the mountains as far south as the San Diego vicinity. Built by members 20 years ago, Clair Tappaan has dormitory space for 145 members, space for fireside activity such as square dancing and singing, and a complete kitchen operated by club members, except for a hired staff of two. Some of the best skiing country in the West—at Squaw Valley, Sugar Bowl and Soda Springs—lies within a few miles. In addition, the club maintains huts, with overnight lodgings for tired skiers, on outlying ski slopes.

On a trip to deliver fresh supplies to one such hut, on 7,800-foot Donner Summit, five miles from the lodge, Miss June Wayne and Miss Betty Klevesahl, both of Emeryville's Patent Division, told of being marooned for nearly a full day in a blinding snowstorm. They started out early one morning. Skiing up the mountain over the wet snow was difficult to begin with, so the two girls, laden with supplies, followed the ski tracks of a male companion.

But as the intensity of the storm increased, the tracks were quickly covered and the girls realized they were lost and stranded part way up the mountain side. Then, in the best story book tradition, darkness came on.

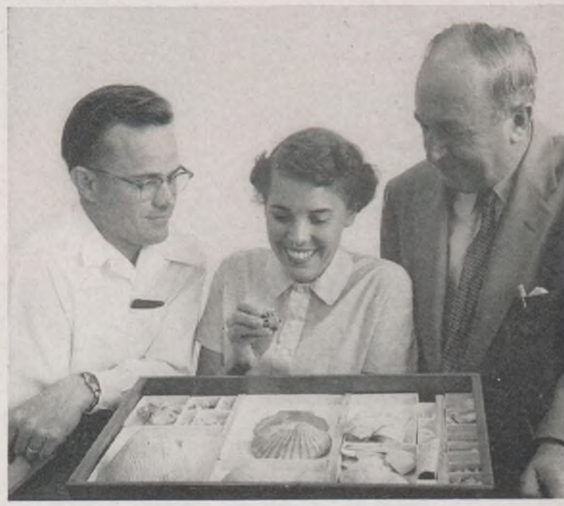
"We were both worried," Miss Wayne said, "but neither would admit it to the other. We debated a bivouac in the snow, but finally decided to move on for another hour or so. It had become so dark by then that we could barely see each other and had to keep yelling to maintain contact."

Just as the girls were about to give up hope of being found, they were met by their companion who had heard their cries. With his assistance, they got the supplies — including a heavy kerosene can—to the hut a short time later.

But, despite the possible perils of mountain climbing and roughing it in the open, Sierra Club members say that the sense of achievement in conquering a formidable peak more than justifies any discomfort experienced on the way up—even blisters.

Fossils are packed, right, in Shell's Bakersfield office for transfer to the University of California's Riverside Campus by Dr. M. A. Murphy, left, geology instructor, and H. J. Elkins, Jr., Shell Laboratory Technician.

Old Fossils for A New School



Specimens displayed in a special case, right, are examined by Dr. Murphy; Joan Crichtlow, a geology student, and Dr. Max Birkhauser, a Senior Geologist in Shell's Pacific Coast Exploration and Production Area.

GRAPHIC illustrations of millions of years in California's geological history are now available for classroom study by University of California students in the form of fossils and other geological specimens collected by Shell geologists. Shell recently presented the collection of thousands of specimens to the Geology Department, which opened last year at the University of California's Riverside Campus, one of the newest of the University's eight branches, which is located about 50 miles east of Los Angeles. The school will use the collection as a reference and teaching tool and will make it available for study by interested outsiders.

The collection presented to the Riverside Campus is made up of three separate groups of specimens assembled at different times and places by Shell men searching for oil in California. Of the three, the most comprehensive is a group assembled at Long Beach from specimens collected from all over the state.

Dr. Max Birkhauser, a Senior Geologist in the Pacific Coast Exploration and Production Area, started the other two collections which are made up largely of specimens from oil-producing sections of California's San Joaquin and Sacramento Valleys. Mahlon V. Kirk, now a Paleontologist in Shell's Exploration Laboratory at Seattle, Wash., added substantially to the Sacramento Valley collection.

The specimens are all megafossils, which are fossils large enough to be identified by the naked eye. They range in size from bits of rock smaller than a pea to stones the size of footballs. Several were in core samples brought up from Shell wells.

In assembling the specimens, Shell's scientists hammered and chiseled at tons of rocks. The size of their task may be judged from the fact that about 100 rocks must be broken up and inspected to uncover one good fossil. On a typical ten-day trip into the Sacramento Valley, for example, Kirk would bring back about three-quarters of a ton of fossil-bearing rocks. He often had to haul heavy rocks for miles on his back to get them to a point where an automobile could pick them up. On one occasion a bearded and aging landowner—approached for permission to explore his property—claimed the rocks were growing bigger. In the last few years, he said, they had been getting more difficult for him to lift.

Gathering a large number of fossils is only part of the job of making a collection. The fossils must be cleaned, and elaborate rubber or plaster casts often must be made to properly prepare the specimens for identification. Accurate identification usually requires a knowledge of scientific French and German.

Although most of the specimens were collected in Shell's search for oil, some were specially gathered in recent years to fill out the collection. It spans about 70 million years and covers all oil-bearing formations thus far discovered in California. Before presentation to the Riverside Campus, the three groups of specimens were integrated to make up one good basic collection for study. Few oil companies have made collections of such size and scope.

Presentation of the geological collection created no new bond between Shell and the University of California at Riverside. The University has long maintained a Citrus Experiment Station there, which has aided in tests of several of Shell Chemical Corporation's insecticides. The expansion of the Riverside Campus into a broader educational institution has been accomplished only in the last year.

They Have

R. ALVEY
Midland Area
Production

F. BENOIT
New Orleans Area
Production

T. A. BOLSTER
Seattle Div.
Operations

W. C. BROWN
Midland Area
Purchasing-Stores

D. CAMERON
Seattle Div.
Operations

F. H. CORSON
Sacramento Div.
Marketing Service

C. E. CROMPTON
San Francisco Office
Public Relations

J. M. DAVIS
Wood River Refy.
Engineering

L. O. DAVIS
Chicago Div.
Sales

F. O. DIETLEIN
Atlanta Div.
Treasury

F. L. DOVER
Cleveland Div.
Operations

P. J. DUHE
Norco Refy.
Distilling

J. A. FELDER
St. Louis Div.
Sales

J. F. FITE
Products Pipe Line
Momence, Ill.

C. F. GREGORY
Boston Div.
Operations

W. E. HARRINGTON
Head Office
Marketing

G. K. HARRY
San Francisco Office
Marketing

A. W. HEINZMANN
St. Louis Div.
Operations

H. J. HENRIQUES
Shell Development Co.
Emeryville

A. T. HOECK
Seattle Div.
Operations

F. C. HOERNKE
Wilmington Refy.
Alkylation

M. L. HOLLENBECK
Seattle Div.
Operations

Retired

L. T. HOOVER
Shell Pipe Line Corp.
Mid-Continent Area

J. M. HOSKINS
Midland Area
Production

C. C. IRWIN
Tulsa Area
Production

O. A. KERSHAW
Chicago Div.
Treasury

C. C. McCABE
Sacramento Div.
Treasury

J. McLAREN
Martinez Refy.
Compounding

R. L. MEYERS
Seattle Div.
Operations

F. MIGLIORE
Seattle Div.
Operations

E. G. MORRIS
Houston Refy.
Engineering

G. L. MORRIS
Shell Pipe Line Corp.
West Texas Area

J. J. RILEY
Cleveland Div.
Operations

W. M. ROGERS
Minneapolis Div.
Sales

C. L. SANFORD
Detroit Div.
Operations

J. SMAWLEY
Seattle Div.
Operations

C. W. SPRINGER
Sacramento Div.
Sales

H. W. STEWART
Sacramento Div.
Manager

A. L. STUM
Products Pipe Line
Zionsville, Ind.

F. E. SUPERIOR
Head Office
Financial

W. L. WAITE
Portland Div.
Sales

E. D. WATSON
Shell Pipe Line Corp.
Texas-Gulf Area

L. R. WHITE
Seattle Div.
Operations

J. A. WILLHITE
Pacific Coast Area
Production

R. J. WILSON
Wilmington Refy.
Engineering

SHELL COAST TO COAST

First Cadets

Appointed to the first class of cadets at the new U. S. Air Force Academy in Colorado were Melvin E. Pollard, at right, son of F. W. Pollard, Assistant Chief Gauger in Shell Pipe Line Corporation's Odessa District; and James M. Reed, standing in photo at far right, who is shown with his uncle, J. E. Reed, Personnel Supervisor in Shell's Denver Exploration and Production Area. Shell has relinquished leases to 1,100 acres of land to help make way for the new Academy at Colorado Springs.

Daddy's Air Medal

Three-year-old Patricia Weed admires the Air Medal recently awarded to her dad, C. B. Weed of the Engineering Office in the Ardmore, Oklahoma, District of Shell's Tulsa Exploration and Production Area. Son Peter, 2, looks on. Weed, a former Air Force staff sergeant, won the medal for distinguished service in Korea. The presentation took place at Ardmore Air Force Base

New Style in Cups

The design for paper cups featuring a Shell pecten, and now in use at the Midland Exploration and Production Area Office, is the work of Draftsman Emma Jo Noland, left, in the Area's Land-Drafting and Surveying Office. Among eight other designs also worked out by Miss Noland are those displayed behind her.

Art Show

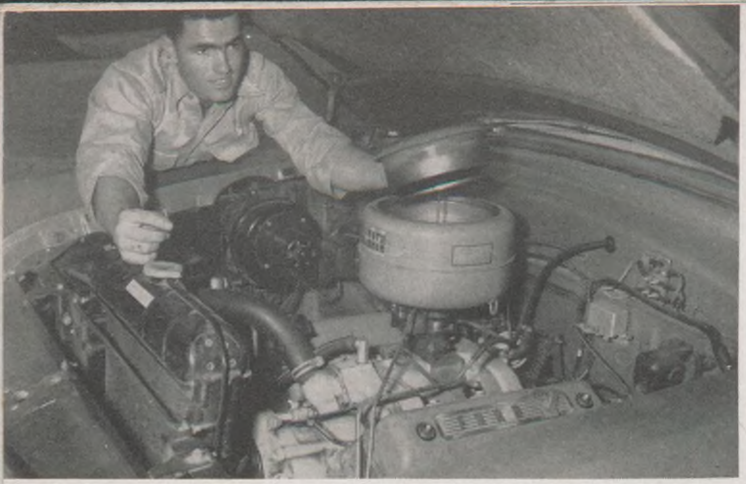
An oil painting class composed of Shell Head Office women employees, and taught by A. C. Williams of the Head Office Aviation Department, held a summer exhibit of their work. Visitors voted first place to the painting at top, done by Anna Abernethy, second from right. A professional jury selected painting at lower left, the work of Mary Malin, left. Other winning works were by Eileen Conway, seated, and Adrienne Camilli, right.

Watching for Winners

These are some of the thousands of Shell people and their families who attended the annual picnic sponsored by the Shell Employees Recreation Association, employee organization at Shell Oil Company's Houston Refinery and Shell Chemical Corporation's Houston Plant. What were they watching when the photo was taken? A bathing beauty contest which was being staged across the field. Later, there were rides and games for both adults and tots. More than 5,000 plates of barbecue were consumed!

The Charleston

Wives of Shell men in the Illinois Division of the Tulsa Area dressed as "flappers" and brought back memories of the Twenties as they performed this version of the Charleston at a Centralia, Illinois, Newcomers' Club dance review. Pictured are Mrs. W. E. McCool, left, Mrs. F. E. Foss, second from left, and Mrs. R. G. Mallander, far right, all wives of Illinois Division men, and Mrs. Shirley Greer of Centralia.



T. W. Lewis, Jr., inspects his car engine.

His Speeding Is Legal

SPEED laws are no handicap to members of the Southern California Drag Racing Association — as long as they keep their stock-model racing cars on officially recognized racing strips and do their speeding under the supervision of local authorities. One exponent of such "legal hot-rodding" is T. W. Lewis, Jr., of the Engineering Department at Shell's Wilmington Refinery. On a recent Sunday afternoon, he drove his 1954 Ford to a victory that required running in 25 elimination races, during which he hit speeds as high as 80 miles an hour and thus won his first drag racing trophy, pictured at left.

Lewis explains that the term "drag" is a slang word for acceleration. It refers to the fact that the lead car in a race, because of its faster acceleration, breaks the wind and thus makes travel easier for the car immediately behind, and so on down the line. One car, therefore, "drags" the one that follows it in the race.

Lewis became active in the drag racing association only six months ago, entering the Class B stock car category. This class admits only 1954 Fords, Chevrolets and Plymouths and certain 1954-55 Mercury models. Under association rules, the only alterations allowed to "soup up" the cars are the addition of manifold headers which permit dual exhaust pipes.

All of his speed driving is done at Santa Ana on a drag racing strip set aside near the Orange County airport and supervised by city and county police officials. In each race, cars start from a dead stop and race a quarter of a mile. Winners are decided according to the order in which cars reach the finish line, and not by time. By the time Lewis' trophy-winning race was run, all but himself and one other driver had been eliminated. They had to compete against one another four times. Their first three finishes were so close that judges couldn't choose between them.

Barbecue

A barbecue was a feature of the Sacramento Marketing Division's annual picnic, attended by 275 Shell Division and District Office people and their families. The picnic was part of a recently augmented recreation program which includes the formation of new bowling and softball teams.

Electronic Thinker

A high speed mathematical method for solving complex transportation problems, developed by Shell's Transportation and Supplies Organization in Head Office, has been "programmed" on International Business Machines' 701 electronic computer, below. Some of the 200 press representatives attending a preview prior to the recent opening of IBM's Electronic Data Processing Center in New York City witness a demonstration of this electronic "thinking machine".

Service Birthdays

Thirty-Five Years


J. T. BUTTS
Tulsa Area
Gas


F. S. CLULOW
Head Office
Vice Pres.-Manufacturing


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


J. B. HOWELL
Pacific Coast Area
Pipe Line


C. F. MERANDA
Pacific Coast Area
Gas

Thirty Years


W. W. AMOS
Seattle Div.
Operations


A. G. ANDERSON
Martinez Refy.
Cracking


R. L. BEDWELL
Wood River Refy.
Compounding


M. E. BENNETT
Pacific Coast Area
Production


A. H. BERENDSEN
Pacific Coast Area
Pipe Line


M. BIRKHAUSER
Pacific Coast Area
Exploration


C. R. BITTING
Pacific Coast Area
Production


A. C. BOTT
Wood River Refy.
Control Laboratory


A. A. BROWN
Wilmington Refy.
Engineering


O. W. BROWN
Atlanta Div.
Sales


O. A. DODSON
Wilmington Refy.
Distilling


M. W. B. DORE
San Francisco Office
Marketing


SELWYN EDDY
San Francisco Office
General Sales Manager


H. A. EICKEN
Wood River Refy.
Lubricating Oils


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


J. R. FERGUSON
Wood River Refy.
Engineering


W. E. HARPER
Wood River Refy.
Dispatching


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


G. C. HILL
Martinez Refy.
Cracking


V. HOUTS
Pacific Coast Area
Gas


J. C. JOHNSON
Pacific Coast Area
Gas


R. T. JOHNSTON
Tulsa Area
Production


C. L. KEITH
Pacific Coast Area
Production


F. O. KING
Wood River Refy.
Engineering

Thirty Years (cont'd)

A. C LANDECHE, SR.
Norco Refy.
Utilities

L. F. LONGMAN
Wood River Refy.
Dispatching

A. J. LORENZINI
Shell Chemical Corp.
Ammonia Division

R. R. MERICLE
Products Pipe Line
Harristown, Ill.

S. H. OATWAY
Pacific Coast Area
Production

J. H. PARKER
Shell Pipe Line Corp.
Mid-Continent Area

L. PEREIRA
Martinez Refy.
Distilling

C. V. POWELL
Shell Pipe Line Corp.
Mid-Continent Area

L. I. RENNER
San Francisco Office
Marketing

R. M. SAVAGE
Wilmington Refy.
Engineering

J. A. SMITH
Wood River Refy.
Utilities

G. J. SPRUILL
Norco Refy.
Econ. & Scheduling

I. E. STULL
Wood River Refy.
Utilities

G. L. WADE
Wood River Refy.
Thermal Cracking

C. H. ZIMMERMANN
St. Louis Div.
Operations

Twenty-Five Years

C. F. ABBOTT
St. Louis Div.
Treasury

J. S. BALLY
Portland Div.
Sales

L. L. BARTRON
Pacific Coast Area
Pipe Line

J. L. COWELL
Pacific Coast Area
Exploration

J. B. CRITTENDEN
Detroit Div.
Operations

S. W. CUMMINGS
Indianapolis Div.
Treasury

R. G. DANIELS
Houston Refy.
Dispatching

J. P. DOBSON
Shell Chemical Corp.
Head Office

H. EATON
Products Pipe Line
Fall River, Mass.

R. M. FRUITS
Tulsa Area
Production

D. G. GASCOIGNE
St. Louis Div.
Operations

M. M. GREIG
Calgary Area
Purchasing-Stores

J. C. HARPER
Cleveland Div.
Sales

A. E. HAYDEL
Norco Refy.
Engineering

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

M. E. HOSHALL
Tulsa Area
Treasury

P. A. HOUSER
St. Louis Div.
Sales

J. K. JACKSON
Norco Refy.
Engineering

A. L. JOHNSON
Shell Pipe Line Corp.
Texas-Gulf Area

J. KERWIN
Wood River Refy.
Engineering

G. F. LEGG
Boston Div.
Sales

J. J. LENGENFELDER
New York Div.
Operations

J. F. LYNG
Chicago Div.
Sales

E. C. MARTIN
New York Div.
Operations

P. H. McDERMOTT
Cleveland Div.
Treasury

R. S. MITCHELL
St. Louis Div.
Manager

E. F. PRYOR
Shell Pipe Line Corp.
West Texas Area

A. J. RICKETSON
Shell Chemical Corp.
Shell Point Plant

R. E. RIEFFER
Products Pipe Line
Litchfield, Ill.

G. ROZUM
Wood River Refy.
Engineering

Twenty-Five Years (cont'd)

R. R. RUEDIN
Wood River Refy.
Control Laboratory

E. H. SMALL
Boston Div.
Public Relations

V. W. SPANGLER
Houston Area
Gas

C. G. STANDLEE
Shell Pipe Line Corp.
Mid-Continent Area

W. B. STUEBINGER
San Francisco Office
Financial

H. S. THOMSON
Shell Chemical Corp.
Shell Point Plant

L. A. WILLIAMS
Houston Refy.
Dispatching

C. M. WILLIAMSON
St. Louis Div.
Operations

H. G. WINCH
Martinez Refy.
Engineering

SHELL OIL COMPANY

Head Office

20 Years

T. D. May, Jr. .... Trans. & Supplies
N. B. Wilson .... Manufacturing

15 Years

Mae J. Dennison .... Personnel
Ellen V. Dickson .... Personnel
P. J. Downey .... Financial
Rowena J. Easop .... Financial
R. O. Ford .... Trans. & Supplies
Marion E. Gleason .... Financial
Johanna W. Huth .... Financial
Amelia M. Myskow .... Marketing
Dorothy F. Schmidt .... Manufacturing
W. G. Schnetzer .... Trans. & Supplies

10 Years

D. Clifford .... Purchasing-Stores
Josephine G. Rubino .... Public Relations

San Francisco Office

10 Years

S. J. Gallardo .... Marketing
Hazel P. Nassett .... Legal

Exploration and Production

HOUSTON OFFICE

10 Years

A. C. Poujol .... Crude Oil

TECHNICAL SERVICES DIVISION (HOUSTON)

10 Years

Cecile K. Badousek .... Administration
Marie A. Tardo .... Engineering

DENVER AREA

20 Years

E. A. Davenport .... Production
G. D. Lambert .... Exploration
F. A. Wagner, Jr. .... Exploration
A. H. Wieder .... Production

10 Years

F. W. Hestand .... Exploration
C. R. Jones .... Production
E. L. Sherron .... Production

HOUSTON AREA

20 Years

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

10 Years

V. J. Dobecka .... Gas
M. Kincheloe .... Gas
L. R. Kubesch .... Gas
C. C. Walters .... Production

MIDLAND AREA

20 Years

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

15 Years

R. W. Hester .... Pers. & Indus. Rel.
H. J. Jauz .... Treasury

10 Years

D. G. Blevins .... Gas
O. L. Cook .... Gas
C. L. Doyle .... Production
N. S. Foeler .... Production
D. W. Gregory .... Production
H. L. Henderson .... Gas
J. D. Leathers .... Production
A. L. Wilson .... Gas

NEW ORLEANS AREA

20 Years

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

15 Years

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

10 Years

S. Jones .... Production
W. E. Kinsey .... Production
R. Peveto .... Production

PACIFIC COAST AREA

20 Years

H. A. Buss .... Land
D. S. Schlegel .... Pers. & Indus. Rel.

15 Years

L. E. Eubanks .... Gas

10 Years

W. W. Bonner .... Pipe Line
R. E. Cathey .... Gas
Cecile C. Cheatley .... Production
C. L. Christiansen .... Production
T. W. Elliott .... Gas
R. W. Everett .... Production
W. C. Humphrey .... Production
A. W. Jordan .... Production
A. E. Nelson, Jr. .... Land
S. A. Nelson .... Gas
R. R. Shinn .... Treasury
W. M. Smith .... Production
W. F. Wollen .... Production
R. A. Worford .... Production

TULSA AREA

20 Years

L. Alley .... Production
R. C. Linke .... Production
E. Richter .... Production
M. W. Sieker .... Production
J. G. Voelm .... Exploration
D. S. Wartick .... Production

10 Years

N. A. Bruce .... Treasury
D. C. Moeller .... Production

Manufacturing

HOUSTON REFINERY

20 Years

O. B. Anderson .... Engineering
C. V. Barbe .... Treasury
R. F. Clayton .... Lubricating Oils
J. L. Dunham .... Engineering
C. D. Fisher .... Engineering
J. S. Gonzales .... Engineering
R. Hargrove .... Engineering
E. B. Lierman .... Lubricating Oils
T. L. Massey .... Utilities
J. L. Murphy .... Research Laboratory
V. E. Wilson .... Engineering

10 Years

E. L. Childs .... Engineering
H. H. Dietzman .... Engineering
H. A. Ellison .... Engineering
F. F. Guidry .... Engineering
W. S. Hern .... Control Laboratory
T. A. Hiett .... Research Laboratory
S. J. Kent .... Research Laboratory
K. M. Mathis .... Gas
R. L. McGraw .... Utilities
H. W. Richardson .... Engineering

MARTINEZ REFINERY

15 Years

M. M. Cunha .... Engineering
R. S. Urner .... Research Laboratory

10 Years

A. Barsanti .... Engineering

C. Carone, Jr. .... Engineering
W. G. Chappius .... Engineering
A. B. Doran .... Engineering
C. B. Jones .... Cracking
J. E. Millsap .... Control Laboratory
E. Pichot .... Distilling
R. R. Ricks .... Compounding
S. H. Shideler .... Control Laboratory
S. Toth, Jr. .... Lubricating Oils
T. C. Wise .... Engineering
H. E. Witt .... Lubricating Oils
O. E. Wyffels .... Lubricating Oils

NORCO REFINERY

20 Years

H. A. Cassagne .... Engineering

WILMINGTON REFINERY

10 Years

P. P. Blockter .... Compounding
E. W. Brest .... Engineering
R. E. Brown .... Engineering
L. W. Claunch .... Catalytic Cracking
H. Graziano .... Engineering
G. C. LaPiana .... Alkylation
W. R. Lovitt .... Control Laboratory
F. M. Nikkola .... Engineering
R. Raddatz .... Distilling
A. M. Settles .... Engineering
N. A. Stanley .... Effluent Control & Utilities
R. B. Tague .... Engineering
C. J. Verbeek .... Engineering
H. R. Wheelock .... Engineering

WOOD RIVER REFINERY

20 Years

R. L. Autery .... Engineering
L. C. Enloe .... Gas
J. G. Ryan .... Research Laboratory
R. G. Schaller .... Catalytic Cracking
V. F. Walker .... Experimental Laboratory

15 Years

N. J. Arnold .... Engineering
W. D. Groves .... Catalytic Cracking
W. H. Lamkin .... Control Laboratory
A. J. Rosy .... Engineering

10 Years

N. Bangert .... Gas
L. D. Brown .... Pers. & Indus. Rel.
L. E. Felder .... Engineering
V. Fillingim .... Thermal Cracking
J. M. Gorman .... Research Laboratory
W. L. Kennedy .... Engineering
L. W. Manning .... Engineering
A. J. Martin .... Engineering
C. A. Pike .... Alkylation
R. D. Smith .... Dispatching
J. H. Tippett .... Engineering

Marketing

MARKETING DIVISIONS

20 Years

C. C. Hurst .... Atlanta, Sales
W. F. Reynolds .... Baltimore, Sales
L. J. Cooley .... Boston, Operations
W. D. Ramsey .... Boston, Personnel
E. P. Rumann .... Chicago, Operations
L. G. Norton .... Detroit, Marketing Service
B. Alexander .... New Orleans, Treasury
D. H. Evans .... Portland, Sales

15 Years

R. D. Bettman .... Albany, Sales
A. Z. Gdula .... Albany, Sales
A. M. Haigney .... Albany, Treasury
H. C. Haralson .... Atlanta, Treasury
J. S. Smith .... Atlanta, Treasury
F. D. Moonaham .... Baltimore, Treasury
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
T. F. Kremer .... New York, Operations
W. J. McGloin .... New York, Sales
H. D. Vandenburgh .... New York, Personnel
D. W. Nichols .... St. Louis, Operations
C. I. Wade .... San Francisco, Sales

10 Years

B. G. Quintin .... Albany, Operations
J. L. Ezzell .... Atlanta, Operations
D. P. Ford .... Atlanta, Marketing Service
J. Glover .... Atlanta, Operations
M. H. Upchurch .... Atlanta, Treasury
A. R. Howlett .... Baltimore, Operations
P. G. Potts .... Baltimore, Sales
E. J. Skovron .... Baltimore, Operations
W. Sundheimer .... Baltimore, Sales
W. Virdinlia .... Boston, Operations
F. J. Whalen .... Boston, Operations
R. N. White .... Chicago, Sales
C. J. Gerth .... Cleveland, Operations
E. A. Gorney .... Cleveland, Operations
R. H. Kellerman .... Cleveland, Operations
H. H. Moore .... Cleveland, Operations
J. G. Reichert .... Cleveland, Operations
H. H. Shadley .... Cleveland, Operations
J. H. Parker .... Detroit, Operations
R. E. Julian .... Indianapolis, Operations
J. L. Stamets .... Los Angeles, Operations
G. C. Adams .... Minneapolis, Sales
L. W. Mason .... Minneapolis, Sales
G. L. Werner .... Minneapolis, Sales
D. B. Burks .... New Orleans, Sales
F. A. Briel .... New York, Operations
E. H. Corrao .... New York, Operations
L. R. Craig .... New York, Sales
Ellen M. Kilroy .... New York, Sales
H. W. Sinkiewicz .... New York, Operations
N. M. Thatcher .... New York, Operations
C. L. Anderson .... Portland, Operations
J. H. Gellatly .... Portland, Operations
V. C. Lehman .... Portland, Operations
E. A. Leverenz .... Portland, Operations
J. H. Nellis .... Portland, Operations
F. D. Rogers .... Portland, Operations
G. J. Weum .... Portland, Operations
T. C. Baskin .... Sacramento, Operations
Evelyn L. Phillips .... Sacramento, Treasury
J. H. Parker .... Seattle, Operations
H. W. Williams .... Seattle, Operations

SEWAREN PLANT

15 Years

A. C. Jensen .... Operations

10 Years

W. H. Baum .... Depot
R. E. Dunn .... Depot
L. G. Simon .... Terminal

Products Pipe Line

15 Years

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

10 Years

L Faulkner .... Niles, Michigan
R. V. Garrettson, Jr. .... Lima, Ohio

SHELL CHEMICAL CORPORATION

20 Years

A. K. Vance .... Dominguez
W. L. J. DeNie .... Head Office
L. Armstrong .... Houston
J. W. Chandler .... Houston
H. Ecby .... Houston
J. Holt .... Houston
C. E. Leonard .... Houston
I. Shultz .... Houston
J. L. Sellers .... Norco
A. O. Newman .... Shell Point

15 Years

R. A. Lewis .... Dominguez
J. Tenconi .... Martinez
C. J. Albera .... Shell Point

10 Years

R. E. Scheidt .... Denver
U. B. Capus .... Head Office
W. J. Curry, Jr. .... Head Office
W. J. Babineaux .... Houston
M. S. Johnsen .... Houston
J. E. Owens .... Houston
S. Reese .... Houston
F. H. Benzel .... Martinez
W. F. Bowden .... Shell Point
I. O. Evans .... Shell Point
J. L. Gonzaga .... Shell Point
E. E. Grove .... Shell Point
J. A. Magana .... Shell Point
R. M. Passley .... Shell Point
M. N. Black .... Ventura
C. A. Harkins .... Ventura
G. H. Peters .... Ventura
A. B. Taliaferro .... Ventura

SHELL DEVELOPMENT COMPANY

20 Years

K. E. Marple .... Agricultural Research Div.
L. C. Anderson .... Emeryville
H. K. Caldow .... Emeryville
D. B. Luten, Jr. .... Emeryville
R. H. Stewart .... Emeryville
W. H. Thurston .... Emeryville
C. H. Wilcoxen, Jr. .... Emeryville
N. D. Smith, Jr. .... Houston

15 Years

R. L. Herrin .... Emeryville
E. D. Katona .... Emeryville
Eleanor J. Wayne .... Emeryville
Mary J. Raftery .... New York

10 Years

T. Alexander .... Emeryville
F. R. Barker .... Emeryville
S. M. Brassington .... Emeryville
R. F. Couch .... Emeryville
H. Johnson .... Emeryville
V. N. Smith .... Emeryville
R. Zanders .... Emeryville
R. L. Guest, Jr. .... Houston
S. J. Walters .... Modesto

SHELL PIPE LINE CORPORATION

20 Years

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

15 Years

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

10 Years

W. P. Burleson .... West Texas Area
C. E. Hart .... West Texas Area
E. L. Martin .... West Texas Area
L. H. Pace .... West Texas Area
C. C. Roberts .... West Texas Area

matters of *fact*

TRIBUTE TO SERVICE

The Shell service emblem is a tribute to the people who wear it — and about **40 per cent** of all Shell employees wear it! Among the 36,000 of us:

4,718 have 10 to 14 years' service
3,444 have 15 to 19 years' service
3,059 have 20 to 24 years' service
2,199 have 25 to 29 years' service
696 have 30 to 34 years' service
53 have 35 to 39 years' service
6 have 40 or more years' service

SHELL OIL COMPANY
50 West 50th Street
NEW YORK, N. Y.
RETURN POSTAGE GUARANTEED

J. B. Bradshaw
4710 Bell
Houston, Texas

SCC

Fuel Oil

After gasoline, fuel oil is the biggest item on Shell's sales list. Nearly one-third of the average barrel of crude is refined into fuel oil, compared to about one-half which is turned into gasoline. Fuel oil's clean, efficient heat and the ease with which it can be stored and handled have caused a vastly increased demand for it in recent years.

Total industry sales of fuel oil in the United States last year amounted to more than one billion barrels and is expected to be higher in 1955. The heating needs of some 8 million homes and public and private buildings account for about one-third of the consumption. Railroads and ship lines use substantial amounts for fuel. Steel and other industries find wide use for it in smelting ores and forging metals. Oil companies themselves use substantial quantities as fuel, particularly in refineries. Among countless other users are bakers, sugar refiners, and other food producers who desire cleanliness and exact temperature control for their products.