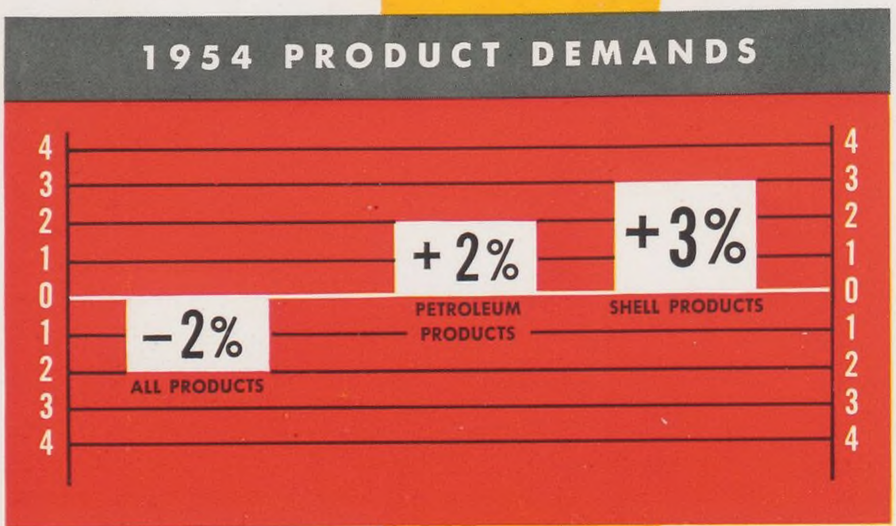

SHELL NEWS
a review of Shell's 42nd Year
APRIL 1955

A Successful Year For Shell

By H. S. M. Burns, *President Shell Oil Company*



At An All-Time Peak, Shell Continued To Improve Its Competitive Position

Domestic demand for petroleum products increased 2 per cent, but demand for Shell products in particular was up 3 per cent in 1954

THE year 1954 was a good one for the American economy in spite of a shaky start. Gross national product value for the year was only 2 per cent less than the record high of 1953. The oil industry fared even better with a 2 per cent INCREASE in volume over 1953—proof, if proof were needed—that ours is still an expanding industry despite its enormous growth in recent years.

Shell beat the oil industry average with a 3 per cent increase in volume of sales over 1953. This increase was more modest than we had been accustomed to since World War II, but it was gratifying on two counts: 1) We more than held the substantial gains made in 1953 with Shell Premium Gasoline with TCP* and 2) the increase was made in the most competitive markets we have experienced in 15 years.

Competition for the gasoline market was particularly keen. Almost all of our competitors stepped up the octane rating of their premium brand gasolines in an effort to offset the gains made by Shell Premium Gasoline with TCP. But at the end of 1954, Shell Premium represented a substantially higher percentage of Shell's total automotive gasoline sales than was the case with premium grade gasolines in the industry as a whole.

* Trade-Mark Shell Oil Company

In addition, we further improved our competitive position with the introduction of TCP into Shell Regular Gasoline. With this move, we reached many motorists who do not buy premium gasolines.

Outstanding Exploration Work

Last year we made substantial progress in all branches of our business, but particularly in our exploration and production work. We spent $146 million, or 62 per cent of our capital budget, in these activities—and I am convinced we more than got our money's worth!

Our exploration people added three states to the nation's list of oil and gas producers: South Dakota, Nevada and Arizona. We also made a discovery in Southeastern Utah which attracted considerable attention. But the most significant events took place in the Gulf of Mexico where we bid successfully for oil, gas and sulfur leases on about 100,000 acres. Drilling tests on these leases have resulted in several substantial discoveries although, in some cases, many obstacles have to be overcome and large sums of money spent before they can be fully exploited. Experience has already shown that daily drilling costs offshore are roughly three times as much as on land.

The problems involved in deep water drilling are formidable and have been solved with varying degrees of success. We are industry leaders in the field of deep-water mobile drilling platforms, with several especially designed for us now in operation or under construction. We have one under contract which can drill in 40 feet of water; another contract rig will drill in depths up to 100 feet when it goes into service in the near future. In spite of the costs and the engineering problems, we intend to step up our drilling activities in the Gulf during 1955.

It is interesting to note that in the period 1946-54 we produced 750 million barrels of crude oil. At the beginning of the period our proven reserves in the ground were estimated at almost the same figure. In other words, had we not pursued an active exploration course during those nine years, we would now be running out of crude supplies. I am happy to report, however, that our proven crude reserves today amount to one and one quarter billion barrels—or two thirds more than they were nine years ago!

Refineries Expanded

Our refinery expansion program moved along on schedule last year. The major expansion at Norco was completed and that refinery is already running more than its new rated capacity of 75,000 barrels a day. Well situated, close to our large crude reserves in Louisiana, Norco figures prominently in our future plans. Construction of our new refinery at Anacortes, Washington, is now well along and we expect it to be in full operation by the end of 1955. At that time our six refineries together will have a rated capacity of 554,000 barrels a day.

A Noteworthy Anniversary

Last year was the 25th anniversary of our entry into the chemical industry. It was also Shell Chemical Corporation's best year in all respects. The Corporation, although it produces only petrochemicals, now ranks among the 15 largest of the several hundred companies in the entire chemical industry. Shell Chemical manufactures 25 per cent of the U. S. supply of glycerine; operates the world's largest epoxy (EPON®) resins plant; and is the largest supplier of ammonia fertilizer west of the Rocky Mountains. The Corporation's insecticides have prevented, lessened or stopped plagues of locusts and grasshoppers which have threatened, at one time or another, the food supply in large areas of the world.

The Corporation has signed a contract for purchase of government synthetic rubber facilities in Los Angeles County, California, which include the butadiene plant at Torrance that we have operated for many years.

You will agree, I believe, that our 25 years in the petrochemical business have been exciting and fruitful.

Prospects for 1955

Shell made capital expenditures of $237 million last year and expects to maintain them at this high level in 1955. Large sums will go into exploration and production, into the completion of the Anacortes Refinery, and into the purchase of the synthetic rubber facilities at Torrance.

These expenditures, I believe, are justified by the prospects for the next few years. Indications are that sales will increase steadily with the expansion of business generally. The year 1955 is certainly off to a good start. General business conditions are good with a corresponding effect on oil industry sales. If the present business trend continues we may expect that over-all demand for gasoline in 1955 will rise substantially over last year—perhaps as much as 4 or 5 per cent.

SHELL NEWS

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

Employee Communications Department, New York, N. Y.

contents

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Record

Discoveries to Record Sales

. . . it was a banner year all around throughout the varied activities of Shell's integrated operations

IN the most concise terms, a review of Shell activities in 1954 brings out certain salient facts: Exploration and production continued at high levels with the emphasis on the search for additional reserves; manufacturing operations and sales volumes reached all-time peaks; research and development resulted in a continued parade of new products and industry "firsts," and Shell's corporate assets passed the $1 billion mark for the first time.

The story behind these accomplishments is a narrative of integrated and interdependent activities in which all of Shell's 35,000 employees contributed and shared.

The chain of action begins, of course, in the field, where Shell Oil Company's exploratory activities broke previous records. In building for the long-term future, the search for new oil reserves was given added emphasis—as shown by the fact that the number of exploratory tests increased

At the end of 1954, Shell's unproven lease holdings totaled 20,500,000 acres—six times the acreage nine years ago. The seismic crew member carrying geophones, above, was working in West Texas.

by about 35 per cent. The results tell the story: 211 exploratory test yielded 51 discovery wells, 14 more than in 1953. Most of these were rank wildcats; however, some resulted in broad extensions or new and deeper production in existing fields. The important thing is that they—along with further developments in established fields—raised the total of Shell's unproduced crude oil reserves to 1¼ billion (1,250,000,000) barrels.

Perhaps the most interesting wildcats of the year were those which added three states—Nevada, Arizona and South Dakota — to the Nation's list of oil and gas producers.

In addition to this history-making trio, the Company's wildcat successes ranged from the Gulf of Mexico to the Canadian wilderness. In the Canadian Provinces, there were five discoveries in Alberta, three in Saskatchewan, and two in British Columbia. In the United States, there were 17 in Louisiana, seven in Texas, four in Colorado, three in California, two each in Montana and Wyoming, and one each in Nebraska, Oklahoma and South Dakota.

THE RECORD OF SHELL'S 1954 EXPLORATION AND PRODUCTION

	1954	1953
Net Crude Oil Produced (barrels)	97,693,800	104,267,590
Natural Gas Produced (million cubic feet)	340,040	316,362
Wells Drilled — Oil	703	755
Wells Drilled — Gas	68	79
Wells Drilled — Dry Holes	225	168

The year's biggest story took place in the offshore waters of the Gulf of Mexico. Following the Federal Government's clarification of "tidelands" ownership in 1953, Shell bid competitively for State and Federal offshore leases. In addition to many thousands of acres already held off the coasts of Louisiana and Texas, the Company acquired in 1954 oil, gas and sulfur leases on about 100,000 acres off the coast of Louisiana. Two major discoveries have been brought in on these new leases, and three others were made on leases already held.

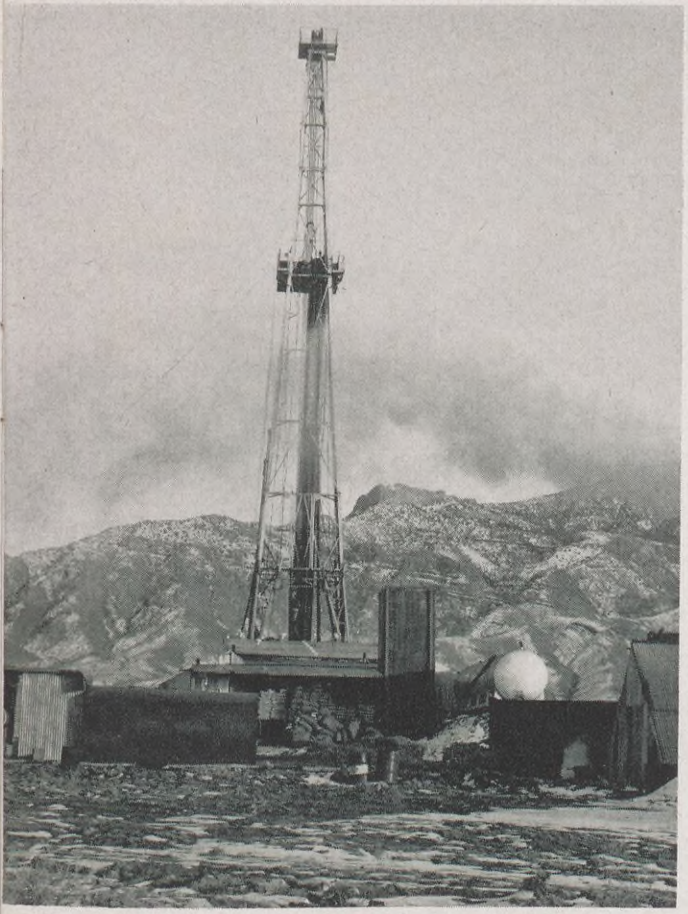
As a result of the year's effort in offshore waters, Shell now is the major crude oil producer in this promising oil province. Over-all production from wells in the Gulf off the Louisiana Coast was averaging more than 51,000 barrels per day at year end. A full third of this was Shell production.

Meanwhile the Company reported its first Texas offshore success when it brought in a gas discovery, establishing the Kain Field off the shore of Matagorda County. The well is unusual for two reasons: 1) it was directionally drilled by a shore-based rig using part of a previous dry hole, and 2) the drillers slanted the bit more than 1,000 feet out under the Gulf.

Shell's accelerated offshore program was carried on despite high financial risks. Not only are Gulf leases expensive, but daily drilling costs in open water are roughly three times as much as those for drilling onshore. There are also a variety of new drilling problems to overcome. In this connection, Shell has been among the leaders in sponsoring the development of huge, mobile drilling platforms capable of operating in water as deep as 100 feet—thus extending the search for oil farther out on the Continental Shelf. Three of the big platforms were under contract to Shell during the latter part of 1954. One of them drilled a discovery well off the coast of Louisiana in South Pass Block 27 its first time out.

As the Company's geologists and geophysicists sought other likely places to spud in wildcat wells, they had ample ground for their search. At the end of 1954, Shell's unexplored

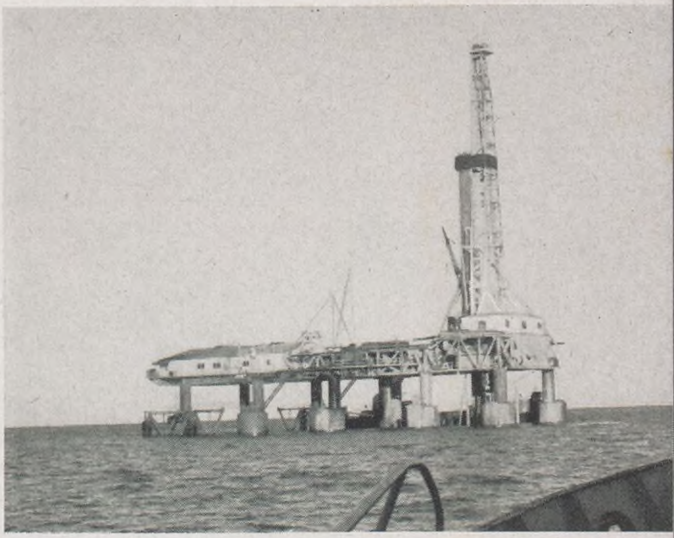
Shell stepped up exploration in the U. S. and Canada
The rodman, right, bucked the winter in the



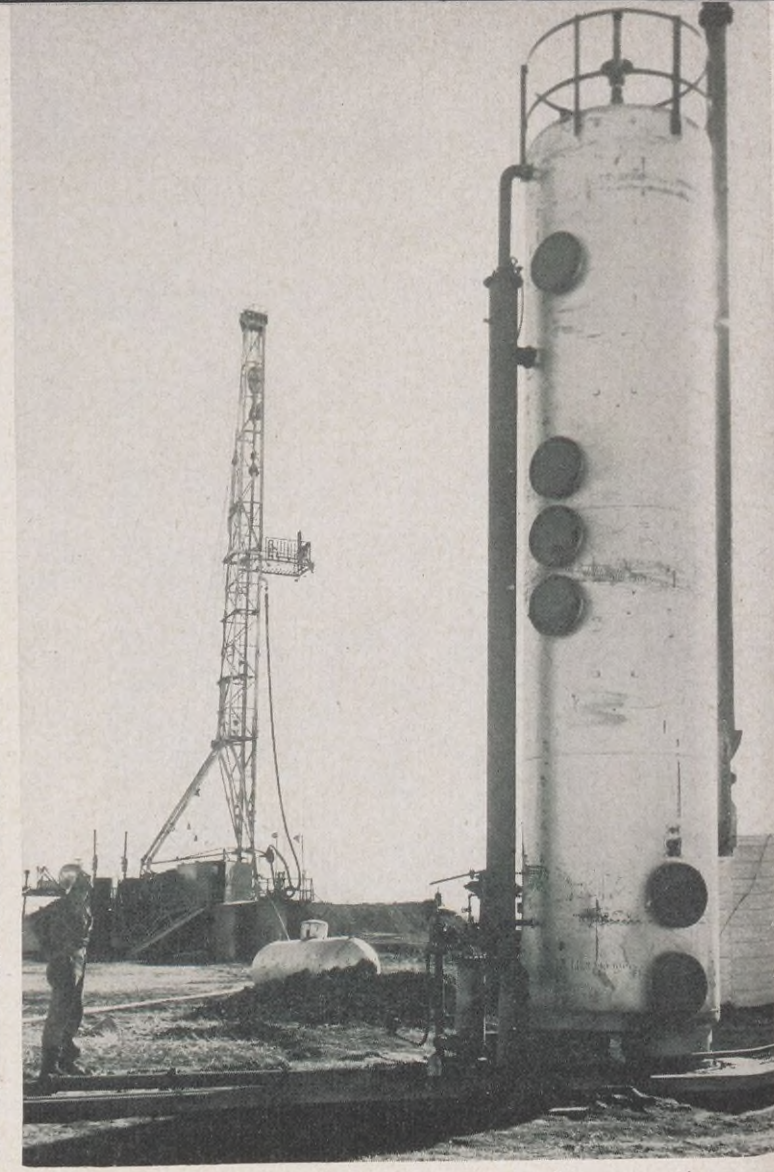
Shell, Eagle Springs Unit No. 1, above, a rank wildcat in Nye County, Nevada, drew attention when it struck oil and added the Silver State to the nation's list of oil and gas producers.

in 1954. The seismic shot, above, was made at Pincher Creek, Alberta.
Williston Basin, where Shell holds over 9 million acres under lease.

"Mr. Charlie," giant mobile drilling platform operating for Shell under contract in the Gulf of Mexico, brought in a discovery in South Pass Block 27 on its first drilling venture.



The contract rig, above, drilled Shell-Home, Sarcee No. 1, a gas and condensate discovery 23 miles southwest of Calgary in the Sarcee Indian Reserve. This well was one of 10 Shell discoveries in Canada in 1954.



Shell, Holloway A-10-20, shown above with a treater installed, was an oil discovery in the Saskatchewan portion of the Williston Basin. A Company rig drilled the well. Shell made two other discoveries in Saskatchewan.

lease holdings, spread from northern Canada to the southern part of Texas, totaled 20,500,000 acres — six times the acreage held at the end of World War II.

Field Development

In common with the rest of the oil industry, Shell's oil production and its development drilling activity declined from the record year of 1953. The decline is largely attributable to curtailment of production allowables by state agencies responsible for the conservation of natural resources. The resultant average net crude oil production during 1954 was 268,000 barrels per day, a drop of 18,000 barrels daily from the previous year. On the basis of allowables that prevailed in 1953, it is estimated that Shell production in 1954 could have been about 300,000 barrels per day, after taking into consideration natural declines in production from old wells and voluntary reductions in some areas.

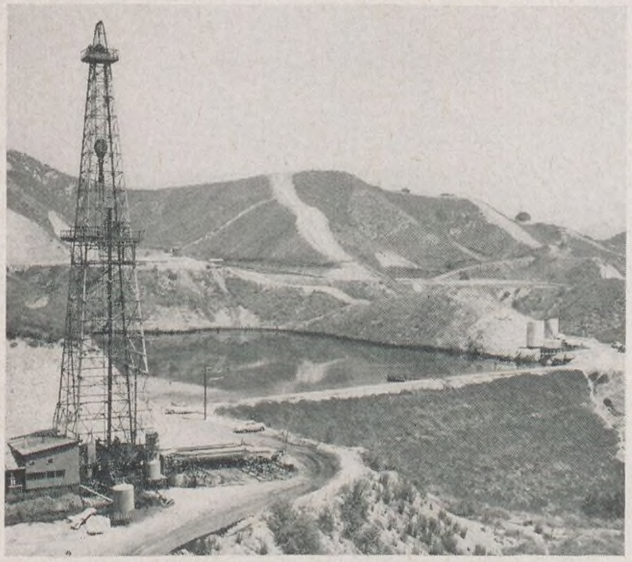
Despite imposed and voluntary restraints, Shell's development drilling did not lag far behind the record-breaking pace set in 1953. Development wells totaled 785 (849 were drilled in 1953), of which 666 were completed as oil producers and 54 as gas producers. With completions averaging almost two a day, the rigs drilling development wells accounted for the bulk of the 1,200 miles of hole drilled by Shell in 1954.

The highest record for any Shell field, in number of wells, was made in the Big Foot Field of south central Texas. There, no less than 106 producing wells were completed, bringing the Shell total in the field to 295, and accounting for a boost in monthly production figures at Big Foot from 129,000 to 150,000 barrels.

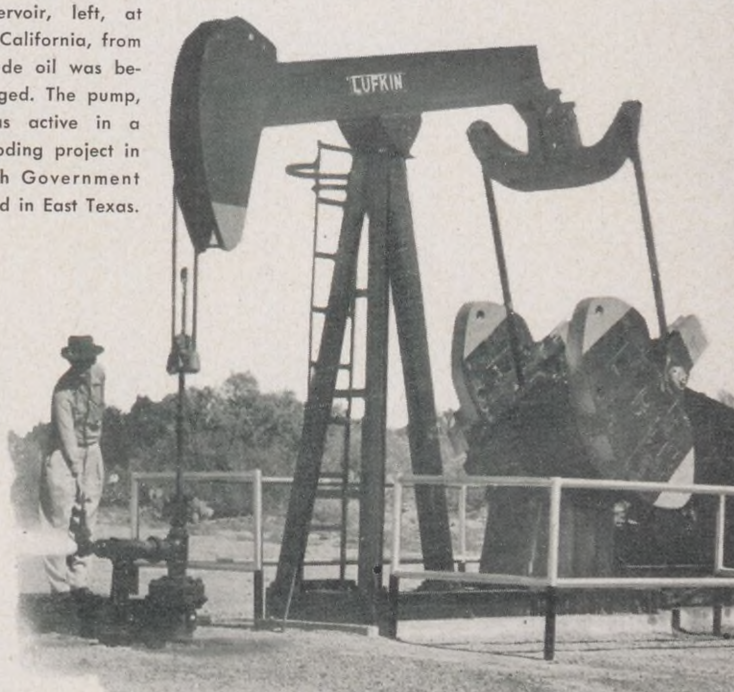
Other major development activities included drilling 48 additional wells in the Ventura, California, Field; 45 in the Big Mineral Field in North Texas; 23 in the Fenn-North Big Valley Field, 90 miles northeast of Cal-

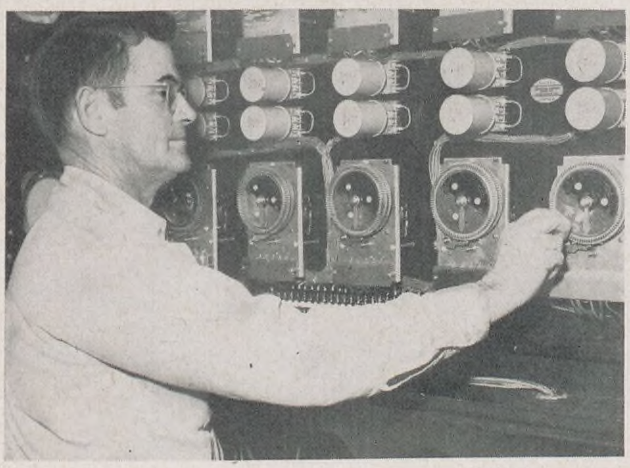
SIGNIFICANT EXPLORATORY DRILLING IN 1954

OFFSHORE: New discoveries off the coast of Louisiana at South Pass Block 27, West Delta Block 30, and Eugene Island; Shell's first Texas offshore completion, a gas producer establishing the Kain Field. THREE NEW PRODUCING STATES: South Dakota, through Shell, State No. 1 in the Buffalo Field; Nevada, through Shell, Eagle Springs Unit No. 1; Arizona, through Shell, East Boundary Butte No. 2, a gas producer. IMPORTANT EXTENSIONS TO EXISTING FIELDS: At the Pine, Cabin Creek and Little Beaver Fields in eastern Montana, and at the Midale Field in Saskatchewan, all in the Williston Basin; at the Big Mineral Field in North Texas; at South Pass Block 24, Main Pass Block 35, Main Pass Block 69, and Weeks Island, Louisiana. OTHER NOTEWORTHY WILDCATS: Shell, Desert Creek No. 2, an oil producer on the Navajo Reservation in Utah; Shell-Home, Sarcee No. 1, a gas producer on the Sarcee Indian Reserve in Alberta; Shell, Samples No. 1, which discovered the North Healdton Field near the old Healdton Field in Oklahoma.



Among projects to conserve crude were the 3½ million barrel drilling mud reservoir, left, at Ventura, California, from which crude oil was being salvaged. The pump, right, was active in a water flooding project in the North Government Wells Field in East Texas.





A Shell pumper, left, inside the central well control station of the Big Mineral Field in North Texas, was setting a time clock to regulate the pumping of oil from a remote well. State regulations required close checks on production. Allowables were considerably reduced in several producing states during 1954.

gary in Alberta; 19 in South Pass Block 24, in a bay off the Gulf of Mexico, and 10 in the North Healdton Field in southern Oklahoma.

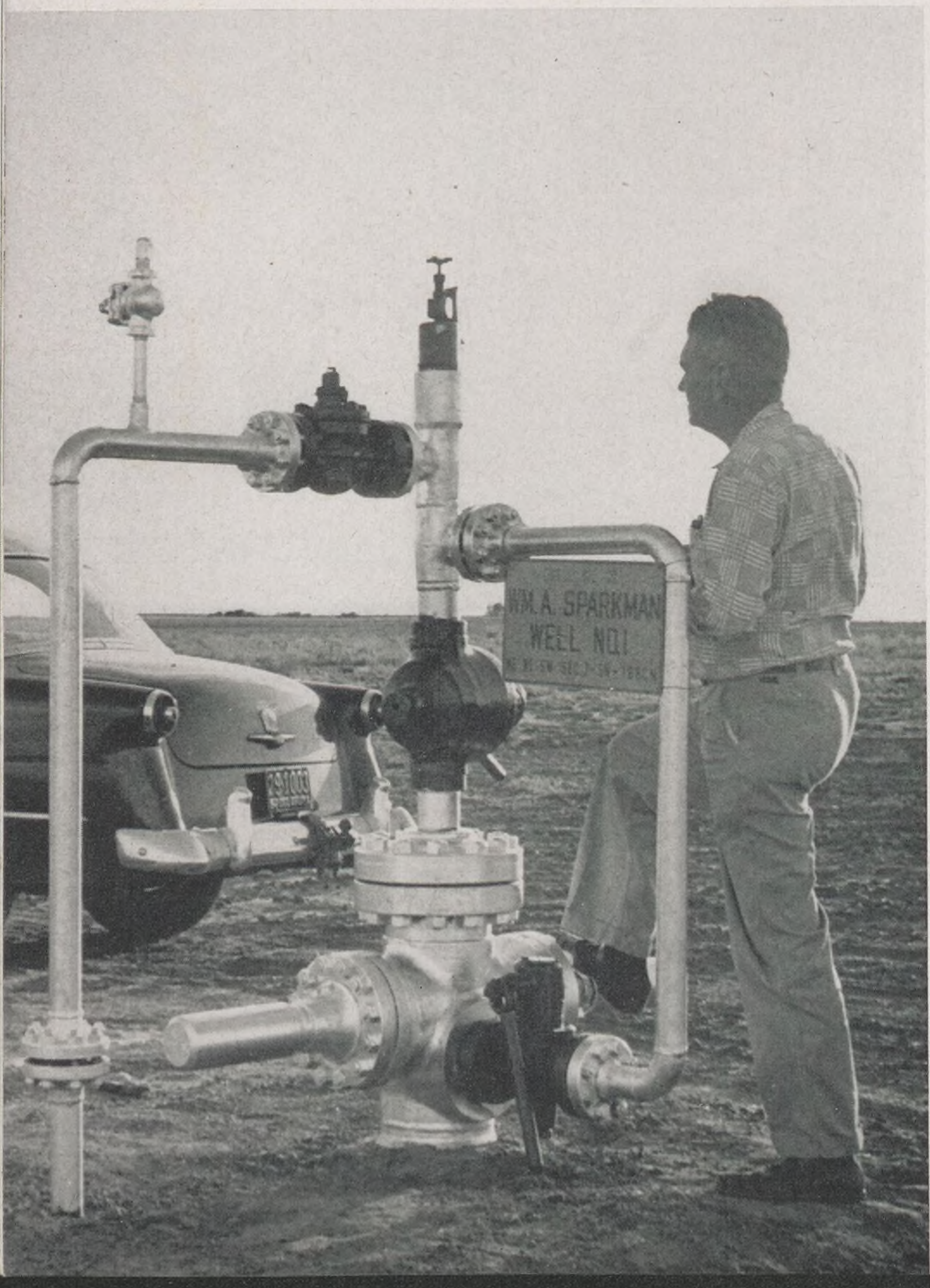
Some drilling time records were also broken. At Big Foot, a comparatively shallow field, Shell's new, portable Rig No. 25 drilled one well in 15½ hours and 11 wells in one month. Another new distance-time record was set in the deep Weeks Island, Louisiana, Field when Shell's Marine Rig No. 7 drilled a 14,400-foot hole in 41 days.

To satisfy current crude oil needs, and also to pave the way for maximum ultimate production, a number of oilfield projects were under way in 1954. Water flooding, as a method of forcing oil out of the ground, was introduced or extended in California, Illinois, Oklahoma and Texas. A project in the Coalinga Field marked the first time the water flooding technique had ever been used by Shell in California. Fracturing of formations to increase the flow of oil continued in many fields. In the Eunice-Monument Field of New Mexico, the introduction of fracturing as a part of well completion techniques enabled Shell to bring in 15 new producing wells in a portion of the field previously written off as unproductive. In Oklahoma's Ardmore Basin, where Shell operates 671 wells, production was increased by installing new pumping units on 464 wells.

Shell crude oil production in 1954 was supplemented by increasing production of natural gas and gas liquids. Natural gasoline increased by 4 per cent to a record total of more than 11 million barrels. Shell's production and sale of natural gas continued to grow as 14 of the 1954 discovery wells produced gas. Total production for the year was 340 billion cubic feet, an increase of about 23½ billion cubic feet over the previous year.

In line with this upward trend in gas production, new processing facilities were begun or existing ones were expanded and modernized at the Iowa and Burtville Fields in Louisiana, Jumping Pound and Okotoks in Alberta, and Elk City, Oklahoma. Shell now owns wholly or in partnership 27 operating gas processing plants and retains an over-riding interest in two farmed out plants. This includes two new jointly owned plants at Denton, New Mexico, and West Seminole, Texas, which were completed early in 1955.

Though crude oil production fell off, Shell increased the number of its gas wells, like the one below, in the Keyes Dome Field in the Oklahoma Panhandle. The Company's total natural gas production increased in 1954 to more than 340 billion cubic feet for the year.

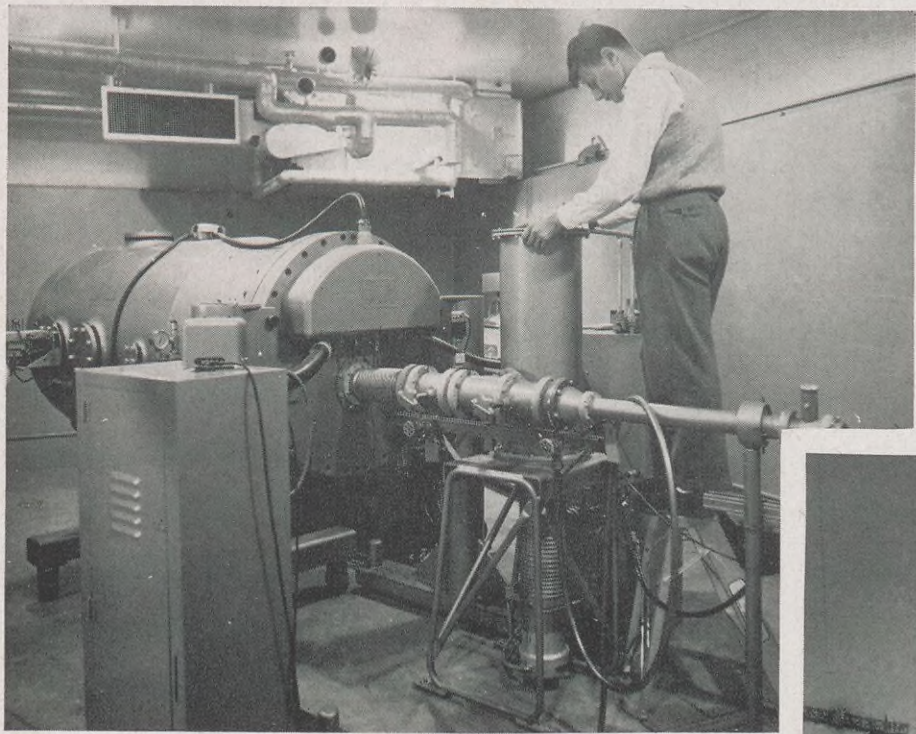


Research Support

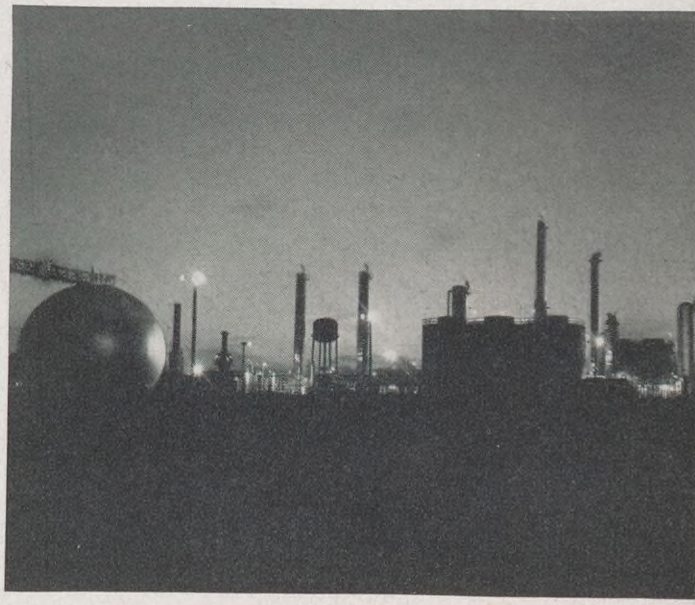
As mentioned, Shell's story of 1954 is one of complementary activities. For example, the men in the field finding and producing gas and oil received valuable assistance from scientists in the Exploration and Production Organization's own Technical Services Division and in Shell Development Company's Exploration and Production Research Division. The Technical Services Division also stepped up its activities in recruiting and training personnel to help insure an ample supply of trained people for exploration and production work.

Among the major Technical Services projects were: 1) Refinements in geophysical instruments and the techniques of using them, 2) review of suggested improvements in designs for drilling, producing, storage and transportation facilities, particularly those for offshore operations, 3) increased use of electronic computing instruments as an aid in estimating underground reserves and selecting exploitation methods, and 4) continued field and laboratory studies of drilling fluids.

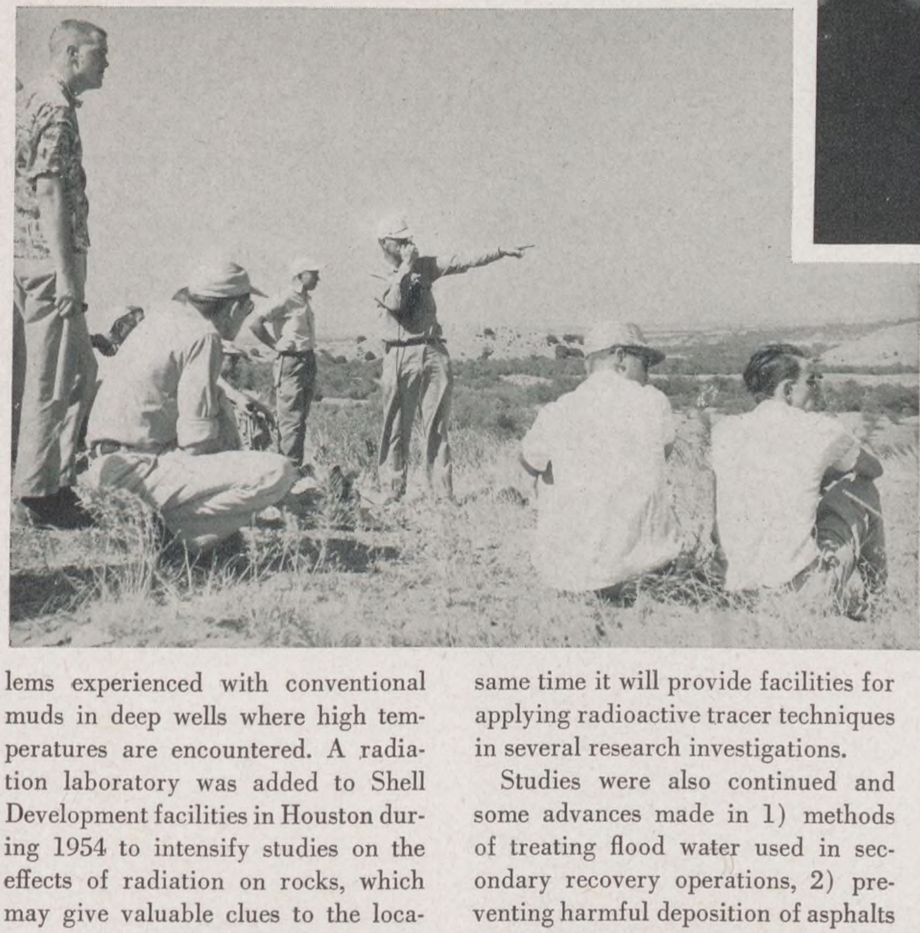
Shell Development Company scientists at Houston continued extensive research in the fields of chemistry, geology, physics and engineering as they relate to exploration and production. Chemical research led to the development of a new drilling fluid that circumvents many of the prob-



To aid in studies of reservoir rocks and other geological formations, the first 2 million volt particle accelerator in the petroleum industry, left, was installed at Houston by Shell Development Company's Exploration and Production Research Division.



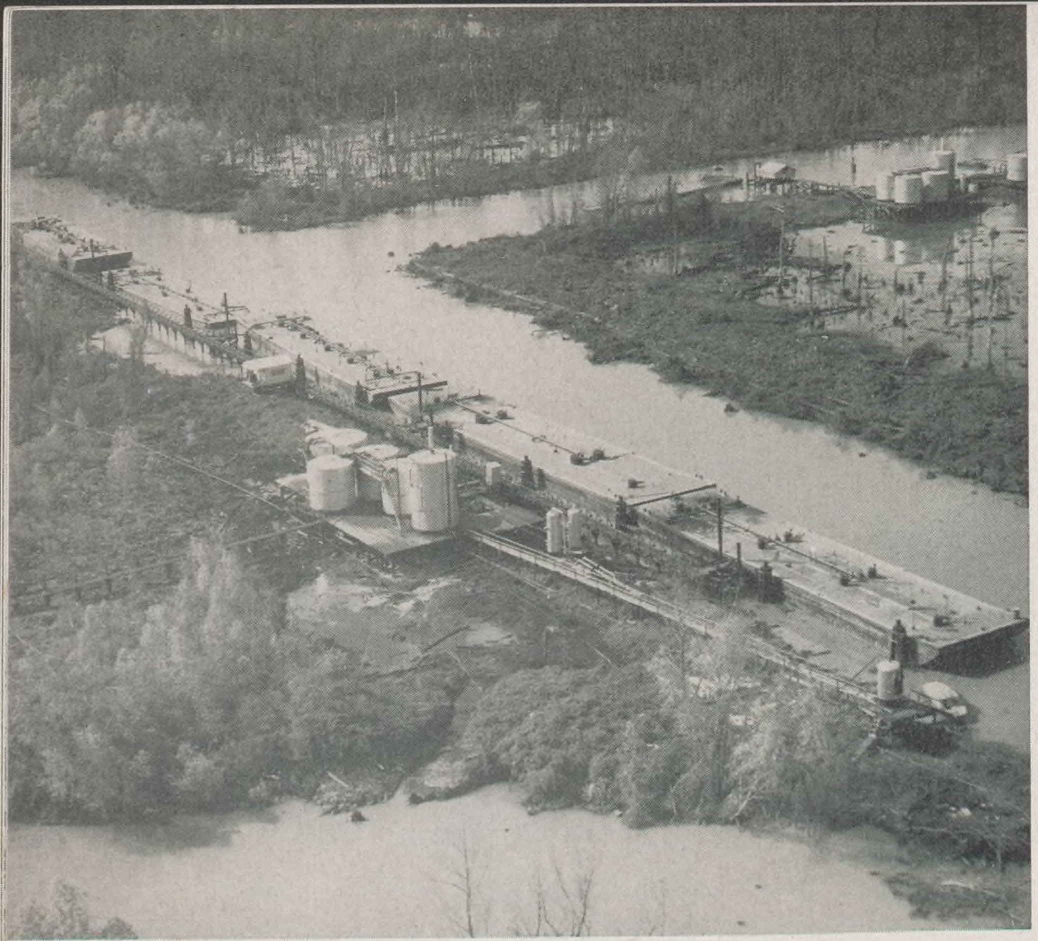
Construction completed in 1954 enlarged the Elk City Gas Plant, above, for the second time. It is one of 27 operating gas plants owned wholly or in part by Shell.



The outdoor classroom scene, left, in Oklahoma's Arbuckle Mountains, was part of an advanced training course given to selected employees by the Exploration and Production Organization's Technical Services Division in Houston. The Division expanded its recruiting and training activities in 1954.

lems experienced with conventional muds in deep wells where high temperatures are encountered. A radiation laboratory was added to Shell Development facilities in Houston during 1954 to intensify studies on the effects of radiation on rocks, which may give valuable clues to the location of oil-bearing formations. At the same time it will provide facilities for applying radioactive tracer techniques in several research investigations.

Studies were also continued and some advances made in 1) methods of treating flood water used in secondary recovery operations, 2) preventing harmful deposition of asphalts and paraffins within producing wells, 3) understanding the movements of fluids in the earth, 4) improving methods of geophysical exploration, and 5) understanding the nature, distribution, origin and geological history of rocks, sediments and hydrocarbons. Part of the latter studies involved exploration of deposits on the Gulf floor by skin divers, and col-



The barges, above, at a recently completed dock in the West Lake Verret Field of southern Louisiana, were loading crude oil destined for the Norco Refinery. Trend was to bigger barges.

Workmen, below, wrap a section of pipe for a 34½-mile line constructed in Montana by Shell Pipe Line Corporation to transport production from the Pine and Cabin Creek Fields.

lection of marine life specimens by a "beachcomber" tramping the coastal shores of Texas and Louisiana.

Near the end of 1954, ground was broken at Houston for a new building that will provide additional space for the Technical Services Division and Shell Development's Exploration and Production Research Division.

Transporting Shell's Production

Once oil and gas are found, the job of transporting them from the fields is the next related step in Shell's integrated operations. Increasing production in the Brea Canyon, California, Field, for instance, dictated the construction of a 12-mile crude oil pipe line to link with a main line running to the Wilmington Refinery. Also in California, scientists of Shell Development Company were seeking answers to the problems of transporting heavy, molasses-like crude oils by pipe line, an operation which ordinarily requires additional pumping units and heating stations along the line or diluting the heavy crude with less viscous oil. Successful experiments were made in a section of Shell's 90-mile Bakersfield-to-Coalinga crude oil pipe line which will eventually make possible considerable savings in operating costs.

In Montana, Shell Pipe Line Corporation constructed a 34½-mile crude oil pipe line with a pumping capacity of 26,000 barrels daily from the Pine and Cabin Creek Fields to rail transportation facilities at Glendive. At the same time, a 450-mile route was investigated to provide pipe line transportation for most of Shell's Montana production south to a junction with the Platte and Service Pipe Lines in Wyoming, which can carry the crude oil to refining centers at Wood River and Chicago respectively. Plans to build this line were announced early in 1955 when the Butte Pipe Line Company was formed to own it. Shell Oil Company will have a majority interest in the new company, and Shell Pipe Line Corporation, as agent, will supervise the construction and operation of the line.

Shell Pipe Line laid 72 miles of crude oil line from Hallettsville to Brookshire in south central Texas, the final link in a line to deliver crude from the Gohlke Field to the Houston Refinery. Shell Pipe Line also purchased some existing crude oil pipe line facilities in 1954. The largest, in West Texas, included an extensive gathering system in the Slaughter Field, 44 miles of trunk line, a pumping station and storage tanks. Several smaller gathering systems were also installed or purchased in fields where Shell has production.

At the same time some pipe lines were sold to adjust operations to fluctuations in crude oil availability in a few areas. All of Shell Pipe Line's holdings in Kansas and some inactive lines in northern Oklahoma, totaling 229 miles of line, were sold to another company for conversion to products lines.

The Corporation now owns wholly or in partnership more than 6,200 miles of trunk and gathering lines transporting both crude oil and products. In 1954 its total crude and product movements rose to approximately 66 billion barrel-miles, an increase of 4 billion from 1953.

Crude oil movements from some fields necessitated using transportation facilities other than pipe lines. Barges under contract carried 25 million barrels of crude to Shell refineries during the year and ocean-going tankers transported 7 million barrels. The trend in barging was toward larger capacity craft carrying 20 to 25 thousand barrels per trip. These are gradually replacing barges of about half this capacity.

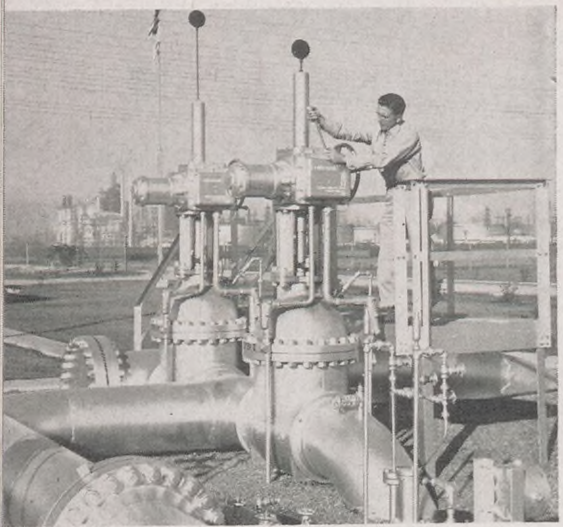
Mainly because of the imposed and voluntary restrictions on oil field production, and increased refinery intakes, Shell's own crude oil supplies were inadequate for its needs. Ac-

Shell Crude and Products Moved in 1954

	Barrels (in millions)	Change from 1953
Pipe Lines:		
Products	64.9	+16.5%
Crude and Natural Gasoline	149.9	+ 2.8%
Tankers*	69.2	– 3.6%
Barges	82.6	+ 0.9%
Tank Cars and "For Hire" Trucks**	66.0	+ 3.9%

*Adjusted to exclude movements for affiliated companies. Also reflects a shift of some West Coast crude oil movements from tanker to pipe line. Tanker movements on East Coast increased.
**Basis: Freight paid by Shell.

The concrete-coated pipe, below, was used by Shell Pipe Line Corporation in a crossing of the Brazos River in Texas. The line is the last link between Gohlke Field and the Houston Refinery.



This equipment, left, at the Pasadena, Texas, Terminal of the Rancho Pipe Line, like that at many other stations, kept busy in 1954. Despite reduced production allowables, Shell Pipe Line Corporation movements of crude oil and finished products in 1954 increased to 66 billion barrel-miles.

cordingly, net crude oil purchases were made amounting to 65.7 million barrels, an increase of 25 per cent over 1953 purchases.

Manufacturing Capacity Increased

Shell and the rest of the oil industry in the United States entered 1954 with excess inventories of refined products—particularly gasolines. While this situation forced many companies to curtail refinery intakes, leading to an industry-wide decline in refinery throughput for the year, the above average demand for Shell products resulted in another record-breaking year for the Company's five operating refineries.

Over-all intake at the refineries amounted to approximately 174,500,000 barrels—or an average of almost 20,000 barrels every hour during the year. This was a gross increase of 5 per cent over 1953, and was largely made possible by the completion of major processing units at three refineries.

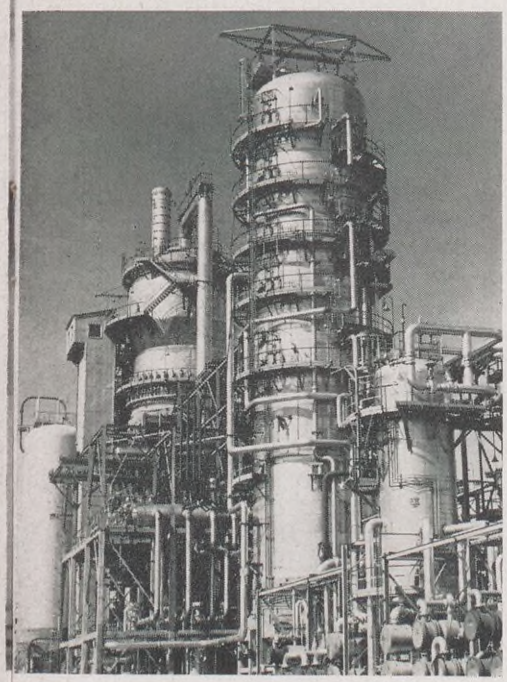
Following the completion of a 50,000-barrel-per-day crude distilling unit at the Wood River Refinery in December 1953, other units were completed and placed in operation by mid-1954. These included a catalytic reforming unit, an alkylation unit, a vacuum flashing unit for the preparation of catalytic cracking feed stock, and extensions to the refinery's polymerization unit.

Crude oil processing capacity at the Norco Refinery was increased from 50,000 to 75,000 barrels per day by the completion at mid-year of a number of new and expanded units, including a crude oil distillation unit, a large catalytic cracker with feed preparation and gas recovery facilities, alkylation and catalytic polymerization units, and numerous auxiliaries such as utilities, storage, treating and shipping facilities.

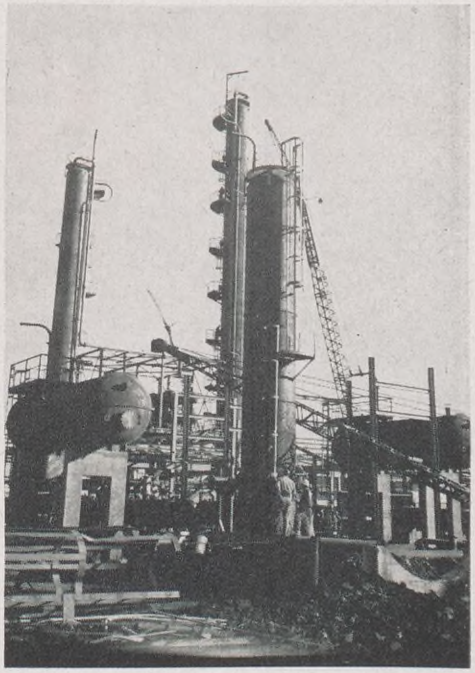
A major catalytic reforming unit was completed at the Martinez Refinery at about the same time. Minor units were added, expanded or modernized at all refineries during the year.

Workmen, left, put together a portion of a big new catalytic reforming unit which went on stream in 1954 at Shell's Martinez Refinery.

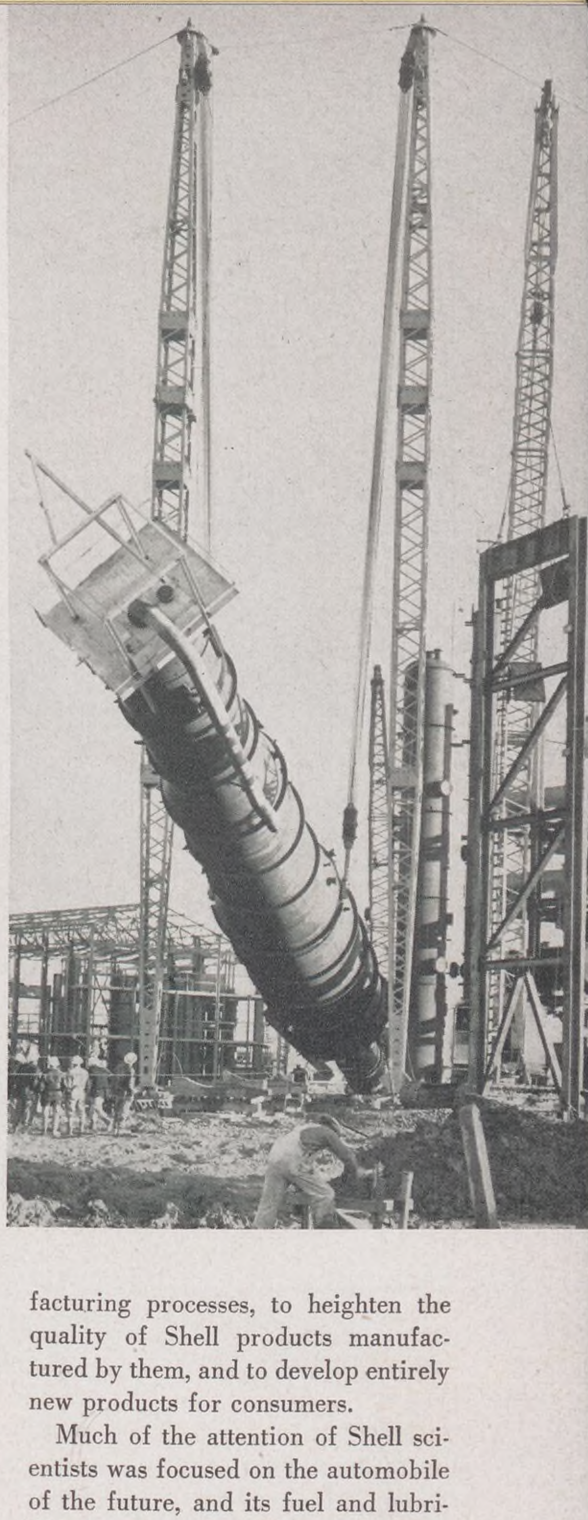
Construction began last year on Shell's new 50,000-barrel-per-day refinery at Anacortes, Washington, and progressed on schedule. Units like the fractionating tower, right, were going up by the end of the year. Full scale operation of this modern refinery is expected in November 1955.



Catalytic cracking facilities, above, were among a number of units added to the Norco Refinery, raising its intake capacity from 50,000 to 75,000 barrels per day. This Louisiana installation is now one of the nation's major and most modern refineries.



The alkylation unit at the Wood River Refinery, shown under construction above, was among several which added 50,000 barrels daily to the refinery's crude oil capacity. Manufacturing units completed at Shell refineries in 1954 have made it possible to increase the output of higher octane gasolines.



Construction of the new Shell refinery at Anacortes, Washington, continued on schedule, with its initial operation slated for September 1955 and completion of all units expected two months later. This refinery, which will include a catalytic cracking unit of a new design created by Shell research, is being built in the Pacific Northwest so that Shell can continue to hold its position as a leading supplier of petroleum products along the Pacific Coast. The Pacific Northwest is one of the fastest growing regions in the Nation, and its demands for petroleum products are increasing rapidly. The refinery, which will receive Alberta crude through the Trans-Mountain Pipe Line, will raise the total intake capacity of Shell refineries to 554,000 barrels per day by the end of 1955.

While 1954 brought to completion major units designed to meet rising demands for high octane motor fuels required for modern automobiles, two other major units were on the drawing boards. These include a second catalytic reforming unit for the Houston Refinery, and further extension of catalytic cracking capacity at the Wood River Refinery.

Process and Product Development

A great deal of research went on behind the scenes to improve manufacturing processes, to heighten the quality of Shell products manufactured by them, and to develop entirely new products for consumers.

Much of the attention of Shell scientists was focused on the automobile of the future, and its fuel and lubricant requirements. This meant that considerable effort was devoted to developing and improving the processes required in the manufacture of high octane fuels. One big result was that in 1954, Shell 311, a high alumina catalyst developed at Shell Development Company's Emeryville Research Center, was put into full scale use at the Houston and Wood River Refineries. The chief advantages of the new

Current Refinery Capacity	Barrels/Day
Wood River	170,000
Houston	125,000
Wilmington	79,000
Norco	75,000
Martinez	55,000
Total	504,000

Much research was devoted to catalytic processes. The laboratory apparatus, left, at the Emeryville Research Center permitted visual comparison of what goes on inside two scale model catalytic units, making it possible to evaluate improved experimental catalysts.

Shell employees were safer on the job than away from it. At Wilmington, below, employees admired a sign which marked the Refinery's establishment of a new Manufacturing Organization safety record of 530 days (almost 4 million man-hours) without a lost time accident.

catalyst are that it retains its activity and effectiveness longer than others in use.

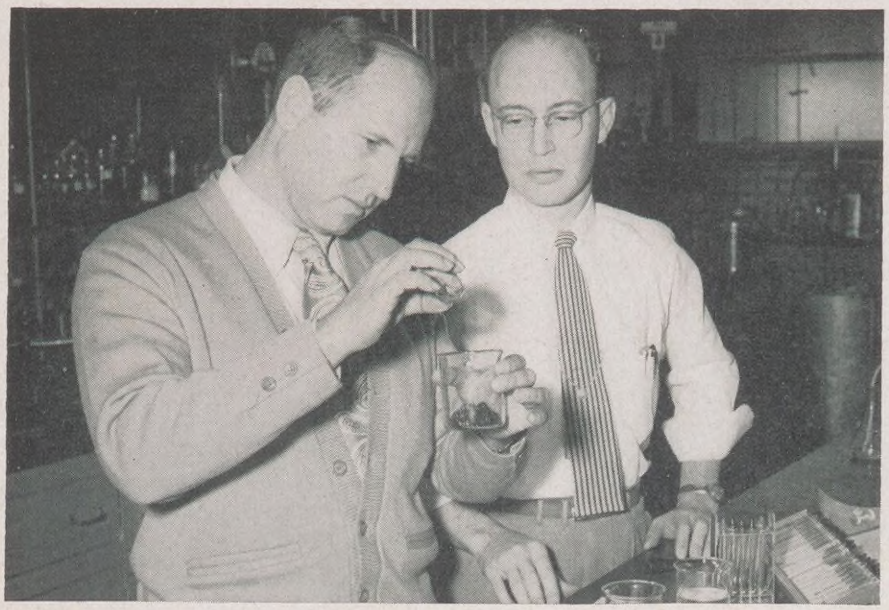
Research by Shell Development scientists at Emeryville also moved forward in the study of methods for preparing catalytic cracker feed stocks to obtain the highest quality and quantity of gasolines on the most efficient basis. Other projects included development of new techniques for laboratory and plant scale studies of the catalytic process.

Meanwhile the Shell Oil Research Laboratory at the Houston Refinery, which specializes in developing refinery processes, continued to work on the improvement of the cracking process. The results were continuously applied in cracking units and helped formulate a new design now being installed at the Anacortes Refinery. In the products field, laboratory engine tests at the Wood River and Martinez Research Laboratories extended knowledge of the effectiveness of TCP* and resulted in the inclusion of this additive in Shell's regular grade gasoline. Further engine and bench tests at these two research laboratories led to the commercial debut of a new motor oil, Shell X-100 Motor Oil Premium 10W-30.

* Trade-Mark Shell Oil Company.

This carefully balanced, multigrade oil assures excellent lubrication in modern high compression passenger car engines.

Several of Shell's industrial oils and greases were improved and tested by scientists in the refinery experimental laboratories and were field tested by Products Application Department personnel. A new aromatic solvent, Cyclosol 53, was introduced by Shell Oil Company to the paint and resin industries in 1954. The solvent makes possible a greater variety of paint formulations and fine quality paint and enamel finishes at lower costs.



Product and process studies continued at a steady pace in Shell Oil Company's refinery research laboratories. Above, for example, two chemists at Wood River were checking Shell's Alkyd Reduction Technique, a new method of formulating oil base "odorless" paints using Shell solvents.

Transporting Products to Market

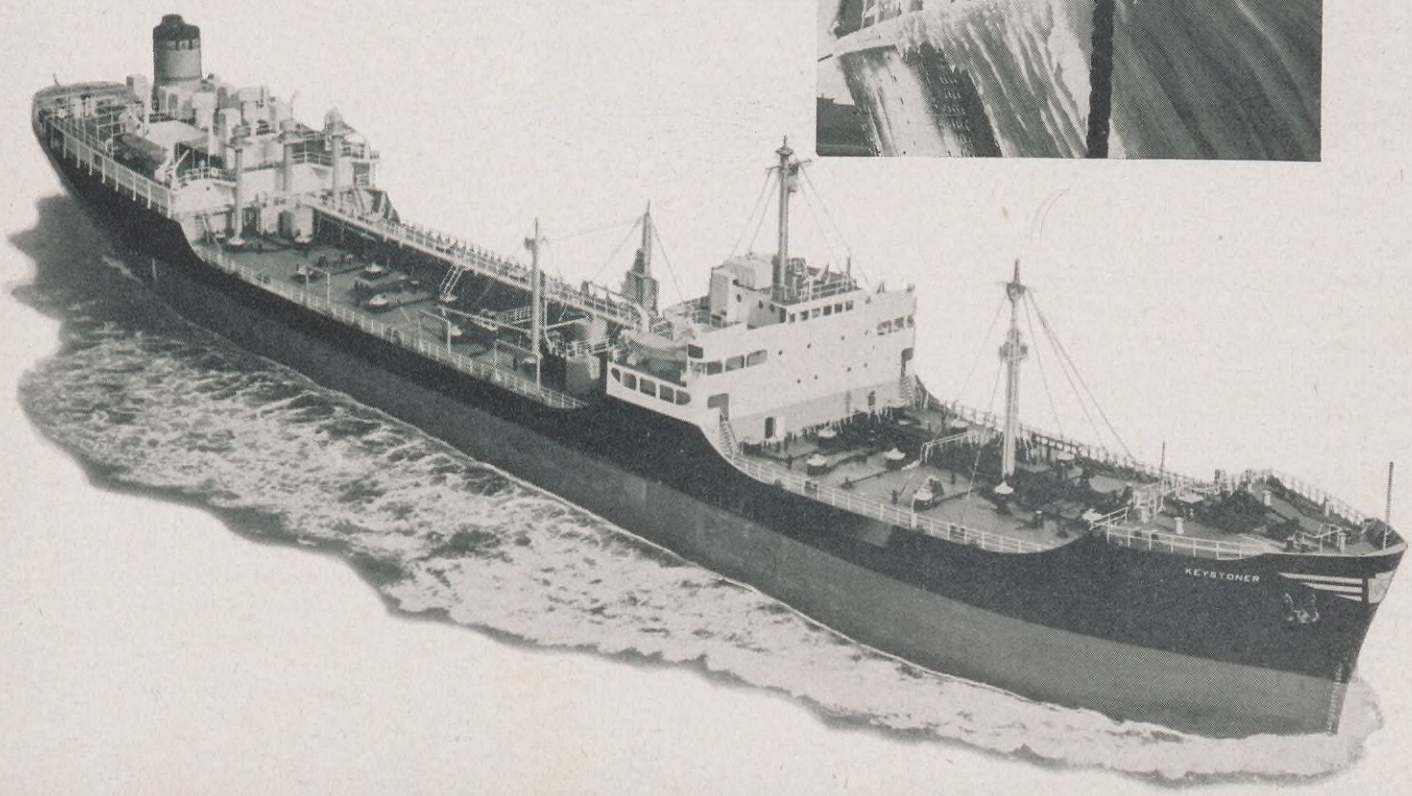
As the demand for Shell products rose to an all-time high, further steps were taken to increase the efficiency and reduce the costs of their transportation. The steps included a number of extensions and modernizations of products pipe line facilities, which in some cases will make deliveries possible during all seasons without interruptions due to frozen waterways or snow-blocked roads.

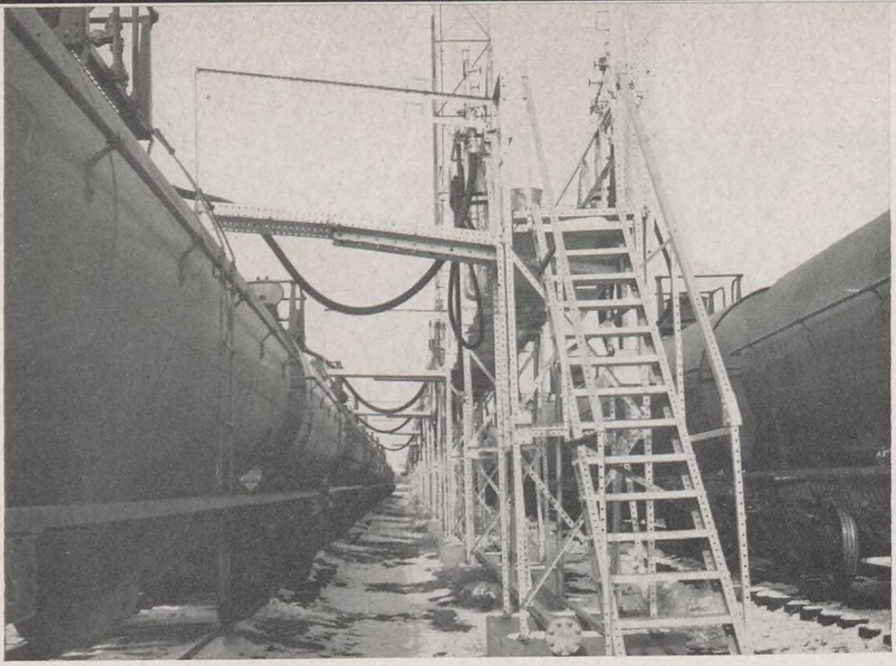
Other modes of transportation, including tankers, barges, railroad tank cars, and "for hire" tank trucks also figured heavily in the over-all increase in product movements.

During 1954, 14 ocean-going tankers were carrying Shell products (and some crude oil) under long-term contracts with their owners. A

The ice encrusted rail, right, was on the Martha E. Allen, a products tanker under contract to Shell in the Great Lakes. The ship was modernized during the year to increase its speed and capacity.

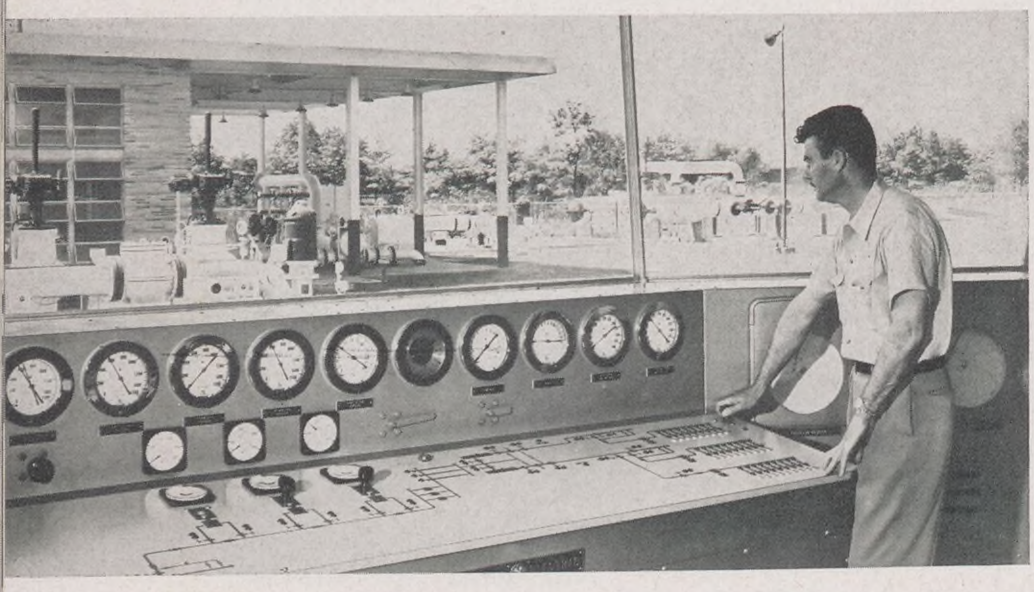
The S.S. Keystoner, shown below in San Francisco Bay, was one of 14 ocean-going tankers hauling products and crude for Shell under contracts of affreightment in 1954. A sister ship to the Keystoner was launched and put into service during the year.





Last year thousands of carloads of propane from Wasson Gas Plants (as much as 5,000 barrels daily in peak periods) were loaded at the rack, above, near Seagraves, in West Texas.

The "push button" control panel, below, at Hammond, Indiana, helped speed Shell product movements through the Wolverine Pipe Line System to Michigan and Ohio markets.



new 18,000-ton tanker was launched and put into service under a 20-year contract of affreightment, two sister ships having gone into service in 1953. A T-2 tanker operating in ocean service for Shell was lengthened to increase its cargo capacity. And another tanker, operating in the Great Lakes, was modernized to increase its speed and carrying capacity.

Shell pioneered a product delivery route in 1954 when a contract barge started regular deliveries of asphalt in bulk to Alaska—a distance of 1,700 sea miles from Shell's terminal at Willbridge (Portland), Oregon, to Anchorage.

There was considerable products pipe line activity in the Midwest, to keep pace with rapidly growing needs of industrial areas there. For example, Inland Corporation, a pipe line company in Ohio, in which Shell has approximately a 44 per cent interest, launched a $2\frac{1}{2}$ million expansion to build additional pipe line and related facilities. Among other things, capacity of the line between Lima and Toledo will be increased by 45,000 barrels per day. Storage capacity was also being added at terminals served by Shell's East Products Pipe Line and the Wolverine Pipe Line. The latter line—operated and 40 per cent owned by Shell—completed its first year of distribution to the growing markets of Ohio and Michigan.

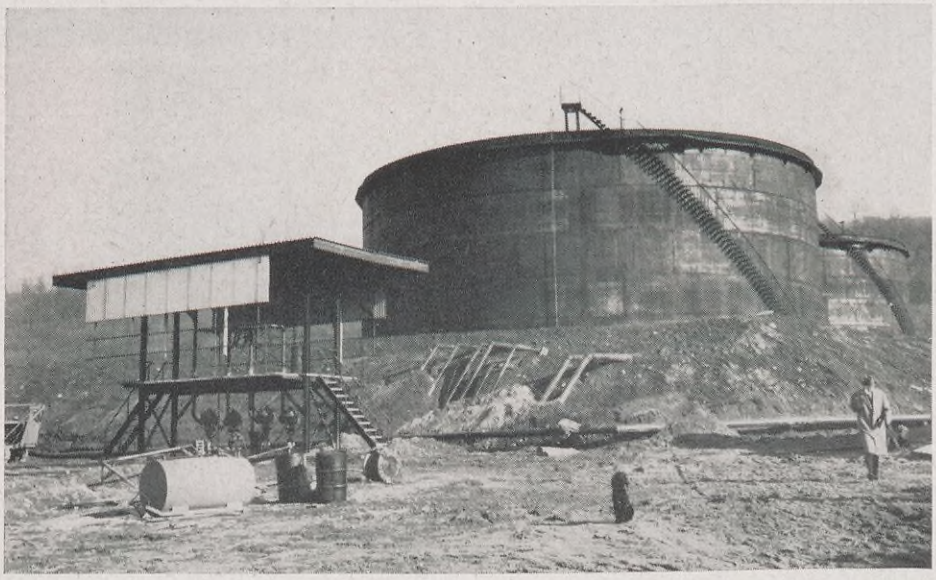
In the east, Shell's terminal at Geneva, New York, was connected to the Buckeye Eastern Products Pipe Line System. The arrangement reduces transportation costs from the Shell terminal and plant at Sewaren, New Jersey, and also permits uninterrupted deliveries during winter months when the New York State Barge Canal is closed.

In the south, where industrial demands are also growing, the Plantation Pipe Line Company, in which Shell has a 24 per cent interest, was preparing to boost its main line pumping capacity by 18,500 barrels per day.

Seasonal distribution of another product, liquefied petroleum gas, was facilitated when two underground storage caverns, hollowed out of underground salt beds near the Wasson, Texas, Gas Plant, were enlarged. A third "salt jug" of this type was also provided to store propane at the Elk City, Oklahoma, Gas Plant.

Expanding Marketing Facilities

Storage capacity at various Shell terminals was increased by 1,200,000 barrels during the year. The increases at established terminals were accomplished in such widely separated areas as Wisconsin, Maine, Illinois and South Carolina. A new terminal was nearing completion at Cincinnati, Ohio, and another was under construction at Mobile, Alabama. Shell also arranged for additional docking and product handling facilities and for leased storage capacity in Indiana, Massachusetts, Tennessee and



A fleet of more than 1,000 Shell-owned tank trucks were delivering bulk products to distributors, dealers and directly to some consumers. The trucks, above, were loading at the Los Angeles Marketing Terminal.

Two new terminals were under construction at Cincinnati, Ohio, and Mobile, Alabama. Part of the Cincinnati Terminal is shown, left, under construction.

This busy scene in Shell's huge Marketing Terminal at Willbridge (Portland), Oregon, was indicative of increased movements in packaged goods as Shell sales in nearly all categories broke previous records.

Shell fleet of more than 1,000 tank trucks. An additional 300 trucks of various types were supporting the fleet by delivering packaged products and performing other services.

Product Sales Broke Records

Despite a smaller-than-normal increase in demands for petroleum products—and the resultant increase in competition — Shell set new sales volume records in 1954.

The automotive gasoline market was the scene of spirited competition as other companies sought to counteract Shell's highly successful introduction of the additive TCP into Shell Premium Gasoline in 1953. Shell, already in a favorable situation because of a more balanced supply position than most companies, met these marketing pressures by introducing TCP into regular grade automotive gasoline, thus extending the advantages of TCP to all Shell customers. TCP in regular was first test-marketed in 11 metropolitan areas from Portland, Maine, to Fresno, California, for several months before it was made available at all Shell service stations across the Nation. Intensive merchandising, supported by a strong advertising program, helped boost TCP sales.

The new multi-grade motor oil, Shell X-100 Motor Oil Premium 10W-30, also experienced good acceptance when it was introduced at

New York to improve product distribution.

As sales grew, so did the number of service stations dispensing Shell products. Last year the Company built and assisted in the building of 329 new stations of various sizes, and in rebuilding and modernizing 220 others.

These stations, as well as industrial plants, homes, air lines, and other consumer outlets were supplied by a

Shell assisted in the building of 329 new service stations and modernization of 220 others in 1954. The one shown being remodelled, above, left, is at Nashville, Tennessee.

The introduction of TCP into regular grade gasoline, as well as Shell Premium, kept service station pump islands busy. Station below is at Jeffersonville, Indiana. TCP in regular was test-marketed in 11 metropolitan areas before it was made available at all Shell service stations.

A new multi-grade Shell X-100 Motor Oil, Premium 10W-30, a result of several years of intensive research, was introduced at thousands of Shell service stations throughout the Nation.

As 1954 drew to a close, Sales and Retail Managers of all Shell Marketing Divisions met in New York, right, below, to hear progress reports and discuss plans for even bigger sales in 1955. Last year increases in demand were less than the normal rise of previous years.

Shell Advertising Media in 1954

Television Stations	25
Radio Stations	70
Magazines	75
Newspapers	250
Outdoor Posters	8,000

Intensive merchandising, supported by a strong advertising campaign and an expanded sales training program, helped account for Shell's record sales. Below, in Seattle, Washington, a Shell Merchandising Representative (with hand raised) explains car servicing to a group of Shell dealers.

Shell lengthened its lead as the top supplier of aviation products to U. S. commercial air lines. The scene above was at New Orleans, as Shell delivered aviation gasoline under a $35 million contract with Eastern Air Lines. The contract has since been increased by more than $20 million.

all stations during the year. The lubricant is the result of years of research, coupled with careful analysis of future engine requirements.

Sales of heating oils continued to improve, aided by two major factors: 1) Generally colder weather in 1954 compared with the previous year, and 2) an increase in oil burner installations throughout the country (there were 7.6 million home oil burners in 1954: 7 million in 1953). Asphalt sales also increased at a rate consistent with industrial expansion, aided by wide-spread growth in highway construction projects. Sales of diesel fuels to railroads declined in 1954 as the carriers themselves experienced reductions in traffic.

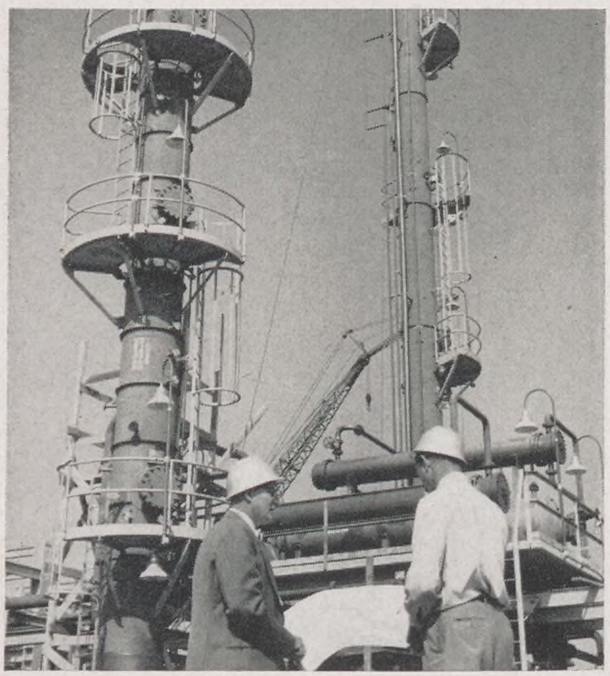
Demands for aviation products reached a peace-time high during the year, and Shell lengthened its lead as the top supplier to commercial airline accounts. In 1954, Shell became the first company to sign a contract with a U. S. airline to supply fuel for commercial turbo-prop aircraft. These aircraft, Vickers Viscount four-engine passenger liners of Capital Airlines, will begin service in the United States in 1955. Early in 1954, delivery began on the first of $35 million worth of aviation gasoline which Shell has contracted to supply to Eastern Air Lines over a three-year period. The contract has since been increased by more than $20 million.

Throughout the year, the Marketing Organization helped maintain Shell's sales leadership by increasing the training of sales personnel.

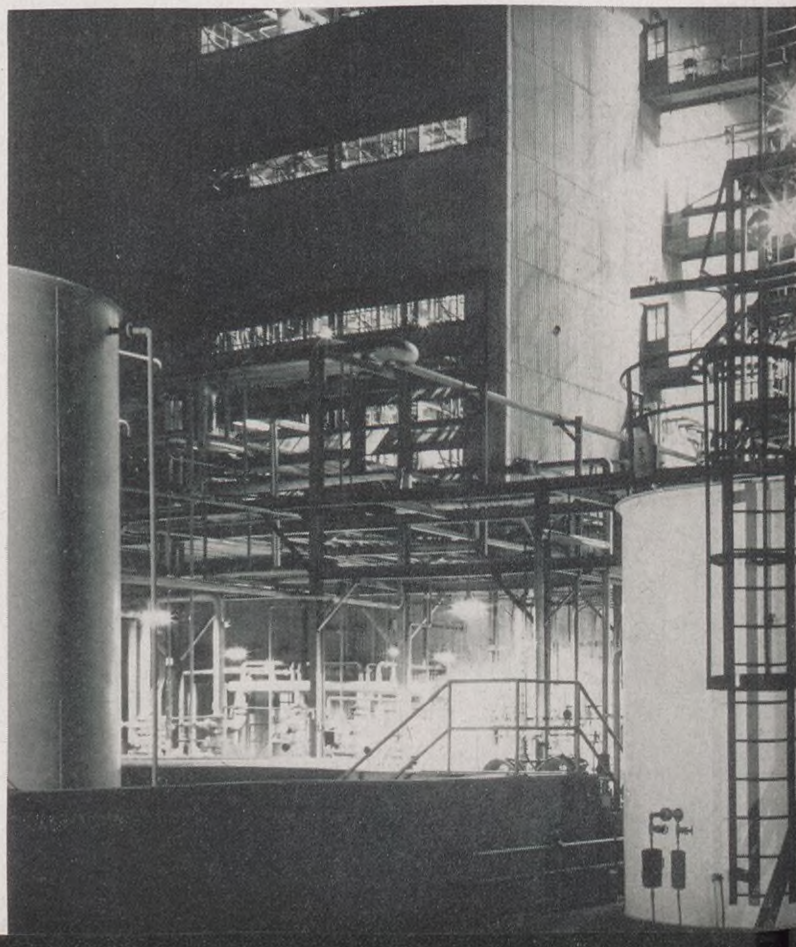
Chemicals

The growth of the chemical industry during the past decade or so has been phenomenal. Each year has seen an array of new chemical products and more applications for them.

In this burgeoning atmosphere, Shell Chemical Corporation rounded out 25 years of operation in 1954 with record sales which surpassed those of 1953 by more than 6 per



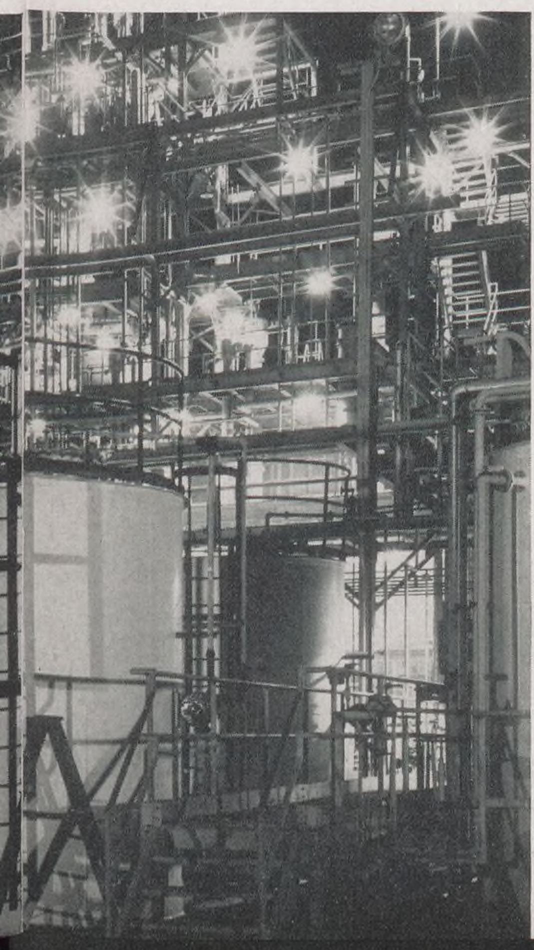
Construction neared completion, above, on the new Norco Chemical Plant which will increase Shell Chemical Corporation's supplies of components of EPON resins, epichlorohydrin, and glycerine.



A group of specialists was formed to handle EPON resin sales. At left, during training at Shell Chemical's Technical Service Laboratory in Union, N. J., they discussed paints formulated with paint vehicles containing EPON resins.

Two of the Technical Service Laboratory staff, below, checked the uses of EPON resins as a potting agent protecting electronic equipment.

Shell's second EPON resin plant at Houston, below, largest epoxy resin plant in the world, completed its first full year of operation.



cent. Chemical sales, like those for all oil products, were achieved in the face of stiffening competition.

Agricultural chemicals, resins and industrial chemicals contributed the largest percentages of increase over 1953. Demand for glycerine, for example, improved steadily, making glycerine sales volume in 1954 the highest of any year.

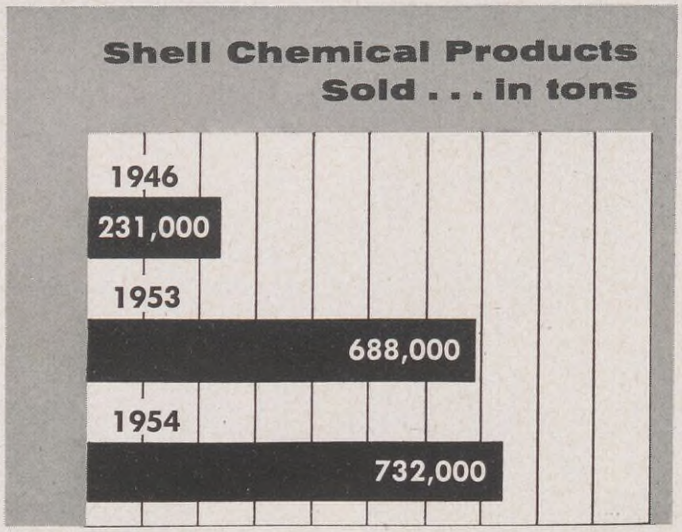
There were other important developments in Shell Chemical's biggest year, including construction of additional manufacturing facilities, expansion of product distribution, and introduction of new products.

The year's developments in EPON resins were especially significant. The second EPON plant at Houston, the world's largest epoxy resin plant, completed its first full year of operation. When it went on stream near the end of 1953, Shell Chemical's EPON producing capacity was tripled.

Despite the increased output, the Corporation was hard put to supply growing demands for the resins, which are being used in surface coatings and adhesives, as potting materials, molds, and in many other industrial applications. Steps were being taken to ease the supply situation, however, as a new chemical plant at Norco, Louisiana, neared completion. It will manufacture materials for expanding the production of glycerine, epichlorohydrin, and EPON resins, and will also produce large quantities of allyl chloride, a component of glycerine.

EPON resins helped make news in the paint industry when they were introduced into paint vehicles for the formulations of high quality interior paints. The paints so made are designed particularly for the do-it-yourself market because of their easy application and one-coat covering ability. They also are "odorless," "scrubbable" and long-lasting. A new EPON resin formulation went into use as a protective and easily-cleaned interior lining for railroad tank cars carrying chemicals and oil products.

In line with increased production of EPON resins, a group of technical



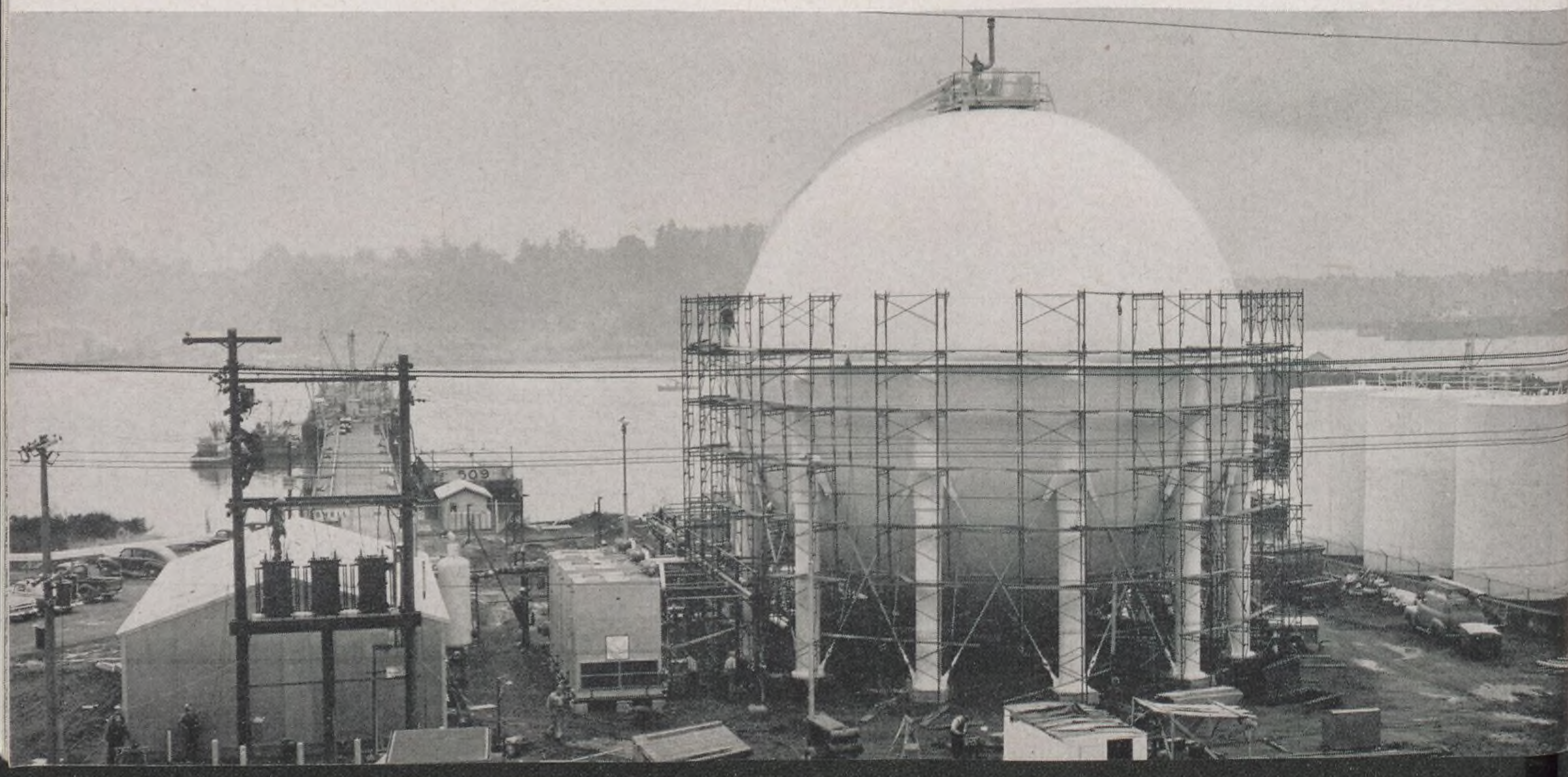
specialists was formed to handle epoxy resin sales and to service customers. The group took an intensive training course in EPON resin applications at Shell Chemical's Technical Service Laboratory in Union, New Jersey.

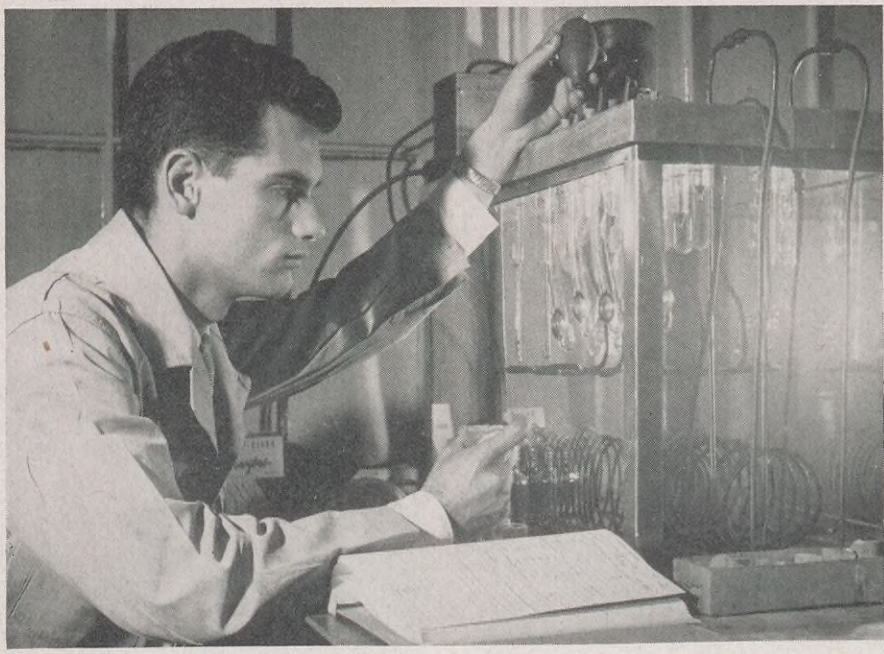
Meanwhile, Shell Chemical continued its pioneering interest in agriculture as it opened a new route for delivering additional supplies of anhydrous ammonia fertilizer to farm centers in the Pacific Northwest. A specially designed sea-going barge, owned and operated by a barging company and the only one of its design, began deliveries of ammonia in bulk from Shell Point, near Pittsburg, California, to new storage facilities at the Willbridge Terminal at Portland, Oregon. Part of the ammonia is distributed from there and part is transshipped by contract river barge up the Columbia River to Pasco, Washington, for distribution to dealers in the agricultural areas of Washington, Oregon and Idaho. Huge, refrigerated storage spheres were constructed at Shell Point, Willbridge and Pasco during the year to handle the increasing bulk traffic in ammonia.

An associated development was the completion of an 11½-mile pipe line from the Martinez Refinery and Chemical Plant to Shell Point to carry hydrogen used in the manufacture of anhydrous ammonia. And in another transportation development, arrangements were completed to make tanker shipments of solvents from Shell Chemical's Dominquez Plant and glycerine from the Houston Plant to enlarged storage facilities nearing completion at Sewaren, New Jersey.

The sale of agricultural chemicals was aided by extended label acceptance by the U. S. Department of Agriculture, permitting additional uses of these chemicals. Dieldrin, one of Shell Chemical's leading agricultural insecticides, was also accepted for home use by the Department. For the first time, dieldrin was packaged (by other firms) for use against house pests and on gardens and lawns. On a broader scale, dieldrin was effectively used to combat a plague of army worms in

At Shell Oil Company's Willbridge Terminal near Portland, Oregon, Shell Chemical Corporation built this huge storage sphere to handle increasing amounts of anhydrous ammonia shipped in bulk by barge up the Pacific Coast from the Corporation's Shell Point Plant at Pittsburg, California.



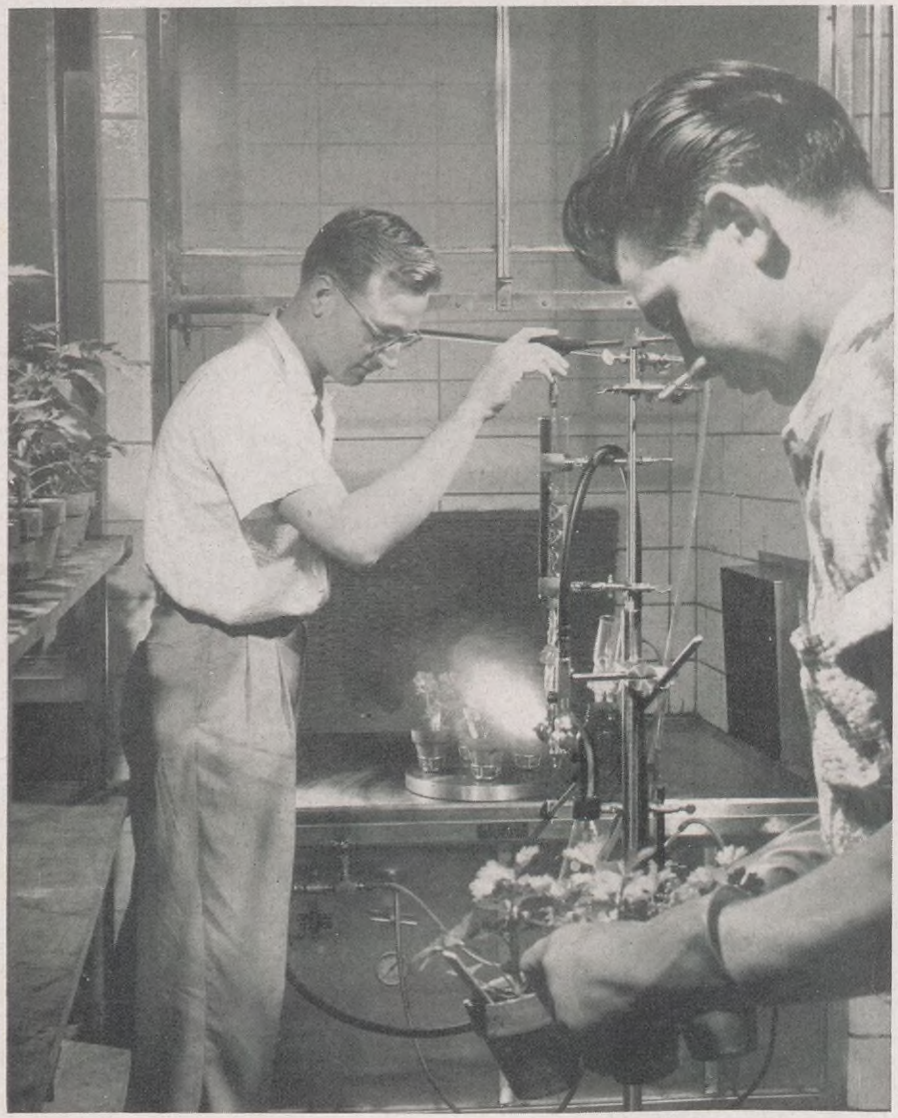


The Ammonia Mariner, shown below beneath the Golden Gate Bridge, was under contract to Shell Chemical and began delivering anhydrous ammonia in bulk from Shell Point in California to Willbridge (Portland), Oregon.

The Shell-designed apparatus, above, at Union, N. J., helped test the efficiency of Shell Chemical paint thinner formulations.

A handful of dead grasshoppers, below, in a potato field near Bakersfield, California, demonstrated effectiveness of dieldrin.

Shell Chemical's aldrin, dieldrin and endrin were used to combat insects around the World. The masked man, below, sprayed dieldrin in an intensive campaign against malaria mosquitoes in the Philippines.



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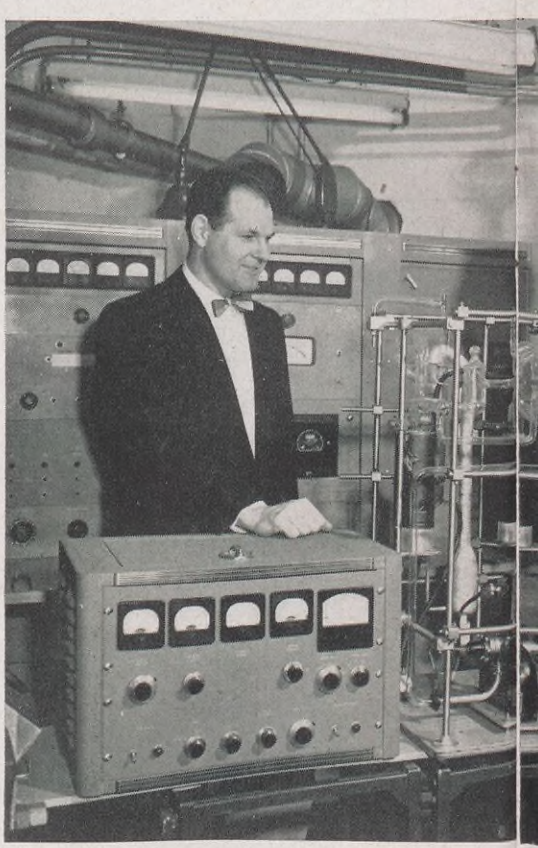
At Shell Development Company's Modesto Laboratory, left, an experimental fungicide was sprayed on plants to test its effectiveness.



A small scale, comparatively inexpensive mass spec was developed at Shell Development's Emeryville is shown in the background against the wall. Small

the midwest; and the companion insecticide, aldrin, was used against swarms of grasshoppers in the same general area. Aldrin gained wider acceptance in pre-planting, preventive treatment of small grains and corn. Aldrin-fertilizer mixtures were also gaining in popularity by accomplishing two jobs in one field application.

Endrin, newest of the Shell Chemical insecticides, was issued a label acceptance by the Department of Agriculture as an effective killer of worms and insects infesting tobacco crops.

Export sales of Shell insecticides also gained in 1954 as aldrin, dieldrin and endrin were used against locusts in the Near East, potato bugs in Switzerland, winged insects attacking coffee beans in East Africa, boll weevils in Central America, ants in Australia, mosquitoes in Venezuela, and stem-borers in rice paddies of Formosa and Japan. The World Health Organization conducted studies in the Philippines to determine the effectiveness of dieldrin in the fight against malaria-carrying mosquitoes.

In the United States, the Food and Drug Administration approved the use of IONOL® as an antioxidant in food and drug packaging, opening up vast new sales possibilities.

Better service for West Coast buyers of denatured ethyl alcohol and certain solvents was made possible during the year when Shell Chemical purchased plant facilities of Lac Chemicals, Inc., at Culver City, California. They complement similar installations operated at Chicago, Houston and Sewaren. And in Denver, Colorado, Julius Hyman and Company, which has been a subsidiary manufacturing aldrin, dieldrin and endrin, was merged with Shell Chemical Corporation.

Research and Development

Many of Shell's activities in 1954 were aided by knowledge acquired in painstaking basic research conducted by Shell Development Company. In addition to previously mentioned

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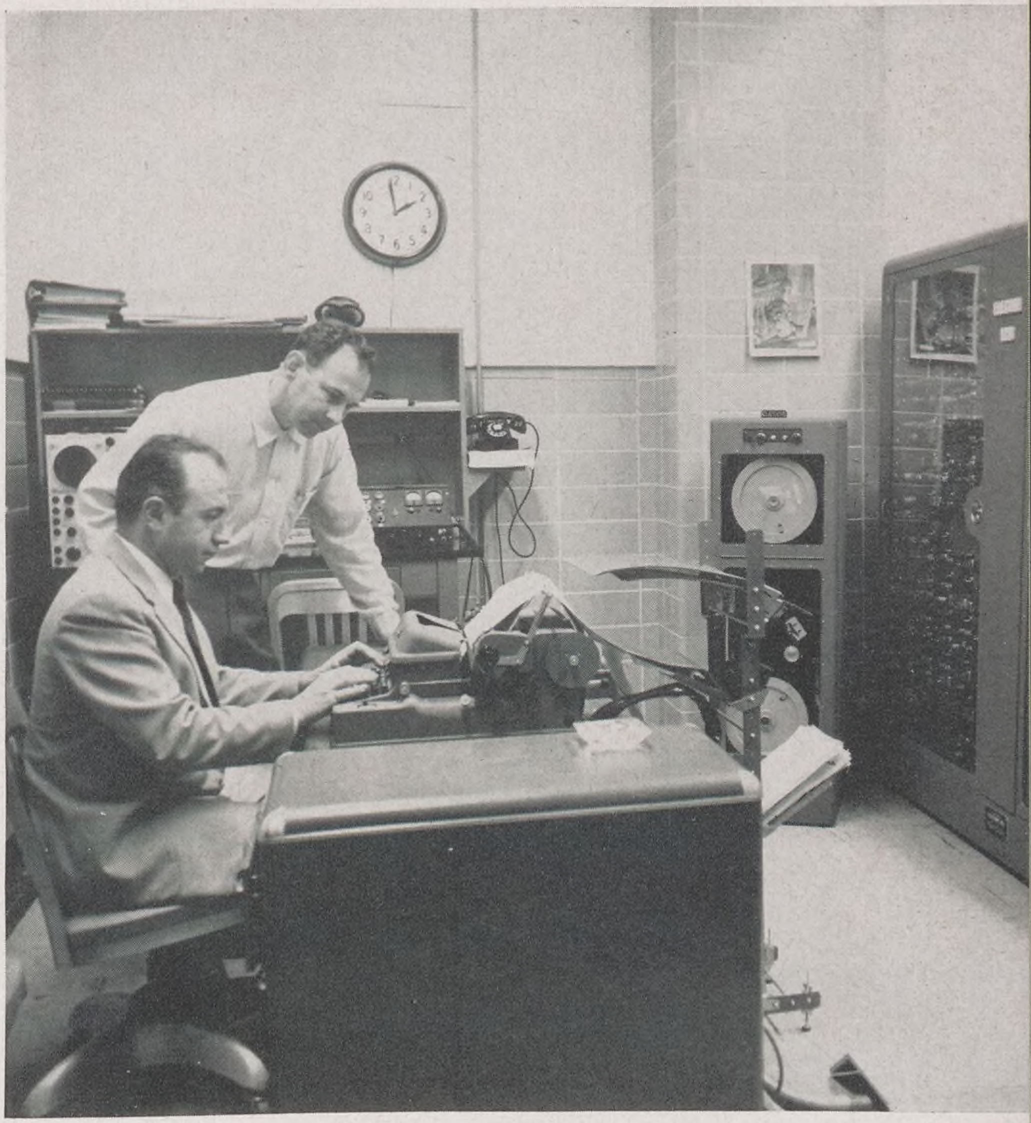
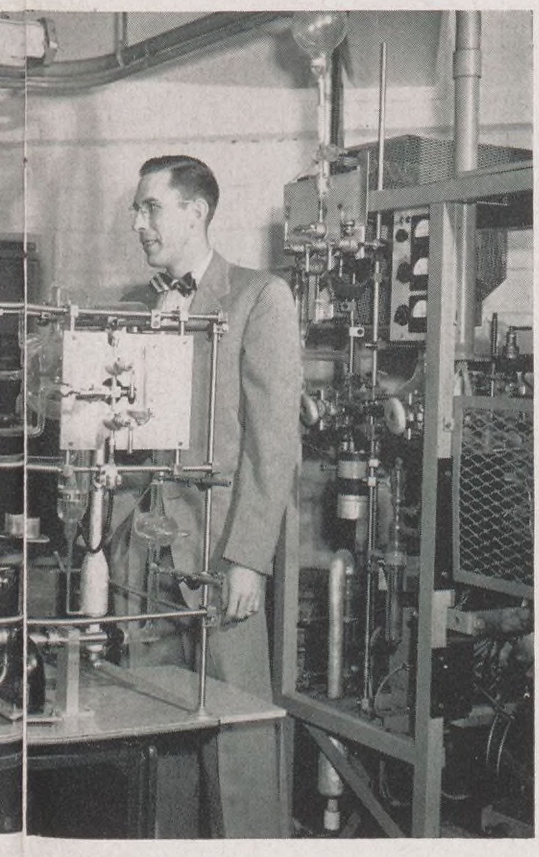
A new electronic computer at Houston, right, helped the Exploration and Production Research Division to extend and speed its research.



trometer, an important research tool, on table above, Research Center. Expensive, full size mass spectrometer models can now be made available to more laboratories.



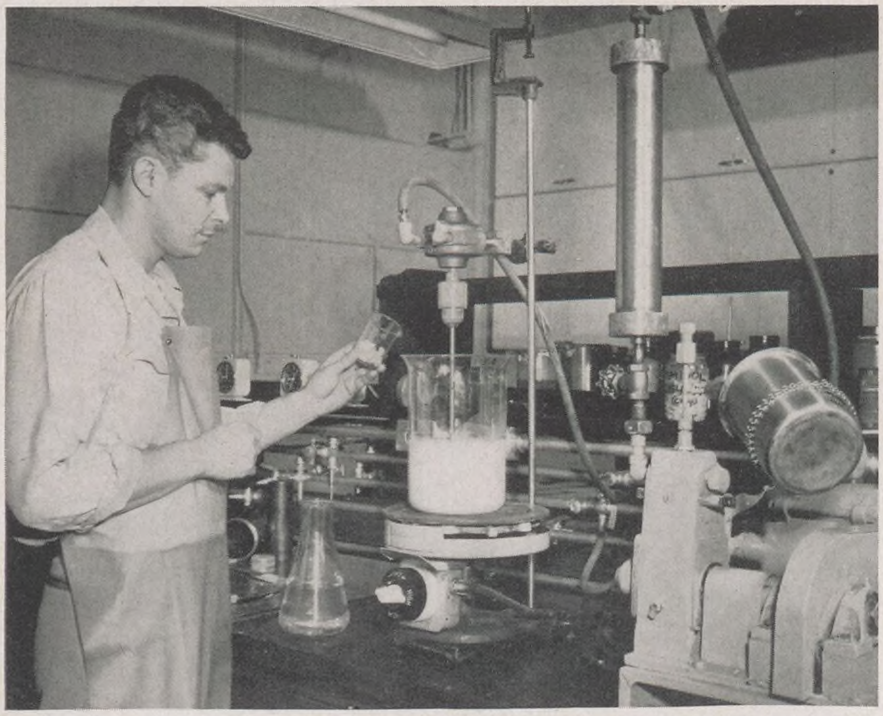
Shell Development contributions in the fields of exploration and production, catalytic processes, and the transportation of heavy crudes, important progress was made in bringing new industrial greases, gear oil, and cutting fluids nearer commercial production. Multi-purpose greases will perform better and last longer than present greases even at temperatures above 300 degrees Fahrenheit. A new gear oil was undergoing commercial field trials in the Pacific Northwest, and passed all of the stringent tests required by the U. S. Army Ordnance Review Board as a prerequisite to acceptance for military use. A superior water base cutting fluid and two oil base cutting fluids were also performing well in laboratory tests. One of the oil base fluids was undergoing field trials.

Aiming at greater durability of asphalt used on streets and highways, scientists at Emeryville were continuing studies of that product.

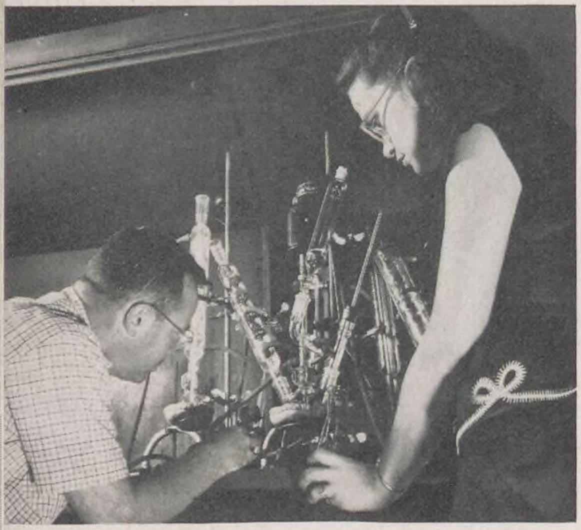
Chemical research at Emeryville opened new areas of chemical product development for future investigation. Research also made possible the acceptance by the Food and Drug Administration of a new IONOL-CP inhibitor, a special grade of Shell Chemical's IONOL, an antioxidant in food packaging which retards stale odors and rancidity.

Further understanding of EPON resin curing processes was acquired during the year, which will lead mainly to broader application of these resins in textiles to prevent creasing and shrinkage and to insure full absorption and permanency of dyes. Emeryville studies also laid the groundwork for the eventual use of EPON resin vehicles in the formulations of new interior paints. And an exterior paint, formulated with EPON resin, passed laboratory and field tests. This new paint, which affords excellent protection against corrosive chemicals and weather, will be used on units of the Anacortes Refinery.

Within the scope of agricultural

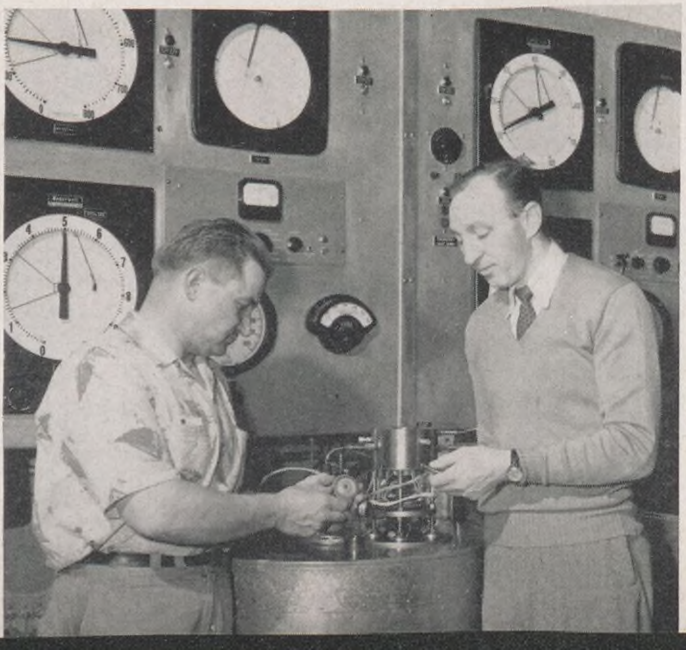


New industrial greases neared commercial production after tests at Emeryville and in the field. The formulation of an experimental grease began on the apparatus shown above.



At Shell Development's Agricultural Research Laboratory in Denver, Colorado, set-ups like that at left were used in a series of steps to develop new insecticides and other pest killers.

An ultra-high-speed bearing lubricant tester at Emeryville, below, aided in the evaluation tests of experimental industrial lubricants.



research, emphasis in 1954 was on field testing several chemical products which previously had given outstanding results in the laboratories. Moderate size batches of these were made, and samples were sent to State Agricultural Experiment Stations and other interested agencies for tests under actual farming conditions. The tests covered insect, fungus and nematode pests, and were made on a wide variety of crops in several parts of the Nation. In one case, testing advanced to the point where Shell Chemical Corporation started planning an experimental sales program for 1955.

Meanwhile, chemists and biologists at Denver, Colorado, and Modesto, California, continued to turn out new chemicals and selected the best ones for future field trials. A newly organized group began studies of how chemicals should be blended into products for the greatest efficiency.

Shell Development scientists continued to develop and acquire new research tools to further the range of their studies. The major development in this line was the design and construction at Emeryville of a small-scale mass spectrometer, a highly useful analytical tool for determining the composition of liquids and gases. Since the cost of a full-scale mass spectrometer is prohibitive for small laboratories, the small one developed at Emeryville (which uses a 20-pound magnet compared with two-ton magnets in the large apparatus) may soon make mass spectrometer studies possible for a larger number of scientists.

Indicative of the importance and widening range of its experimentation, Shell Development Company announced in 1954 that a purchase contract had been signed to acquire a five-story and two one-story buildings adjacent to the Emeryville Research Center. The additional structures, available April 1 of this year, will provide 50 per cent more laboratory, office and shops space for the present Research Center.

Statement of

FINANCIAL CONDITION

Shell Oil Company and Subsidiary Companies

December 31, 1954

WE OWN

CURRENT ASSETS		
Money in offices and banks		$ 36 million
U. S. Government securities (less those set aside to pay Federal income taxes)		21 million
Due from customers and affiliated companies		120 million
Inventories—crude oil, refined products, materials and supplies		166 million
TOTAL CURRENT ASSETS		343 million
PROPERTIES, PLANT AND EQUIPMENT		
Drilling and production		902 million
Refineries and plants		556 million
Transportation		175 million
Marketing and other		192 million
TOTAL PROPERTIES, PLANT AND EQUIPMENT		1,825 million
Less depreciation, depletion and amortization		1,183 million
NET PROPERTIES, PLANT AND EQUIPMENT		642 million
OTHER ASSETS		57 million
TOTAL ASSETS		$1,042 million

WE OWE

CURRENT LIABILITIES		
Owed to suppliers and others		$ 129 million
Owed for taxes	$ 95 million	
Less U. S. Government securities held for payment of federal income taxes	60 million	35 million
TOTAL CURRENT LIABILITIES		164 million
BORROWED MONEY		137 million
TOTAL LIABILITIES		301 million
SHAREHOLDERS' INVESTMENT		
Capital	$236 million	
Earnings employed in the business	505 million	
TOTAL		741 million
TOTAL LIABILITIES AND SHAREHOLDERS' INVESTMENT		$1,042 million

FOR YOUR INFORMATION: Copies of the Shell Oil Company Annual Report for 1954 are available to employees. If you would like a copy, ask your supervisor. He will arrange to obtain one for you.

THE financial aspects of the activities described on the preceding pages are summarized in Shell's Statement of Financial Condition, above, and in the Income Statement on the next page. These statements, which are included in the Company's Annual Report to Shareholders for 1954, are reproduced here in condensed form.

The Statement of Financial Condition shows what the Company OWNED and what it OWED at December 31, 1954. The Income Statement is a summary of the year's business.

Corporate assets passed the billion dollar level for the first time in the Company's history. Working capital, represented by the excess of CURRENT ASSETS over CURRENT LIABILITIES continued to reflect a strong position. However, to provide funds for a portion of the unusually large 1955 capital expansion program, Shell borrowed $75 million from banks in February 1955.

Additions totaling $237 million to properties, plant and equipment, brought their total gross value to more than $1,800 million.

INCOME STATEMENT

WHAT CAME IN	
From customers and others	**$1,327** million
WHAT WENT OUT	
To suppliers for goods and services	**714** million
To more than 35,000 Shell Employees for wages, salaries and benefits	**232** million
Towards replacement of plant, equipment and crude oil underground	**155** million
Direct taxes—Federal, state and local	**101** million
Interest on borrowed money	**4** million
WHAT WAS LEFT	
Profits from the year's business	**121** million
DIVIDED AS FOLLOWS	
Cash dividends to the more than 18,600 shareholders who invested their money in the Company	**52** million
Retained earnings employed in the business	**69** million

The Income Statement, above, shows that receipts from customers and others reached a new peak of $1,327 million, a 4 per cent increase over 1953, and exceeding one billion dollars for the fourth consecutive year. Operating charges rose 3 per cent over 1953.

Earnings from the year's business, after all expenses, were $121 million. These earnings were divided as follows: Cash dividend payments to shareholders amounted to $52 million, $11 million more than in 1953. The remaining $69 million, or 57 per cent of the earnings, was retained in the business to help finance Company expansion.

For more than 35,000 Shell employees, $232 million was paid in wages, salaries and benefits. Service and family allowances, as applicable, were continued for 585 employees on military leave. During the year, 320 employees retired on pension, bringing the total retirements to 3,414 since the adoption of the Shell Pension Plan.

Service Birthdays

Thirty-Five Years

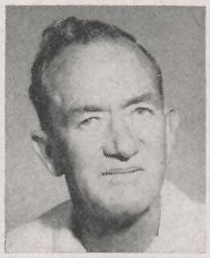

H. HOCKINGHOMER
Wood River Refy.
Utilities


E. J. LORIO
Shell Chemical Corp.
Norco


J. L. MILLER
Houston Refy.
Administration


J. M. TROXLER
Norco Refinery
Engineering


O. J. TROXLER
Norco Refy.
Engineering


L. N. WRIGHT
Pacific Coast Area
Production

Thirty Years


W. B. ANDREWS
Tulsa Area
Crude Oil


C. W. ARNOLD
Chicago Div.
Operations


C. S. BLANKENSHIP
Wood River Refy.
Engineering


J. C. BLOEMEKE
Wood River Refy.
Compounding


O. F. BREGGER
Wood River Refy.
Compounding


F. S. BUCK
Seattle Div.
Treasury


J. R. CAMERON
Pacific Coast Area
Purchasing-Stores


A. A. CATES
Houston Area
Production


E. H. CHANNELL
Pacific Coast Area
Gas


G. S. DEALY
Pacific Coast Area
Gas


S. R. GASKILL
Sacramento Div.
Marketing Service


H. L. HARRISON
Portland Div.
Operations


J. A. LaBARGE
Tulsa Area
Gas


G. W. LANGSTON
Wilmington Refy.
Engineering


W. A. LEONHARDT
San Francisco Off.
Marketing


R. L. LUCAS
Houston Refy.
Treasury


F. A. MAHON
San Francisco Div.
Operations


D. E. MAHONEY
San Francisco Div.
Sales


K. McFARLAND
Wood River Refy.
Lubricating Oils


J. I. NICHOL
San Francisco Off.
Marketing


L. A. OSBURN
Wilmington Refy.
Engineering


J. J. PHILLIPS
Wood River Refy.
Dispatching


R. E. POND
Sacramento Div.
Operations

Thirty Years (cont'd)

B. L. TANNER
Wood River Refy.
Lubricating Oils

A. R. TAYLOR
Wood River Refy.
Lubricating Oils

G. H. THOMPSON
Tulsa Area
Gas

J. B. THOMPSON
Shell Pipe Line Corp.
Head Office

J. F. WEBBER
Wood River Refy.
Engineering

V. P. WHITE
Tulsa Area
Production

C. M. WILSON
Houston Refy.
Engineering

A. T. WINGFIELD
Los Angeles Div.
Marketing Service

B. L. WOLVERTON
Wood River Refy.
Engineering

Twenty-Five Years

W. W. ANDERSON
Sewaren Plant
Engin. & Maint.

W. E. AUSTIN
Products Pipe Line
Terre Haute, Ind.

E. A. AVANT
Houston Area
Production

T. L. BETTIS
Atlanta Div.
Operations

A. W. CARROLL
St. Louis Div.
Sales

F. C. CODY
Chicago Div.
Operations

D. F. COOLEDGE
Shell Pipe Line Corp.
West Texas Area

H. L. CUMMINS
Cleveland Div.
Operations

C. L. DeLASSUS
Cleveland Div.
Treasury

R. L. De SPAIN
Chicago Div.
Operations

B. D. FERGUSON
Pacific Coast Area
Production

V. W. FINCH
Pacific Coast Area
Exploration

J. H. FLOOD
New York Div.
Operations

G. L. GRANT
Wood River Refy.
Engineering

H. E. GREENFIELD
Cleveland Div.
Marketing Service

J. F. HALLIGAN
Boston Div.
Sales

R. W. HALOUSKA
Honolulu Div.
Operations

H. A. HEIGERT
Wood River Refy.
Utilities

E. J. HOLST
Minneapolis Div.
Operations

C. F. HOLTEN
Head Office
Financial

R. E. KAUFFMAN
Sewaren Plant
Depot

L. P. KRAFT
St. Louis
Asphalt

C. W. KUHLMAN
St. Louis Div.
Sales

L. A. LOHMAN
Wood River Refy.
Administration

J. J. MANNING
Boston Div.
Operations

H. E. MARTINET
Albany Div.
Sales

R. A. MATSON
Cleveland Div.
Sales

T. T. McCLELLAN
Houston Refy.
Treating

C. S. McKENNEY
Cleveland Div.
Operations

M. R. McKEY
Shell Pipe Line Corp.
Mid-Continent Area

J. L. MUSTIN
Houston Refy.
Distilling

C. R. NELSEN
Seattle Div.
Sales

Twenty-Five Years (cont'd)


J. B. PEISTRUP
Head Office
Financial


L. E. RINKER
New Orleans Area
Production


L. C. SCHMIDT
Wood River Refy.
Engineering


S. M. SISLEY
Midland Area
Gas


C. F. SPRAGGINS
Houston Refy.
Control Laboratory


G. H. STEMMLER
New York Div.
Operations

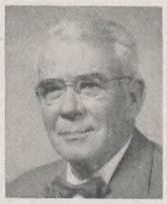

D. C. STEWART
Los Angeles Div.
Operations


L. O. TERHUNE
Shell Pipe Line Corp.
Mid-Continent Area


R. L. TOBIAS
Minneapolis Div.
Operations


P. H. ULMER
Houston Refy.
Treating


J. E. WATTS
Houston Refy.
Catalytic Cracking


L. H. WHITTAKER
Shell Develop. Co.
Emeryville


C. E. WILSON
San Francisco Div.
Treasury


J. F. WOODS
Boston Div.
Operations


M. U. YOUNG
Wood River Refy.
Aromatics


S. J. ZIMMERMAN
Detroit Div.
Sales

SHELL OIL COMPANY

Head Office

20 Years

T. R. Barnes........Exploration & Production
Ella M. Soeller.....Transportation & Supplies

15 Years

C. E. Brown....................Marketing
J. A. Mawhinney, Jr.............Personnel

10 Years

H. S. Gross....................Marketing

San Francisco Office

20 Years

I. E. Cafarelli..................Marketing

10 Years

E. L. Parker....................Marketing

Exploration and Production

HOUSTON AREA

20 Years

J. H. Written.................Production

15 Years

G. E. Crist......................Treasury
M. O. Patten........Pers. & Indus. Relations

10 Years

L. H. Bergamini...............Exploration
H. M. Caughern.....................Gas
F. E. Cheatham...............Production
S. L. Hamby.....................Treasury
J. R. Lyon....................Production
B. F. Owens.....................Treasury
E. H. Scherer...........Purchasing-Stores

MIDLAND AREA

10 Years

E. Gober ....Production

NEW ORLEANS AREA

20 Years

L. W. Elderkin................Production
W. S. Fruge ....Production
P. J. Gauthreaux.............Production

15 Years

E. D. Hall...................Production
E. Harrison ....Production
O. J. Landry.................Production
H. J. LeBlanc................Production
G. J. Oufnac.................Production

10 Years

T. J. Broom..................Exploration
M. J. Harmon........................Gas
M. T. Pennison................Production

PACIFIC COAST AREA

20 Years

T. J. Ahlf.....................Production
F. E. Anderson...............Exploration
R. Beer ....Production
E. W. Downie...........Purchasing-Stores
W. O. McKelvy...............Production
W. J. Murphy.................Production

10 Years

O. J. Bainum.........................Land
C. Dunham ....Production

TULSA AREA

20 Years

A. L. Snyder..................Production
M. C. Woodson...............Production

15 Years

L. F. Irwin....................Production

10 Years

O. G. Hart.........................Gas
J. W. Hunt.........................Gas

Manufacturing

HOUSTON REFINERY

20 Years

M. O. Baker . . . . Research Laboratory
O. O. Hawkins . . . . Engineering
M. C. Rodriquez . . . . Engineering

15 Years

J. M. Gates . . . . Thermal Cracking

10 Years

E. L. Applegate . . . . Engineering
J. C. Bess . . . . Engineering
W. M. Bostick . . . . Engineering
J. Brinac . . . . Engineering
A. J. Hale . . . . Engineering
E. B. Hawkins . . . . Engineering
N. V. Holland . . . . Engineering
J. E. Leared . . . . Engineering
J. C. Muyres . . . . Research Laboratory
G. E. Petty . . . . Engineering
H. H. Taylor . . . . Engineering
F. Wetuski . . . . Thermal Cracking

MARTINEZ REFINERY

10 Years

T. O. Grisham . . . . Lubricating Oils
A. J. Guillory . . . . Engineering
E. F. Hill . . . . Dispatching
E. G. Lea . . . . Distilling
H. W. Patterson . . . . Engineering

NORCO REFINERY

15 Years

L. J. Cambre . . . . Pers. & Indus. Relations

WILMINGTON REFINERY

20 Years

C. J. Manson . . . . Engineering
S. B. Thomas . . . . Technological

10 Years

F. X. McFee . . . . Catalytic Cracking
L. A. Omundson . . . . Fire & Safety
L. A. Poole . . . . Engineering

WOOD RIVER REFINERY

20 Years

J. R. Foote . . . . Control Laboratory
H. A. Jansen . . . . Engineering
C. K. Johnson . . . . Engineering
W. M. Schumacher . . . . Gas
G. M. Stuck . . . . Control Laboratory

15 Years

E. J. Arth . . . . Engineering
M. T. Baker . . . . Engineering
C. L. Bartels . . . . Engineering
F. C. Been . . . . Dispatching
J. R. Britton . . . . Engineering
C. J. Bryan . . . . Engineering
C. M. Immer . . . . Engineering
R. R. Lakin . . . . Thermal Cracking
L. R. LaRose . . . . Engineering
H. F. Laycock . . . . Dispatching
H. H. Lemmon . . . . Control Laboratory
W. A. Light . . . . Engineering
W. J. More . . . . Lubricating Oils
R. C. Niepert . . . . Gas
R. R. Shaffer . . . . Lubricating Oils
C. R. Shearburn . . . . Engineering
M. G. Slocumb . . . . Control Laboratory
R. C. Spitze . . . . Engineering

10 Years

A. N. Bertagnolli . . . . Thermal Cracking
H. D. Browning . . . . Compounding
M. E. Chesnut . . . . Engineering
A. D. Springer . . . . Gas

Marketing

MARKETING DIVISIONS

20 Years

E. E. Fitch . . . . Albany, Operations
R. W. Sykes . . . . Atlanta, Operations
J. Davidge . . . . Boston, Sales
J. K. Reynolds . . . . Boston, Operations
A. Grodsky . . . . Chicago, Treasury
C. Klima . . . . . . Cleveland, Marketing Service
P. P. Schafer . . . . Detroit, Operations
G. O. Williams, Jr. . . Los Angeles, Operations
O. L. Korte . . . . Minneapolis, Sales
T. C. Sarchet . . . . Portland, Operations
C. A. Loker . . . . Sacramento, Operations
R. S. Pope . . . . Seattle, Sales

15 Years

C. F. Gregory . . . . Boston, Operations
R. A. High . . . . Los Angeles, Operations
G. E. Crites . . . . Minneapolis, Operations
H. P. Robinson . . . . Portland, Operations
E. Hildahl . . . . Seattle, Operations

10 Years

A. Degone . . . . Albany, Operations
W. C. Holmes . . . . Chicago, Sales
F. A. Tuck, Jr. . . . . Detroit, Sales
F. Bailey . . . . Indianapolis, Operations
E. O. Boman . . . . Los Angeles, Operations
Phyrne F. Patterson . . . . Los Angeles, Treasury
M. P. Russell . . . . Los Angeles, Operations
L. H. Schneider . . . . . Sacramento, Operations
H. A. Turmes . . . . St. Louis, Treasury

SEWAREN PLANT

15 Years

D. P. Miller . . . . Terminal

10 Years

P. Schimpf . . . . . . Engineering & Maintenance

Products Pipe Line

10 Years

E. R. Agnew . . . . Waltham, Mass.

SHELL CHEMICAL CORPORATION

20 Years

B. R. Valls . . . . Denver
R. F. Hefley . . . . Houston
C. G. Hollingsworth . . . . Houston
D. Shelton . . . . Houston
F. A. Horsley . . . . Shell Point

15 Years

K. W. Harvey . . . . Shell Point
A. E. Peterson . . . . Shell Point

10 Years

V. A. Daniels . . . . Houston
C. N. Frazier . . . . Houston
R. L. Harris . . . . Houston
R. Q. Hubbard . . . . Houston
E. E. Matlock . . . . Houston
D. W. Risinger . . . . Houston

SHELL DEVELOPMENT COMPANY

20 Years

D. A. Scott . . . . Emeryville
F. K. Kazetsky . . . . Houston

15 Years

A. M. Droke . . . . Emeryville

10 Years

C. E. Dillon . . . . Emeryville
A. D. Reichle . . . . Emeryville
O. B. Chamberlain . . . . Modesto
M. M. Turner . . . . Modesto
E. A. Martin . . . . New York

SHELL PIPE LINE CORPORATION

20 Years

J. A. Gunn . . . . West Texas Area
R. P. Harvey . . . . West Texas Area
R. B. Hext . . . . Texas-Gulf Area
H. E. White . . . . Mid-Continent Area

15 Years

J. L. Whitaker . . . . Bayou System

10 Years

E. I. Kenny . . . . Texas-Gulf Area matters of *fact*

WE JOINED SHELL IN 1954 *

A large number of young men and women last year teamed with the thousands of experienced Shell employees to carry out the activities of a growing organization. As Shell's business has increased, jobs have become more secure, and more jobs have been created. Today there are more than 35,000 Shell employees.

* Patricia Harrison, New York Marketing Division, and Dudley M. Hargrove, Shell Chemical Plant, Houston.

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