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THE OIL REFINING INDUSTRY IN THE SOUTHWEST

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This is the second in a series of articles about the oil industry in the Southwest which will appear in the ***Monthly Business Review*** *from time to time. Additional copies of this article may be obtained by addressing a request to:*

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The Southwest is the foremost oil refining area in the Nation. More refineries and a larger proportion of refining capacity are located in the southwestern States of Louisiana, New Mexico, Oklahoma, and Texas — which lie wholly or partly within the Eleventh Federal Reserve District — than in any other section of the Nation. This region's pre-eminence in refining has been associated with its position as the dominant producer of the Nation's crude oil.

Before undertaking a discussion of the Southwest's oil refining industry, it may be desirable to describe briefly the function of refining in the oil industry as a whole. Refining is a manufacturing operation, whereas the location and extraction of crude oil from underground reservoirs technically are classed as a mining operation. The function of an oil refinery is the processing of crude oil in order to obtain products which will be more useful in our modern economy. Crude oil itself is of limited usefulness; as such, it cannot be used in the engines which run automobiles, trucks, and trains and in the oil burners for heating our homes. The derivation of various products from crude is accomplished either by separating it into different components and/or through changing the molecular structure of some of the compounds found in the crude. The principal finished products manufactured from crude oil are gasoline, kerosene, heating oil, diesel fuel, and residual fuel oil; although many refiners make other important products, such as lubricants, asphalt, waxes, solvents, chemicals, and raw materials for petrochemical manufacture.

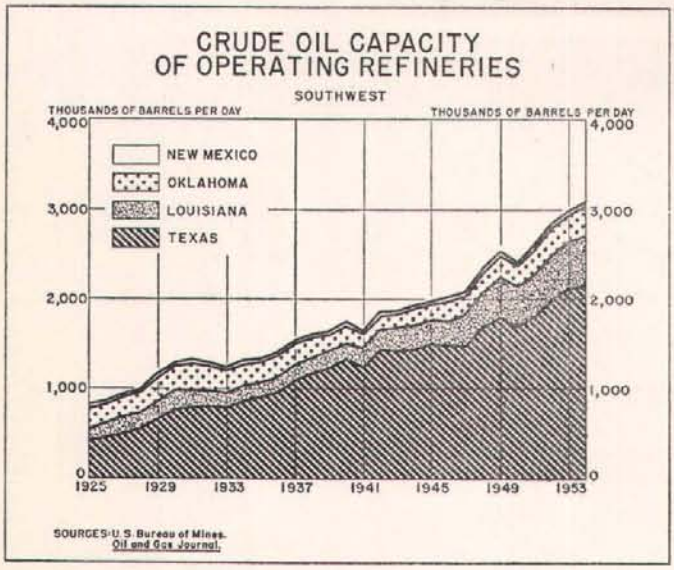
Development of the Southwest's Refining Industry

A primitive contraption which served as a refinery was in operation in Nacogdoches as early as 1890. The first southwestern refinery of consequence, however, was established in 1898 with a capacity of 1,000 barrels to process the crude oil from the region's first important oil discovery, the Corsicana field.

The refining industry on the Gulf Coast had its origin in the three refineries built at Beaumont and Port Arthur within a few years after the electrifying Spindletop oil discovery in 1901. While these refineries were established to process Spindletop crude, they subsequently began to tap other fields. Pipelines were constructed to northeastern Oklahoma in 1906-7 to obtain the higher-gravity, lower-cost oil available in the major Glenn pool near Tulsa. These pipelines were forerunners of a major network of pipelines to be constructed in future years to bring crude from interior sections of the Southwest to gulf coast refineries. The original three refineries in the Beaumont-Port Arthur area developed into some of the largest and most modern refineries in the Nation.

The Glenn pool also provided a start for the oil refining industry in Oklahoma, which expanded following the discovery of Cushing and other major fields in the State. Increasing demands associated with World War I, together with a marked rise in Oklahoma's crude oil production, gave a substantial impetus to the State's refining industry, making it a major supplier of refined products to the Middle West and the East, as well as to international markets.

The refining industry in Texas and Louisiana also expanded sharply during World War I, a trend which continued practically unabated during the 1920's. Refining capacity in Texas almost tripled and in Louisiana, about doubled. In



Oklahoma, however, the refining capacity began to show a declining trend in 1925. During the 1920's, an increasing number of "prairie-dog" refineries—small and inefficient installations established in oil fields to process local crude—were supplanted by larger, more efficient refineries drawing crude from wider areas and having access to more extensive markets. While the capacity of the Southwest's refining industry rose markedly during this period, the number of refineries declined.

Although the depression slowed refinery expansion in Texas, the refining industry in the State continued to experience a substantial growth during the 1930's, accounting for nearly three-fourths of the net expansion in the United States. This development contrasts with a marked decrease in refinery capacity in Oklahoma and a more moderate decline in Louisiana. Some refining expansion occurred in New Mexico, but refining capacity in that State remained a very small part of the Southwest's total.

In the past 13 years, the refining industry has grown significantly in each of the four southwestern states. Most of this expansion has occurred on the Texas and Louisiana Gulf Coasts, although substantial growth also has been evident in Oklahoma and New Mexico. Refining capacity in the interior of Texas and in northern Louisiana has shown little net change in the past decade.

The expansion in the Southwest's refining capacity during World War II and in the postwar period has been primarily through the enlargement of existing refineries. Very few new refineries have been established, and many small ones owned by both major and smaller oil companies have been shut down.

Over the years, as the Southwest's refining industry has been expanding, it also has been keeping pace with technical advances in refining. Technically, the region's refineries have come a long way from the cheese-box and shell stills in use at the advent of the century. With the adoption of thermal cracking during World War I and in subsequent years, refineries began to take on the aspects of the chemical industry. The chemical nature of the region's refineries has become more pronounced in the past 15 years, with the utilization of catalytic cracking, catalytic reforming, and solvent refining processes. These technological improvements have enabled the Southwest's refineries to increase the number and quality of products obtained from a barrel of crude oil. They have permitted an increase in the yield of the more valuable products, such as gasoline and distillate fuels, and reduced the yield of less valuable products, such as residual fuel oil. Moreover, they have increased the flexibility of the region's refining industry, permitting it to secure greater variation in the yields of different products to meet seasonal and other changes in demand.

Number and Capacity

The Southwest's refining industry at the beginning of 1954 was comprised of 107 refineries, with a crude capacity of 3,186,637 barrels per day. Excluding the capacity of the six shutdown refineries, the operating crude capacity of the region's 101 active refineries amounted to 3,078,400 barrels. These represented almost one-third of the Nation's refineries, and their operating crude charge capacity constituted 40 percent of the national total. The Southwest's share of the Nation's operating refining capacity has shown little change during the past 15 years.

The Southwest's refining industry not only accounts for a substantial proportion of the Nation's gross refining capacity but also possesses a significant share of the cracking, reforming, and other types of specialized capacity which determine the variety and quality of products obtained and the flexibility of the refining operation. The following table shows the proportion of the Nation's capacity of the various types of refining facilities which is located in the Southwest.

REFINING CAPACITY:
SOUTHWEST AS PERCENT OF NATION

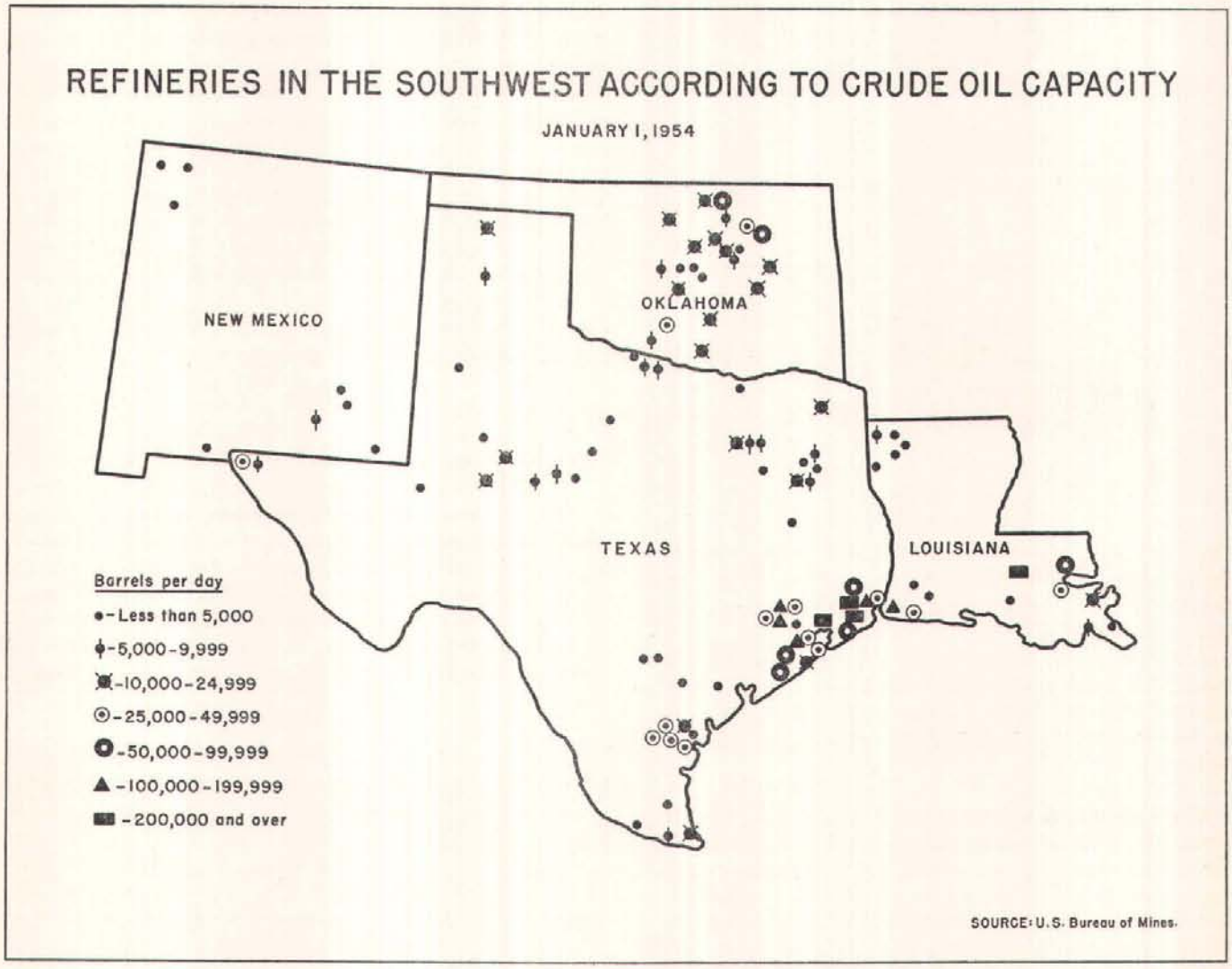
January 1, 1954

Crude oil	40
Vacuum distillation	39
Thermal operations	38
Catalytic cracking	41
Catalytic reforming	46
Polymerization	42
Lubes	47
Coke	18
Asphalt	16

SOURCE: *Oil and Gas Journal.*

Location

Although refining facilities may be found in most sections of the Southwest, the region's refining industry tends to be concentrated both with respect to the states within the region and with respect to areas within the states. At the beginning of 1954, Texas accounted for the major proportion of the Southwest's refining capacity, with the total crude charge capacity of its refineries amounting to 2,151,037 barrels per day, or about 67 percent of the region's total. Louisiana ranked second, with 20 percent of the region's capacity, followed by Oklahoma with 12 percent. New Mexico refineries had less than 1 percent.



Within Texas and Louisiana, refining capacity is concentrated largely in a single area common to both states — the Gulf Coast. At the beginning of 1954, the Texas and Louisiana Gulf Coasts, together, possessed over three-fourths of the Southwest's refining capacity and 31 percent of that in the Nation. The gulf coast refineries tend to be grouped in a relatively few areas: Corpus Christi, Houston-Baytown-Texas City, Beaumont-Port Arthur, Lake Charles, Baton Rouge, and New Orleans.

Several major economic advantages, both natural and developed, are responsible for the concentration of the Southwest's refining capacity on the Gulf Coast of Texas and Louisiana. Foremost among these advantages is the access to cheap water transportation. Gulf coast refineries can ship to east coast markets via ocean-going tankers, which, at present, are the cheapest form of transportation. In addition, the refineries can utilize barges to reach, via the Intracoastal Canal and the Mississippi River system, the large markets in the Middle West.

A second major factor has been the availability of a large and relatively stable supply of crude oil. Not only is the Gulf Coast an important oil-producing area in its own right, but a network of trunk pipelines brings crude to the Gulf Coast from most producing areas in the Southwest. Although this network of crude pipelines to the Gulf Coast is, in part, the product of the existence of the refineries on the Gulf Coast, the pipelines probably would have been built in any case if the Southwest is to help supply the oil needs of the east coast markets.

The Gulf Coast also has other advantages for refineries. The large quantities of natural gas produced in this area have supplied the refineries with a relatively cheap source of fuel. The availability of water at a low cost has been important to the refining industry because of the large amounts it uses. Moreover, the existence of plant sites, an adequate labor supply, and housing facilities have tended to attract gulf coast refineries.

In view of the advantages of a gulf coast location, the question may be raised as to why any refinery in the Southwest is located in the interior. Most of the interior refineries were established near oil fields to get the advantage of low-cost crude. Prior to prorationing, oil fields usually were developed

OIL REFINERIES:
NUMBER AND CRUDE OIL CAPACITY

January 1, 1954

Area	Number				Crude oil capacity (In barrels per day)			
	Operating	Shut-down	Total	Under construction	Operating	Shutdown	Total	Under construction
Louisiana	15	1	16	—	587,075	52,725	639,800	48,300
New Mexico	7	1	8	—	19,375	4,175	23,550	—
Oklahoma	20	2	22	—	339,950	32,300	372,250	5,000
Texas	59	2	61	—	2,132,000	19,037	2,151,037	61,400
SOUTHWEST	101	6	107	—	3,078,400	108,237	3,186,637	114,700
UNITED STATES	308	29	337	7	7,782,103	224,794	8,006,897	397,500

SOURCE: United States Bureau of Mines.

as rapidly and as intensively as possible; the ensuing flood of oil, frequently exceeding the capacity of transportation facilities, resulted in low crude prices at the field. Even today, an interior refinery obtaining its crude from a nearby oil field generally gets it more cheaply than a gulf coast refinery because of the savings in transportation costs. This advantage, however, is limited largely to the small refinery, since a large refinery must draw its crude over a wider area in order to have an adequate and dependable supply.

The interior refinery also enjoys transportation cost advantages in the distribution of its products in nearby markets. On the other hand, a lack of cheap water transportation tends to limit the extent of its market. In fact, those interior refineries which do not have access to products pipelines generally are restricted in their markets to the local territories in which they are operating.

Size

The Southwest's refineries vary greatly in size, ranging from those with a crude capacity of less than 1,000 barrels per day to giant refineries with capacities exceeding 250,000 barrels. The larger refineries are located in the gulf coast areas of Texas and Louisiana, while the smaller refineries usually are found in the interior. The average crude capacity of the region's refineries is somewhat greater than that of refineries in the Nation as a whole; at the beginning of 1954, the average capacity of refineries in the Southwest was 29,782 barrels per day, as compared with 23,759 barrels in the Nation. The proportion of very small refineries in the region is lower than that elsewhere in the Nation, and the proportion of very large refineries is higher in the region. Baton Rouge claims the Nation's largest refinery, and the second and third ranking refineries are located near Houston and Port Arthur, respectively.

DISTRIBUTION OF REFINERIES ACCORDING TO
CRUDE OIL CAPACITY

January 1, 1954

Crude oil capacity (In barrels per day)	Refineries in Southwest				Refineries in other sections of United States			
	No.	Percent of total	Capacity	Percent of total	No.	Percent of total	Capacity	Percent of total
Less than 5,000	39	36.5	83,137	2.6	90	39.2	209,060	4.3
5,000-9,999	17	15.9	115,500	3.6	50	21.7	337,700	7.0
10,000-24,999	20	18.7	291,000	9.1	36	15.7	557,300	11.6
25,000-49,999	15	14.0	529,500	16.6	24	10.4	811,800	16.8
50,000-99,999	7	6.5	431,200	13.5	17	7.4	1,154,800	24.0
100,000-199,999	5	4.7	703,000	22.1	12	5.2	1,537,200	31.9
200,000 and over	4	3.7	1,033,300	32.5	1	.4	212,400	4.4
Total	107	100.0	3,186,637	100.0	230	100.0	4,820,260	100.0

SOURCE: United States Bureau of Mines.

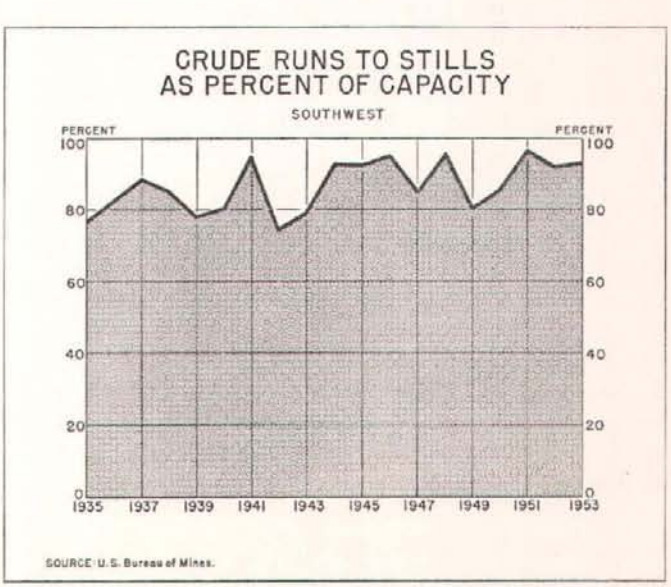
Ownership

Most of the major oil companies have refineries in the Southwest. Major oil companies, or their subsidiaries, account for roughly one-third of the number but four-fifths of the crude capacity of refineries in the region, due to their ownership of the larger refineries. Most of the refining capacity of the major oil companies is located on the Gulf Coast, although they have a substantial number of moderate-size and small refineries in Oklahoma and inland areas of Texas. While about one-half of the total refining capacity of independent refiners and smaller oil companies in the Southwest is located on the Gulf Coast, most of the individual refineries of such owners are located in the interior of the region.

Although the refining capacity owned by both major and small oil companies has increased greatly since 1940, that of the major oil companies has shown the larger relative growth. At the beginning of 1954, the crude charge capacity of major oil company refineries comprised 79 percent of the total capacity of the Southwest; on January 1, 1940, the crude capacity of major oil company refineries was 71 percent of the total.

Utilization

While a prime objective of refiners is operating their facilities at full capacity as a means of securing lower unit costs, it is impractical for the refining industry or individual refiners to operate continuously at 100-percent capacity. Refinery units must be shut down from time to time for repairs. Moreover, even allowing for these necessary shutdowns, capacity operations are not practical on a sustained basis. Under the defense program of recent years, the Government has encouraged the building of some excess capacity through granting certificates of necessity, which permit accelerated depreciation for tax purposes. Furthermore, even before the defense program, refining capacity in excess of that to meet



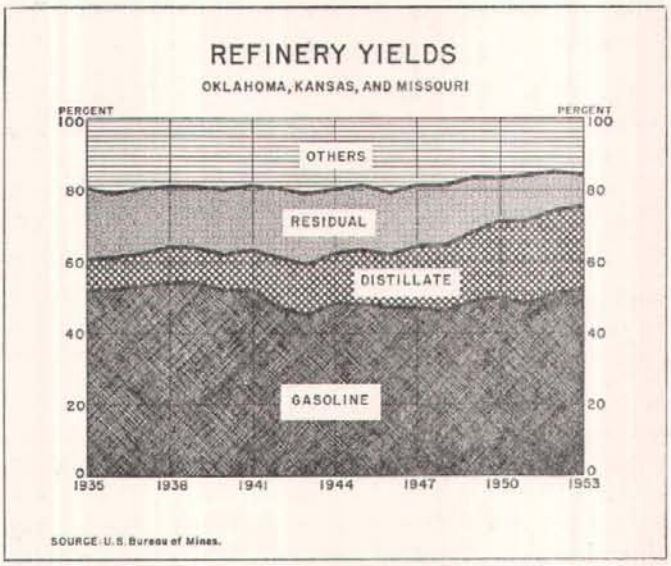
average demands was necessary to prepare for the continuing long-term rise in demand, as well as to meet seasonal peaks in the aggregate demand for petroleum products. Part of this seasonal peak demand, however, has been met by the accumulation of inventories in periods of lower demand.

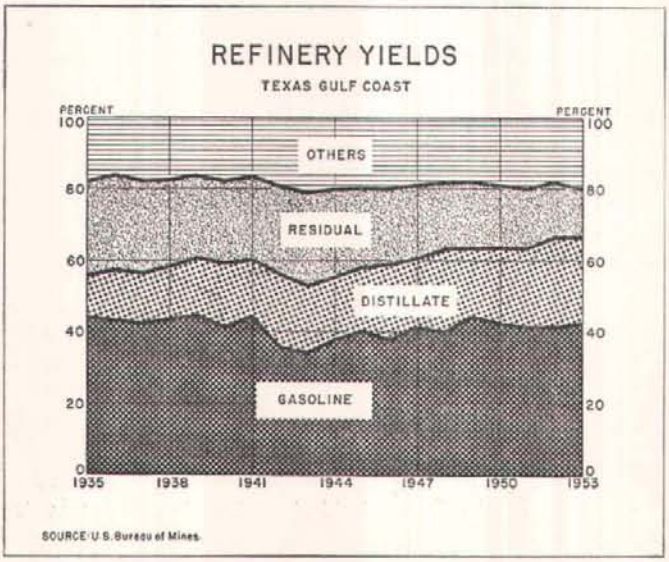
The degree to which the Southwest's refining industry has been able to approach full utilization of its facilities has varied over the years. In the years following World War II, the region's refineries were strained to meet the rapid increase in demand for petroleum products which was the outgrowth of the sharp increase in the number of automobiles in use, the expansion in oil use for heating homes and businesses, growth of the industrial needs associated with the high level of economic activity, and further mechanization of farming. Accordingly, the refineries operated at a higher percent of capacity during this period than during either the war years or the prewar years. The peak utilization of the Southwest's refineries was in 1948, when daily average crude runs to refinery stills were equal to 97 percent of the total capacity of the region's refineries at the beginning of that year. With the build-up in refining capacity and the more recent leveling off in demand, refinery operations have dropped to a lower rate of capacity. During the first 6 months of 1954, daily average crude runs amounted to 87 percent of the total capacity. Comparable figures for the period 1935-40 ranged from 77 percent to 88 percent.

Refinery Yields

Considerable difference exists among the individual refineries, among the various refining districts of the region, and between the Southwest and the Nation in the proportion of the sundry petroleum products derived from a barrel of oil. Moreover, the product yields of the individual refineries vary from season to season. These variations are due to differences in plant facilities, in the type of crude processed, and in the market which a refinery is serving.

The gulf coast refining industry, which serves the large heating oil markets on the East Coast, produces a substantially higher percentage of kerosene and distillate fuel oil per barrel of crude than the refineries in the Nation as a whole. Moreover, with ready access to major lubricating oil markets not only in this country but also in foreign countries, the gulf coast refineries also have been large producers of lubricating oil. In 1953, refineries in this area accounted for 51 percent of the Nation's kerosene output, 37 percent of the Nation's distillate fuel oil production, and 44 percent of lubricating oil production. On the other hand, yields per barrel of residual fuel oil are somewhat lower in gulf coast refineries than in the Nation's refineries.





Refinery yields in inland areas of the Southwest tend to be high in gasoline and low in residual fuel oil. The principal markets accessible to these inland refineries are primarily gasoline markets, and, consequently, the inland refineries tend to maximize their production of that product. On the other hand, their immediate market for residual fuel oil is relatively limited, and they must absorb transportation costs to dispose of the product in more distant markets. Because of this situation, the inland refineries have been quicker to install coking and other equipment to reduce residual fuel oil

CRUDE RUNS AND PRODUCTION OF SELECTED PETROLEUM PRODUCTS AS PERCENT OF NATIONAL TOTALS

1953

	Okla. Kans. Mo.	Texas Inland	Texas Gulf	La. Gulf	Ark. No. La.	New Mexico	Total, southwestern refinery districts[1]
Crude runs	8.4	3.7	24.3	7.9	1.2	.3	45.7
Gasoline	9.9	5.2	23.8	8.0	1.0	.4	48.3
Kerosene	9.3	3.4	36.2	14.4	2.2	.1	60.8
Distillate fuel oil	9.3	2.9	27.9	9.5	1.3	.2	51.1
Residual fuel oil	4.2	2.7	19.8	4.2	.6	.3	31.6
Lubricants	6.8	.3	34.1	9.4	3.7	—	54.3
Wax	9.5	1.9	20.7	14.0	—	—	46.1
Coke	11.6	1.6	8.3	7.8	4.0	—	33.3
Asphalt	11.1	5.8	7.8	5.6	5.0	.1	35.5
Road oil	16.1	.7	.1	#	#	—	17.0
Still gas	6.7	4.7	25.6	5.6	1.1	.1	43.8
Liquefied gases	6.4	4.5	25.1	19.7	1.6	.2	57.5
Miscellaneous	6.4	18.5	9.1	13.8	8.3	—	54.9

[1] Due to rounding, the sum of various components may not agree with the total.

Less than one-half of 1 percent.

SOURCE: United States Bureau of Mines.

production and increase the yield of gasoline and other light products.

The yields of residual fuel oil have been becoming progressively smaller in most areas of the Southwest. This trend has been in keeping with that prevailing in the Nation. The relatively low price of residual fuel oil as compared with most other petroleum products has encouraged the refiner to reduce his residual fuel oil yield to the minimum.

Source of Refiners' Crude

As one might expect, practically all the crude requirements of the Southwest's refineries are met by crude oil produced in this region. In 1953, crude oil produced in the southwestern states — Louisiana, New Mexico, Oklahoma, and Texas — accounted for approximately 97 percent of the total crude received by refineries in those states. The remaining small amount of crude received by the region's refineries consisted of crude produced in the nearby States of Mississippi, Alabama, and Kansas, as well as in foreign countries.

The large refineries in the Texas gulf coast area draw their crude from widely scattered areas of the region, including west Texas and New Mexico, east Texas, the gulf coast area itself, and — to a limited extent — Oklahoma. On the other hand, interior refineries, most of which are small, usually obtain their crude from oil fields located relatively close to the refineries. Some of the larger interior refineries, however, must secure some of their crude supply via pipelines from southwest fields, sometimes located several hundred miles from the refineries.

The Southwest's refineries in recent years have been processing about two-thirds of the crude oil produced in the region. Moreover, the proportion of southwestern crude refined in the region has tended to move irregularly higher. During the past 5 years, crude runs to refinery stills in the Southwest amounted to 67 percent of the region's crude production. In the preceding 5 years, refinery crude runs were 65 percent of crude production; in the prewar years 1935-39, the comparable figure was 60 percent.

Markets

The transportation facilities available to a refinery are the dominant element determining its market. Those refineries having direct access to water transportation generally have much broader markets than inland refineries. Moreover, inland refineries with access to products pipelines usually have wider markets than refineries without such facilities.

The Southwest's refineries differ considerably in the transportation facilities available to them and, hence, in the markets they serve. Practically all the major markets of the Nation east of the Rocky Mountains are reached by some southwest refineries. The largest share of the products of the region's refineries, however, goes to the East Coast. The Southwest itself ranks second as a market, followed by the Middle West. A relatively small proportion of the products of southwestern refineries is exported, and an insignificant amount is shipped to the Mountain and Pacific Coast States.

An accompanying chart, prepared from data compiled by the Petroleum Administration for Defense, shows shipments of refined products from PAD District 3—which comprises the States of New Mexico, Texas, Louisiana, Arkansas, Mississippi, and Alabama — and provides some approximation of the market existing for products of southwest refiners. This chart, however, understates the amount of shipments going to the North Central States since shipments from Oklahoma, which is in PAD District 2, are not included. On the other hand, it should be noted that not all shipments originate in District 3; furthermore, some of the shipments include natural gas liquids not derived in refinery operations.

Refineries in the gulf coast area, with access to water transportation, have the broadest markets of the Southwest's refineries. The major portion of their production is shipped by tanker to the East Coast. These refineries also supply, via pipelines, important inland markets in the Southeast, as well as in the Southwest. Moreover, significant quantities of refined products are barged up the Mississippi River system to middle west markets. For some gulf coast refineries, the export market has been important.

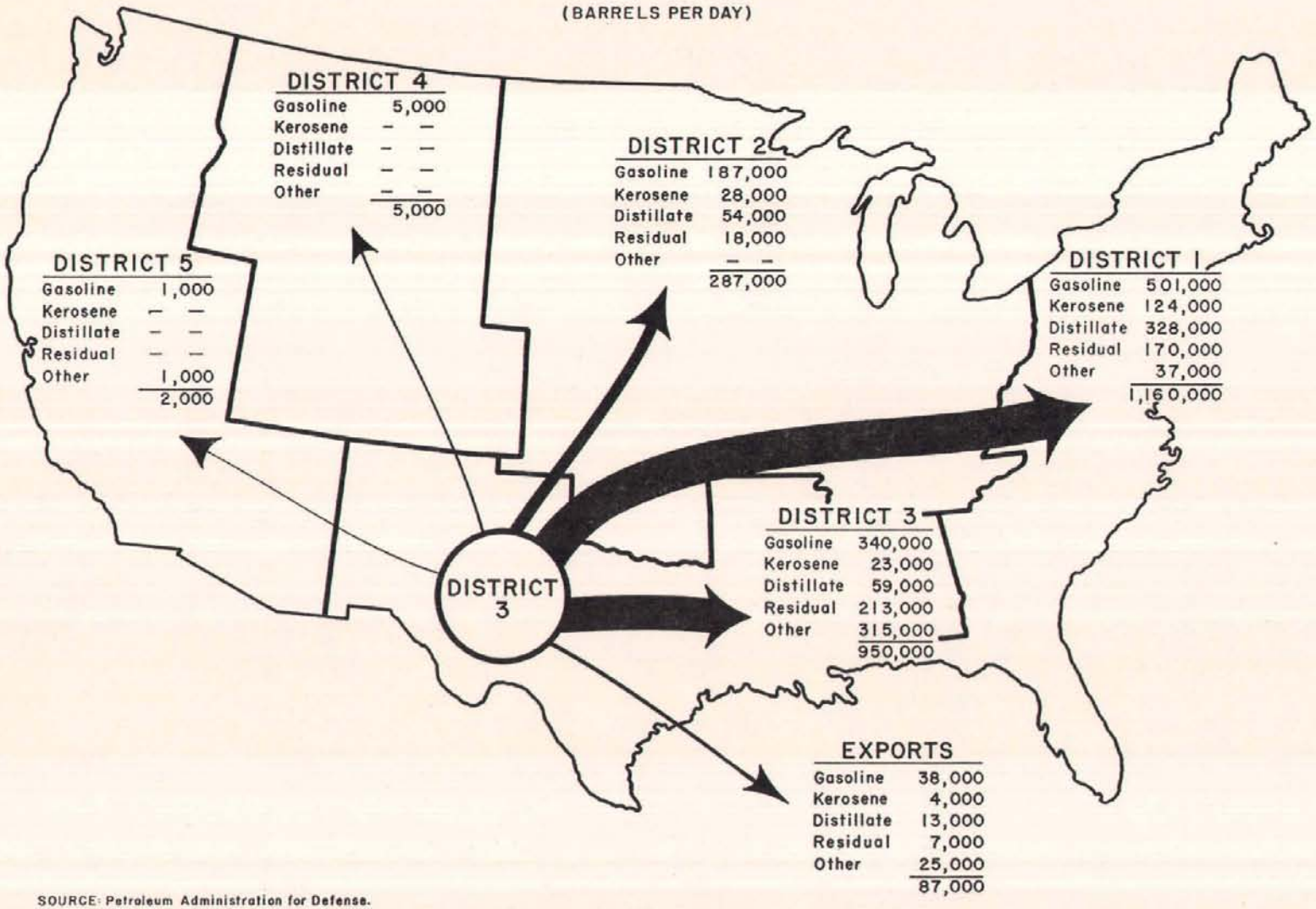
Refineries in Oklahoma and the Texas Panhandle, not having access to water transportation, have developed products pipelines which have enabled them to maintain important markets in many of the North Central States, including North Dakota, South Dakota, Minnesota, Wisconsin, Nebraska, Iowa, Kansas, Missouri, and Illinois. These markets take the bulk of the production of these refineries, with most of the remainder being marketed locally. Other southwestern inland refineries generally do not have direct access to either water or pipeline transportation; and their markets, for the most part, are confined to a relatively limited area. However, they may ship some specialty products over long distances.

Importance of Oil Refining to the Southwest

Oil refining is of considerable importance to the Southwest's economy. It ranks second among the region's manufacturing industries, both in the number of persons employed and in the value added by manufacturing. In June 1954, employment in the oil refineries of the four States of Louisiana, New Mexico, Oklahoma, and Texas totaled around 75,000, or about 11 percent of the total manufacturing employment of the area. Approximately one out of every 50 wage and salary workers in the Southwest is employed in an oil refinery. Moreover, wage rates of refinery workers are higher than those for most other industries in the region.

The value added by manufacturing of the Southwest's oil refineries exceeded $800,000,000 in 1952, according to the latest data available from the United States Bureau of the Census. This figure represented 18 percent of the total value added by all manufacturing establishments in the region. It will be noted that this proportion is substantially higher than that of the manufacturing employment accounted for by the refining industry and is a reflection of the relatively heavier plant and equipment expenditures per worker in refining as compared with most other types of manufacturing in the Southwest.

DISTRIBUTION OF REFINED PRODUCTS FROM PETROLEUM ADMINISTRATION FOR DEFENSE DISTRICT 3, 1950



SOURCE: Petroleum Administration for Defense.

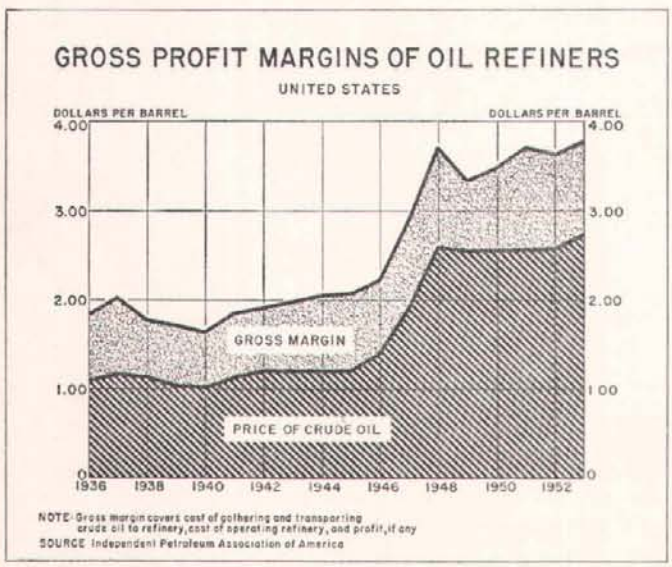
In this connection, oil refining has promoted the development of metals fabricating firms in the region which supply the refineries with fractionating towers, pressure vessels, tanks, pipe coils, pipe fittings, and other equipment. Such metals fabricating firms tend to be concentrated in refinery centers, such as Beaumont-Port Arthur and Houston.

The role of the refining industry in the development of the petrochemical industry has been of outstanding importance to the Southwest's economy. Oil refining has contributed to the petrochemical industry in two ways: (1) through research and (2) through supplying basic raw materials. Some of the petrochemicals produced in the region today are the result of research conducted by the oil refining industry both in the Southwest and elsewhere. Refinery gases, as well as other hydrocarbon components obtained in refineries, constitute raw materials for the petrochemicals. Many of the region's refineries have expanded their activities to become important producers of petrochemicals. The major portion of the petrochemicals produced in the Southwest, however, is manufactured by chemical plants which receive their basic raw materials, in many instances, from nearby oil refineries.

Problems and Outlook

During the past year, the refining industry in the Southwest, as well as elsewhere in the Nation, has been confronted with a leveling off in demand, excessive stocks, declining products prices, and narrowing profit margins. Reflecting the decline in refinery gross margins, the spread between the price of crude oil at the wellhead and refiners' realization from major products, as measured by the Independent Petroleum Association of America, has decreased from $1.07 per barrel in the autumn of 1953 to 82 cents per barrel in July of this year, which is the lowest level in over 4 years. Southwestern refiners have been forced to cut back their crude runs, and a number of the small refineries have been shut down.

Part of the current difficulties of the Southwest's refining industry is merely a reflection of increased competitive pressures arising from the expansion in refining facilities during the past few years. This expansion has more than met the industry's immediate needs, and some surplus, or reserve, capacity has resulted. With the industry forced to operate at less than full capacity, the new, modern, and more efficient facilities inevitably are exerting a competitive pressure on the older and less efficient installations.



These competitive pressures also are manifested in the steady increase in the octane rating of motor fuel. If one refiner achieves a higher octane rating for his gasoline, other refineries are impelled to install new equipment to raise their gasoline octane ratings. This competition to improve the quality of the product has been largely responsible for the substantial increase anticipated in refinery expenditures for new equipment during 1954. The octane race, or the quality race, is not new in the refining industry, but it has become more intense recently.

Residual fuel oil has long been considered a problem by southwestern refineries because of its relatively low price. The price of residual fuel oil consistently has been less than the price the refiner pays for his crude oil at the wellhead. Consequently, refiners have been striving to minimize their yield of residual fuel oil and to increase their yields of the more valuable products. The residual fuel oil problem is more acute for the inland refiner than for those on the Gulf Coast. With the conversion of the railroads to diesel engines, the interior refiner has lost one of his important markets for residual fuel oil. Although he may still find a market for his residual on the Gulf Coast or in industrial centers of the Middle West, his return will be considerably less than that which the gulf coast refiner receives for his residual.

Improvements in coking processes have been developed recently which have enhanced the opportunity of the refineries to convert economically their residual oil to lighter, more valuable products and to petroleum coke. With the advent of these new processes, interior refineries have been turning increasingly to coking to solve their residual fuel oil problem. Even some gulf coast refineries have installed coking equipment.

Probably the most serious problem facing the southwestern refineries is the threat of increasing competition in some of their established markets. The Southwest's refineries, while located relatively close to the source of crude, must ship their products a substantial distance to reach the important markets of the East and Middle West. Under these circumstances, the discovery of new oil fields closer to the markets, the construction of new pipelines, changes in the rates on existing forms of transportation, and other factors may reduce or eliminate certain competitive advantages which southwestern refineries presently enjoy in selected markets.

At the present time, the establishment of refineries in North Dakota and Minnesota to process oil from newly developed fields in the Williston Basin and Canada is exerting strong pressures on Oklahoma refiners' markets in some portions of the North Central States. The increasing competition in these markets, however, probably will develop gradually; and, in the meantime, Oklahoma refiners undoubtedly will

attempt to expand their markets elsewhere. For instance, a products pipeline recently has been completed from central Oklahoma to the Mississippi River at Memphis which may improve the accessibility of Oklahoma refiners to markets in Arkansas, as well as east of the Mississippi River. Moreover, the demand for their products in Oklahoma itself and nearby territories may be expected to expand.

Gulf coast refiners, meanwhile, are confronted by increasing pressures in east coast markets resulting from the marked expansion of refinery capacity in that area. During the postwar period, the major portion of the growth in east coast markets has been met by larger shipments from gulf coast refiners, but their share of the total market has declined.

Although the expansion in the refining capacity on the East Coast may represent, in part, the long-term trend for refineries to move closer to the markets they serve, a major reason for the growth in the east coast refining industry has been the processing of increasing amounts of foreign crude coming into that area. In so far as foreign crude is imported to help supply east coast demands, it is likely to be refined in that area rather than on the Gulf Coast because of the saving in transportation cost.

The future course of imports will be determined by a variety of factors, including the relative cost of locating and producing oil in this country as compared with foreign countries, tanker rates, and national defense considerations, as well as national and international policies. In view of these circumstances, it is hazardous to predict the course of imports. On the other hand, the major importing companies own a large portion of the refining capacity on the Gulf Coast. The fact that they have been expanding and modernizing their refineries in this area appears to indicate that they are unlikely to increase their imports and their east coast refining capacity to the extent that markets of the gulf coast refineries would be impaired seriously.

The gulf coast location gives refineries in this area considerable flexibility in the markets they can reach. They are not dependent upon east coast markets alone. At the present time, gulf coast refineries have important markets in the Southeast, Middle West, and the Southwest itself. The Southeast and the Southwest, which have been experiencing a more rapid economic growth than most other areas in the Nation, should provide increasingly large markets to gulf coast refineries. While competition in the Middle West is very keen in view of the large number of refineries in different areas which are attempting to sell in that market, the gulf coast refiner can be expected to continue to meet at least some of the needs of this very important consuming area. All in all, the availability of cheap transportation—water and products pipelines, its wide markets, and the ability to tap crude from practically all portions of the Southwest give the gulf coast refining industry competitive strength.

Inland refineries in Texas, New Mexico, and northern Louisiana which are not served by products pipelines have had serious problems to overcome, and many have been forced to shut down over the years. The markets they can reach economically have been relatively small and their opportunities for expansion limited. Moreover, before the war, the small inland refineries had difficulty obtaining some types of equipment needed to produce gasoline of a quality which the larger refineries were capable of turning out. This situation has changed in the postwar period, although the cost of equipment per barrel of capacity still may be higher for the small refinery than for the larger refinery. Some inland refineries, dependent for their crude upon the production of a particular field, have seen their source of supply play out.

Despite these handicaps, some of the inland refineries have progressed through capitalizing on certain advantages available to them. The successful small inland refineries usually have been those which have had one or more of the following attributes: (1) aggressive management, (2) a favorable location with respect to particular local markets, and (3) specialization in selected products to which their crude supplies were particularly adapted, such as solvents, naphthas, and asphalt. In addition, these successful refineries capitalized on their low overhead costs, their flexibility of operation to take advantage of temporary changes in refined products markets, and their ability to render more personalized service than their large competitors located in other areas.

A place undoubtedly exists in the Southwest's refining industry for the efficient, well-situated inland refineries, and such refineries probably will show further growth. It is likely that some of the less efficient inland refineries may lose out in the competitive struggle and the total number may decrease, but the total capacity of such refineries may be maintained.

While markets will be prime factors influencing the future development of the Southwest's refining industry, the availability of crude will be the fundamental factor conditioning this development. As long as southwest crude production expands, the odds are probably better than even that the region's refining industry will expand. On the other hand, a persistent contraction in the region's crude production would jeopardize its refining industry. At least a continued existence of crude production in the Southwest seems necessary if the refining industry is to do anything more than meet regional needs. At the present time, however, there are no indications that the Southwest's crude production will be a limiting factor in the region's refining industry. In fact, southwestern refineries now are utilizing only about two-thirds of the region's crude production.

In summary, the Southwest's refining industry, experiencing an almost uninterrupted growth during the 20th century, has expanded markedly during the postwar period. There are no indications that the industry has reached its maximum size, although it faces several problems which may tend to limit its growth. The factors which have been responsible for the development of the region as the foremost refining area in the Nation are still present. Although refining capacity in the region may not increase as rapidly in the next 10 years as it did in the preceding decade, it probably will continue to rise and provide an expansionary influence to the Southwest's economy.

REVIEW OF BUSINESS, AGRICULTURAL, AND FINANCIAL CONDITIONS

Department store sales in the District in August rose seasonally 3 percent above July but were 1 percent below August 1953. January-August sales trailed those of a year ago by 4 percent. The year-to-year loss continued in the first half of September.

August sales were marked by a relatively greater use of credit, compared with a year earlier. Instalment and regular charge account sales were up 11 percent and 1 percent, respectively. Department store inventories reflected a year-to-year decline of 7 percent; merchandise on order was up 4 percent.

Hot, dry weather in September intensified the drought in most areas of the District. Harvest of the cotton crop is virtually completed in southern and southeastern Texas counties and is well advanced in other areas. Seeding of the 1955 winter wheat crop is making progress in northwest Texas. Ranges and pastures continue to deteriorate. Prices of cotton and some classes of cattle rose in September, while prices of most other farm commodities declined.

September daily average crude oil production in the District rose moderately following decreases in July and August, but a reduction in Texas daily allowables for October foreshadows a decline. An increase in District refinery runs in August and the first part of September halted a 5-month decline.

Nonagricultural employment in the District rose seasonally from August to September. Average weekly earnings in both manufacturing and nonmanufacturing industries in Texas showed an increase from June to July.

The value of construction contracts awarded in the District during August was 6 percent below July but 12 percent above August 1953. The total for the first 8 months of 1954 reflected a gain of 9 percent above a year earlier.

Under the stimulus of seasonal credit demands, commercial, industrial, and agricultural loans of the District's weekly reporting member banks rose 4 percent during the 5 weeks ended September 22. Investments declined, while total deposits increased.

August sales at District department stores rose seasonally 3 percent above July but were 1 percent below August 1953. Although it declined from 132 in July to 127 in August, the seasonally adjusted index of monthly sales (1947-49=100) remained 6 points higher than the average for the first 6 months of this year. Cumulative sales from January through August were 4 percent under the comparable 8-month period last year and represented a small gain from the 5-percent loss during the first half of 1954.

September sales made a slow start, influenced by unseasonably hot, dry weather over most of the District during the first half of the month. Department store sales during the 3 weeks ended September 18 were 2 percent under those during the same period last year.

Back-to-school buying during August at District department stores showed a moderate gain over a year earlier, reflecting principally the larger requirements of a growing student population. The gains were offset, however, by a decline in the demand for other department store goods. Sales of girls' wear and boys' wear rose 3 percent and 7 percent, respectively. Sales of footwear rose 4 percent. A strong demand for jewelry and watches resulted in a 14-percent rise in the sales of those items, while sales of sheetings, blankets, and comforters registered a corresponding gain. On the other hand, August sales of women's and misses' coats and suits declined 17 percent compared with a year ago; the demand for men's clothing was down 6 percent. Sales of furniture and major household appliances were off 7 percent and 13 percent, respectively.

RETAIL TRADE STATISTICS

(Percentage change)

Line of trade by area	NET SALES: Aug. 1954 from August 1953	NET SALES: Aug. 1954 from July 1954	NET SALES: 8 mo. 1954 comp. with 8 mo. 1953	STOCKS[1]: Aug. 1954 from August 1953	STOCKS[1]: Aug. 1954 from July 1954
DEPARTMENT STORES					
Total Eleventh District	—1	3	—4	—7	5
Corpus Christi	11	17	—3	1	4
Dallas	1	0	—2	—6	3
El Paso	—1	14	—6	—10	9
Fort Worth	—4	3	—5	—7	6
Houston	0	6	—3	—9	7
Shreveport, La.	—8	3	—2	—12	4
Waco	—4	—3	—3	—9	2
Other cities	—1	0	—5	—6	5
FURNITURE STORES					
Total Eleventh District	3	5	—	—18	—6
Austin	4	25	—	—21	—3
Dallas	6	—13	—	—16	—24
Houston	1	1	—	—	—
Port Arthur	17	—9	—	—	—
San Antonio	—1	2	—	—	—
Shreveport, La.	n.a.	n.a.	—	n.a.	n.a.
Other cities	—5	14	—	—8	—4
HOUSEHOLD APPLIANCE STORES					
Total Eleventh District	—30	—27	—	—	—
Dallas	—30	—25	—	—	—

[1] Stocks at end of month.
n.a.—Not available.

INDEXES OF DEPARTMENT STORE SALES AND STOCKS

(1947-49 = 100)

Area	UNADJUSTED				ADJUSTED[1]			
	Aug. 1954	July 1954	June 1954	Aug. 1953	Aug. 1954	July 1954	June 1954	Aug. 1953
SALES—Daily average								
Eleventh District	115	111	112	115r	127	132	127	127
Dallas	107	108	103	107	122	133	126	121
Houston	137	129	128	137	152	148	141	152
STOCKS—End of month								
Eleventh District	128p	123	121	139r	131p	133	131	142

[1] Adjusted for seasonal variation.
r—Revised.
p—Preliminary.

The customer bought less for cash in August than he did last year and used his credit more. Instalment sales were 11 percent greater, despite the lower sales volume of hard goods, while cash sales were down 6 percent and regular charge account sales were up 1 percent.

Charge account credit outstanding at department stores rose 5 percent during August to a total 1 percent below a year ago. Instalment accounts were unchanged from July but on August 31 were 5 percent higher than on the same date last year.

Inventories at department stores on August 31 were 5 percent above a month earlier and 7 percent below a year ago. The month-to-month increase represented the normal seasonal accumulation of fall merchandise. The lower level of total stocks on hand, compared with 1953, was consistent with the inventory pattern established early this year. Merchandise on order at the end of August was up 4 percent from the same date in 1953. The stock-sales ratio reported by a representative group of stores indicated that, on August 31, department store stocks represented a 3.3-month supply, based on August sales. This is the same ratio reported for August 1952 and compares with a 3.6-month supply on hand on the same date in 1953.

Furniture store sales at reporting stores in the District during August rose 5 percent above July and 3 percent above August 1953. August was the second consecutive month for furniture stores to report sales increases over year-earlier totals; during the first 6 months of 1954, year-to-year losses ranged from 10 percent to 15 percent. Inventories decreased 6 percent during August to a level 18 percent under the same month last year. Accounts receivable showed little change, rising 1 percent over July and declining 1 percent below a year ago.

Cotton harvesting dominated the agricultural picture in much of the District during September. Harvest was virtually completed in southern and southeastern Texas counties and is nearing completion in northcentral and northeastern Texas and northern Louisiana. Yields in the latter areas have been relatively low. Active harvest is under way in the High Plains of Texas and in New Mexico and Arizona, with very satisfactory yields.

COTTON PRODUCTION

Texas Crop Reporting Districts

(In thousands of bales—500 lb. gross wt.)

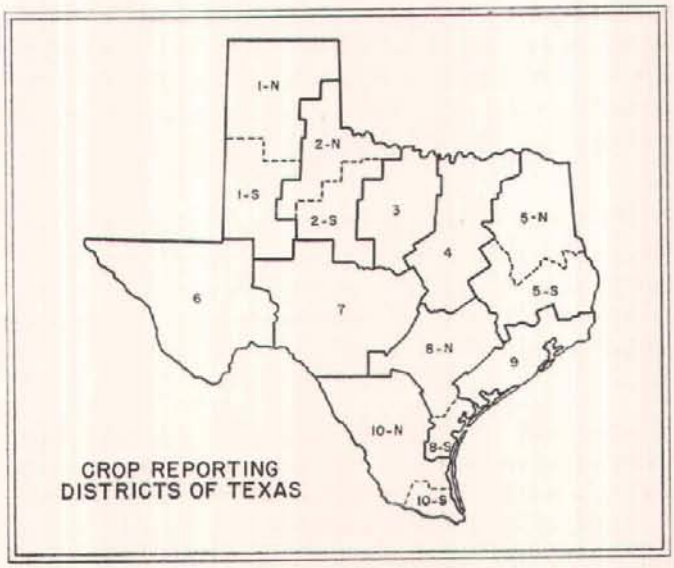
Crop reporting district	1954 Indicated September 1	1953	1952	1954 as percent of 1953
1-N	400	548	469	73
1-S	930	835	1,005	111
2-N	175	143	182	122
2-S	145	285	59	51
3	18	39	12	46
4	405	1,101	610	37
5-N	60	136	95	44
5-S	60	119	95	50
6	180	253	239	71
7	17	39	17	44
8-N	130	215	201	60
8-S	205	76	222	270
9	180	238	231	76
10-N	65	32	61	203
10-S	405	258	310	157
State	3,375	4,317	3,808	78

SOURCE: United States Department of Agriculture.

Ginnings prior to September 16 were 1,305,380 bales in Texas, compared with 951,752 bales as of the same date in 1953. In general, the crop in Texas is shorter in staple but higher in grade than a year ago.

Cotton production in the Nation is estimated by the United States Department of Agriculture at 11,832,000 bales, based on conditions as of September 1. Reports during September indicated further deterioration of the crop in central and east Texas, the Mississippi Delta area, and parts of the Southeast, while conditions in the irrigated sections of west Texas, New Mexico, Arizona, and California continue favorable. The estimated national average yield of 295 pounds of lint per acre is 30 pounds lower than in 1953 but 23 pounds above the 1943-52 average.

The September estimate of the cotton crop in District states was about 200,000 bales below that of August. Declines were recorded in Arizona, Louisiana, Oklahoma, and Texas, while the estimate for New Mexico was unchanged.



In Texas, cotton production is forecast at 3,375,000 bales—down 25,000 bales from the August 1 estimate. Declines in the Low Rolling Plains and northcentral and northeastern regions more than offset small increases in south Texas, the northern High Plains, and the Trans-Pecos areas.

Light rain in coastal areas of south Texas late in September improved prospects for small grains and other winter feed crops in those areas, but elsewhere in the District, rain is needed urgently. Considerable acreage of oats has been seeded in the dust in central and southeastern counties. Planting of the 1955 winter wheat crop continues in northwestern Texas, with some farmers in the drier areas dusting in the grain. In extreme northern Panhandle counties, moisture has been sufficient to bring early fields up to a stand; these fields and some volunteer wheat are providing grazing.

Harvest of grain sorghums is progressing rapidly in the High Plains of west Texas, with yields from irrigated land turning out very satisfactorily but with most dry-land acreage being grazed or baled. Dry-land sorghums in most of the southern High Plains and Low Rolling Plains of Texas have been harvested for forage or grazed off.

Harvest of a record rice crop in Texas is nearing completion, with yields per acre estimated at 2,650 pounds—50 pounds higher than the record yield last year. Total production in the State is now forecast at 16,430,000 100-pound bags, or nearly 2,000,000 bags more than in 1953 and over 6,000,000 bags above the 1943-52 average. The bountiful crop, harvested somewhat earlier than usual, has posed a serious storage problem. Considerable on-the-farm storage has been constructed to provide suitable space.

The early winter commercial vegetable crop in south Texas is making excellent progress. Harvest of the Texas Panhandle lettuce crop is nearing completion. Shipment of the new crop of citrus fruits from the Lower Rio Grande Valley began early in September; the fruit is of good size, and the trees are in excellent condition.

Continued hot, dry weather during most of September caused further deterioration of ranges and pastures in virtually all sections of the District. Rains the latter part of the month improved prospects for winter grasses in the eastern half of Texas and in northern Louisiana. However, even in those sections, subsoil moisture is very low, and additional rains will be required for maximum production. In the western half of the District, range feed is scarce, except in the Big Bend area and extreme northern Panhandle of Texas, where showers have been more frequent during the late summer and early fall. Movement of cattle to market has been seasonally heavy, but orderly.

A relatively strong stocker and feeder cattle demand from the Corn Belt states and from major wheat-growing areas has maintained prices of such cattle in the Southwest at levels generally $1 to $2 per hundredweight higher than those which prevailed in early August and about $1 per hundredweight above prices a year ago. Stocker sheep prices also continue strong to slightly higher, with considerable demand for animals to restock ranges and to send to feed lots.

Cotton prices advanced nearly ½ cent per pound following the announcement of the September 1 forecast of production. Prices near the end of September were about 1 cent above a month ago and 2 cents above a year earlier. It is reported that farmers are offering current ginnings rather freely, although much of the low-quality, short-staple cotton of the eastern half of the District is not wanted by the trade and, hence, is going into the Commodity Credit Corporation loan. Loan entries in the Nation through September 10 totaled 67,902 bales.

The Secretary of Agriculture has announced that, because of the very large supplies of wheat, the 1955 wheat crop will be supported at not less than a national average price of

LIVESTOCK RECEIPTS

(Number)

Class	FORT WORTH MARKET			SAN ANTONIO MARKET		
	August 1954	August 1953	July 1954	August 1954	August 1953	July 1954
Cattle	98,467	83,024	80,186	44,646	33,507	26,009
Calves	30,923	30,817	23,422	36,587	28,386	21,637
Hogs	31,636	25,844	26,401	2,610	—	2,697
Sheep	44,434	54,332	56,297	[1]36,778	[1]27,077	[1]18,807

[1] Includes goats.

CROP PRODUCTION

Texas and Five Southwestern States

(In thousands of bushels)

Crop	Texas			Five southwestern states[1]		
	Estimated Sept. 1, 1954	1953	Average 1943–52	Estimated Sept. 1, 1954	1953	Average 1943–52
Cotton[2]	3,375	4,317	3,239	5,065	6,957	4,791
Corn	34,054	33,874	51,266	51,290	52,991	91,286
Rice[3]	16,430	14,924	10,162	30,292	27,080	20,839
Sorghum grain	77,146	55,198	79,379	86,515	66,156	94,745
Hay[4]	1,522	1,705	1,546	4,823	5,063	4,740
Peanuts[5]	102,550	179,400	282,635	156,050	299,890	395,214
Irish potatoes	2,100	2,484	3,818	4,991	6,099	8,303
Sweet potatoes	1,485	2,550	4,047	10,705	11,511	13,894

[1] Arizona, Louisiana, New Mexico, Oklahoma, and Texas.
[2] In thousands of bales.
[3] In thousands of bags containing 100 pounds each.
[4] In thousands of tons.
[5] In thousands of pounds.
SOURCE: United States Department of Agriculture.

FARM COMMODITY PRICES

Top Prices Paid in Local Southwest Markets

Commodity and market	Unit	Week ended Sept. 21, 1954	Comparable week last month	Comparable week last year
COTTON, Middling 15/16-inch, Dallas	lb.	$ .3425	$ .3385	$ .3230
WHEAT, No. 1 hard, Fort Worth	bu.	2.63	2.60	2.49
OATS, No. 2 white, Fort Worth	bu.	1.01½	.94¼	.97¾
CORN, No. 2 yellow, Fort Worth	bu.	1.94	1.90	1.97¾
SORGHUMS, No. 2 yellow, Fort Worth	cwt.	2.62	2.70	2.80
HOGS, Choice, Fort Worth	cwt.	20.50	23.75	25.75
SLAUGHTER STEERS, Choice, Fort Worth	cwt.	25.00	23.50	24.00
SLAUGHTER CALVES, Choice, Fort Worth	cwt.	17.50	17.50	18.00
STOCKER STEERS, Choice, Fort Worth	cwt.	20.00	19.00	17.00
SLAUGHTER SPRING LAMBS, Choice, Fort Worth	cwt.	18.00	19.00	19.00
BROILERS, south Texas	lb.	.23	.26	.26
EGGS, current receipts, Fort Worth	case	9.50	10.00	—
WOOL, 12-months, west Texas	lb.	[1]	[2]1.80	[2]1.85
MOHAIR, kid, west Texas	lb.	1.00	1.01½	1.05

[1] No sales reported.
[2] Clean basis.

CASH RECEIPTS FROM FARM MARKETINGS

(In thousands of dollars)

State	June		Cumulative receipts January—June	
	1954	1953	1954	1953
Arizona	$ 28,990	$ 28,412	$ 160,171	$ 192,914
Louisiana	11,376	11,927	115,717	112,153
New Mexico	10,138	9,765	62,005	73,017
Oklahoma	89,112	82,273	220,852	230,473
Texas	118,999	119,636	656,431	674,720
Total	$258,615	$252,013	$1,215,176	$1,283,277

SOURCE: United States Department of Agriculture.

$2.06 per bushel. This is 82½ percent of current parity—the minimum permitted by law. The Secretary also has announced that, in view of reduced feed production in drought areas, land taken out of production because of acreage allotments on basic crops in 1955 may be planted to any crop except those under production controls.

Cash receipts from farm marketings in District states during the first half of 1954 were 5 percent below those in the first half of 1953. Largely because of a decline of nearly 1,000,000 bales in the prospective cotton crop of the District, cash farm income in 1954 is expected to be 5 to 10 percent lower than in 1953. Partially offsetting the declines in cotton, peanut, and corn production will be larger crops of wheat and grain sorghums and larger marketings of cattle and calves.

Treasury spending in the current fiscal year ending June 30, 1955, will total $64,000,000,000, and revenues will amount to $59,300,000,000, according to the revised estimates of the Bureau of the Budget. As compared with January estimates, the new figures are $1,600,000,000 lower for expenditures and $3,300,000,000 lower for receipts, increasing the budget deficit to $4,700,000,000 as against the January estimate of $2,900,000,000. On a cash basis, the deficit is expected to run about $2,100,000,000. The downward revision of receipts—the principal change reflected in the new totals—is attributable largely to greater than projected tax cuts this year and anticipated lower yields from corporate and individual income taxes.

Loan trends at weekly reporting member banks in the District during the 5 weeks ended September 22 showed considerable evidence of a seasonal pickup in business and other credit demands. Commercial, industrial, and agricultural loans of these banks rose in each week, with the total increase amounting to $45,779,000, or 4 percent. During most weeks, commodity dealers, wholesale and retail trade establishments, manufacturers in the food and liquor lines, and grain and milling concerns added substantially to their outstanding bank borrowings. Manufacturers in the petroleum and related products industries, construction firms, and sales finance companies also borrowed on balance. The increase in commercial, industrial, and agricultural loans to a total of $1,249,161,000 on September 22 stands in rather sharp contrast to the reduction of $5,168,000 during the comparable weeks of 1953.

CONDITION STATISTICS OF WEEKLY REPORTING MEMBER BANKS IN LEADING CITIES

Eleventh Federal Reserve District

(In thousands of dollars)

Item	Sept. 22, 1954	Sept. 23, 1953	Aug. 18, 1954
ASSETS			
Commercial, industrial, and agricultural loans	$1,249,161	$1,158,204	$1,203,382
Loans to brokers and dealers in securities	8,787	9,681	9,406
Other loans for purchasing or carrying securities	89,647	71,463	89,565
Real estate loans	153,394	135,566	151,280
Loans to banks	9,258	2,494	13,409
All other loans	402,841	411,690	409,209
Gross loans	1,913,088	1,789,098	1,876,251
Less reserves and unallocated charge-offs	17,855	18,457	17,408
Net loans	1,895,233	1,770,641	1,858,843
U. S. Treasury bills	160,250	114,790	249,707
U. S. Treasury certificates of indebtedness	169,664	262,494	156,630
U. S. Treasury notes	205,256	207,411	202,953
U. S. Government bonds (inc. gtd. obligations)	868,676	620,789	885,511
Other securities	212,870	190,581	206,685
Total investments	1,616,716	1,396,065	1,701,486
Cash items in process of collection	334,321	323,741	303,842
Balances with banks in the United States	534,373	485,196	476,996
Balances with banks in foreign countries	1,822	1,753	1,416
Currency and coin	45,442	48,425	44,793
Reserves with Federal Reserve Bank	631,897	576,748	577,783
Other assets	109,209	86,417	99,761
TOTAL ASSETS	5,169,013	4,688,986	5,064,920
LIABILITIES AND CAPITAL			
Demand deposits			
Individuals, partnerships, and corporations	2,718,782	2,530,277	2,669,918
United States Government	79,915	104,515	110,027
States and political subdivisions	172,821	190,512	160,157
Banks in the United States	1,029,652	841,567	975,769
Banks in foreign countries	12,287	10,338	12,827
Certified and officers' checks, etc.	46,546	47,365	51,813
Total demand deposits	4,060,003	3,724,574	3,980,511
Time deposits			
Individuals, partnerships, and corporations	586,164	489,929	583,378
United States Government	13,365	10,129	9,805
Postal savings	451	450	451
States and political subdivisions	98,640	81,924	99,035
Banks in the U. S. and foreign countries	1,203	1,938	1,883
Total time deposits	699,823	584,370	694,552
Total deposits	4,759,826	4,308,944	4,675,063
Bills payable, rediscounts, etc.	2,000	15,000	0
All other liabilities	59,319	44,656	44,874
Total capital accounts	347,868	320,386	344,983
TOTAL LIABILITIES AND CAPITAL	5,169,013	4,688,986	5,064,920

Changes in other categories of loans included an increase of $2,114,000 in loans secured by real estate and decreases of $6,368,000 in "all other" loans and $4,151,000 in loans to banks. Loans for financing security transactions were virtually unchanged. On September 22, total loans of these banks were $1,913,088,000, as compared with the year-earlier figure of $1,789,098,000.

The weekly reporting member banks reduced their investments between August 18 and September 22 in the amount of $84,770,000, or 5 percent, with Treasury bills accounting for somewhat more than the total decrease. Holdings of Government bonds declined $16,835,000, but additions to Treasury certificate and note portfolios had the effect of offsetting most of that reduction. Investments in municipal and other non-Government securities rose moderately.

Deposits of these banks rose $84,763,000, or 2 percent, during the 5 weeks to reach a total of $4,759,826,000 on September 22. Increases of $53,343,000 in demand deposits of banks and $48,864,000 in the demand accounts of individ-

CONDITION STATISTICS OF ALL MEMBER BANKS

Eleventh Federal Reserve District

(In millions of dollars)

Item	August 25, 1954	August 26, 1953	July 28, 1954
ASSETS			
Loans and discounts	$3,060	$2,902	$3,197
United States Government obligations	2,633	2,396	2,342
Other securities	477	434	477
Reserves with Federal Reserve Bank	911	951	952
Cash in vault[e]	121	124	135
Balances with banks in the United States	1,100	909	1,007
Balances with banks in foreign countries[e]	1	2	1
Cash items in process of collection	309	288	299
Other assets[e]	152	132	145
TOTAL ASSETS[e]	8,764	8,138	8,555
LIABILITIES AND CAPITAL			
Demand deposits of banks	1,087	828	982
Other demand deposits	5,938	5,744	5,840
Time deposits	1,078	904	1,082
Total deposits	8,103	7,476	7,904
Borrowings[e]	2	48	5
Other liabilities[e]	56	53	47
Total capital accounts[e]	603	561	599
TOTAL LIABILITIES AND CAPITAL[e]	8,764	8,138	8,555

e—Estimated.

uals and businesses were the principal factors in the rise. Demand deposits of the United States Government declined $30,112,000; total time deposits increased $5,271,000. Deposit expansion during the 5 weeks was associated, in part, with gains from Treasury operations and a net flow of funds into the District.

Gross demand deposits of all member banks in the District averaged $6,992,543,000 during August, reflecting increases of $118,043,000, or 1.7 percent, over July and $437,355,000, or 6.7 percent, over August 1953. Reserve city member banks accounted for 76 percent of the July-to-August rise, which was weighted rather heavily by the expansion in interbank deposits. Time deposits declined $3,354,000, or 3.1 percent, from July to August, due entirely to the reduction at country member banks. At this lower level, however, time deposits were $174,687,000, or 19.3 percent, above the comparable year-earlier total.

Debits to deposit accounts reported by banks in 24 cities of the District declined 5 percent during August as compared with July but were 6 percent above August 1953. The lower volume of spending in August was general; practically all cities reported decreases. The annual rate of turnover of deposits also declined, from 18.1 for July to 17.2 for August. The rate for August 1953 was 16.8.

GROSS DEMAND AND TIME DEPOSITS OF MEMBER BANKS

Eleventh Federal Reserve District

(Averages of daily figures. In thousands of dollars)

Date	COMBINED TOTAL		RESERVE CITY BANKS		COUNTRY BANKS	
	Gross demand	Time	Gross demand	Time	Gross demand	Time
August 1952	$6,546,078	$ 758,238	$3,123,616	$414,837	$3,422,462	$343,401
August 1953	6,555,188	903,610	3,153,585	495,813	3,401,603	407,797
April 1954	6,802,386	1,057,137	3,295,363	594,744	3,507,023	462,393
May 1954	6,752,376	1,073,865	3,263,439	599,299	3,488,937	474,566
June 1954	6,804,576	1,083,140	3,313,244	605,899	3,491,332	477,241
July 1954	6,874,500	1,081,651	3,349,903	600,870	3,524,597	480,781
August 1954	6,992,543	1,078,297	3,439,030	600,994	3,553,513	477,303

CONDITION OF THE FEDERAL RESERVE BANK OF DALLAS

(In thousands of dollars)

Item	Sept. 15, 1954	Sept. 15, 1953	August 15, 1954
Total gold certificate reserves	$748,661	$ 736,613	$ 877,173
Discounts for member banks	1,829	15,570	329
Other discounts and advances	4,935	0	4,230
U. S. Government securities	942,565	995,668	938,207
Total earning assets	949,329	1,011,238	942,766
Member bank reserve deposits	914,842	964,828	1,127,315
Federal Reserve notes in actual circulation	730,676	734,834	730,275

Between August 15 and September 15, member banks drew down their reserve deposits at the Federal Reserve Bank of Dallas in the amount of $212,473,000. The reduction reflected, in part, the investment of funds freed through the lowering of reserve requirements in July and August. The use of excess reserves for purchasing securities, together with other interdistrict payments during the month, contributed, in turn, to a net reduction of $128,512,000 in the gold certificate reserves of this bank. Other changes in the condition of the Federal Reserve bank between August 15 and September 15 included an increase of $6,563,000 in total earning assets, reflecting principally a rise of $4,358,000 in holdings of Government securities and an expansion of $1,500,000 in discounts for member banks. On September 15, Federal Reserve notes of this bank in actual circulation totaled $730,676,000, as compared with $730,275,000 on August 15 and $734,834,000 on September 15, 1953.

On September 20, the Treasury announced that it would offer for cash subscription on September 23 $4,000,000,000

BANK DEBITS, END-OF-MONTH DEPOSITS AND ANNUAL RATE OF TURNOVER OF DEPOSITS

(Amounts in thousands of dollars)

City	DEBITS[1]			DEPOSITS[2]			
		Percentage change from			Annual rate of turnover		
	August 1954	Aug. 1953	July 1954	August 31, 1954	Aug. 1954	Aug. 1953	July 1954
ARIZONA							
Tucson	$ 97,294	11	—4	$ 87,350	13.6	13.0	14.4
LOUISIANA							
Monroe	44,122	—8	—9	42,373	12.7	15.4	13.4
Shreveport	190,893	—3	—6	178,461	13.2	14.6	14.5
NEW MEXICO							
Roswell	23,634	7	—5	28,898	9.8	9.7	10.3
TEXAS							
Abilene	53,317	7	—6	53,550	12.0	11.9	12.7
Amarillo	130,673	4	—4	103,323	15.2	14.8	16.2
Austin	114,104	12	—5	104,121	13.2	12.5	13.3
Beaumont	107,241	—15	—6	93,271	13.8	16.7	14.6
Corpus Christi	174,993	19	6	125,707	17.2	16.4	16.8
Corsicana	12,548	10	2	20,702	7.3	7.0	7.1
Dallas	1,674,252	11	—6	924,321	22.0	21.0	22.9
El Paso	172,089	—10	—6	124,534	16.9	19.7	18.1
Fort Worth	500,347	6	—8	338,739	17.9	17.3	19.4
Galveston	72,981	2	—2	68,072	13.0	10.3	13.2
Houston	1,667,110	5	—5	1,121,964	18.2	18.1	19.4
Laredo	16,341	—4	—12	17,798	11.2	11.3	12.4
Lubbock	98,090	15	—1	80,127	14.6	13.6	14.4
Port Arthur	45,497	5	—4	40,253	14.0	14.0	15.1
San Angelo	39,094	13	—5	47,660	10.1	9.2	10.9
San Antonio	404,752	7	—1	317,101	15.4	14.6	15.7
Texarkana[3]	16,462	—11	—4	17,550	11.3	11.9	11.8
Tyler	60,067	9	—2	53,981	13.1	12.6	12.8
Waco	83,058	18	5	64,780	15.7	13.4	15.1
Wichita Falls	83,212	7	0	101,536	9.7	9.6	9.6
Total—24 cities	$5,882,171	6	—5	$4,156,172	17.2	16.8	18.1

[1] Debits to demand deposit accounts of individuals, partnerships, and corporations and of states and political subdivisions.

[2] Demand deposit accounts of individuals, partnerships, and corporations and of states and political subdivisions.

[3] These figures include only one bank in Texarkana, Texas. Total debits for all banks in Texarkana, Texas-Arkansas, including two banks located in the Eighth District, amounted to $33,259,000 for the month of August 1954.

NEW MEMBER BANK

The Southern National Bank at Tallulah, Tallulah, Louisiana, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business September 20, 1954, as a member of the Federal Reserve System. The new bank has capital of $100,000, surplus of $100,000, and undivided profits of $50,000. The officers are: A. M. Stewart, President; J. W. Love, Vice President; Lamar T. Loe, Vice President; and Harvey T. Mounger, Vice President and Cashier.

of 1⅝-percent notes, to be dated October 4 and to mature May 15, 1957. Subscriptions from commercial banks, for their own account, were restricted in each case to an amount not exceeding one-half of combined capital, surplus, and undivided profits as of June 30. Payment for the new notes will be permitted by credit to Treasury Tax and Loan Account.

Daily average crude oil production in the District rose moderately during September, after declining in August to the lowest level in more than 2 years. Production during the first 10 days of September averaged 2,914,000 barrels per day, which is 39,000 barrels higher than in August although 221,000 barrels below the same month a year earlier. A smaller increase occurred in the Nation during early September; daily average production, at 6,158,000 barrels, was down 399,000 barrels from September 1953.

The upturn in District crude production in September apparently will be short-lived. The October daily oil allowable announced by the Texas Railroad Commission is 59,138 barrels below the level prevailing on September 11.

Total imports of crude oil and refined products showed a small decline during August and early September, with residual fuel oil accounting for the decrease; crude imports rose moderately. In the 5 weeks ended September 10, total imports amounted to 988,000 barrels per day, or 35,000 barrels higher than in the comparable period last year.

Refinery crude runs in the District turned upward during August and the early part of September, after registering declines for five consecutive months. August refinery runs averaged 1,989,000 barrels per day, which is 51,000 barrels above July although 42,000 barrels lower than August a year ago. Runs in early September, however, were slightly higher than the average for September 1953. Crude runs in the Nation's refineries also rose in the latter part of August and early September. Nevertheless, the August average of 6,859,000 barrels per day was moderately below that of July and was 304,000 barrels less than a year earlier.

The demand for petroleum products in the Nation has continued to lag slightly behind year-earlier levels. During

CRUDE OIL: DAILY AVERAGE PRODUCTION

(In thousands of barrels)

Area	August 1954[1]	August 1953[2]	July 1954[1]	Change from August 1953	Change from July 1954
ELEVENTH DISTRICT	2,875.0	3,163.6	2,940.6	—288.6	—65.6
Texas	2,560.5	2,853.1	2,627.0	—292.6	—66.5
Gulf Coast	553.8	631.1	575.4	—77.3	—21.6
West Texas	992.7	1,099.5	1,016.9	—106.8	—24.2
East Texas (proper)	205.6	245.8	218.5	—40.2	—12.9
Panhandle	83.5	76.4	82.0	7.1	1.5
Rest of State	724.9	800.3	734.2	—75.4	—9.3
Southeastern New Mexico	204.1	197.5	201.9	6.6	2.2
Northern Louisiana	110.4	113.0	111.8	—12.6	—1.4
OUTSIDE ELEVENTH DISTRICT	3,271.7	3,418.9	3,341.3	—147.2	—69.6
UNITED STATES	6,146.7	6,582.5	6,281.9	—435.8	—135.2

SOURCES: [1] Estimated from American Petroleum Institute weekly reports.
[2] United States Bureau of Mines.

the 5 weeks ended September 10, the demand for major refined products at refineries and bulk terminals was about 1 percent less than in the same weeks of last year. While the demand for kerosene and distillate fuel oil showed increases and that for gasoline was practically the same as a year earlier, the demand for residual fuel oil was down 11 percent from a year ago.

Wholesale prices of major petroleum products in the principal markets of the Nation remained generally steady during August and early September. Some firming has occurred, however, in prices of residual fuel oil in Mid-Continent markets.

The Nation's stocks of major refined products have been following seasonal trends, with gasoline stocks declining and heating oil stocks rising. Although they have declined over 26,000,000 barrels from the seasonal peak of early April, gasoline stocks still appear large, especially since the end of the heavy motoring season is approaching. In fact, primary stocks of gasoline amounted to 153,300,000 barrels on September 10, or 8 percent above the high level of the corresponding date last year. Residual fuel oil stocks also were substantially higher than a year earlier, but distillate fuel oil stocks were slightly lower. Crude stocks declined 6,400,000 barrels during August and the first part of September and on September 11 totaled 273,300,000 barrels.

Nonagricultural employment in the District states during July continued the rise of the previous month. Total wage and salary employment increased to 3,850,800, or 2,200 above the June level but 5,400 below the level of July 1953. The reduction of 6,300 in government employment between June and July was more than offset by gains in other categories.

The July increase in the number of nonagricultural wage and salary employees did not apply, however, to each of the five states lying wholly or partly within the District. Total employment in both Texas and New Mexico increased substantially over June, while the level of nonagricultural employment in Arizona remain unchanged. Oklahoma reported a slight decrease, and Louisiana showed a sharp decline.

NONAGRICULTURAL EMPLOYMENT

Five Southwestern States[1]

Type of employment	Number of persons			Percent change July 1954 from	
	July 1954p	July 1953	June 1954	July 1953	June 1954
Total nonagricultural wage and salary workers	3,850,800	3,856,200	3,848,600	—.1	.1
Manufacturing	707,500	736,900	705,500	—4.0	.3
Nonmanufacturing	3,143,300	3,119,300	3,143,100	.8	0
Mining	236,700	230,900	234,500	2.5	.9
Construction	298,400	295,000	297,300	1.2	.4
Transportation and public utilities	394,600	411,400	393,700	—4.1	.2
Trade	980,300	978,900	978,900	.1	.1
Finance	158,700	153,700	158,600	3.3	.1
Service	458,900	449,400	458,100	2.1	.2
Government	615,700	600,000	622,000	2.6	—1.0

[1] Arizona, Louisiana, New Mexico, Oklahoma, and Texas.
p—Preliminary.
SOURCE: State employment agencies.

Manufacturing employment, which gained 2,000 to reach a total of 707,500, accounted for the bulk of the increase in nonagricultural employment. On the basis of incomplete data, it appears that manufacturing employment in August showed little change from July. It is estimated unofficially that manufacturing employment in the District in September totaled about 715,000. This estimate reflects seasonal increases in chemicals, petroleum and petroleum products, furniture and fixtures, apparel, and food-processing employment.

The employment picture in the District and the Nation is tending towards stability, following earlier declines. Recent increases in employment have been seasonal in nature. Trade and manufacturing activities are experiencing a seasonal preholiday expansion. Although below postwar records, the construction industry is still supplying a large volume of jobs. This situation should continue, in view of further easing of the mortgage market and the high level of construction contracts awarded during July and August.

Average weekly earnings in both manufacturing and nonmanufacturing industries in Texas during July were up from June and higher than in July 1953. These increases are due to higher wages, as the number of hours worked in manufacturing industries showed no change from June and a slight decrease from July 1953. The average of $72.86 per week in manufacturing was 3 percent above the level of July 1953. Weekly earnings in nonmanufacturing industries also were up from a year ago, despite a shorter workweek.

VALUE OF CONSTRUCTION CONTRACTS AWARDED

(In thousands of dollars)

Area and type	August 1954p	August 1953	July 1954	January—August	
				1954p	1953
ELEVENTH DISTRICT	$ 105,220	$ 94,245	$ 112,078	$ 876,817	$ 802,292
Residential	43,064	29,245	52,625	405,892	351,638
All other	62,156	65,000	59,453	470,925	450,654
UNITED STATES[1]	1,572,865	1,414,408	1,836,935	12,661,009	11,115,588
Residential	692,736	507,560	745,440	5,418,867	4,419,463
All other	880,129	906,848	1,091,495	7,242,142	6,696,125

[1] 37 states east of the Rocky Mountains.
p—Preliminary.
SOURCE: F. W. Dodge Corporation.

The value of District construction contracts awarded in August totaled $105,220,000, which is 6 percent less than July awards but 12 percent greater than awards in August 1953. Contracts for residential construction in August declined to $43,064,000. Although it was 18 percent less than in the preceding month, the August residential total was 47 percent above August 1953. Nonresidential contracts increased slightly over July but were 4 percent below the level of a year earlier.

For the first 8 months of 1954, construction contracts in the District were valued at $876,817,000. Compared with the same period last year, this total reflects a gain of 9 percent; residential and nonresidential awards were up 15 percent and 5 percent, respectively. The District increase in both residential and nonresidential construction was smaller than that for the Nation during the same period. The national increase was 23 percent in residential construction and 8 percent in nonresidential construction.

BUILDING PERMITS

City	August 1954		Percentage change in valuation from		8 months 1954		Percentage change in valuation from 8 months 1953
	Number	Valuation	Aug. 1953	July 1954	Number	Valuation	
LOUISIANA							
Shreveport	350	$ 3,065,041	137	—9	2,887	$ 16,818,801	7
TEXAS							
Abilene	138	866,901	—10	—73	1,116	9,445,780	52
Amarillo	213	2,063,189	160	49	1,719	13,278,905	—7
Austin	322	3,099,396	8	30	2,212	25,810,133	25
Beaumont	389	1,026,220	150	86	1,924	5,884,358	18
Corpus Christi	418	2,315,261	44	—27	3,738	23,338,151	20
Dallas	2,636	13,113,208	78	—4	17,633	94,981,593	31
El Paso	489	2,521,005	109	—23	3,554	16,813,545	5
Fort Worth	743	3,669,422	26	0	5,903	29,442,645	—5
Galveston	97	786,964	501	195	818	4,289,908	13
Houston	1,451	13,537,373	66	7	8,680	98,644,763	9
Lubbock	388	1,902,885	93	—3	2,662	18,372,570	53
Port Arthur	162	367,283	99	25	1,108	2,478,227	16
San Antonio	1,464	7,114,275	113	91	11,596	33,907,039	—3
Waco	271	1,482,965	82	—28	1,974	10,100,461	30
Wichita Falls	110	622,765	—15	—57	981	5,851,979	8
Total—16 cities	9,641	$57,554,153	71	1	68,505	$409,458,858	15

The rise in construction activity during 1954 is illustrated further in a comparison of the number of dwellings provided for by construction contracts awarded. New dwelling units provided in Texas during the first 8 months of 1954 totaled 31,453, compared with 29,808 for the same period of 1953. Not only have more units been provided in 1954 than in 1953, but the average valuation per unit in the first 8 months of 1954 was $11,194, or $615 per unit more than in 1953. In 1954 as in 1953, the bulk of new residential units is being constructed by the speculative builder. During the first 8 months of 1954, one-family units contracted by owners for construction for future occupancy amounted to less than 7 percent of new one-family units. During the same period of 1953, owner-occupied units accounted for almost 8 percent of such new units.