

# MONTHLY *Business Review*

FEDERAL RESERVE BANK of CLEVELAND

*February 1955*

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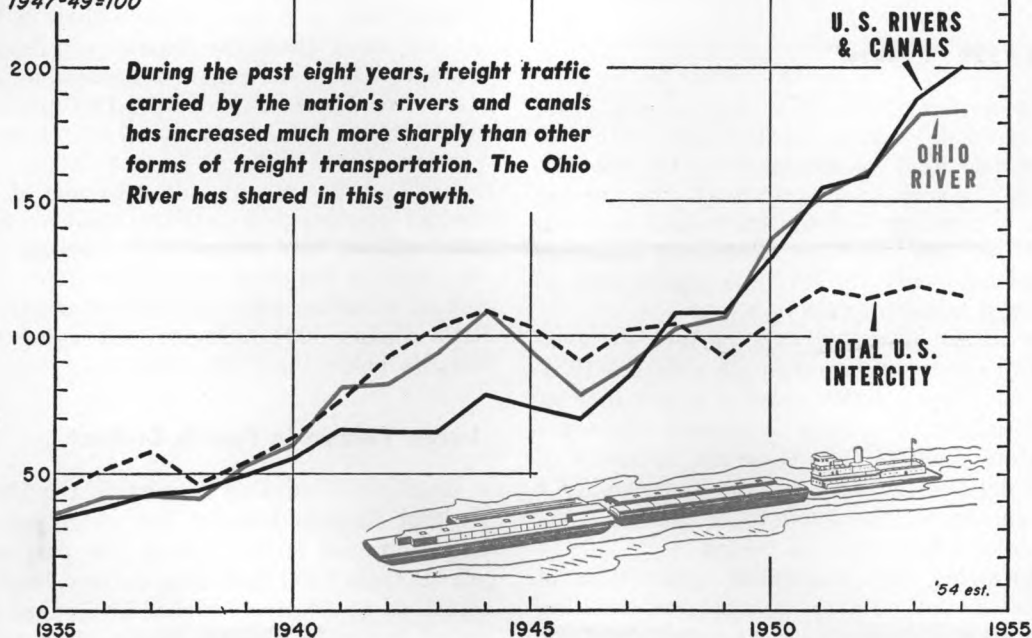
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## FREIGHT TRAFFIC

INDEX of  
Ton-Miles  
1947-49=100

During the past eight years, freight traffic carried by the nation's rivers and canals has increased much more sharply than other forms of freight transportation. The Ohio River has shared in this growth.



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# Homebuilding: Review and Outlook

**T**HE NATION'S HOMEBUILDERS toppled old records during 1954 and confidently entered 1955 expecting to expand activity even further. Speculative homebuilding (for-sale units as contrasted with custom-built homes) was at a new peak last year, providing the main impetus to 1954's exceptional volume.

After a relatively slow start early in the year, homebuilding activity picked up sharply in the second half and held up unseasonally into the winter months. Mortgage funds were readily available to support the large number of new homes begun during the year. The easing of downpayments and the extension of repayment periods on mortgages insured by the Federal Housing Administration provided some stimulus late in the year.

## The 1954 "Record"

The extent of the 1954 surge in residential construction varies considerably with the yardstick used to measure it. Of the two yardsticks most frequently used—the number of new nonfarm housing starts and expenditures for new nonfarm residential buildings completed—only the latter measures 1954 as a record homebuilding year.

In terms of dollar outlays for new residential construction put in place during 1954, homebuilding activity reached a new high of \$13.8 billion, or nearly 7 percent above the previous 1950 record. However, in terms of 1950 dollars, the 1954 volume was roughly 4 percent under the 1950 total, making 1954 the second best year on record.

Measuring 1954 residential construction in terms of the number of nonfarm dwelling units started during the year definitely places

1954 second to 1950. Last year's 1.2 million starts were nearly 13 percent below the 1950 peak of 1.4 million. The homes started in 1954 contained more living space than those begun five years ago, however. The three-bedroom home was probably most typical of the 1954 starts, while the average dwelling built in 1950 contained only two bedrooms.

The trend towards larger homes has kept the physical volume of residential construction closer to 1950 levels than indicated by the series on the number of dwelling units started. In the 37 states east of the Rocky mountains, for example, the F. W. Dodge Corporation reports that the floor area of all residential buildings covered by contract awards aggregated 868 million square feet during 1954, or 5 percent more than in 1950. At the same time, the number of dwelling units contained in contract awards in these states ran 2 percent under the 1950 peak, but their dollar value was at a new high, 26 percent above 1950.

In brief, the record dollar volume of residential construction activity chalked up in 1954 reflects both increases in average home size and in building costs since 1950. Residential building costs actually changed very little during 1954, however, averaging fractionally below the 1953 peak.

## Large Volume in Fourth District

Residential building activity in the Fourth Federal Reserve District has roughly paralleled national levels during the past eight years. Since 1950, however, volume has been sustained at relatively higher levels than prevailed in the 37 Eastern States. As a result,

the District's proportion of the dollar volume of all residential building awards in the 37 Eastern States rose steadily from 11 percent in 1950 to 13 percent in 1954.

The District's better showing relative to the experience in the 37 Eastern States is illustrated in the accompanying ratio chart where trends of *new* residential building awards in the two areas are contrasted.<sup>(1)</sup> This chart also serves to point up the different results obtained by using the three yardsticks—dwelling units, floor area and dollar value. All three measures reached new highs in the Fourth District during the year, while, as previously noted, only floor area and dollar totals surpassed previous records for the country as a whole.

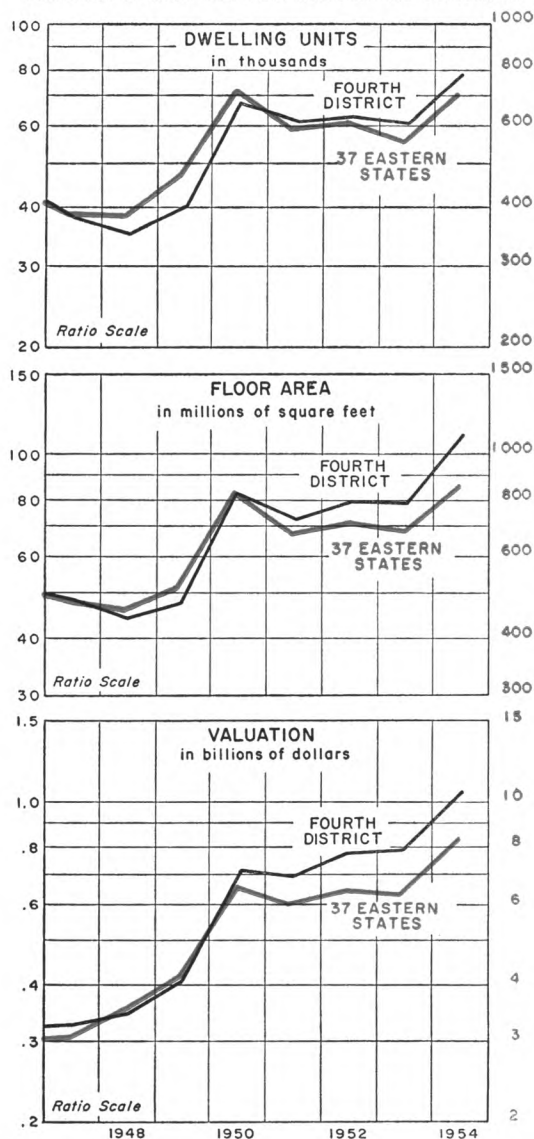
The upturn in residential building was reflected throughout the District. Contract awards in eleven of the District's twelve largest metropolitan areas exceeded the 1953 dollar volume, with the Wheeling-Stuebenville area registering the only decline. In four out of the five areas for which there is a continuous record in the Dodge Reports—Akron, Cleveland, Columbus and Toledo—dollar volume in 1954 was at a new high. In the Canton area, volume increased from 1953 but fell short of the 1951 peak.

There was a marked trend towards larger homes in the District during 1954. The average for-sale home put under contract contained 1,420 square feet — 120 square feet more than in 1953 and 250 square feet more than in 1950. Custom-built homes, which generally contain more living space than speculatively-built units, averaged 1,600 square feet during 1954, or about the equivalent of a 10'x13' room more than their 1950 and 1953 counterparts. Both the for-sale and custom-built units ran about 90 square feet larger than those built in 1939.

Building costs in the District eased slightly during the year, after more than a decade of protracted rise. New home prices continued to advance, however, because of the increase in size.

(1) On a ratio chart, equal vertical distances represent equal percentage changes.

## CONTRACT AWARDS FOR NEW RESIDENTIAL BUILDINGS



Based upon data compiled by F. W. Dodge Corporation.

## Speculative Building at New Peak Levels

Last year's upturn in homebuilding activity received most of its impetus from speculative builders of single-family homes—both nationally and in the Fourth District. In the Dis-

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# Resurgence of the River Boat

**F**REIGHT TRAFFIC on the nation's network of rivers and canals spurred to a record 75 billion ton-miles in 1953 and appears to have set another record during the year just past, despite the mild business recession.

The cover chart depicts the phenomenal postwar growth of waterway traffic in general (exclusive of the Great Lakes) and Ohio River barge traffic in particular.<sup>(1)</sup> Freight traffic on the inland waterways has been growing at a pace far exceeding that of the transportation system as a whole. Rivers and canals which carried only 3.7 percent of all intercity freight in the United States during 1939 now handle well over 6 percent, and the figure is rising with each passing year.

The Ohio River, which is the principal waterway of the Fourth Federal Reserve District, has generally kept pace with the national growth in river traffic. Freight traffic on the Ohio was heavy during World War II. Coal shipments rose along with the general increase in industrial production, and large quantities of petroleum products were routed to Eastern markets via the Ohio, in order to ease the tanker shortage and avoid the submarine hazard to which ocean tankers were then subject. The end of the war brought a temporary decline in Ohio River barge traffic, but it wasn't long before a peacetime growth trend was well established.

In 1953, the Corps of Engineers of the U. S. Army, which is the source of waterway data, extended the coverage of waterway ton-mile statistics to facilities not included in

previous years. This created an artificial gap between the statistical trends of total river traffic and Ohio River traffic, as depicted by the lines on the chart. The gap was widened somewhat in 1954, when the industrial recession temporarily curtailed activity in the steel industry—one of the Ohio River's major industrial users.

The upsurge in waterway traffic can be considered a revival; a hundred years ago, rivers and canals were the backbone of the country's embryonic transportation system. After the Civil War, the more versatile railroads quickly displaced waterways as the main carrier of intercity commerce, and by the turn of the century the eclipse of the rivers and canals was almost complete. In the last two decades, however, and especially since World War II, inland waterways have developed a new and important place in the transportation system of the United States.

## Reasons for Growth of Barge Traffic

The attractiveness of barges as freight carriers is based largely upon their ability to transport bulk commodities at very low cost. Bituminous coal can be shipped by an all-water route from Kanawha River ports in West Virginia to St. Louis, Missouri, for approximately \$2.80 per ton, compared with an all-rail cost of about \$4.67. Grain can move by barge from Chicago to Pittsburgh, and sulphur from Louisiana to Cincinnati, for half of what it costs by rail. Finished steel shipped from Pittsburgh to Cincinnati costs \$7.00 per ton by rail, \$1.70 if sent by barge.<sup>(2)</sup>

(1) Indexes for the years 1935-53 are based on data reported by the Corps of Engineers, U. S. Army, and by the Interstate Commerce Commission. The year 1954 is partly estimated by this bank.

(2) Bargeload minimum weights are generally 500 tons, whereas rail carload minimum weights range from 20 to 50 tons. Rates are higher for less than minimum loads.

River carriers owe their low cost structure partly to the efforts of the Federal government, which has developed and maintained the inland waterways with public funds. But another important aspect is the fact that the waterways industry has continued to introduce new, better designed, and more efficient equipment into its operations. The powerful twin-screw diesel towboats being built today can manipulate as many as twenty steel barges carrying up to 20,000 tons of bulk freight along the major rivers of the United States. This is the equivalent of more than 300 average railroad cars. Specially designed barges built to haul molten sulphur, hot asphalt, and refrigerated products are now joining fleets already containing huge tank barges for petroleum products, as well as coal barges, the latest of which have a capacity of as much as 3,300 tons each.

New ways of arranging barges on the move have also stepped up operating efficiency. Most important of these has been the development of the semi-integrated and integrated tow, where two or more barges are sheared off and then pushed together to form one long unit with separate watertight sections.

Terminal facilities for loading and unloading vessels efficiently, long a limiting factor in river transportation, are being expanded and improved. Pittsburgh, for example, now has a new public river-rail-truck terminal, and in other river cities, such as Huntington and Ashland, new terminal projects are under consideration. Transshipment between barges, railroads, and trucks is expanding, and a new type of truck-barge combination, involving "piggy-back" operations, is in a developmental stage.

The final passing of war-induced shortages has given riverboats a definite boost. The erstwhile emphasis on quick delivery has tended to fade; accordingly, the slow moving barges are no longer at so much of a disadvantage because of the time element. In fact, the improved dependability and regularity of barge service has enabled many manufacturers to regard goods in transit on barges as floating inventory, which can be relied upon to arrive at given points on sched-

ule—thus cutting down the need for storage facilities.

A basic factor underlying the postwar gains of the inland waterways has been the robust growth of industry along the rivers of the nation. New industry seeking ample supplies of fresh water, low cost electrical power, and cheap transportation has flocked to the thousands of choice sites available on the banks of improved waterways.

*The Ohio River Valley.* The Ohio River Valley, having the special advantage of a strategic location contiguous to large mineral deposits and extensive industrial markets, has benefited handsomely from the stream of new industry seeking choice waterway sites. Since the end of World War II some 2,500 new industrial plants have located along the Ohio, investing billions of dollars in new facilities.

In recent years, expansion in the chemical and steel industries, particularly, has closely followed the rivers. It is estimated that during the past two years more than three-quarters of all the expansion in basic steel, pig iron, ferro-alloy plants and coke ovens has been along inland waterways. The paper, petroleum and electric power industries have shown a similar tendency to be drawn towards the waterways. The industrial plants of the valleys of the Ohio River and its tributaries are major producers of iron and steel products, chemicals, and petroleum products. Plants of many other important manufacturing industries are also located there.

Twenty-one electric power stations capable of generating 8.9 million kilowatts are now located on the Ohio River between Pittsburgh and the point where the Ohio joins the Mississippi. At the beginning of 1941 there were only eight stations, with a combined capacity of just over one million kilowatts.

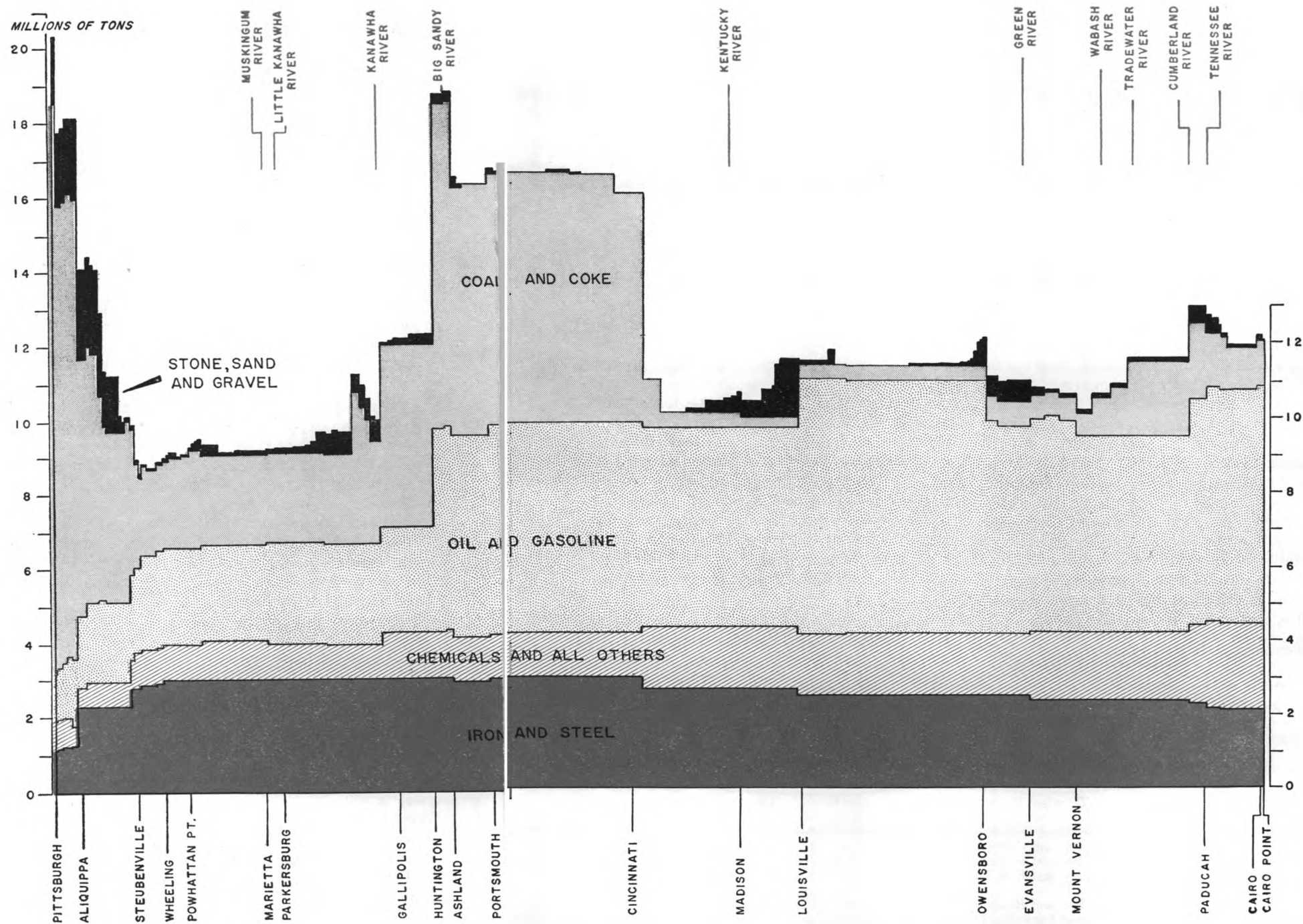
Not the least of the new facilities to spring up have been four giant electric generating plants which are to provide power for the Atomic Energy Commission's gaseous diffusion plants near Waverly, Ohio, and Paducah, Kentucky. Huge quantities of coal for the Kyger Creek power station near Gallipolis, Ohio, and for the Clifty Creek station near



## OHIO RIVER FREIGHT TRAFFIC (1953)

The adjacent chart is a graphic representation of the volume and composition of freight traffic on the Ohio River. Traffic is measured in tons and includes movements in both directions. The pattern of commodity flow is influenced by the location of the ports shown at the bottom of the chart and to some extent by the tributary rivers, which appear at the top.

The chart shows the total tonnage passing by any point on the river, but gives no clue as to the distances that specific commodities were actually hauled. The length of the average haul for all commodities in 1953 was 190 miles. Iron and steel, however, averaged 780 miles per haul, while stone, sand and gravel averaged only 30 miles, and coal and coke averaged 87 miles. The river is 981 miles in length.



Source: Corps of Engineers, U. S. Army.

Madison, Indiana, are expected to move entirely by barge. It has been estimated that within the next ten years the tonnage of coal hauled to electric generating plants on the Ohio River will be comparable with the total tonnage of all freight now being shipped by barge on the Ohio.<sup>(3)</sup>

### Waterways of the Fourth District

The Ohio and Monongahela Rivers carry the great bulk of the freight traffic moving on Fourth District waterways, as shown by an accompanying table. Of the other improved rivers serving the District, only the Allegheny is of any major importance. The Corps of Engineers of the U. S. Army has discontinued the operation and maintenance of facilities on the Big Sandy and Muskingum Rivers because of declining commercial traffic. State and local governmental agencies and private industry have assumed the responsibility of maintaining those facilities still in operation.

The Monongahela River is, mile for mile, the busiest inland waterway in the world. Most of its tonnage is bituminous coal, some of which is consumed by the forty miles of steel mills, wire mills, pipe mills and other industrial plants which stretch along its course in an unbroken line, but much more of which is sent on down the Ohio Valley.

(3) The Kyger Creek and Clifty Creek power stations, alone, will consume some 7.5 million tons of coal annually when in full operation. All shipments on the Ohio River in 1953 totaled 62.7 million tons, of which 31.7 million tons were coal.

At Pittsburgh, the Monongahela and the Allegheny form the Ohio River, the greatest single link in the country's system of inland waterways. More than 60 million tons of freight moved an estimated 12 billion ton-miles on the Ohio River during 1954. This freight total was far greater than that of any other single section of the 28,383-mile system of U. S. inland waterways, and exceeded by a wide margin the volume of freight flowing through the vital Panama Canal.

### Commodity Traffic on the Ohio

The chart shown on pages 6 and 7 presents graphically the commodity distribution of the freight traffic on the Ohio River, as of 1953, the latest year for which detailed statistics are available. Three commodity groups, coal and coke, oil and gasoline, and iron and steel account for the bulk of the ton-mileage carried. Chemicals flowing from the expanding chemical industry on the upper Ohio and its tributaries make up a fourth category of considerable size. Building materials are important freight items in certain areas, but generally move only for short distances to the larger ports on the river. The remainder of the barge cargoes are made up mostly of sulphur, limestone, grain, sugar and automobiles.

Coal accounts for about one-half of the total tonnage shipped on the Ohio River. Its movement has been concentrated in the industrialized upper Ohio, flowing from the

### IMPROVED RIVERS OF THE FOURTH DISTRICT

	Terminal Points	Controlling Depth (feet)	Improved Length (miles)	Total 1953 Freight Traffic (tons)
Ohio River.....	Pittsburgh, Pa. and Cairo, Illinois	9	981	62,034,303
Monongahela River....	Pittsburgh, Pa. and Fairmont, W. Va.	7-9	129	33,370,457
Allegheny River.....	Pittsburgh, Pa. and East Brady, Pa.	9	72	3,590,807
Youghiogheny River....	McKeesport, Pa.	9	1	268,273
Kentucky River.....	Carrollton, Ky. and Beattyville, Ky.	6	259	91,430
Muskingum River.....	Ohio River and Lock No. 1 (Ohio)	4	1	66,184
Big Sandy River.....	Ohio River and Lock No. 2 (Ky.)	6	13	43,922

Source: Corps of Engineers, U. S. Army.

mines of Pennsylvania, West Virginia, Eastern Kentucky and Eastern Ohio to the power plants, steel mills and other industrial consumers of Pittsburgh, Cincinnati and points in between. A substantial tonnage of the coal flowing to Cincinnati is transshipped to various inland points, such as Hamilton and Middletown, Ohio, and Indianapolis, Indiana. Likewise, there is a large and growing movement of coal from West Virginia origins to Mt. Vernon, Indiana, where it is transferred to rail carriers for shipment to the Chicago area.

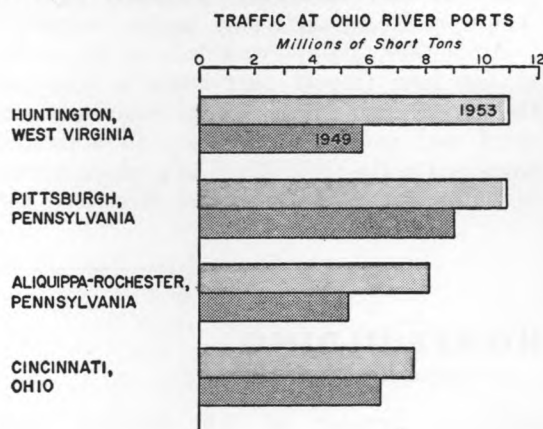
On a ton-mile basis, "oil and gasoline" is the most important commodity group carried on the Ohio River. In contrast to coal, most of the petroleum products shipped by barge move over long distances. Crude oil moves upriver, supplementing pipeline supplies from Southwestern oil fields, while gasoline and other refined petroleum products are shipped in both directions on their way to various mid-continent markets. Large oil refineries are located at Neville Island, Pennsylvania, Catlettsburg and Latonia, Kentucky, and Cleves, Ohio; smaller refineries are scattered at many other points along the Ohio River.

Iron and steel products (including scrap) have made up one of the fastest growing categories of barge cargo. Shipments in 1953 totaled 2.59 billion ton-miles—only a shade below the 2.75 ton-mile figure for coal. Although Pittsburgh steel output was down sharply in 1954 as compared with 1953, it is believed that barge loadings of finished steel products at Pittsburgh might actually have increased. With the end of the steel shortage and the resultant de-emphasis on speedy delivery, steel-makers in Pittsburgh and other upper Ohio River ports have found that low barge freight rates have helped them compete successfully with producers situated much closer to many Midwestern and Southwestern markets.

### Major Ports on the Ohio

The growth of over-all freight traffic on the Ohio has brought many new shipping and

*Huntington, West Virginia, the fastest growing of the major ports on the Ohio River, ranked first in volume of freight traffic during 1953.*



Source: Corps of Engineers, U. S. Army.

receiving stations into existence; yet the big river ports still handle most of the total tonnage. In 1953, the four largest ports shipped or received well over 60 percent of all the freight handled along the Ohio. An accompanying chart shows that in 1953, Huntington, West Virginia, wrested the tonnage leadership from Pittsburgh, the top ranking port in prior years. All of the four leading ports are located on the upper Ohio, and three of the four are within the confines of the Fourth Federal Reserve District (Huntington, West Virginia, the lone exception, is in the Fifth District.)

Coal is the most important commodity handled in each of the four ports. It ranges from 50 percent of the total tonnage at Pittsburgh to 80 percent at Aliquippa-Rochester. Pittsburgh, Aliquippa-Rochester, and Cincinnati are primarily receivers of coal, although Pittsburgh also ships a substantial amount; Huntington is exclusively a shipper.

Huntington receives large quantities of crude oil and ships refined petroleum products; in Pittsburgh and Cincinnati the petroleum trade is mostly in refined products, which move both in and out. Pittsburgh has been receiving a considerable tonnage of



building materials and some steel scrap by river, and in turn sends out finished steel products and chemicals. Finished steel is Aliquippa-Rochester's only major "export".

Altogether, about two-thirds of all traffic at the four largest port cities is inbound. Only at Huntington, with its enormous outward coal movement, is there an outbound surplus. On the Ohio River as a whole, traffic is similarly weighted in one direction; the

movement of traffic in 1953 was approximately 40 percent upbound and 60 percent downbound. In 1954 the spread between upbound and downbound tonnage widened. Shippers, seeking lower freight rates on their finished steel products, turned more and more to the river, while the decline in industrial activity reduced the demand for the raw materials, such as steel scrap, which typically move up the river.

## HOMEBUILDING

(Continued from Page 3)

trict, the number of new dwelling units included in contract awards topped the previous record 1950 total by 15 percent. Measuring from the 1950 benchmark, the gain in the number of new dwelling units covered by contracts awarded in the Fourth District during 1954 was distributed as follows:

One-family homes built for sale	+51%
One-family homes built for owner	-13%
Apartments and two-family homes	-48%

These divergent trends are charted for the Fourth District in an accompanying ratio chart. About the same pattern prevailed in the 37 Eastern States.

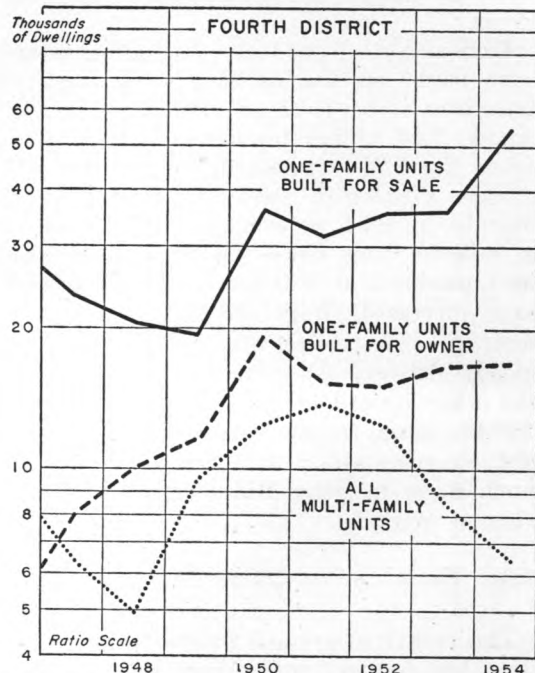
The volume of contract awards for speculatively-built, single-family homes held up well all year in the District while that of custom-built, one-family units ran slightly below 1953 levels during the initial six months but closed the year strongly. Apartment construction declined for the fourth straight year.

### Mortgage Funds Plentiful

Builders in the Fourth District were able to obtain financing for sound projects with little or no trouble throughout 1954. When queried early in the year, builders reported an adequate supply of construction and mortgage funds. At that time, however, discounts ranging up to 5 points on some Government-underwritten loans were reported. In a later

survey, made in July, builders said that financing was generally available at attractive terms and most Government-underwritten mortgages were going at par. Interest rates on conventional home mortgages appeared to have dropped about a half-point between the beginning and middle of 1954. In general,

### CONTRACT AWARDS FOR NEW RESIDENTIAL BUILDINGS



Based upon data compiled by F. W. Dodge Corporation.

lenders eased downpayment requirements and extended repayment periods in the same interval.

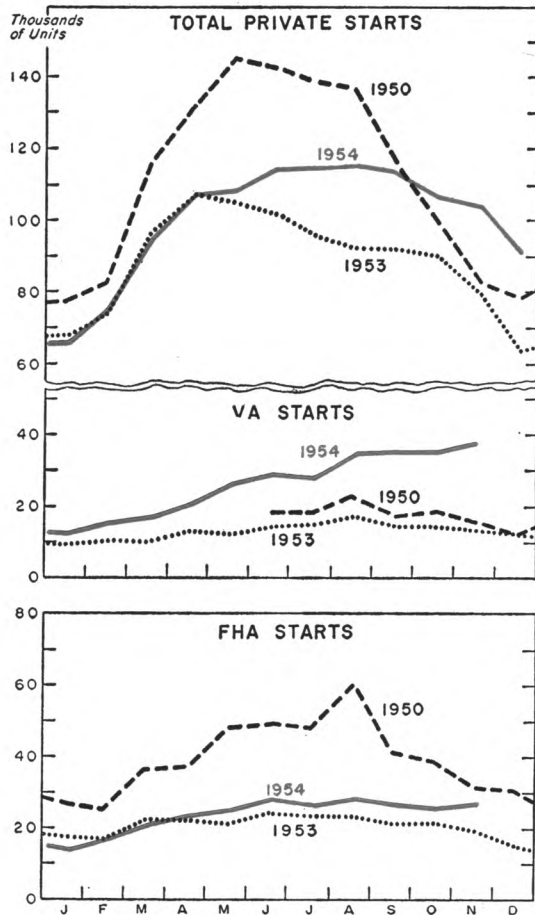
The general easing of loanable funds from the tight conditions prevailing in the late summer of 1953, coupled with a half of one percent increase in the interest rate on VA-guaranteed loans earlier in 1953, made this type of mortgage a prominent factor in the 1954 home financing picture. During 1954, about one-fourth of all new private starts in the U. S. were made with financing guaranteed by the Veterans Administration. The proportion, which had never been above 15 percent until last year (see chart), covered about one-third of all private nonfarm housing starts in the final quarter. The attractiveness and general availability of this type of financing played a major role in maintaining homebuilding activity at unseasonally high levels into the winter months.

A further stimulus to the industry was provided by the Housing Act of 1954, which became effective October 1. Its main feature, insofar as homebuilders were immediately affected, was the provision for easing terms on mortgages insured by the Federal Housing Administration. The Act raised the maximum mortgage amount on sales housing loans, lowered downpayment requirements and extended the maximum repayment period. The new terms applied to both new and used housing, putting them on virtually the same footing for the first time.

Currently available data on new housing starts under FHA inspection fail to show any noticeable change after the new terms became effective, while the number of applications for FHA mortgage-insurance on new homes turned down in the last quarter. However, applications to purchase old homes jumped sharply to new highs in the months immediately following the passage of the 1954 Housing Act, thus providing some indirect benefit to builders by making used housing easier to sell.

Mortgage debt outstanding on one- to four-family properties rose sharply during the first nine months of 1954, increasing by \$6.3

## PRIVATE NONFARM HOUSING STARTS IN U. S.



Data from Bureau of Labor Statistics and Housing and Home Finance Agency.

billion to \$72.6 billion at the end of September. In terms of percentage change, the biggest gain was scored by VA-guaranteed mortgages. The increase was distributed between conventional and Government-underwritten mortgages as follows:

	OUTSTANDING Sept. 1954 (billions)	INCREASE 9 mos. '54 (billions)
Total .....	\$72.6	\$6.3
FHA-insured .....	12.6	0.6
VA-guaranteed .....	17.9	1.8
Conventional .....	42.1	3.9

The continuation of this rapid growth during the final quarter of the year would place

outstandings near the \$75 billion mark at year-end.

### Outlook for '55

Both public and private forecasters foresee a very good homebuilding year in 1955. Current optimism stems from many bullish factors. Among the most frequently mentioned are the growing prevalence of larger families in the middle-income group formation, the impetus given the industry by the Housing Act of 1954, the buying power of consumers and its broad distribution, the continued eligibility (until 1957) of millions of World War II veterans for GI home-loan privileges, and the pronounced trend towards home ownership during the past decade.

Several further factors should be considered, however, in evaluating the prospective volume of homebuilding this year. First and foremost, in connection with availability of funds for the mortgage market, it should be recalled that last year, competition for loanable funds by other sectors of the economy was lessened by the recession; lenders, competing for mortgages, relaxed mortgage credit terms somewhat, bringing new housing within the reach of more families through lower downpayments and longer repayment periods. This year, however, it appears that there will be stronger competition for funds in the money market, putting home mortgages to a stiffer test than in 1954. The experiences of the past few years show that lenders tend to tighten mortgage terms as alternative in-

vestment opportunities became more attractive.

Secondly, recent trends in housing vacancies suggest that the homebuilding industry may be approaching market saturation. Statistics covering this very important market indicator are sketchy, but they do point to sharp increases in vacancy rates during 1954 and continuing into this year. In Cleveland, for example, newspaper advertisements of family units offered for rent more than doubled in the second half of 1954 and by December, were at levels that had not been reached since the end of 1940. In Ohio, vacancies in all FHA rental housing projects were 4.5 percent last March and 5.6 percent in the marginal veteran's emergency housing projects. This compares with a 3.5 percent vacancy rate obtaining in all such projects throughout the country last March. According to a survey made by a leading building materials manufacturer, vacancies in nonseasonal owner and rental units were between 5 and 6 percent in late 1954 and were then rising noticeably. A continued rise in vacancies would eventually depress the entire real estate market.

Finally, a key to the probable volume of new housing construction this year may be the rate of new home sales. Most of the large number of homes started in the fall and early winter months will be on the market before builders plans for 1955 are translated into starts this spring. Any substantial market hangover of unsold homes at that time could dampen considerably the currently optimistic outlook held by builders.