MONTHLY REVIEW

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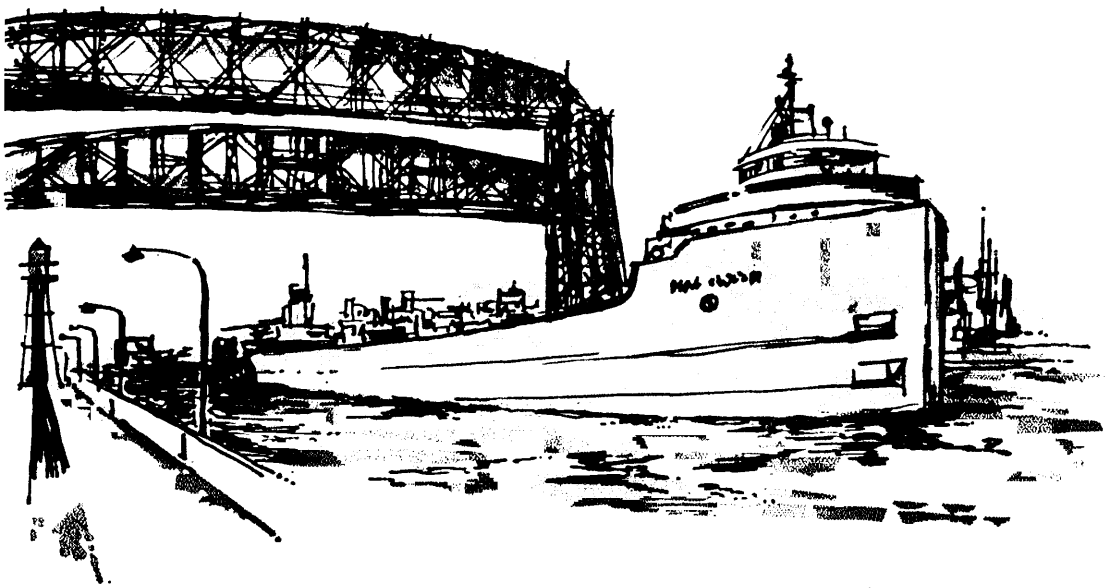
FEDERAL RESERVE BANK OF MINNEAPOLIS

FEBRUARY 1962



Shipping increases at Twin Ports

In the three years since the opening of the St. Lawrence Seaway, Duluth-Superior appears to have definitely established itself as an important Great Lakes seaport. The trend in the port's foreign commerce shipments has been very favorable, and the rapid expansion and modernization of the port's facilities in recent years is likely to add further to its attractiveness to foreign shippers.

Prior to the Seaway opening in 1959, direct foreign trade shipments to and from the Twin Ports were rather negligible. Between 1950 and 1958, on the average, only six ocean vessels called at the port annually with a total of 6,720 short tons of cargo in direct overseas export-import shipments. Moreover, due to the limitation of access, the vessels were small tramp steamers with no regular schedule.

In contrast, in the three shipping seasons[1] since 1959, a total of 682 ocean vessels of 21 different nationalities have visited Duluth-Superior, and the volume of export-import shipments has increased proportionately. Three different ship lines have established scheduled service to Hamburg, Bremen, Antwerp, and Rotterdam in addition to the unscheduled services of six other lines to the ports of northern Europe, the Mediterranean and the Middle East. The national registry of the visiting ocean vessels is shown in Chart 1.

Foreign general cargo tonnage handled in the Twin Ports increased from 3,800 tons in 1958 to 34,600 tons in 1959, 129,850 tons in 1960, and 214,780 tons in 1961. Moreover, the composition of foreign shipments has considerably widened. Prior to 1959 imports consisted almost exclusively of woodpulp, and exports other than grain were negligible. Since 1959 both imports and exports have included a wide variety of raw and semi-processed materials, some industrial equipment, and even consumer goods. The principal imports were steel, ferrosilicon, machinery, woodpulp, glass, coffee, twine, liquor, beer, rugs, auto-

[1]The foreign shipping season at the Twin Ports runs only seven months, usually from April 24 to November 24. During most of the winter the port is icebound.

mobiles and oatmeal. Major exports included bentonite, machinery, dried milk, flour, honey, iron and steel scrap and tinplate.

The following table shows the composition of the foreign general cargo in regard to exports and imports.

Table 1—FOREIGN GENERAL CARGO, EXPORTS AND IMPORTS, AT THE TWIN PORTS[1]

	1959		1960		1961	
	Tons	Index	Tons	Index	Tons	Index
Exports	22,911	100	106,522	465	195,532	853
Imports	11,681	100	23,324	200	19,250	165
Total	34,592	100	129,846	375	214,782	620

[1]Source: Seaway Port Authority of Duluth.

As is apparent from the figures, general cargo exports increased more than 4½ times from 1959 to 1960 and 8½ times from 1959 to 1961. General cargo imports on the other hand, while doubling from 1959 to 1960, declined from 1960 to 1961 by 18 percent. Yet, exports and imports combined increased over 1959 both in 1960 (275 percent) and in 1961 (520 percent).

By any standards this has been a very favorable development for the Twin Ports, particularly in view of the fact that the gains were made in the face of a decline in the foreign general cargo tonnage passing through the Montreal-Lake Ontario section of the Seaway. In 1959, upward bound ships carried through the Seaway to the U. S. a total of 1,314,886 tons of general cargo merchandise from overseas and Canada. In 1960 the tonnage was only 805,028 tons, a decline of more than 38 percent. Yet, in the same period shipments of general cargo imports to Duluth-Superior increased by 100 percent. Furthermore, while general cargo tonnage carried from all U. S. Great Lakes ports through the Seaway to overseas and Canada increased from 483,880 tons in 1959 to 706,578 tons in 1960, or by 46 percent, shipments of general cargo exports from Duluth-Superior within the same period increased 265 percent.[2]

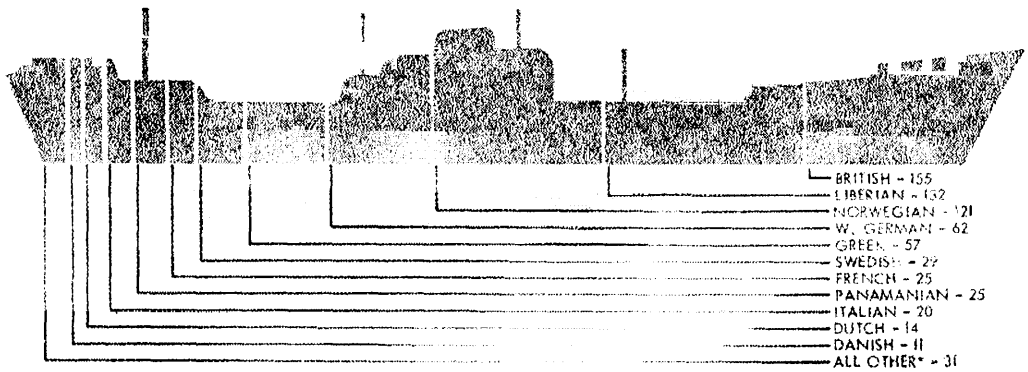
The breakdown of traffic data by destination or origin for 1961 was not available at the time of writing, but preliminary traffic statistics issued by the St. Lawrence Development Corporation of New York reported a 7 percent decrease in the total general cargo tonnage passing through the Seaway—from 2,240,162 tons in 1960 to 2,062,595 tons last year. The Twin Ports' general cargo export-import shipments rose, however, by 65 percent.

Even more spectacular has been the expansion of the grain export trade. From 650,000 bushels in 1958, exports of grain from Duluth-Superior skyrocketed to 86,389,000 bushels in 1959 and 92,924,000 bushels in 1960. In 1961, however, grain exports fell 12 percent below their 1960 level to 81,789,000 bushels. But when the volume of shipments is expressed in terms of tons rather than bushels, the difference decreases to less than 4 percent—2,295,960 short tons in 1960 compared with 2,208,458 tons last year. The relatively large decline in the volume of grain exports in 1961 when measured in terms of bushels is attributable to the fact that the composition of the shipments changed from lighter grains to heavier grains. Specifically, exports of wheat and corn, which are from 56 to 60 pounds to a bushel, increased during the 1961 season, while exports of lighter grains, such as oats at 32 pounds per bushel and barley at 48 pounds per bushel, declined to considerably less than one half of their level in the preceding year.

In part at least, the decline in grain exports from the Twin Ports in 1961 may have been due to tight supply conditions caused by the drouth which plagued much of the Midwest throughout

[2]Compiled from **The Traffic Report of the Saint Lawrence Seaway, 1959 and 1960,** prepared by the Saint Lawrence Seaway Authority and the Saint Lawrence Seaway Development Corporation.

Chart 1—National registry of visiting ocean vessels, 1959, 1960 and 1961[1]



*Irish, Finnish, Yugoslavian, Israeli, Swiss, Nationalist Chinese, Spanish, Lebanese, Canadian, American.

[1] Source: U.S. Army Corps of Engineers, Duluth and the Seaway Port Authority of Duluth.

most of the spring and summer of 1961. The U. S. Department of Agriculture estimates, for example, that crop production in the Ninth Federal Reserve district in 1961 was considerably below 1960. The district's production of oats was down 25 percent, production of barley 37 percent, production of wheat 35 percent, while production of corn decreased a little more than 3 percent. Most significantly perhaps, grain stocks at Duluth as well as at Port Arthur and Fort Williams were reported to be exceptionally low as late in the season as the middle of August.

The prospect for the further development of Duluth-Superior as a seaport appears quite favorable at this point, particularly as far as the growth of foreign general cargo shipments is concerned. A trend toward a freer international trade would undoubtedly benefit all the Great Lakes ports, including Duluth-Superior, and so will the gradually increasing familiarity of foreign shippers with the Seaway. Moreover, the promotional activity by the Port Authority among domestic and foreign shippers, and the organizational effort aiming to encourage pooling arrangements to build up larger and more regular shipments, may also benefit the Twin Ports in the form of more foreign cargo and more scheduled liners.

The future trend in grain exports depends on a number of external factors which are not readily predictable at this point. Undoubtedly, any arrangement (or lack of it) between the U. S. and the European Economic Community concerning the admittance of American farm products to the European Common Market countries will be of overriding importance. So is the continuation of shipments of grains and other foods under the Federal government relief programs.

ZDENEK CERNOHOUS

Current conditions . . .

The economic recovery which got underway about a year ago for the nation as a whole was continuing at a relatively rapid rate at the turn of the new year. New records in economic activity in general have been achieved and the momentum created has carried forward thus far in 1962. This forward movement is backed up by relatively sharp increases in personal incomes, a rising flow of new orders, and by surveys of producers and consumers which indicate favorable spending patterns in the months ahead.

Unemployment, although somewhat improved by year-end, is still high. The extent of unused capacity in manufacturing also continues high. Ample labor, raw materials, and manufacturing resources have been important factors in holding price levels at a steady rate and in calming inflationary fears.

In most respects, the economy of the Ninth district also appears to be developing at a satisfactory pace. Employment was gaining toward the year's end, particularly in manufacturing and in the service areas. Manufacturing employment in Minnesota constitutes about 80 percent of the district's total and in December the number employed was at a new high, about 4 percent above the year earlier figures. Personal incomes in the Ninth district grew steadily during 1961, with December incomes estimated 4.7 percent higher than in December a year ago.

Home building in the area tended to lag during most of 1961 and builders are not too optimistic about much, if any, improvement in early 1962. On the other hand, recent data on construction contract awards indicate some improvement may occur in heavy construction activity. District cash farm incomes lagged perceptibly during the third quarter of last year as drouth cut small grain production. Farmers' fourth quarter incomes, however, staged a recovery and it now appears cash farm receipts in 1961 may almost have equaled that of 1960. Department store sales spurted in late December but the extremely cold weather in January has tended to keep many shoppers home. Nevertheless, the volume of checks handled by the Federal Reserve Bank of Minneapolis during January was ..... percent ahead of a year earlier.

A sharp increase in savings type deposits at commercial banks in the district occurred in January following widespread increases in time deposit rates, effective January 1, permitted under a December 2 change of Federal Reserve regulations. In recent weeks, a pick-up in the demand for bank loans was observed, a development which was anticipated in view of the increased tempo of the economy. So far, however, there is no evidence of excessive demand for bank credit. Loan-deposit ratios, although relatively high, are still below year-ago levels. Sales of Federal Funds from district banks exceeded purchases and member bank borrowing at the Federal Reserve Bank continued through January to be almost nil.

The following selected topics describe particular aspects of the current economic scene:

CONSTRUCTION ACTIVITY EXPANDS

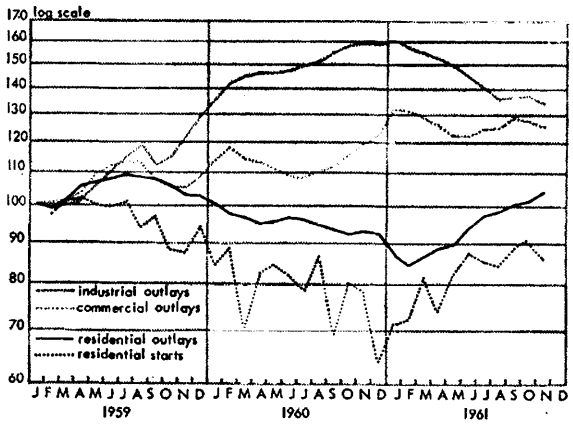
The construction industry has benefited by the prompt turn-around in capital expenditures made by businessmen near the beginning of this recovery period and by the moderate rise in expenditures made by consumers for new houses and repair and modernization throughout 1961.

In the nation, the outlays for commercial construction have risen moderately from the low of last June, as can be seen in Chart 1. The outlays for industrial construction continued to decline materially through August 1961 and since then have inched up in some months. The low point in the expenditure for housing occurred in February 1961, the same month as the trough of the business cycle. Since that time, these expenditures have expanded at a moderate rate. The series on housing starts, which leads residential construction expenditures, rose only slightly during the latter half of 1961, indicating that these expenditures will rise slowly in the first several months of this year.

The outlays made by business firms for new plants and equipment in the nation, which reached a cyclical low in the second quarter in 1961, have recovered at a slow but steady rate since that time. It is of interest to note that capital expenditures have responded more promptly to the upturn in overall economic activity in the current cycle than in former recovery periods. The cyclical low in business fixed investment occurred in the second quarter of 1961, just one quarter after the trough in the gross national product while in the former post World War II cycles, the lag extended over two quarters.

Surveys on anticipated capital expenditures indicate a continuation of the rise in 1962. According to the survey conducted by the U. S. Department of Commerce and the Securities and Exchange Commission in late October and November

Chart 1—Recent trends in U.S. construction, January 1959 equals 100; seasonally adjusted



1961, the anticipated expenditures for total plant and equipment in the first quarter of 1962 are at a seasonally adjusted annual rate of $36.5 billion, equal to the peak of the former cycle which occurred in the spring of 1960 and 6 percent above the estimated outlays for the entire year of 1961.

If the anticipated expenditures for the first quarter of 1962 are realized, they will be up 8 percent from the first quarter of 1961, the trough of the current business cycle. Because of the early turnup in expenditures in this recovery, the expansion during the first four quarters will be larger than occurred during the comparable period of the two recoveries of 1949-50 and 1958-59 in spite of the fact that the rate of advance is smaller compared with that in former periods. Among the key factors retarding capital expenditures in recent years has been the relatively low utilization of capacity which had been greatly enlarged during the 1955-57 investment boom.

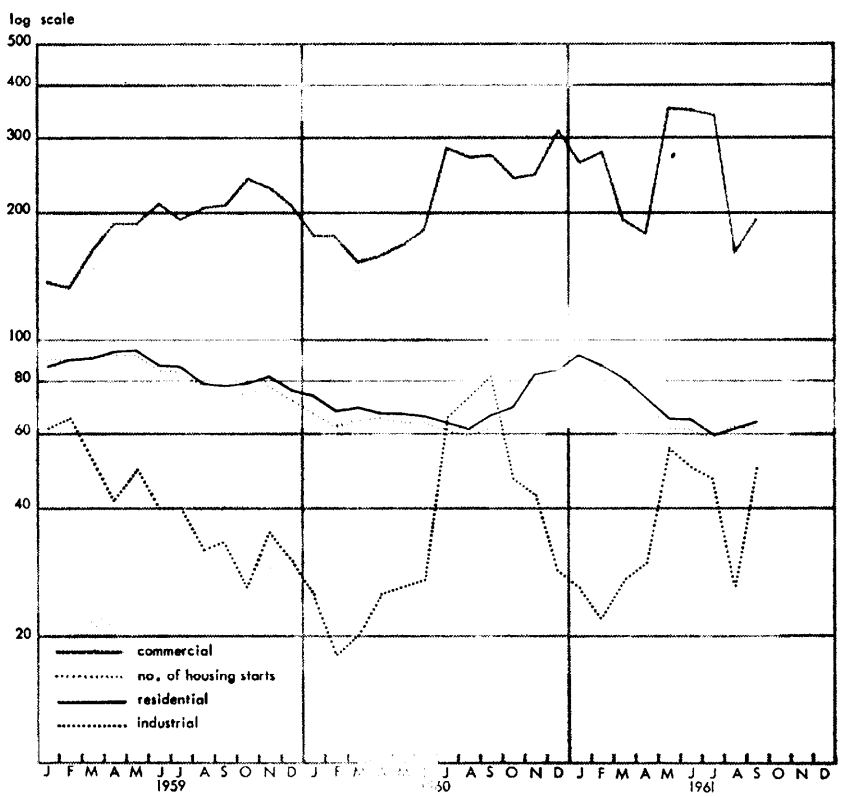
The demand for new housing in the nation continues to rise slowly as the trend in private nonfarm starts reveals on the chart. The population explosion during World War II now is beginning

to increase the number of new household formations in the current decade. Almost a million households may be added annually after 1962. The replacement needs in the housing field are also rising significantly.

While new household formations and replacement needs, which constitute the physical requirements for new housing, now are quite comparable to those prevailing in the early fifties, other former demand factors, such as many families desiring better dwellings which resulted from shortages due to low building during the 30s and 40s, are not present. A decade ago, many families who found their houses inadequate both in terms of size and quality had the income and the opportunity to secure mortgage credit to improve their homes. This upgrading in living facilities raised the demand for new dwellings well above the physical requirements growing out of the rise in the number of households and in the replacement of old houses taken out of the market. On the whole, the American people are now better housed than ever before, but slum conditions still persist in urban centers. This is a key factor in the moderate rise in the demand for new housing experienced at the present time.

In view of the above developments in the construction industry, it is of interest to note the trend in the Ninth district. In this region, the fluctuations in activity do not conform to the general business cycle, as can be seen in Chart 2.

Chart 2—Ninth district construction trends, January 1959 equals 100; seasonally adjusted three months' moving average



The outlays for commercial construction as authorized by building permits, seasonally adjusted, since the first of 1959 have risen substantially with dips occurring in both 1960 and 1961. The brisk activity in this field reflects the loop redevelopment and suburban shopping center construction in the larger metropolitan areas. The outlays for industrial construction as authorized by permits, on the other hand, have been relatively low since the first of 1959 with the exception of spurts occurring in the late summer of 1960 and 1961.

The outlays for residential construction as authorized by permit declined slowly in 1959 and in 1960 through August. The upturn from September 1960 to January 1961 did not reach the former level, and the activity in the latter half of 1961 was well below the level in the first half of the year. The number of dwelling units authorized by permits reveals a very similar trend. The building of apartment units continues to expand while the building of single dwelling units has leveled off. The vacancies in rental units are high. In the north central states 8.6 percent of the total were vacant in the fourth quarter of 1961, but the increasing number of newly married couples, on the one hand, and more retired couples on the other, is steadily expanding the market for apartments.

CITY BANK LOANS PICK UP

December data for district member banks indicates that city banks increased loans by $1 million and country bank loans fell $2 million. This compares with respective averages for the previous fourteen Decembers of minus $8 million and plus $7 million. For the entire fourth quarter city bank loans were unchanged in comparison with an average decline of $8.4 million in the previous fourteen fourth quarters; country bank loans were up $29 million in contrast to the previous average of plus $24 million. The loan figures cited above for the fourth quarter contrast sharply with the third quarter when both city and country banks experienced the largest loan liquidation since the war.

It is as yet too early in January for measuring the overall impact on time and savings deposits of the higher interest rates paid by many member banks beginning January 1. But the twenty weekly reporting city banks submit to the Federal Reserve a balance sheet each Wednesday which shows, among other things, the total of time and savings deposits. The latest tabulation of weekly reporting bank statements shows that in the three week period ending January 10, 1962, the sum of time and savings deposits rose by more, both absolutely and percentagewise, than in any of the comparable three week periods since 1947.

Table 1—CHANGE OF TIME DEPOSITS AT DISTRICT WEEKLY REPORTING MEMBER BANKS

	Three Weeks Ended	Millions of Dollars	Percent
1948	January 14	+ 1.6	+ .63
1949	12	+ 1.8	+ .70
1950	11	+ 1.4	+ .55
1951	10	— 1.2	— .50
1952	9	+ 2.5	+1.05
1953	14	+ 2.8	+1.09
1954	13	+ 2.2	+ .82
1955	12	+ 3.1	+1.11
1956	11	+ .4	+ .13
1957	9	+ 6.4	+2.15
1958	8	+ 3.2	+ .95
1959	14	+ 2.5	+ .65
1960	13	+ .2	+ .05
1961	11	+ 2.1	+ .53
1962	10	+12.9	+2.79

Not surprisingly the second largest increase for the three week period in the years since 1947 occurred in the period which included January 1, 1957, the date of the previous increase in the maximum rate payable on time deposits, from 2½ percent to 3 percent. A sample of 57 district member banks were interviewed concerning their time and savings deposit interest rates before and after January 1, 1962, the date of the change in Regulation Q. All but one of these banks had been paying the old maximum on other time deposits than savings and 33 of them had been paying the old maximum on savings deposits. Only three of the banks reported no intention of taking advantage of the new permission to raise rates. Of the remaining 54 banks, all but four are now offering the maximum permissible rate of 4 percent on time deposits of twelve months or more.

Basin gets two new gas plants

Two new gas processing plants will begin operating in northwestern North Dakota this winter, bringing the total number of such plants in the Ninth district to four. Three of the plants are in North Dakota and the fourth is in eastern Montana.

The construction of the new gas plants is directly related to the growing oil industry in the Williston Basin area. Natural gas plants are common in older oil producing regions of the United States, but only since the opening of the Williston Basin oil fields eleven years ago have gas plants been built in this area to utilize the "wet gas" which is liberated when crude oil comes to the surface.

Gas plants, which are more numerous and smaller than refineries, collect the "wet gas" that is separated from the crude oil at each well and pipe it to the plant where it is further separated into marketable products such as dry gas, natural gasoline, liquefied petroleum gases and sulfur. A single plant may serve several hundred wells, and in a large oil field there may be several gas processing plants.

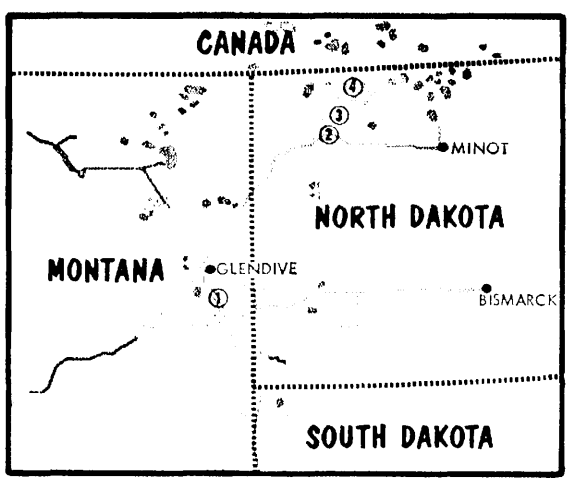
The story of the Ninth district's growing gas processing industry closely parallels the development of the Williston Basin oil fields and the industry's future depends upon the further development of the basin.

The first gas processing plant to be built in the Williston Basin was a $7 million plant constructed by the Signal Oil and Gas Company at Tioga, North Dakota. The Tioga operation, still the largest in the area, handles gas not only from the Beaver Lodge and Tioga oil fields, the two largest fields in that state, but also from several other fields in the area. In 1956 the Texas Natural Gasoline Corporation built the second plant north of Glendive, Montana.

Both of the two new plants are being built in the vicinity of the Tioga plant and will handle additional gas from the North Tioga and McGregor fields and from the cluster of fields near Lignite.

The larger of the two new plants is a $4 million structure near Lignite in Burke county which is being built by the Oilchem Corporation of Dallas. Operation of the plant, which was originally scheduled to begin January 1, has been delayed because of cold weather. The second and smaller plant is a $2 million layout built by the Hunt Oil Company and associates near McGregor in Williams county. The new plants will serve a total of about 300 wells where the "casing head" gas produced along with oil is now being burned.

Gas processing plants in the Williston Basin



Construction of the new plants was accelerated by an order last year from the North Dakota Industrial Commission which said it would limit oil production in the areas in North Tioga where gas is being burned to token production if steps were not taken by the oil companies to utilize the gas by January 1, 1962. This order has now been moved back.

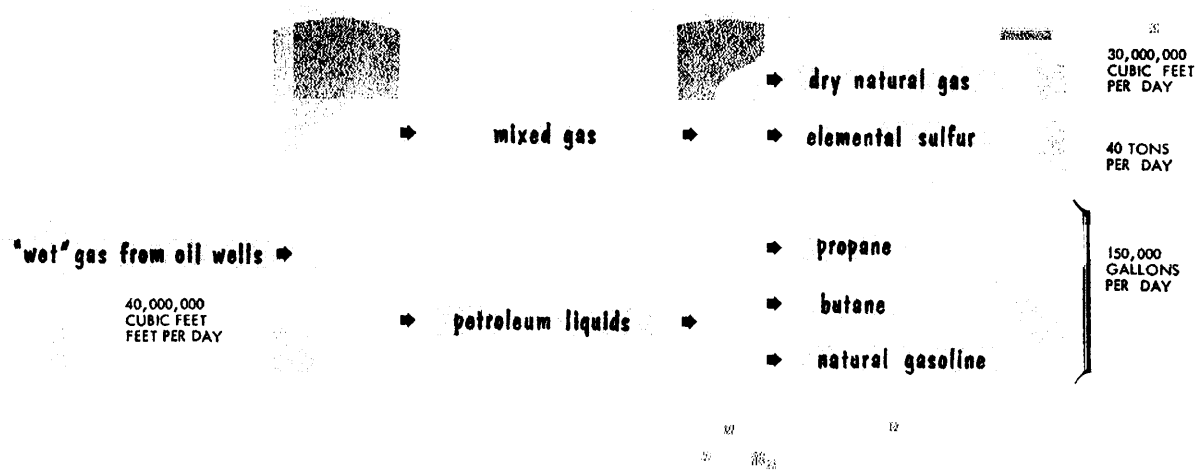
With the opening of the new processing operations about 15 million cubic feet of dry residue gas per day will be available for consumption in North Dakota. Final arrangements are being made for the entire output of both plants to be sold to the Montana-Dakota Utilities Company which serves western North Dakota, eastern Montana, northeastern Wyoming and some northwestern and central portions of South Dakota. Montana-Dakota, which sells more than 45 billion cubic feet of natural gas annually to homes and industries, does not plan to open any new market areas with the additional gas supply. The new gas will provide additional surpluses which may be stored underground at the old Cedar Creek oil field in eastern Montana and used for expanding consumption in the company's present market areas.

Stripping the five major marketable products from the "wet gas" mixture piped into the processing plants is a continuous, almost unseen operation accomplished inside a vast network of pipes and towers. A labor force of not more than 30 men per plant is all that will be needed to operate the two new plants.

The operation really begins several thousand feet underground where the hot mixture of petroleum liquids, gases and other materials is compressed in a layer of limestone rock, ready to be tapped by the well. When the underground oil reaches the surface, the locked-in gases and vapors bubble out, and the gaseous mixture thus liberated is called "wet gas."

At each well, "wet gas" is separated by special equipment and piped to the processing plant where

Flow of products from a representative natural gasoline plant



the stripping process begins. Because of the physical differences among the constituents of "wet gas," such as boiling point and density, the plant is able to separate them into five different product groups. (See diagram.)

Methane and ethane, the lightest hydrocarbons, together with some inert gases, form the so-called "dry gas" or natural gas which is transported to population centers and sold by utility companies for home and industrial use.

The next two heavier hydrocarbons, propane and butane, are extracted separately and bottled in pressure drums for the rapidly growing rural market for "LP" gas fuels.

Pentane, plus a minute assortment of other hydrocarbons, is the heaviest fraction collected. Termed "natural gasoline," this product is a liquid about the density of automotive fuels and is generally sold to refineries to be blended with refinery-made gasoline.

The hydrogen sulfide gas, where present, is converted to elemental sulfur which is sold chiefly to paper mills for industrial use.

The volume of each of the five products extracted may vary from plant to plant, depending on the quality of the "casing head" gas in the oil field. But when the total value of all the by-products is great enough to warrant the expense of building a processing plant, oil companies will construct plants to utilize this "wet gas." Other gas processing plants constructed for this purpose in the Williston Basin area will follow as oil production expands.

Growth of crude oil production in the Williston Basin, whose vast oil reserves still await full development, is hampered by the small number of direct pipeline connections for oil to refinery centers in the Midwest and East and by a lack of a large local market. Trunk pipeline facilities have not been constructed because not enough new oil has been discovered over and above the local market to make these expensive capital installations profitable.

Even though the gas processing industry in the district is minuscule compared with the national industry and its growth is limited by the slow rate of growth in oil production, it is a locally important contributor to industrial expansion. Demand for the liquified petroleum or bottled gas fuels has enjoyed rapid growth both in the district and in the nation. This market is especially important in the district because of the heavily rural population in the Williston Basin area. Natural gas too has an expanding market, and the natural gas processing industry of the Williston Basin should find ready local markets for its production.