

EVERY 10 MINUTES OF THE DAY A TRAIN ARRIVES OR DEPARTS HOUSTON

The month, the 18 railroads operating in Houston employ over 10,000 persons. Six systems operate the lines that give the nation's commerce to the four corners of the country.

The railroad payroll reached \$1,000,000 in 1929 when it totaled \$1,000,000. The payroll for 1933 totaled \$1,000,000. The payroll for 1933 totaled \$1,000,000.

There are 150 trains daily passenger and freight trains arriving and departing Houston every 24 hours, averaging six trains per hour. There is, on an average, a passenger or freight train entering or leaving Houston every 10 minutes of each of the 24 hours of every day in the year. In 1939 the railroads of Houston handled 208,557 carloads of freight, or 11,356,342,000 pounds—equivalent to 5,678,171 tons to and from Houston proper (not including freight passing through Houston).

Three of the six great railroad systems whose 18 lines serve this

community maintain their general offices here. In Houston is located one of the largest and finest general railway hospitals in Texas. There is one general railroad shop where even locomotives are built. Four railway systems maintain roundhouses in Houston where train equipment is repaired.

From the Houston chamber of commerce comes information to the effect that the career of the railroad industry in that city extends over a long era.

Rails Arrive in 1852
On a fall morning of 1852, amid impressive ceremonies, some of the county's leading citizens assembled at Harrisburg to applaud the driving of a spike. Harrisburg is now a part of Houston.

The spike secured a thin iron rail to the first railroad in the west of the Mississippi and ushered in the era of railroad development in Texas.

Within a year a barbecue was held at Stafford, to celebrate the arrival of the pioneer railroad there. It had been built a distance of 20 miles. That was the first lap in the Southern Pacific Railroad system.

The barbecue celebration, August, 1853, was climaxed when the General Sherman, the first locomotive operated in the western part of the United States, made its first scheduled run and chugged laboriously into town with a tiny string of Boston street cars overhauled and converted into railroad passenger service. The railroad was called the Buffalo Bayou, Brazos and Colorado Railroad, running from Harrisburg to Stafford. It earned the Brazos part of the name late in 1855 when it reached the east bank of the Brazos, opposite Richmond, having laid 32 miles of rail. Encouraged by legislative

authorization of \$6,000 for each mile of railroad trackage laid, the company built a low pile bridge over the stream and began building toward the Colorado river.

Other Line Built
Meanwhile the Texas and New Orleans line had been started and in 1860 it reached Orange on the Sabine river. The Gulf, West Texas and Pacific was built from Port Lavaca to Victoria. The Galveston, Houston and Henderson was built between Houston and Galveston giving the Island City, in 1857, its first railroad connection and its only outlet for 20 years.

Recovering from a staggering blow from the war between the states, the Texas railroads entered a new record for the preceding 17 adverse years—2,431 miles of main line track. There were 27 railroads, most of them standard gauge.

The name of the Buffalo Bayou, Brazos and Colorado by this time had been changed to the Galveston and San Antonio. The Houston and Texas Central Railroad had been extended to Red River City from Houston. The Gulf, Colorado and Santa Fe had been built from Galveston to Richmond. The Houston, East and West Texas Railroad had been extended to the Trinity river. The International-Great Northern had started operation of a line from Houston to Longview.

The Texas Transportation Co. had been organized for shortness. The railroad extended 7 and 3-4 miles to connect Clinton with the Houston and Texas Central Railroad at Houston at the time Commodore Charles Morgan started bringing his ships to Clinton.

With these beginnings, the industry has grown in Texas to 102 railroad companies with 22,939 miles of rails.

1,000 OIL FIRMS

Headquarter in Houston And Give It Vast Buying Power and Expansion

Its status as a petroleum center governs Houston's place in the Southern industrial picture. Now centered in Houston are the manufacture and distribution of machinery and tools needed in oil fields. This industry, naturally hinges on Houston's retaining its present important position in the oil picture.

There are about 1,000 petroleum companies with headquarters in Houston and the executives who manage these equipment and supplies are located here. This is a most important element in the expansion of manufacturing and the marketing of the finished products. With so much buying power immediately

ready to purchase the manufacturer's goods, a line of least resistance between customer and manufacturer is established.

Its fine port cannot be overlooked in this connection with Houston's part in the petroleum industry. With the port facilities the delivery of basic raw materials is possible at a minimum cost. Fuel and power rates are moderate and enter into the calculation when an attempt is made to evaluate Houston's place in southwestern manufacturing.

Houston may be described as a natural locality for the practical gathering and storage of the vast amount of equipment and supplies absorbed annually by the oil in-

dustry of Texas, Louisiana and adjoining states, together with other types of manufacture incident to any concentration of population.

Approximately 300 manufacturers and distributors of oil field equipment are now operating here. Heading the list in point of magnitude is the Hughes Tool Co. with 16 acres under roof and a normal payroll of about 3,600. This concern is notable because it is a completely contained unit. Every item of production entering into Hughes' output is performed within the plant, which has its own drop forging department, its own steel casting department, and a variety of other departments. Operations which are performed outside the plant are frequently outside the city.

Metropolitan Houston is estimated with 500,000 residents, employing 27,000 persons. The products valued at \$350,430,000, the last available government figures.

Developments have been launched recently which make for far-reaching effects on Houston's future. These have to do with a revival of the iron smelting industry which became dormant a quarter of a century ago. Within a comparatively few miles of Houston there are enormous deposits of brown and limonite ores of a good grade.

Providing coke at a moderate cost proved insuperable, but a solution of the problem may be through smelting iron ore with natural gas in a process said to have distinct advantages to its credit. Natural gas is plentiful and cheap and in the immediate vicinity of the ore deposits.

Definite steps are being taken now to work out the gas smelting plan and if success attends these efforts, with moderate cost pig iron they will revolutionize Houston's industrial future.

HOUSTON THINKS ITS WEATHER OK

Houston measures up neatly to the highest weather standards. First, the temperature average for the past 63 years has been a maximum of 78.2 and a minimum of 69.2 degrees. An average of 1,754 hours of sunshine are enjoyed every year, amounting to 61 per cent of all available sunshine for the 12-month period. Average yearly rainfall is 45.33 inches, evenly distributed over the 12 months.

According to statistics compiled by the chamber of commerce and the weather bureau, Houston has an average of only 99 rainy days out of the 365. A recent survey of 44 widely scattered American cities showed just eight that could top this record.

Nine months out of the year the prevailing wind is from the south-east, blowing at approximately 10 miles an hour. In June and July the breeze shifts due south and a north wind does not appear until December.

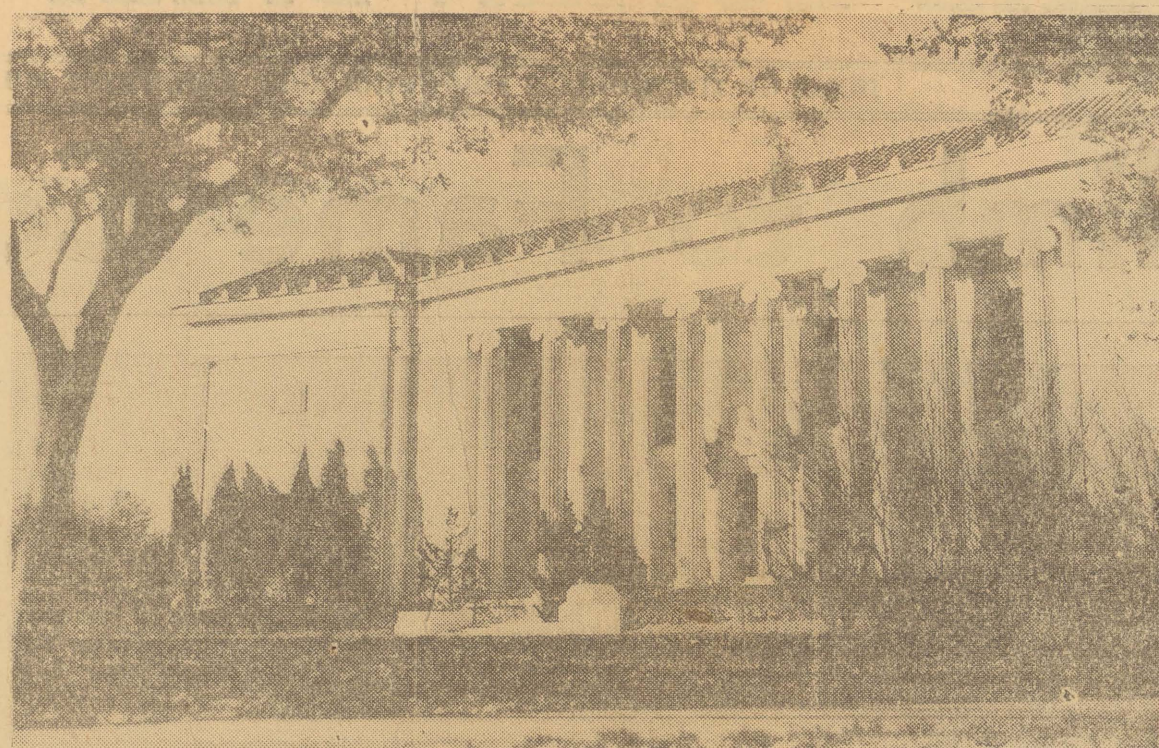
The highest temperature for 1939, an unusually pleasant year, was only 97 degrees. On six days the temperature dropped to freezing. The sunshine average was better than normal with the city catching 66 per cent of the sun's rays.

Foggy weather and cloudiness which mar so many climates, cause practically no inconvenience here. Over a 29-year period Houston has averaged 130 clear days each year; 131 days when clouds were visible and 104 days rated as cloudy by the weather bureau. Only 16 days were classified as foggy.

Climatically, Houston is located in the middle zone which means pleasant weather. It is almost exactly half-way between Winnipeg, Canada, and the equator.

We need fire protection to build up the carrying capacity of the fall and winter range.

Houston Museum of Fine Arts



Series of Setbacks Fail to Daunt Determined Group Who Backed Art Museum

No cultural pursuit in any town in Texas lacks a fascinating history, leavened with the high purpose of human endeavor and sweetened with the romance that has ever been an integral part of achievement. Men and women with the right sort of public spirit and an intense desire for a means with which to satisfy the desire for better cultural interests, in 1900 organized the Houston Public School Art League. Their purpose was to bring art to the schools of Houston and to make reproductions of the world's masterpieces available.

Cast and prints had to be purchased, but there was little money and certainly not in quantities sufficient for this somewhat ambitious program. Funds were secured through bazaars, "Dutch teas," carnivals and socials. Still, not having sufficient money, the League bought the pictures it desired on credit. By 1911 most of the classrooms were equipped with a substantial number of reproductions.

It was in this same year that the League dropped the words "Public School" from its name and changed its name to the Houston Museum of Fine Arts. The museum came into its own. On Jan. 12, 1926, an exhibition of contemporary art was held that filled every gallery. More than 16,000 visitors called during the first day and more than 70,000 had called by the end of the first week. More than \$100,000 worth of paintings were purchased by Houstonians. Thereby Houston had made a winning bid for a place in the art circles of the South.

Further expansion was begun with the opening of an art school in 1927. Talented children were encouraged to attend and classes were started. By 1930 the museum offered 30 exhibits annually. Temporary curtailment of activities were brought about by the depression, but in 1934 the program was going forward again under a three-point plan presented by C. A. Hill, Jr., present museum president.

Its progress took an upward swing with the start of an endowment fund. Personal gifts increased; classes were enlarged and new activities were inaugurated which served to extend the art center to a larger number of people.

One of the most successful exhibits in the museum's history was held in 1938. Exhibits of international importance were shown and new shows brought forth interesting and excellent work from Texas and southwestern artists.

Lecture series have carried, and are carrying, art information into the schools, clubs and to art patrons.

Its future now assured, the museum launched its 1939 exhibit with a photographic show which created much new interest and aroused considerable comment throughout the nation.

Today the museum has a cash valuation of \$779,000, which is incomparable to the great value it has in cultural interest and development. It is the center of an ever increasing program of cultural activities. Its services are designed to meet the needs of everyone, regardless of age, or taste. There is art for all, just as there is music for all. Its art school is recognized everywhere, and is considered one of the finest in the South.

HOUSTON BECOMES TEXAS STOREHOUSE

Few people realize the extent of general manufacturing and industrial activity carried on in Houston, or the wide diversification of merchandise handled over the water front. This very diversification is one of the secrets of Houston's outstanding success, for it has not allowed itself to become a one-industry city nor its port a one-commodity port.

Even understanding that Houston is truly the storehouse of the southwest, it is yet difficult to realize the vast volume of general merchandise handled over the docks to and from the giant warehouses that line the ship channel.

Low water rates to both the Atlantic and Pacific seabards are responsible for this great warehousing and has made Houston the leading general cargo port on the Gulf coast.

In and out of the port moves every conceivable article from sealing wax to motor cars. Houston's warehouses are packed with a list of commodities and products that is much too long to enumerate here.

These warehouses provide an invaluable service to importers throughout the southwest. A wholesaler in Dallas, for example, who cannot afford to maintain a forwarding plant in Houston, may depend on one of the great warehouses. If he is in need of a truck load of a certain commodity he has only to telephone the warehouse and in the time it takes to load the truck it is on its way.

A steadily growing industrial community flanks the channel and there are scores of plants that do not depend upon shipping for its existence.

Products manufactured in Houston which are distributed by truck, rail and water include farm implements, air conditioning equipment, oil well supplies, steel products, aluminum ware, building supplies, food products, bronze and brass products, rubber goods, bottles, fibre goods, beer, asbestos products, auto parts, lumber, machinery, paints, leather goods, glass, jewelry, compressors, clothing, electrical equipment, drugs, flour, dairy products, meat products, cosmetics, cans, furniture, chemicals and many others.

Millions of dollars are spent each year in adding additional manufacturing plants to the port area.

5 CITIZENS RUN HOUSTON'S PORT

Transportation has frequently been referred to as a city's lifeblood and certainly that is true with Houston's 50-mile ship channel. More than any other single factor the channel has made Houston the first city of Texas and the second port of the nation.

Five non-paid business and professional men are directing the af-

fairs of the port, giving generously of their time and being untiring in their efforts to further the port's interests.

A city appointed harbor board governed the ship channel for a time; its first members named in 1913 were Jesse H. Jones, J. T. Scott, R. M. Farrar, J. F. Coleman as consulting engineer, Thomas H. Ball and C. G. Pillot.

The navigation district was created in May, 1922, and the port commission took the place of the old harbor board, its first members being E. A. Peden, R. S. Sterling, R. J. Cummins, D. S. Cage and R. M. Farrar, with Thomas H. Ball as counsel, J. F. Coleman as consulting engineer, B. C. Allin as port director and Charles Crotty as his assistant.

Two men each were named by the city and county to the port commission and the four then named the fifth man. Turnover on the commission is small. Since the first commission was named the only other appointments have been Len Campbell, W. T. Carter, Jr., K. E. Womack, S. P. Farish, J. W. Evans, W. A. Sherman, H. C. Cockburn and W. W. Strong. Present members are J. W. Evans, chairman; Mr. Cummins, Mr. Womack, Mr. Sherman and Mr. Strong. J. Russell Wait is the port director.

The port commission leases wharves, grants private wharf permits, provides police and fire protection and keeps a watchful eye on the turning basin and the Public Belt railroad which is operated by the Port Terminal Railroad Association composed of a representative of each trunk line carrier entering Houston and a member of the port commission.

One hundred and fifty persons are employed by the port commission. Its operating costs and bonded debt payments cost \$1,236,008.66 in 1938 and its outstanding obligations of \$6,537,000. Before 1922 the city operated the wharves only, and the navigation district the channel.

BOOK STARTED IN 1872 ABOUT READY

Tunis J. Quick of San Antonio decided in 1872 to write a book on "Secrets of the Earth's Phenomena Revealed," something to do with climate and centripetal force. At 90 he has completed the seventh draft of the book and thinks it is about ready for publication. Quick will contend that there never was any "ice age," that earthquakes are caused by the readjustment of particles of the earth moved by centripetal force, and that the earth rotates on two axes at once.

A former mathematics teacher in Indiana, Quick came to San Antonio in 1929. He says his theories have been expounded before classes at St. Mary's university here.

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Truly this is a great industrial achievement of vast significance to the South's future prosperity... as well as a glorious personal triumph for those leaders who worked so long and tirelessly toward this goal.

Clark & Courts

ENGRAVERS

Lithographers
Printers
Office Furniture
Stationery
HOUSTON

Our Congratulations to Lufkin and East Texas

We salute the leadership of the men whose vision and energy have been responsible for the bringing of the Newsprint Industry to East Texas. The building of the Southland Paper Mill at Lufkin should be the signal for all Texas to marshal its industrial forces and march in unison to the greatest industrial era the state has ever known.

All Texas should be proud of this new industrial accomplishment, for its influence is not only for Lufkin and East Texas, but will be felt throughout the whole of the state. It should be regarded merely as the beginning of Texas' greatest industrial expansion.

TEXAS FREIGHT COMPANY

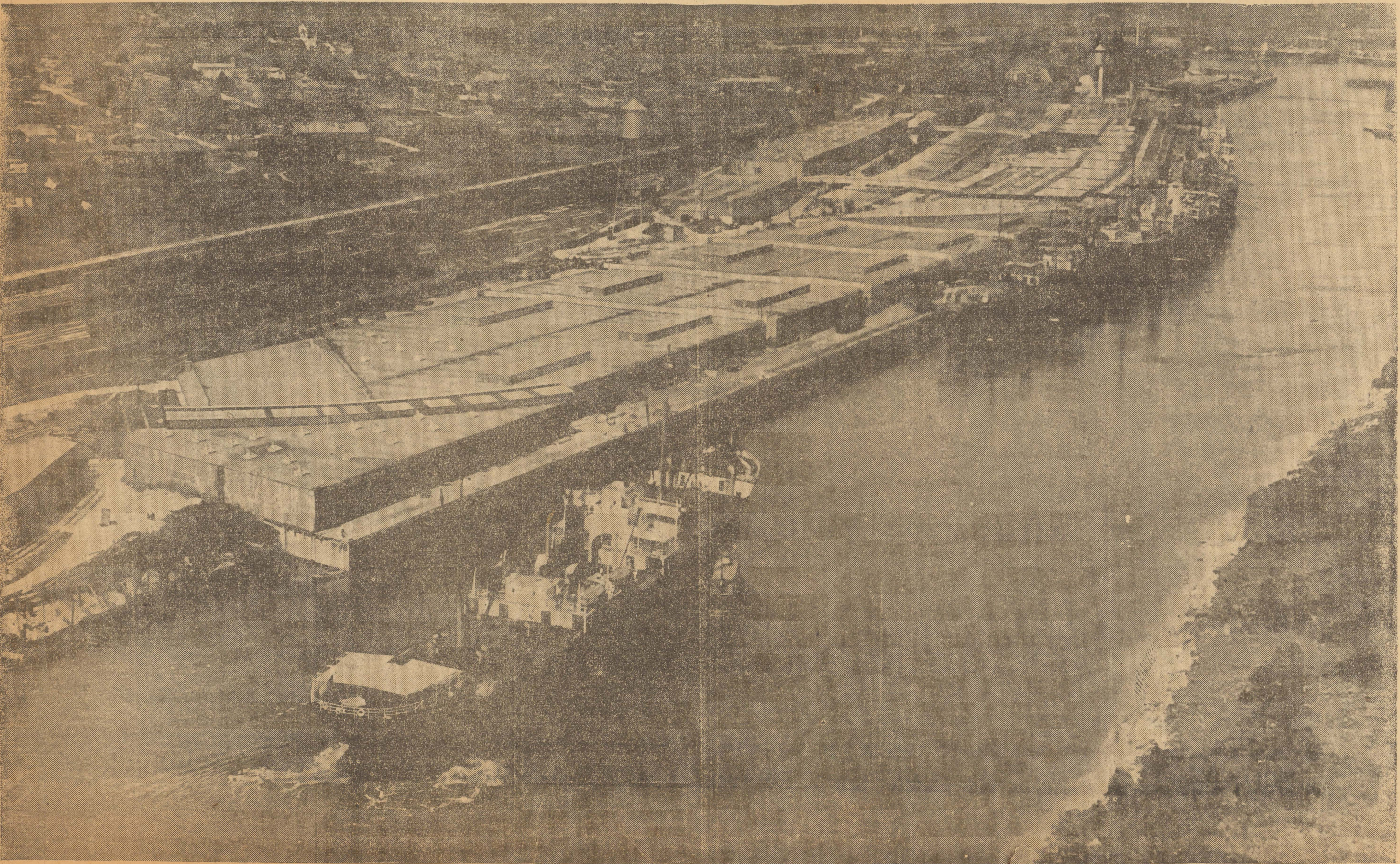
Well done...
our good and
faithful friend

WITH THESE brief words we express our approval and high regard for the great achievement of our friend, Ernest Lynn Kurth, and his capable associates. Now it is the sincere wish of all of us at The National Bank of Commerce, Houston, that the new paper mill will enjoy the outstanding success for which it is unquestionably destined. . . . Well done, too—because in having done so well, you've created countless benefits for countless others.



MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

FROM ALL OVER THE GLOBE SHIPS COME TO HOUSTON FOR CARGOES



FROM THE FAR CORNERS OF THE WORLD COME SHIPS TO PORT HOUSTON TO TAKE ON CARGOES. ABOVE IS A VIEW OF THE VAST SYSTEM OF DOCKS AT LONG REACH.

—Photo by permission The Houston Press.

Houston Area Growing as Cattle Center

South Texas has been the greatest cattle breeding ground in America for more than a century, and five of the first 10 cattle counties in the United States are within a short three hours' drive of Houston. All of these counties are located in the Gulf coast area, producing 25 per cent of the cattle raised in Texas.

From the earliest time in Texas the raising of livestock has been one of the state's most profitable industries, and has helped to establish the present firm financial and commercial structure of the state.

During all seasons the Gulf coast is covered with a great variety of rank growing, but nutritious grasses. Undisturbed by plow, large blocks of this grazing land still support the most intensive livestock section in Texas.

Approximately 1,666,000 head of cattle are being grazed on land in the 16 counties comprising the

Houston area. As a means of stimulating interest in scientific cattle feeding and of demonstrating the results obtainable the Houston Fat Stock Show and Livestock Exposition was organized here on a modest basis six years ago.

Experiments in feeding and breeding cattle on scientific basis has been the result of curtailment of the enormous herds of cattle which formerly were customary of the Texas range. Since so much of the land was suitable for farming and farmers settled from the far eastern portion of the state to the Mexican border beyond El Paso, cattle herds were decreased in size and better beef cattle bred. Such institutions as the Houston Fat Stock show have been instrumental in bringing about the better breeding which is prevalent throughout the state now.

No systematic effort had been made to bring Houstonians to realize the possibilities along this line, so there were thousands of persons who assumed that the production of high grade meat animals involved methods and processes peculiar to the corn belt states. This view is now being radically changed, according to J. W. Sartwell, leader in the development here of the livestock industry.

Proven economically unsound

the practice of shipping Texas cattle out of the state to be fattened and processed, is now practically eliminated, for it is possible to produce prime beef in the Houston area. The demonstrations given through the Houston Fat Stock Show have proven this conclusively. This area supports the most intensive cattle population in the United States.

Of the 24 counties having a population of 50,000 cattle or more, 20 are in South Texas, 15 of these are in the Gulf coast, and only one in West Texas. All 10 of the counties having the largest number of cattle per square mile are located on the Gulf coast.

Recent pasture experiments at the Angleton experiment station prove that with proper pasture management the land in the Gulf coast area will carry two, or even three times the number of cattle now sustained in the area, and this fact is of vital importance to Houston.

A recent feeding experiment conducted at Spur shows that cattle can be finished to prime class on ensilage and cotton seed meal. This will further intensify the feeding of Texas cattle in the Gulf coast. Forage crops such as hegari and red top cane from which a high grade ensilage can be made are dependable producers of large tonnage per acre in this area.

There were 22,691,000 head of all kinds of livestock in Texas at the beginning of 1937, valued at \$356,532,000. Cattle and calves alone accounted for 7,245,000 head of this total, with a valuation of \$174,705,000. Significant as these figures are, they cannot completely measure the value of the livestock industry to the state, for other industries allied with it also play a vital role in the economic life of Texas.

trim package that makes it easy to handle in a ship.

Numerous other wares and store cotton in smaller measure.

Some 2,000,000 feet of space devoted to commodity storage in these warehouses are to be filled with products from every section of the world. A journey through one of the major ones will reveal countless bags of sugar from Cuba, Hawaii, and Porto Rico, dimes and toys from Japan, pineapples from Hawaii, coffee from South America and Mexico, malt from Belgium, lubricating oil from Antwerp, various products from France, olives from Spain, and Italy, newsprint from Norway, wines and liquors from many countries, sugar beet seeds from Germany and Belgium, fishing poles from Calcutta, India; compressed waste paper from Houston office buildings—baled and ready for shipment; scrap iron—carloads of it—being sent to European countries.

In one of these plants there are frequently more than 1,200 different items on a single floor. Each floor or section has its own manager, whose duty is to keep track of the thousands of articles—where they are to be found, where they go, etc.

As an example of how these commodity warehouses lessen the worries of the merchant and save him time and money.

A coffee roaster in Shreveport, La., decides to make a blend from the choicest products of several countries in South America and parts of Mexico. He doesn't have to send his orders to these far-away places, then wait for them to be filled. He telephones one of the major warehouses here, gives his order as late as 4:20 p. m. any week day and is assured delivery will be made the following morning.

They go in for storage in Houston in a big way and scores of persons are daily engaged in the business of moving the products.

Cold storage also has its place in the Houston set-up. Temperatures ranging from 10 degrees below zero to 32 degrees above can be had for the asking. The former is used for meats and eggs, the less vigorous "climates" being adapted to fruits, vegetables, peaches, and such. Most modern equipment is to be found in Houston's cold storage plants.

Houston offers to manufacturers as modern and adequate warehouse service as can be found anywhere.

Builders of Lufkin's Modern Water System

Municipal Engineering Construction

GENERAL CONTRACTORS
WATERWORKS
SEWAGE SYSTEMS

Dellone Construction Co.

Houston, Texas

W. H. CURTIN & COMPANY, Inc.

Domestic and Export
Laboratory Apparatus and Chemicals

Houston, Texas

We Congratulate Lufkin

And East Texas on a New Industry

James Bute Co.

Houston, Texas

Warehouses—

CONT. FROM PAGE 1, PART E

erhead trolley carriers. On one side of the building is a long wharf, at which are docked steamships that sail the seven seas—taking Texas cotton into remote parts of the universe.

Scores of truckers and other workers move about in the semigloom. There is no smoking and a minimum of conversation seems likewise to be the rule.

Everyone appears to know exactly what he is to do—though to the uninitiated the scene is bedlam. However, the cotton keeps moving, eventually going into the dark hold of a mighty freighter flying the flag of Japan, England, Germany or any of the other maritime nations.

Fancy more than 250,000 bales of cotton at the North Side plant or some 300,000 bales at the Houston Compress Company's Long Reach compress. Yet, these plants could store that number, and have. And 325,000 or more bales could be placed within the sturdy walls of the Manchester Terminal Corporation's huge plant.

Houston's 12 major cotton storage warehouses have 20 high-density compresses, those machines that convert bulky bale into the

FEED CATTLE ON MESQUITE BEANS

ROCKDALE, Jones County — Ranchmen in this area have gathered large amounts of mesquite beans and stored them in barns for use during the winter along with other feeds for hogs and cattle. The beans contain a sugar content and are very palatable. The mesquite bean crop is always large during periods of drouth, one of nature's ways of providing feed when the grass is short.

Young pine timber grows three times faster in height when protected from fire.

THE STATISTICAL MIRACLE

Fortune Writers Examine Texas, Find It Good---and Big

THE Texas boom is one of the most exciting facts in the present U. S. economy, Fortune magazine declares in its December issue.

In a special, 14,500-word article on the Lone Star State, the \$10-a-year business magazine points out that "the fact has long been accepted that the Texan was a prodigious fellow hailing from a prodigious land, but the fact about Texas that has bemused and puzzled and finally awakened the country's curiosity is the Texas boom."

"During the depression the Texan was considered a unique fellow who somehow or other had remained 'in high cotton,'" Fortune recalls. "The disposition was to attribute this incredible prosperity to oil and to think that it would pass."

"Then the 1937-38 recession came along, and Texas persisted as a 'white spot' on economic maps. People began to read about matters they had never associated with Texas."

"Texas factory payrolls were dropping only five per cent against a U. S. average drop of 27 per cent. Texas manufacturing employment was sinking only eight per cent while the U. S. average was falling 20 per cent. Texas per capita farm income was standing at 76 per cent of the 1929 index while that of the U. S. was only 69. Texas was opening 300 new plants. Texas was a place where C. I. O. organizers were battered over the head and a city like Dallas was boasting that it was 'the largest open-shop town in the U. S.'"

"And Texas, which had stood twenty-third among the states in manufacturing in 1900, was moving into thirteenth place, then twelfth, with a \$1,581,000,000 output. Could the Texas boom be as good as it looked? Did Texas have something that nobody else had?"

What Is a Boom?

"The answers to these questions require, on the one hand, a definition of the boom and, on the other, a definition of Texas," Fortune explains. "A boom is an illusory and selective force. What it does to a column of statistics is one thing. What it may do to the existing social and economic fabric is something else again."

"Texas has long been considered merely a vast reservoir of raw materials within the U. S. economy. Precisely as a South American country does, Texas takes from the land, oil, cotton, beef, and other goods and exports them to industrially more advanced markets for final processing."

"Now a boom built on nothing more than raw materials is speculative and it may be short. It is speculative in the sense that a 'colonial' economy is always at the mercy of forces beyond its control. And it is short in the sense that the basic sources may either be doomed to slow exhaustion, or be outflanked in world markets by the autarchic exigencies of power politics or simply by a sudden burst of competition from people on equally favored earth."

"What, then, is Texas doing to defend itself against the shocks that periodically must fall upon raw-material economy? Is it taking the profits from the land and reinvesting them in an industrial economy with a view to raising the standard of living and setting up a buffer against the world?"

"That, obviously, is the ultimate task confronting the state," Fortune points out, "and the extent to which it is being approached can be judged only by examining the social and economic pattern of the state itself."

"The great Texas coastal plains hold 75 per cent of the state's city dwellers and the bulk of its money wealth. In this region, which represents about a third of the state, are the paddies from which come some 13,000,000 bushels of rice a year; the immense sulphur deposits in the salt domes from which Texas mines some 85 per cent of U. S. brimstone,

plus most of the cotton and much of the oil.

Fast-Growing Cities

"And here are some of the fastest-growing cities in the nation: Port Arthur, Houston, Beaumont, Corpus Christi. In two decades, between 1920 and 1938, the aggregate populations of these coastal cities (if you include Brownsville and Galveston) have jumped from 268,000 to over 600,000. Oil has made these cities boom, and East Texas, like Houston, finds that its whole economy from now on will swing with the price of crude. But in this region Tyler can boast that it's the world's leading grower of roses; Jacksonville, that it's the world's greatest producer of tomatoes; and Morris county, that it has one of the world's biggest peach orchards."

"Texas produces nearly 26 per cent of the nation's cotton, and a third of its share comes from the blacklands. One finds few other crops of boom in the blacklands, but Dallas is the second largest city in Texas and peculiarly one of cotton's creations."

"The Texas cattleman can remember better days, but he is not so badly off as he would have you believe. No federal restriction scheme hampers him and his prices have been stable, his beef-cattle income last year coming to \$102,000,000, against an average of \$74,000,000 annually for 1924-28."

"Yet the road builders are pounding at his fences, demanding that busy city folk be let through," Fortune points out. "Even the Kings and Klebergs have been powerless to withstand the pressure. Next year a highway through the King ranch will be finished and the King fence riders, when they hear the whine of tires, will mark the passing of an epoch."

Prosperity in Valley

"The Lower Rio Grande Valley brims with prosperity. Last year it shipped out about 12,000,000 boxes of citrus fruits plus 20,000 carloads of winter vegetables (the world's largest vegetable farm is near Edinburg), plus 10,000 bales of cotton. The Valley now has 24 newspapers, 19 banks, 40 fair-sized canneries, and a radio station of Elliott Roosevelt's network. In addition to oil wells in Hidalgo and Starr counties, a dozen gas fields have been found."

"The symbol of the aspirations of the prairie is the city of Fort Worth, which insists upon being called a 'cow town.' Except for the Swift and Armour packing plants and the livestock exchange, there is little to identify it as one."

"Up in the Panhandle, trapped in a sunken mountain range, is one of the biggest oil fields in Texas, and besides the oil the world's biggest natural gas field, with reserves conservatively estimated at 25 trillion feet."

"That gas is now being piped as far as Minneapolis and into dozens of middle-western cities," Fortune explains. "The field also supplies 30 carbon-black factories of the Panhandle, which produce over 80 per cent of the country's carbon-black. And only a few miles from Amarillo is the U. S. government's helium plant, which produces nearly all the world's helium."

"The Edwards Plateau, sprawling over 40 counties and equal in area to Tennessee, is the finest sheep and goat country in the U. S. Here are some 80 per cent of the 9,400,000 sheep in Texas, which last year produced 79,000,000 pounds of wool (or over 20 per cent of the U. S. total), and practically all of the 3,000,000 Angora goats which yielded 14,000,000 pounds of mohair (or 34 per cent of the U. S. production). Including mutton, they meant a total income of nearly \$38,000,000."

"Few industries in Texas have had a faster growth than the sheep industry. Since 1920 the number of sheep has increased by 180 per cent, the number of Angora goats by 71 per cent, and the 1940 outlook is very good indeed."

Statistical Miracle

"And so it must be said that the Texas boom reduces itself to

a statistical miracle." Fortune declares. "The marvelous percentage gains in new construction, in manufacturing, and in all the rest, are significant in that they portend that a third-generation frontier is beginning to create an economy appropriate to its potentials."

"Although war will undoubtedly give raw materials a terrific shove, Texas economists are looking beyond the monetary cycle. The obvious move, as Dr. Homer P. Rainey, president of the University of Texas, has argued, is to rebalance the economy by creating within Texas 'an industrial economy to provide a home market for a substantial proportion of our potential raw material production as well as our demands for finished goods.'"

"Research work in this direction has already been done by the University of Texas, and, for that matter, the progress toward industrialization has recently produced notable examples: The \$6,000,000 newspaper mill at Lufkin, first of its kind in the South, which will be opened shortly; the \$5,000,000 kraft paper mill at Houston; Southern Alkali's \$7,000,000 alkali plant at Corpus Christi."

"There is much talk, too, of developing the East Texas iron deposit, which the U. S. Geological Survey has estimated at 200,000,000 tons, and Texans swear is bigger than the Mesabi. A process, backed by Texans, is being perfected for reducing the ore by means of natural gas."

"And while nothing may come of it, nevertheless it indicates how the Texan's mind is turning."

Houston CC Active Along Many Fronts

Many persons and firms located far from Houston desire service and information with reference to their various interests, for which the Houston Chamber of Commerce is always glad to be called upon.

Following is the Executive Committee:

Wright Morrow, president.
L. S. Adams, vice-president.
H. O. Clarke, Jr., vice-president.
R. D. Ernst, vice-president.
J. Virgil Scott, treasurer.
J. Sayles Leach, secretary of the board.

W. N. Blanton, vice-president and general manager.
J. M. Lykes, member-at-large.

The service rendered by the chamber of commerce is divided into several departments, of which the following is an outline, and they at all times welcome inquiries from those desiring their assistance:

Executive department—W. N. Blanton, vice-president and general manager; T. W. Archer, office manager.

Transportation—C. E. Holloman, manager; E. E. Dullahan, assistant. Rate quotations. Readjustments of rate situations. Publication of rate changes. Preparation of statistical information in defense of rate adjustments. Analysis of transportation problems. Dissemination of information on the car situation and any other transportation subjects of interest to shippers.

Industrial and aviation—Major Roland A. Laird, manager. Industrial Sites. Warehouses. Retail locations. Labor situation. Statistical information on industrial subjects. Business conditions (city and state). Present and future industrial possibilities. Aviation. Stimulates the establishment of new airmail and passenger services at Houston; inaugurates statewide movements for the betterment of commercial flying in Texas and fosters the improvement of airports in Houston and generally throughout Texas.

Foreign trade—T. L. Evans, manager. Foreign trade problems. Information to Houston. Trade possibilities, with special reference to Mexico, Central and South America and the West Indies. Spanish translations. Information on customs regulations, tariffs, etc. Domestic trade. Local conditions of trade with special reference to wholesalers and jobbers. Classified list of Houston concerns. Present and future possibilities of specific trade propositions. Port activities and improvements.

Public Relations and Safety—Col. Norman H. Beard, manager. Baker Armstrong, assistant. Public relations: Deals with a variety of Chamber of Commerce activities which do not center in any division under the direction of a department head, including inter-organization activities. Participates in the welcoming and entertaining of distinguished visitors and arranges details for a variety of meetings and conferences held by local agencies. Safety: Advocates and promotes the observance of approved safety measures both with reference to the individual and to group employees. The department regularly carries a message of safety through every publicity medium and interests itself in the adoption of legislation to enforce worthwhile safety methods.

Membership Department—L. Goldston, manager; Jimmie Hill Jones, assistant manager. Establishes friendly contacts between members, prospective members, new citizens and visitors through confidence in the chamber of commerce.

Research and Statistics—Geo. F. Findlay, manager. Maintains a file of approximately 1,500 items on

subjects of informational value with reference to Houston, its trade territory and Texas. This information is available to anyone anywhere.

Manufacturers and Jobbers—Harold E. Nelson, manager. Contacts Houston trade territory and assists jobbers and manufacturers to develop new business.

Agricultural—W. O. Cox, manager. Agricultural conditions in Harris county and adjoining counties. Specific information to individuals on farming problems. Information from specialists employed in the department of livestock and dairying, home demonstration and field crop subjects. County agent work. Information available through direct contact with the Extension Service of the State Agricultural and Mechanical College.

Highway—Glen R. Blackburn, manager. Provides comprehensive service for motorists and tourists and assists in the planning of new or improved highway construction. Assists in planning new highways that directly or indirectly benefit Houston.

Publicity—J. T. McCully, manager. National and local distribution of civic advertising, including news, publicity on Houston development. Pictures and cuts of Houston's commercial and civic life for the use of visitors and for

loan to interested individuals. General information regarding the city. Direct contact with local newspapers which makes available assistance for those desiring that character of publicity service. Advice and counsel in the preparation of publicity matter which has a bearing on Houston publicity. File of newspaper clippings on stories of interest.

Convention and Tourist Bureau—T. A. Siefert, manager. Promotes the holding of conventions at Houston; arranges for conventions and other conferences and stimulates the holding of sales conferences at Houston.

Houston Magazine—C. E. Gilbert, Jr., editor and manager. A monthly business journal, combined with the Port Register.

Junior Chamber of Commerce—Norman H. Beard, director.—An organization of young business men of Houston but a distinct division of the chamber of commerce operating under the latter's supervision. Promotes the general civic welfare of Houston through a great variety of activities.

Ninety-four per cent of pines under one year old are killed by the average grass fire in East Texas.

We need fire protection to reforest non-agricultural cutover land now largely idle.

ALL LINES SERVE HOUSTON WHARVES

Every railroad entering the city of Houston has an open door to the wharves, for the Houston port is one of the few in the nation which maintains this service for railroads. Port Terminal railway trackage is owned by the Navigation District.

The Port Terminal Association operates the railway through a board of control, composed of one representative for each of the five member railroads with J. W. Evans, port commission chairman, as its presiding officer, J. Russell Wait, port director, as secretary and Capt. Charles Crotty, assistant port director, as assistant secretary.

Membership will be opened to any other railroad which may enter the city. "Thus the entire facilities of the port will always be available to every railroad without the tremendous duplication of trackage necessary if separate terminals were maintained up and down the 25 miles of the ship channel to Morgan's Point and without any favoritism," Mr. Wait said.

Mr. Wait added that most of the east coast ports have separate terminals for each road. New Orleans and San Fran-

cisco have public belt systems which are somewhat similar to Railroad Co. with certain portions of trackage owned by the city of Houston and known as the Public Belt Railroad.

The association now operates 10,851 miles of trackage. Its first operations were 35.14 miles. The number of loaded cars handled over the P. T. R. A. annually has increased from 91,220 during the first full year, 1925, to 106,387 in 1938. Total for the 14 1-2-year period to Dec. 31, 1938, was 1,554,871 loaded cars.

Switch engines and other equipment are now furnished by member railroads. Mr. Wait commented that the port's program of building one engine especially designed for use on the road each year until it has built up its own equipment.

The Burlington-Rock Island, Santa Fe, the Katy, the Southern Pacific and the Missouri Pacific systems are members of the P. T. R. A. The P. T. R. A. pays \$1 per car to the Navigation District for lease of the tracks on cars coming from outside the city and 50 cents per car for switched cars.

The actual cost of switching operations are divided by the member railroads in proportion to the business each does; thus service is obtained at cost.

Before the forming of the Port Terminal Railway Association in 1924, the port's railroad facilities consisted of trackage belonging to the Southern Pacific Lines and

the International-Great Northern Railroad Co. with certain portions of trackage owned by the city of Houston and known as the Public Belt Railroad.

Switch engines and other equipment are now furnished by member railroads. Mr. Wait commented that the port's program of building one engine especially designed for use on the road each year until it has built up its own equipment.

Young pine stands protect from fire produce in the same length of time 10 times the amount of wood fiber as when burned annually.

We need fire protection to provide green woods for camping and recreational purposes.

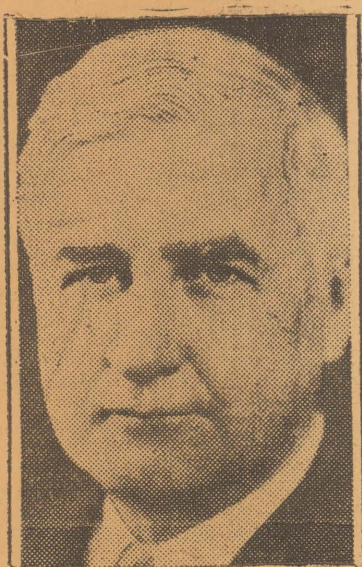
We need fire protection to prevent injuries to and destruction of our remaining stands of merchantable and second-growth timber.



ERNEST LYNN KURTH

We Congratulate An Industrial Pioneer

We salute Ernest Kurth as a pioneer industrialist—building for the future by founding a new industry. The real economic problems of today as in times past are solved by men of action—men who have the courage and initiative to build new enterprises. We are all Texans together looking to the future development of our state.



JESSE H. JONES

Jesse H. Jones Interests Houston, Texas

D. S. Mair Machinery Corporation

MACHINERY—CRANES

FOUNDRY EQUIPMENT

LANDIS THREAD CUTTING

EQUIPMENT

Houston F-1466

Dallas 7-2874

Man-Made Houston Port Becomes Nation's Foremost

Sea Extended 50 Miles, Makes Top Exporting Point

By JACK T. McCULLY

As a pioneer man-made port, being the first to extend the sea 50 miles inland, Houston has the novel distinction of being the nation's first port in exports, second in deep sea tonnage and third in total tonnage.

Houston now is very definitely "second" in the port category, only New York topping her. According to the United States Engineers' report to the Houston Port Commission, the Texas city held first rank in the nation in exports with a total of 22,964,221 tons. Excluding the local traffic, Houston ranked next to New York.

A vast dredging program has been completed, providing a depth of 34-35 feet throughout and a width of 400 feet on the bottom across Galveston Bay, and 150 to 250 feet thence to the turning basin.

Vessels of 30 to 32 feet draft are now using the channel to the turning basin, which has a diameter of 1,100 feet and a depth of 34 feet.

On August 30, 1935, congress approved a project for increasing depth to 36-37 feet, and widening the channel from Morgan's Point to Baytown—five miles—to 300 feet; thence to Nonsworthy—13 miles—250 feet and to basin—seven miles—to 200 feet on bottom.

The public terminals owned by the city and navigation districts are located at or near the head of deep sea navigation—the turning basin being within the city limits and four and one-half miles from the courthouse.

Private and industrial terminals and plants are located all along the channel from basin to the bay, a distance of 25 miles. This inland channel now is a vast industrial and commercial district.

There terminals provide berthing space for more than 60 vessels.

Channel Brings Factories

With the opening of the ship channel in 1915 came the opportunity to establish large manufacturing plants on deep water, such as cement mills, oil refineries, fertilizer works, cotton compresses, paper pulp plants, steel warehouses, shell grinding plants, shell distributors, ship yard and marine ways.

These various industries are estimated to have a capital investment of about \$200,000,000 on the waterfront, employing 10,000 to 12,000 men in normal times, with a daily payroll of \$50,000,000 to \$60,000,000 per day.

This vast industrial district is served by the Public Belt Railroad Association as a neutral switching organization for the benefit of all trunk lines centering in Houston. This belt railroad extends down each side of the channel for 10 to 12 miles in order to reach industrial plants and terminals.

Five great railway systems serve the port, reaching out to the vast trade territory tributary to Houston. These systems, the Southern Pacific, Missouri Pacific, Santa Fe, Missouri-Kansas-Texas, and the Burlington-Rock-Island, each have several subsidiaries, or branch lines which effectively

serve the great southwest.

Concrete highways radiate in all directions from the port, providing for rapid dispatch of freight by truck to nearby cities. Air mail and passenger service is available to connect with northern and transcontinental routes.

Electric power lines, natural gas and crude oil pipelines on each side of the waterway provide power and fuel requirements for any size industry.

Industrial and terminal sites are available in any size tract desired at reasonable prices, values ranging according to location and facilities.

Commission Controls

All the terminal facilities around the turning basin are under the control of the Port Commission and consist of wharves comprising 7,401 lineal feet with berthing space for 18 vessels. During 1935 total tonnage through the Port of Houston aggregated 26,981,674.8.

A public grain elevator is located in rear of Wharf No. 14, built of concrete with a capacity of 3,500,000 bushels, equipped with two car dumpers, latest design of electric conveying machinery. Loading capacity to 100,000 bushels per hour.

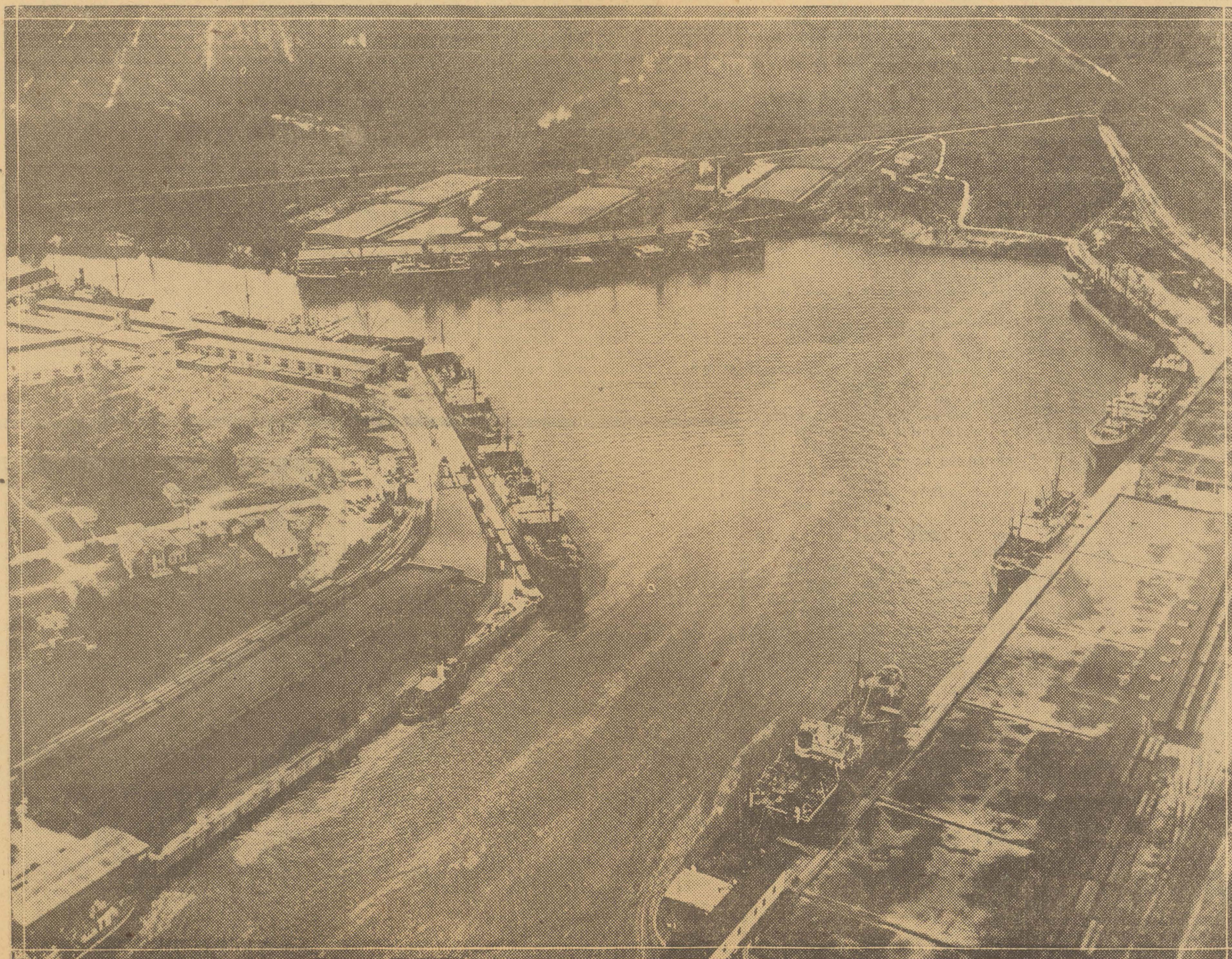
The Port Commission has installed a vegetable oil handling rack at Wharf No. 15. This unit consists of pumping plant and pipe lines, loading racks and two 500-ton storage tanks fully equipped to handle vegetable oils from car to ship, ship to car, or from car to ship to storage tanks. The pumps can handle oils at the rate of 150 tons per hour in either direction. Steam lines are also provided for heating heavy oils or to facilitate the movement in cold weather.

Cottonseed oil, olive, linseed, coconut and various other bulk vegetable oils can be handled through this facility with the greatest dispatch and at a minimum charge. Arrangements have also been made for handling lubricating oils from tank car to vessels.

Leading Oil Port

Houston is virtually an oil port, being located in the midst of all the coastal oil fields, with pipe lines radiating in all directions to the great producing fields of Texas, Louisiana and Oklahoma, with one pipe extending to Wyoming, there being storage capacity of approximately 40,000,000 barrels located adjacent to the ship channel. Exceptionally convenient

Ships of the World Have Visited This Inland Ocean



THIS TURNING Basin, 1,100 feet in diameter and 34 feet deep, lies at the end of a man-made channel which brought the sea to Port Houston. In its waters have floated the vessels of all nations, and in its vicinity and along the channel has grown up a scene of vast industrial and shipping enterprises.

bunker facilities have been provided by the Humble Oil Co. at the turning basin, with approximately 128,000 barrels of fuel oil and storage and pipe lines extending on to all the public wharves on the south side and to the Houston Compress wharves, through which vessels can be furnished bunkers at the rate of 2,000 barrels per hour, while taking on or discharging cargo. Those lines have been extended to serve the new wharves on the north side of the channel.

Bunker oil can also be obtained by private arrangements with some of the oil refineries located farther down the channel. The U. S. Shipping Board and naval vessels are bunkered under contract at Houston.

The main lines of the Public Belt Railroad extends down the south side of the ship channel to the east line of the Shell Refinery tract, a distance of approximately 12 miles. This belt line serves the public facilities on the south side of the turning basin and at Manchester and also the various private terminals along the south side which have their own industrial spurs branching from the main line into their plants or waterfront terminal.

On the north side of the ship channel at the Public Belt Railroad way has been extended from the turning basin to a point across and near the mouth of Green's Bayou, a distance of about eight and one-half miles.

A three-mile section was also built from the basin to the Carnegie Steel Co. plant on the north side, near the channel and considerably south of the main line. Additional extensions will be made from time to time as the needs of commerce and industrial development require.

Port Well Protected

The facilities of the port are well protected by a splendid system of fire mains and connections with the city of Houston water supply, as well as auxiliary electric fire pumps, and the entire port is patrolled by one of the latest Diesel electric fire boats, the "Port Houston." This vessel, constructed in 1926, is 125 feet long, 27 feet beam, 8 1-2 foot draft, equipped with two 500-horsepower Diesel engines and auxiliary unit of 165 horsepower driving motor generators, which in turn operate motors for two centrifugal pumps with a capacity of 7,000 gallons of water per minute at 150 pounds pressure, which can be delivered through 39 fire nozzles.

A wharf for fire boat with shore fire station has been constructed at Manchester, about 2 1-2 miles below the turning basin. This station and barracks for firemen is equipped with complete fire alarm service, connected to city system.

The opening of the Houston ship channel provided a vast area on tide water for industrial development where large industrial plants will be afforded both rail and water connections in or adjacent to the city, with access to raw materials and a plentiful supply of labor and world market for their products. The land on each side of the water way from the turning basin to Morgan's Point, a distance of 25 miles, is admirably adapted to this development and is being utilized at a very rapid rate, as over 50 plants have

been constructed in the last few years.

Ample electric energy is available on each side of the channel at very reasonable rates. The Houston Lighting & Power Co. has a total capacity of 1,000,000 k.

The entire city and district is supplied with gas from three different sources, Texas and from north Texas and Louisiana. Fuel is provided through pipe lines from all the major fields of Texas, with approximately 40,000,000 barrels storage available in the port area.

CLYDE-MALLORY PIONEER LINE

A new and prosperous era of southern commerce was born 73 years ago when a steamship was dispatched from New York bound for Texas under the flag of the New York and Texas Steamship Co., now the Clyde-Mallory Line. For more than three-quarters of a century, the Clyde-Mallory Line's efficient and far reaching service has contributed, and does still, to the development and growth of the southwest.

Charles H. Mallory was quick to see the opportunity presented by the need for a fleet of merchant steamers through profitable business with Gulf ports. That recognition of an opportunity was the beginning of a new famous line. Mallory further realized that after the Civil war the country along the Gulf of Mexico would be in dire need of water transportation just as soon as the farmer put aside his gun and took up his farm tools.

William Hendley and Co. were the first agents for the new steamship firm. All of the steamers then were small in comparison to modern ships, their capacity being between 800 and 1,000 bales of cotton.

Lack of adequate railroad facilities in the early days was an important reason for the slow growth of the company. Infrequent sailings were sufficient to lift all the coastwise cargo that was available. With the development of the railroads, commerce was greatly stimulated and justified a more rapid increase in the size of the fleet.

Early steamers were the General Sedgwick, the Victor, Governor Ingersoll, Ariadne, Euterpe, Tili, Varuna, Carondelet and Equator. Later came the fleet named for Texas cities: City of Houston, City of Galveston, City of Austin, City of San Antonio and City of Waco.

For the first few years of its existence the Mallory Line's service consisted of about one sailing in every 10 days. A weekly service was established in 1871. The Mallory Line was the first to inaugurate a combined passenger and freight service between New York and Texas.

The Mallory Line immediately laid keels for larger vessels when Texas ports were reconstructed and dredged to accommodate vessels of deeper draft. Several ships of approximately 1,500 tons were built and placed in service during the 1880's, thus enabling the line to enjoy the early profits of the

south's rapidly increasing commerce.

It is generally believed that C. H. Mallory obtained money to 1866. Upon the death of the four-

found the steamship line with the der, his son, Henry R. Mallory, profits derived from building 30 assumed the active leadership of gunboats for the Spanish navy in the firm, retiring in 1915.

Adhering to its consistent policy

of providing adequate passenger and freight service, the Clyde-Mallory Line continued to develop and expand until at the present Texas is served by a weekly passenger service to Miami and New York with the steamers Algonquin and Seminole, in addition to two freight sailings each week.

Both the Algonquin and the Seminole are luxurious and have accommodations for more than 300 passengers each. Beside the usual two-berth stateroom with or without showers, there are bedrooms with double or twin beds with connecting or private bath, and suites consisting of parlor, bedroom and bath. Every stateroom has both hot and cold running water and there are numerous public baths including showers.

Also there are swimming pools, orchestras, movies, and other means of entertainment, both indoor and outdoor. Glass enclosed promenades, sun parlors, observatories, tea rooms, beverage rooms, spacious lounges, dining rooms and libraries make each steamer a comfortable and even luxurious means of travel.

LUMBER SECTION FLANKS HOUSTON

At the edge of the great East Texas lumber belt, Houston has for many years been the lumber capital of the state, and many Houston fortunes have been made from the lumber industry.

Lumbering was Texas' first million dollar industry. Lumber production was valued at \$66,012 in 1850 and a decade later it had grown to \$1,735,000.

There are approximately 24,000,000,000 feet of pine and hardwood standing in 36 East Texas counties, according to the southern forest experiment station. These figures are for Harris, Cherokee, Camp, Cass, Bowie, Anderson, Angelina, Gregg, Hardin, Harrison, Houston, Jefferson, Jasper, Liberty, Franklin, Morris, Montgomery, Marion, Newton, Nacogdoches, Orange, Polk, Panola, Red River, Rusk, Smith, Shelby, San Augustine, Sabine, San Jacinto, Titus, Trinity, Tyler, Upshur, Wood and Walker counties.

Texas lumber is said to produce values between \$40,000,000 and \$45,000,000 annually, with 20,000 workers receiving \$14,000,000 in wages.

The East Texas timber belt adjacent to Houston includes a stand estimated between 14 and 15 billion board feet. The state ranks third in the production of yellow pine and has about 400 saw mills in operation.

Houston serves not only as a shipping point, but as marketing point as well.

Prime The Pumps Of Industry

Business is the life blood of Texas. Business provides taxes, offers an outlet for farm produce, employment to hundreds of thousands and services which afford American citizens the highest standard of living on the face of the globe.

This company as a unit of the Texas sulphur industry recognizes its responsibility in the Texas wheel of progress. Millions of dollars are annually spent by this company for wages, taxes, purchases, royalties, freight, etc., thereby giving direct and indirect benefit to literally thousands of Texans.

Industry and agriculture comprise the two chief sources of livelihood of the human race and neither could exist without the supplementary support of the other. Industrial development inevitably means greater payrolls for workers and a purchasing power necessary to consume farm products—thus, close harmony of effort is essential.

We salute the pioneers of the paper industry. The confidence placed in the future industrial development of the Lone Star State deserves and commands admiration and commendation.

Texas Gulf Sulphur Company, Inc.

Houston

Producers of Crude Sulphur

Congratulations- Citizens of LUFKIN AND EAST TEXAS Ernest Kurth and Associates

Pulp, Paper, Progress, Protection and Prosperity

Aetna Life Insurance Company
(89 Years Service to Policyholders)

JOS. S. SMITH
GENERAL AGENT
Houston, Texas

Miss Lila Baird
Lufkin Representative

It Takes 50,000 Cows To Furnish City's Milk

Houston needs 50,000 cows to supply its milk needs. Engaged in filling this demand are 700 dairy farmers who employ approximately 2,800 families. An additional 3,000 employees do the distributing of milk and dairy products.

Including ice cream and other manufactured dairy products, plant investment of the industry in Houston amounts

to approximately \$11,000,000. Milk provides the largest source of farm income in the United States, with nearly a billion and a half dollars, or one-twentieth of the national income received by dairy farmers.

An average Houstonian will consume 153 quarts of milk and cream, 17 pounds of butter and six pounds of cheese yearly.

Monument—

CONT. FROM PAGE 1, PART E.

nel can be had from the observation tower. Houston, a distance of 20 miles, can be seen without difficulty on a clear day. Visitors find it interesting to locate Texas City, the Tri-Cities, and many other towns and hamlets.

The grounds present a picture of beauty almost unbelievable to those who remember its wood-covered hills. Seventy-three large trees and 100 or more smaller ones were moved during the landscaping. None were destroyed.

A new highway system has been built with roadways offering easy access to the many historical monuments and markers that dot the grounds. In the past the roads were narrow and formed an endless network which did not always pass near the scenes of historical importance. The present system is a symmetrical layout.

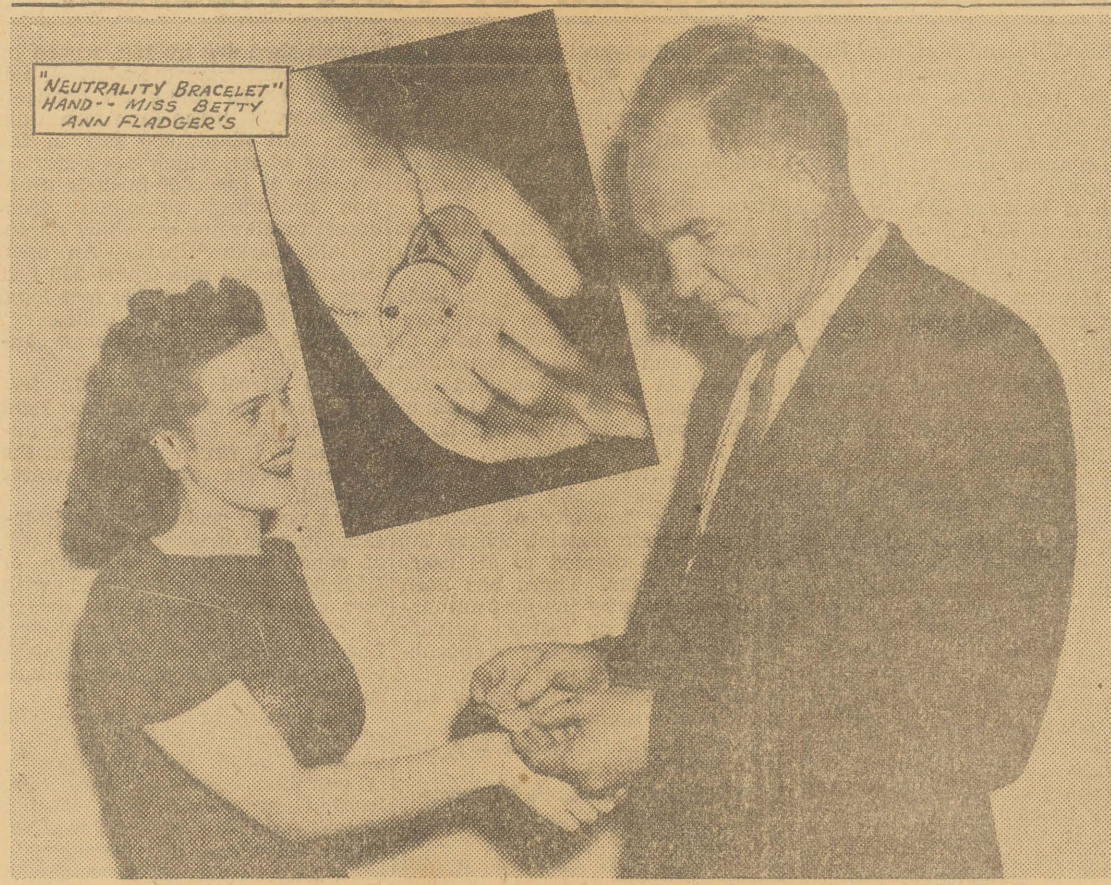
HOUSTON WATER SUPPLY AMPLE

Each year Houston consumes a quantity of water equivalent to all the water in the 50-mile length of the ship channel. Its nearest large body of water—the Gulf of Mexico—being salt, visitors invariably wish to know where Houston gets its water supply.

It is pumped from the deep water bearing sands underlying the city—more than 50,000,000 gallons every day—without permanently lowering the level in any of the wells. Fifty million gallons is a huge quantity of water and is sufficient to float two battleships the size of the cruiser Houston.

More than 20 billion gallons of water are pumped to the surface each year to meet the city's needs. It is believed that the water sands are being continuously recharged not only from rainfall where they outcrop on open land, but from outcroppings to the north and northwest of Houston under such rivers as the Colorado, Brazos, Navasota and others. Whatever the source, this invisible reservoir steadily supplies Houston with an apparently inexhaustible supply of pure, healthful water.

Betty Ann's Bracelet is Challenge to Hitlerism



"NEUTRALITY BRACELET" L. TO R. MISS BETTY ANN FLADGER - W.A. COOPER.

Here is one co-ed's challenge to Hitlerism—a "Neutrality Bracelet," on which she has strung the identification tags her father wore during the World War. Pretty Betty Ann Fladger, North Texas State Teachers college freshman, Denton, Tex., says one glance at her bracelet makes her talk pretty full listening.

During the first World War each American soldier wore two of these "nameplates," one on a string

around his neck and one about his wrist. Unless the body were completely blown to bits, one of these usually remained to serve as an identification in case of death.

Miss Fladger, adapting them to her own uses, has strung them on a narrow silver chain into a real "charm" bracelet—a charm against the bad luck of war.

In the picture she is showing her bracelet to W. A. Cooper, athletic coach at the NTSTC Demonstration School, an ex-service man

who served during the World War as a machinist in the naval aviation service. Cooper was attached to the Northern Bombing Squadron, Base B, Eastleigh, England, which supplied planes to the marines at Dunkirk and also to naval bases in England. Cooper was originally attached to the Northern Bombing Squadron, Base B in Italy, but was shifted to England before he reached Europe because the Italian base was "blown off the map" by an enemy air raid.

Houston Cotton Exchange Nerve Center of Trade

Organized in 1874, chartered in 1877, incorporated in 1893 the Houston Cotton Exchange and Board of Trade has become the nerve center of Houston's world-wide commercial life. It occupies the top floor of the Cotton Exchange building and here commodity fluctuation on most of the world's greatest market places are instantly available for the hundreds of cotton men and traders.

Its purpose of providing and maintaining suitable room for a board of trade in Houston and promoting equitable business practices has been carried out consistently from the beginning. Its membership has been in the front ranks of all enterprises for the advancement of Houston's commercial and civil progress.

From the earliest days, the cotton business has been one of Houston's greatest enterprises. Long before the city became a port, cotton growers brought lint to Houston in rough sacks, loaded on covered wagons. During the middle 60's and for the next decade Houston was the principal

market center for the Gulf coast and eastern Texas.

However, facilities for properly dealing in cotton were lacking and since dealings were based on the Liverpool market, traders frequently made transactions on figures a month old. Local cotton men finally agreed that an exchange was essential and the ground for a building was broken in 1874. The present building was erected in 1924, and practically all of the cotton interests in Houston are now housed in it.

Exchange dealings are mainly in spot cotton, continuous cotton quotations are received from all American and foreign cotton exchanges. American and foreign cotton prices are also received from all American and foreign cotton exchanges.

Every day the city of today that will especially interest visitors, as they drive down Houston's wide, beautiful Main street, they will be interested with the modern newness on all sides. Air as free from smoke and soot as a country road will exhilarate, while they will marvel at the many industries which produce articles valued at

New York and New Orleans cotton exchanges and the Chicago Board of Trade. It is the largest spot cotton trading center and concentration point in the United States.

A comparison of figures for 1883-84 with those of later years indicates the growth of the cotton receipts. At the earlier date, Houston receipts were only 514,600 bales, but in 1931-32 they were 3,186,769 bales. Because of the recent unsettled condition in the world affairs, receipts up to July 31, 1932, were only 1,048,783 bales, the 1932-33 season.

Sights—

CONT. FROM PAGE 1, PART E

center of the original Texas. When that vast, fertile stretch of land to the south and west was but Indian hunting grounds, the Houston area was becoming a thriving frontier settlement.

It was less than 100 miles northwest of here, at old Washington-on-the-Brazos, that the Texas Declaration of Independence was signed, March 2, 1836. Thirty-seven miles east of Houston, at Anahuac, was fought an early skirmish which led to the revolution, and at Goliad, west of Houston, the battle which precipitated the actual declaration, was fought.

At San Jacinto battleground, and 20 miles east of Houston, the final battle of that long-drawn, arduous conflict was fought. Extensive improvements are now being constructed at the San Jacinto Battleground, which include the San Jacinto Memorial Shaft, which towers 567 feet above the hallowed soil in this state park, being 12 feet loftier than the famous Washington Monument. It was here on this hallowed spot that the decisive battle, on April 21, 1836, was fought and won in the struggle of the Republic of Texas for independence from Mexico.

In the center of Houston's business section stood the first official capital of the Republic of Texas. At the time of its occupancy, Houston was serving the republic as the second capital city, a few sessions of the congress having previously been held at Columbia but not, however, in a structure officially designated as a capital. The site of the first capital in Houston is marked by a brass and bronze tablet.

In Houston a marker has been placed on the spot where Sam Houston, after whom the city is named, lived while president of the republic. There reposes in a Houston cemetery the mortal remains of more Texans famous in the days of the republic than in any other spot in the state, with the possible exception of the state cemetery at Austin.

Harrisburg, now within the corporate boundaries of Houston, before and shortly after the San Jacinto campaign, was the home of the president's cabinet members and much official business was transacted there during the emergency of war though the town was never designated as an official capital. Just across old Buffalo Bayou, now the Houston ship channel from the battlefield of San Jacinto, is the more than century-old town of Lynchburg. It was the home of the republic's first president, David G. Burnett.

But it is the city of today that will especially interest visitors, as they drive down Houston's wide, beautiful Main street, they will be interested with the modern newness on all sides. Air as free from smoke and soot as a country road will exhilarate, while they will marvel at the many industries which produce articles valued at

over two hundred million dollars without sending up a smudgy smoke haze.

Houston's industrial area is first in the state with a value of products of more than two hundred and twenty-five million dollars. Principal among the items included in this impressive total are petroleum products, lumber, cotton and metals. Huge steel fabrication plants and foundries, manufacturing of oil well tools and equipment, oil refineries, lumber and planing mills, cotton compresses and mills, besides a miscellaneous number of industries contribute to the huge total.

Because they use gas or oil for fuel, the air is remarkably free from smoke even in the heart of the industrial area.

But a short distance east of downtown Houston is the Houston ship channel, a man-made port to which ships from all nations come bringing the products of the world and taking to foreign ports our surplus of cotton, oil, soybean and many other products. Over 5,000 ships enter and depart through the port each year. In 1932, a total of 26,981,674.8 tons of merchandise was handled over the wharves of Houston's port. The value of this merchandise was more than one-half billion dollars. Chief among Houston industries is oil and petroleum products. This business alone is responsible for an annual industrial payroll of \$50,000,000 in Houston. In the area there are 12 refineries with a daily capacity of 378,000 barrels. The Houston territory produces 60 per cent of all the oil obtained in the nation and 25 per cent of the entire world's production. Headquarters for six major oil companies operating internationally while 1,205 oil companies have offices in Houston. The city leads in the manufacture and distribution of oil industry equipment of all the world.

The population of Houston today is estimated at in excess of 450,000. This estimate is based on post office surveys, telephone connections and public utilities. There are more telephone connections here than any city of the south. On March 15, 1932, there were 95,730 telephones in operation in Houston.

In building, Houston is showing the same progress that has marked her as the industrial and commercial center of the state. During 1932, this city led the entire south with a building total of \$25,005,543, being more than twice the total of any city in the state. Houston was fifth in the nation, and again this year leads all Texas cities in building totals to date.

Outstanding among additions to Houston facilities for accommodating conventions and expositions is the new Sam Houston Coliseum recently completed at a cost of approximately \$2,000,000. This huge structure will accommodate the largest convention with all sessions under one roof. It has a total seating capacity of more than 25,000 persons and is within easy

walking distance from all downtown hotels.

There are more than 100 hotels in the city, 20 of which are strictly first class, having a total of 7,000 rooms and 300 multiple room apartments; 22 hospitals with a total of 2,000 beds; a total of 113 elementary and high schools; the University of Houston and Rice Institute—the latter of which has seven large buildings with beautiful grounds. This school has an endowment of \$15,998,470.

Among the many interesting points in and near Houston which visitors will want to see are the Houston ship channel; San Jacinto battleground and the San Jacinto Memorial Shaft; Rice Institute; Museum of Fine Arts; Hermann Park and the zoo; bayshore resorts, including Elysian Beach; oil fields—many of which are just beyond the city limits; petroleum refineries; world's largest cotton compresses; Founders Memorial Park, and the new Sam Houston Coliseum and Music Hall.

Oil—

CONT. FROM PAGE 1, PART E

to supply the essential fuels and lubricants to industry and trade. It is becoming more and more recognized that increased international trading, creating better understanding and good will, is one of the best economic stabilizing influences and a sound method of furthering world peace.

From 1860 to 1900 the principal petroleum production exported was kerosene; from 1900 to 1915, fuel oil; and since 1915, gasoline, of course, has been the major commodity. Just as the coal oil lamps, distributed free throughout the world by early petroleum marketers, constituted the entering wedge into world affairs for petroleum, so, has the internal combustion engine come to be recognized as the consolidating agency for petroleum's supremacy, as a medium of trade.

No discussion of the relationship between petroleum products and industry and foreign trade would be complete without mention of natural gas, rapidly becoming recognized as a primary industrial fuel. Today we are witnessing the shift of importance in the power that turns the wheels of industry, and consequently motivates world commerce. We see coal giving way more and more to gas and the Diesel engine replacing the steam engine. It is estimated that between two and three trillion cubic feet of gas is stored in underground reserves within 100 miles of Houston alone.

What coal meant to the development of the industrial east, natural gas is the foundation of new industrial southwest. Seeking new sites where the combination of native born and efficient labor was available with a reasonable proximity to great market areas, the industrialists found not only these in Texas, and especially in Houston, but also abundant supply of low cost fuels and gateways to all the world.

We are glad to join with other Texas Institutions in welcoming a New Industry to our State. We Serve Many Established Industries and Look Forward to SERVING New Ones in Shipping Package Problems.

Wirebound Boxes

Corrugated Fibre Boxes

Unitized Fruit and Vegetable Packages

Continental Box Company, Inc.

HOUSTON, TEXAS

2324 Maury Street Telephone Preston 4281

COAST POINTS LINKED BY CANAL

Thirty-four years ago the first convention of the Intercoastal Canal Association was held in Victoria, Texas. Since then a complete canal of five feet depth and 40 feet width has been constructed from the Mississippi to Corpus Christi, with the exception of one section from Port Arthur to Galveston. This canal was small and proved entirely inadequate for commercial purposes, but the experiment was valuable, for it revealed that maintenance costs were prohibitive, the canal having been constructed through shallow bays along the coast, the cross-currents shoaling the canal so rapidly and to such an extent that its maintenance cost much more than the traffic justified.

As a result, the canal was built farther inland, and the handicap was overcome.

At all times the association has advocated a nine-foot-depth and 100-foot width at the bottom of the canal from the Mississippi to the Rio Grande and has worked vigorously on this program from its inception. At last, upon the approval of United States engineers, congress passed a bill providing for construction of such a canal from the Harvey Locks and Palquemin Locks on the Mississippi to Corpus Christi at a minimum of nine-foot depth and 100-foot width at bottom.

The canal was completed to a connection with Galveston and Houston. The following table shows that the first full year's traffic, 1935, as compared with the full year of 1930, has increased 10 times over; 1936 three times over 1935; 1937 has increased 136 per cent over 1936 and 1938 increased 132 per cent over 1937. The table runs: 1934, 37,726 tons, value \$2,383,029; 1935, 238,404 tons, value \$6,568,014; 1936, 793,877 tons, value \$20,008,204; 1937, 1,021,450 tons, value \$33,678,467; and 1938, 2,369,096 tons, value \$65,750,898. These figures are from the United States engineer's office at Galveston, showing the traffic between Port Arthur, Houston and Galveston. In an address at Wharton on Sept. 11, Col. R. G. Powell, division engineer at New Orleans, stated that the tonnage over the New Orleans-Houston-Galveston division amounted to 2,400,000 tons, valued at \$66,000,000.

Due to the terrific increase in shipping, United States engineers have recommended that the canal

be increased to a depth of 12 feet, 125 feet width at bottom from the Mississippi to Corpus Christi and there is now being incorporated in the rivers and harbors bill an authorization for \$5,000,000 for such improvement.

There are now six hydraulic dredges on the Galveston-Corpus Christi section, operating under five contracts, engaged in dredging the section of the waterway from the west boundary line of Galveston county to Freeport harbor and from the Colorado river to Rockport. Two of these contracts will be completed within the next 10 or 12 months. Funds are available for dredging from Freeport to the Colorado river, but work cannot be commenced until all rights-of-way and spoil disposal privileges have been furnished by local interests. This work should be completed by July, 1941.

The projected work of completing the canal to the Rio Grande will become a reality, association authorities believe, as soon as United States engineers have checked the data now being gathered for them.

HOUSTON NO LONGER 'DAYLIGHT PORT'

Until 1930 Port Houston was a "daylight port." Deepening and widening of the ship channel between 1930 and 1933 with improved lighting, brought first night traffic in volume on the channel.

1930's night traffic was only 2.6 per cent of the total traffic, but it had increased to 17.3 per cent by 1937 and it has remained somewhere near that figure ever since. Street lights were installed across the bay on both sides of the channel a mile and a half apart in 1929 and 1930 and at the same time dim range lights from Morgan's Point to Lynchburg were greatly improved.

According to port commission records the volume of night traffic through the port from 1930 through 1938 runs: 1930, 2.6 per cent; 1931, 7.8 per cent; 1932, 11.3 per cent; 1933, 14.6 per cent; 1934, 16.5 per cent; 1935, 17.3 per cent; 1937, 16 per cent; 1938, 15.5 per cent.

Texas forests are valuable for production of forest products, protection of watersheds, food and shelter for wildlife, recreational opportunities, regulation of stream flow, control of erosion, windbreaks, aesthetic value, and as a source of labor and industry.

We give thanks for Mr. Kurth, his associates, the Lufkin Chamber of Commerce and business men of Texas who are typical of the progressiveness which characterizes our State and Nation.

How fine it is to witness the birth of another new industry, opening the doors of opportunity to men, at a time when too many are saying, "There is nothing new for a man to do. There are no fields left to be explored."

Hail to that pioneer spirit!

We are happy to have participated in Industrial East Texas and look forward to serving its industries to even greater extent.

MONCRIEF-LENOIR MFG. COMPANY

Houston— CONTINUED FROM PAGE 1

brought the Gulf coast and Houston its first taste of feverish activity of the oil industry. These prosperous strikes laid the foundation of the modern Gulf coast oil industry. The lumber, banking, railroad, cotton and shipping and manufacturing industries all enjoyed substantial increases in business. The rapid growth of Houston is portrayed by the facts that the population and assessments doubled, while the value of manufactured products and export trade tripled within the 10-year period.

City's Fame Spreads Widely

Houston's reputation traveled far. It became known as the inland city to which all nations send their ships—a mystery to persons over the nation who look on the map and find it 50 miles from the sea, yet the world's greatest cotton port. That was brought about by the \$20,000,000 ship channel, the history of which is a story within itself.

Perhaps the first greatest period of growth was between 1907 and 1916. Some of the things that happened were:

Miles of streets paved at a cost of \$1,469,260, marking the beginning of real paving, although before then Houston had board and macadam and a few brick streets; bridges costing \$1,207,738 were built; sewers put in at \$699,323; drainage work done at a cost of \$1,156,322; schools costing \$1,533,347 erected; expended for park area \$463,684, a total expense for civic improvements of \$6,498,583. Population increased 46,200. Today Houston has nearly 1,000 miles of paved streets costing more than \$13,000,000.

Assessment rolls increased \$75,537,000 during that time. Houston had built 15 modern hotels up to 1916. It now has more than 100 possessing 7,000 rooms and 300 multiple-room apartments.

The interurban railroad connecting Houston and Galveston had been built at a cost of \$5,000,000. It has since been replaced by a modern bus system.

During the 1907-1916 period, 14 churches were constructed. There were 34 new wholesale houses added and 56 factories were enlarged. Gas company storage capacity increased by 3,050,000 cubic feet, and 102 miles of mains were built. Rice Institute was started with the expenditure of \$1,250,000. Street railway improvements cost \$2,873,000. Seventy-seven important buildings were erected. The Binz building, the first skyscraper erected, was built before that period. The new structure did not include much of today's skyline south of Texas avenue.

Capital invested in factories in 1914 was \$25,443,000. That was before the first bale of cotton was shipped to a foreign port in 1919, thus it doesn't include \$100,000,000 worth of factories built since then. In 1914, factories employed 5,607 persons. The development in this line was greater than any other city in Texas, United States reports show.

During that time, Houston plotted 29 new residential subdivisions. Those were among the first, and now Houston has more than 500 of them. Some apartment houses were erected. Prior to then, Houstonians were single-family house dwellers. Apartment houses now run into the thousands.

The union station was built at a cost of \$5,000,000. Additions and improvements to railroad shops cost \$480,000. The postoffice, courthouse, city auditorium, and city hall annex cost \$1,663,100. A new city hall costing \$1,700,000 has just been completed.

The ship channel was completed. About \$3,000,000 worth of wharves were erected by 1916, and the New York-Houston service, which was the first one, was started. Today ships of all nations, coastwise and foreign, call at Houston. During 1938 total tonnage through the Port of Houston aggregated 26,981,874.8 tons.

History Linked With Cotton

A history of cotton in all of its details would be a history of Houston, of Texas, or of the entire South. Around the middle of the nineteenth century, Houston had cotton receipts of some 4,000 bales; with the crossing of the mark of the first third of the century Houston has upward of 2,000,000 bales.

It is said that a third of one-half of the people of Texas make their livelihood in some form of the cotton business. In Houston well over a third of those who do not live from oil subsist by reason of cotton. In normal years from 20 to 30 per cent of the cotton of the world is grown in Texas.

Not only has Houston always had a direct benefit of actually handling the cotton but indirectly the city benefits, for the inhabitants in her rich trade territory derive most of their support from cotton. As a farm product, cotton not only clothes the race, but it furnishes other products from food for both man and animal to gunpowder. Its ramifications in industry are too numerous to mention here.

Houston's convention facilities are comparable to those of much larger cities. Recently completed at a cost of \$2,000,000, the Sam Houston Coliseum and Music Hall is spacious enough to house a big-time circus, yet is flexible enough to accommodate smaller gatherings. Composed of two distinct auditoriums, largest of which is 370 feet long and 251 feet wide, the structure offers clear exposition space 9,000 feet larger than a square city block.

Total seating capacity of the structure is approximately 25,000. The structure is located a few blocks from the heart of Houston's business section.

Houston now has more than 300 churches, 86,000 family domiciles, 71,000 individual residences, and 15,000 individual apartments, 31 theatres, 11 public senior high schools, 13 junior high schools, 89 elementary institutions, two universities, 20 parochial schools, and two law schools.

Eighteen railroad lines serve the city. More than 600 establishments now operate in the industrial area, employing 22,000 persons whose yearly earnings aggregate \$28,475,000. The city's 750 jobbers and wholesalers employ more than 10,000 persons. The yearly payroll totals \$17,500,000.

In Texas, Houston ranks first in population, corporate area, school enrollment, dwelling units, building permits, automobile registrations, employed persons, manufactured products, retail sales, shipping facilities, utility connections and convention facilities.

FRUIT AND TRUCK GROWERS PROSPER

Fruit and truck growers in the Houston-Gulf coast area do well for practical purposes all varieties of standard field and garden truck crops thrive. Beans of all kinds, peas, green vegetables, turnips, beets, carrots, cabbage, onions, okra, watermelons, cantaloupes, cucumbers, tomatoes, radishes and lesser known vegetables grow to profusion.

Local and carlot demands for fresh vegetables take a considerable portion of the crops at a good price, and the coast country is the logical point for a great many canning plants which can be operated the year around if attention is given to planting schedules.

Principal money crop along the Gulf coast is the Magnolia fig. This fig is a prolific producer and the fruit makes up into a very delicious preserve at low cost. The future for this crop is excellent. The preserves are now well established on the market and since there is a real scarcity of the preserved or canned product, sales are assured.

Strawberries, dewberries and many other varieties offer a real opportunity for the scientific, intelligent growers. The Pasadena territory is one of the best known strawberry producing areas of the United States. Since the preserving of other fruits has proven so profitable it is only a matter of a short time until strawberry growers will begin preserving the berries and realizing on the sales. The old custom of selling only the berries fresh during the season and allowing the remainder of the crop to rot on the vines, is doomed to be relegated to the past as so many other wasteful practices have been. There is an excellent market waiting for every good product and strawberry preserves and other cooked varieties should prove as profitable as the sale of peach preserves, etc.

SOUTHERN CROPS NEARING BALANCE

With increasing production of grain and forage crops combined with cotton, Southern farmers are producing balanced rations that are economical and efficient for raising well-finished beef. Grains and roughages, including silage, hay and cottonseed hulls, furnish carbohydrates which are balanced in rations by the protein from cottonseed meal.

Patterning beef cattle on farms in East Texas, livestock leaders point out, offers an excellent market for feeds grown on farms. In addition, year-round income is provided through efficient use of labor over many months of the year, and soil fertility is restored by use of manure.

Stressing the importance of "growing" into beef cattle production, these leaders point out that elaborate equipment is not needed for successful lot-feeding of cattle. Practical, well-built pens and sheds, especially important where rainfall is so heavy, can be constructed at little cost and are good investment for feeders. (Ample trough space of two and one-half to three feet per steer for grain feeding prevents crowding, while separate troughs or bunkers are needed in feeding roughages that is not ground and mixed with the grain mixture. A separate trough is needed, also, for salt and oyster shell flour or ground limestone required unless legume hay is fed. An adequate supply of clean, fresh water completes the requirements for the feed lot.)

Full value is obtained from manure, and better feeding conditions result, if manure is removed from pens at frequent intervals and spread on cultivated land.

Preparation of feeds for use in their most efficient form has proved important in Experiment Station tests and the experience of practical feeders. Unless cattle are followed by pigs in the feed lot, it pays to grind all grains. Grinding of such roughages as grain sorghum fodder (bundles with heads) also is necessary. Where pigs follow cattle receiving unground grain the common practice is to have one pig for each two yearlings or two-year-olds and one for each three calves.

Along with proper equipment and preparation of feeds goes the handling cattle in the feed lot. Cattle that are given close attention, fed in quiet surroundings and with adequate space, and are fed at regular intervals obtain full value from their feeds. Most important for those who are feeding for the first time is the planning of operations in accordance with the supply of feed available. To fatten efficiently and economically, cattle must have plenty of grain and roughage, and valuable suggestions for planning feeding operations can be obtained by consulting successful, experienced feeders, county agents and vocational agriculture teachers.

Rations of proven value for finishing cattle will be discussed in the next article of this series.

FAT STOCK SHOW PRIZES INCREASED

With the premium budget increased by several hundred dollars, the 1940 Houston Fat Stock Show and Livestock Exposition will be greater in 1940 than in any previous year.

Show dates have been set from March 24 through March 31, as announced by W. O. Cox, manager of the Houston chamber of commerce department of agriculture and exposition secretary.

Premium increases will be made on virtually all fronts, Mr. Cox said.

Awards in the Hereford division will aggregate \$2,625, an increase over both 1938 and 1939. Short-horns will be awarded a total of \$1,150; Brahmans, \$1,500; Aberdeen-Angus, \$1,000; Jerseys, \$1,325; Guernseys, \$357; Holsteins, \$340; swine, \$1,000, in addition to special awards; sheep, \$555.

We need fire protection to provide forest cover, to prevent soil erosion, and to regulate stream flow.

Detailed Description of Port Houston

A GREAT inland port, now third in the nation, Houston is located 50 miles from the Gulf of Mexico, at a point where the great railway and highway lines radiate from a common center to all parts of the great southwest. The exact location is latitude 29° 45' north and longitude 95° 17' west, which, of course, means more to the mariner than the landman.

The Houston ship channel, extending from the Gulf to the city of Houston, uses the Galveston jetty entrance to Bolivar Roads, thence across Galveston Bay and up the San Jacinto river and Buffalo Bayou to the public terminals at the turning basin.

Present Depth And Width. The 1937-39 dredging program has resulted in deepening the channel from Bolivar Roads to Nonsworthy, a distance of 43 miles, to depth of 36-37 feet and width of 400 feet on the bottom across Galveston Bay, 300 feet to Baytown, and 250 feet to Nonsworthy.

Contract to continue this depth another four miles to Manchester, with a minimum width of 200 feet on bottom, will be awarded in a short time.

Remaining section to basin will probably be completed in 1940. There is available depth of 32 feet over incomplete section of channel, and 34 feet over finished section.

The war department has reviewed the ship channel project and recommended widths of 400 feet from Bolivar Roads, Baytown, 350 feet to Shell petroleum refinery, 300 feet to Clinton and 250 feet thence to basin. Two auxiliary turning basins to be constructed at Nonsworthy and lower end of Brady island. This project is now before congress in pending river and harbor bill.

The war department has also recommended improvement of channel 10 feet deep and 60 feet wide around Brady island at Harrisburg.

Port Facilities

The public terminals, owned by the city and navigation district, are located at and near the head of deep sea navigation—the turning basin being within the city limits and four and one-half miles from the court house.

Private and industrial terminals and piers are located all along the channel from basin to the bay, a distance of 25 miles. This inland channel is thus becoming a vast industrial and commercial district. These terminals provide berthing space for a total of 61 vessels, 18 at public wharves and 43 at private plants.

Industrial Development. The Houston ship channel industrial area extends from the center of the city to Galveston Bay, a distance of over 20 miles, affording locations on deep water for those plants having a need for ocean transportation, and on lighted channels for barge service connecting with the inland coast.

Some 50 or more plants have been established on the waterside, many covering several hundred acres, with their own shipyards, terminals, handling their products direct to and from ship. Houston, as the "Oil Capital of the World," and center of the huge industry, has naturally developed very large refineries on the channel, and with its allied industries, pipe, supply and equipment distribution plants, the oil industry accounts for a large percentage of the traffic and capital investment on the waterway.

Other industries, such as cotton warehouses and terminals, portland cement mills, crabs and paper pulp mills, chemical and fertilizer works, oyster shell grinding and lime plants, flour mill and export grain elevators, steel warehouses and pipe-yards, warehouses, ship yards and general cargo terminals, also find desirable locations on deep water.

Raw materials for many of the basic industries such as salt, sulphur, gypsum, fuller's earth, carbon black, iron ore, petroleum coke, oil of various specific gravities, natural gas, cotton and cottonseed products, grain, rice and livestock, are found in abundance in close proximity to deep water terminals. A dependable supply of skilled and common labor is available at reasonable wages.

The climate is mild, with short winters marked by only an occasional freeze, and a summer with only a few days above 90 degrees, cool Gulf breezes prevailing most of the time. The annual rainfall is about 48 inches, fairly well distributed, and no "rainy seasons." Outdoor work can be carried on at all times.

While the industrial development along the waterway has been remarkable for the few years the channel has been open for navigation, with over \$200,000,000 invested in capital improvements, employing over 12,000 men and an average daily payroll of over \$60,000, there is still ample room for further development, as only about 40 miles of channel frontage is in use, with 60 miles more ready for industrial development. These waterfront sites, privately owned, are for sale at varying prices, depending on location, depth of tract, highway and railway facilities, etc.

The waterfront industrial area is served by the Public Belt railroad, owned by the navigation district and operated by the Port Terminal Railroad Association as a neutral switching organization for the benefit of all trunk lines centering at Houston. This belt line extends down each side of the channel for 10 and 12 miles, serving industrial plants and terminals. Spur tracks connect each plant with the public belt main line.

Five trunk line systems serve the port, reaching out over a great hinterland area whose shortest haul is to the port of Houston, thus affording the lowest possible freight rates.

These systems are the Southern Pacific, Missouri Pacific, Santa Fe, Missouri-Kansas-Texas, and the Burlington-Rock Island, each sys-

tem having several subsidiaries, or branch lines, that serve all parts of the southwest.

Highway transportation is available in all directions with many well established truck lines affording over-night delivery to central Texas cities.

Air passenger and mail service centers at Houston, reaching out to all inland points.

Natural gas and oil pipe lines from the major Texas and mid-continent fields converge here at shipside and industrial terminals. Cheap fuel is thus assured for many years to come. High tension electric power lines extend down each side of the waterway.

Public terminals at the head of deep sea navigation have been provided by the city of Houston and navigation district, where the facilities are offered to all users on equal terms. There has been no effort made by the port authority to control or restrict private development, but rather to encourage it, with sufficient public terminals to insure fair charges and prevent any monopoly.

These public facilities are described as follows:

Description of Public Wharves. All the terminal facilities around the turning basin are under control of the port commission and consist of wharves 1 to 5, 7 and 8, 10 to 15 comprising 7,634 lineal feet with berthing space for 18 vessels.

Wharf No. 1—This wharf is 819 feet in length, constructed of creosoted pile with wooden deck served by a concrete warehouse 100 by 425 feet in size, together with additional galvanized iron sheds containing a total of 95,336 square feet. This wharf is equipped with cottonseed cake grinding equipment on the east end. A pipe line for handling crude molasses is also provided on this wharf.

Wharf No. 2—522 feet long, concrete construction, with transit shed 105 by 483 feet in size. This wharf is used for miscellaneous cargo. Shed area 53,500 square feet.

Wharf No. 3—799 feet long, concrete construction, for open storage and railroad connection. Two tracks reach the ship side. On the east end of this wharf there is a galvanized iron transit shed with approximately 15,140 square feet of storage area. A steel iron clad transit shed has been constructed at west end of this wharf 400 feet long and 95 feet wide with an area of 36,521 square feet. Oil pipe lines for loading and discharging vessels and for bunkers are located on this wharf.

Wharf No. 4—777 feet long, concrete construction, with a concrete transit shed 600 by 100 feet in size. No railroad tracks reach the ship side, but behind the shed are five tracks spanned by a 20-ton electric traveling crane and two trucking bridges connecting the transit shed with a concrete warehouse 600 by 400 feet in size, which is served by a railroad.

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of the waterway from the turning basin to Morgan's Point, a distance of 25 miles, is admirably adapted to this industrial development and is being utilized at a very rapid rate, as over 50 plants have been constructed in the last few years, representing at the present time a capital investment of over \$200,000,000 and with a daily payroll of about \$60,000.

In addition to the advantage of water transportation, Houston is one of the greatest rail centers of the south, with 18 railroads radiating from the city.

Ample electric energy is available on each side of the channel at very reasonable rates. The Houston Lighting and Power Co. has a total capacity of 178,000 k.w. Another 25,000 k.w. unit is being installed.

The entire city and port district are supplied with natural gas from local fields and from several different fields in south Texas and from northeast Texas and Louisiana.

Fuel oil is provided through pipe lines from all the major fields of Texas, with approximately 40,000,000 barrels storage available in the port area.

NEW LABORATORY AIDS CATTLEMEN

South Texas' cattle industry has been given a big boost with the opening of an animal disease and parasite laboratory by the state and federal governments at the experiment station in Angleton.

Opening the laboratory was the culmination of more than two years' campaigning by the farmers and businessmen of the Gulf coast counties.

A group of interested citizens met at the Houston chamber of commerce and laid plans to seek the necessary appropriation for a building, equipment and personnel. This meeting, of course, was the direct instigation of the move and it was never allowed to flag, once set in motion.

Through its research facilities the laboratory hopes to bring animal diseases and parasites within control and to minimize their effect on the cattle industry.

HUNDREDS VISIT BIRD SANCTUARY

Pronounced by the Audubon Society the greatest natural bird sanctuary in the world, Vingt et Un Islands, 20 miles east of Morgan's Point in Galveston Bay, draw many hundreds of nature lovers. More species and rarer birds find shelter on these islands than are to be found in any other sanctuary in the United States.

Here are thousands of feathered residents of many hues—ibis, egrets, herons, roseate spoonbills, pelicans, swans and many others.

Vingt et Un Islands—Twenty-one Islands—have been made a permanent sanctuary and no one is permitted to land without a permit and no guns are allowed. There is yet another sanctuary on Bird Island in Galveston Bay, near San Luis Pass.

HARRIS COUNTY IS WELL PAVED

County Auditor Harry L. Washburn's records show that Harris county has more than 2,000 miles of paved roads excluding those in the city limits, with a valuation of \$8,876,674. If current efforts to induce a spirited state highway program here are successful, the mileage and the valuation will both climb.

Construction of a 60 to 75 mile highway loop within 12 miles of the city giving thorough motor traffic room to avoid congested city streets, is the principal item on the county-state program.

The county auditor's books give the county's highway system a total valuation of \$16,104,955.70. This sum includes \$5,394,330.70 for unimproved rights-of-way and \$1,702,854 for bridges. Precinct mileage and valuation figures on the roads run: Precinct 1, 548.03 miles at \$2,897,220; precinct 2, 456.51 miles at \$2,798,102; precinct 3, 462.15 miles at \$1,683,837; precinct 4, 603.46 miles at \$1,497,515, making a total of 2,070.15 miles at \$8,876,515.

The major type of surfacing, mileage and valuation will run: shell, 544.73 miles at \$973,599; shell surface treated, 177.35 miles at \$1,288,491; bituminous concrete, 34.03 miles at \$1,254,977; concrete, 61.18 miles at \$1,976,831; macadam with gravel or crushed rock base, 59.13 miles at \$1,050,461; macadam with shell base, 44.93 miles at \$832,521; gravel, surface treated, 18.26 miles at \$124,511 and gravel, 165.32 miles at \$417,020.

Three factors will contribute to the impetus given county road building this year. They are: the state highway commission has exhibited interest in the proposed master highway plan and the Houston loop plan. Allocations from the state bond adjustment board are due to be made on the La Porte road and highway 246. WPA has informed the county commissioners that a \$500,000 farm to market road balance must be expended next year.

The 1940 road program was prepared by county commissioners Bob Turrentine, Tom Decker, Tom Graham and William Tautenharn.

LAND CHEAPER THAN CLOTH IN 'GOOD OLD DAYS'

Early Houstonians really lived in the "good old days" because they could buy cigars at 25 cents a dozen and whiskey at 20 cents a pint. But when the price they had to pay for the necessities of living are considered, the days weren't so good after all.

Tea was \$3.50 per pound and \$1 per yard for cheap cloth, probably equal to our present lowest grade of domestic. Flour was only \$12 per barrel. Land, however, was the cheapest thing of all, being sold at an average price of 12½ cents an acre.