Climatography of the United States

Number 40–41

Climatic Guide

Houston–Galveston, Texas Area

U. S. Department of Commerce
Weather Bureau

U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary

WEATHER BUREAU
F. W. REICHELDERFER, Chief

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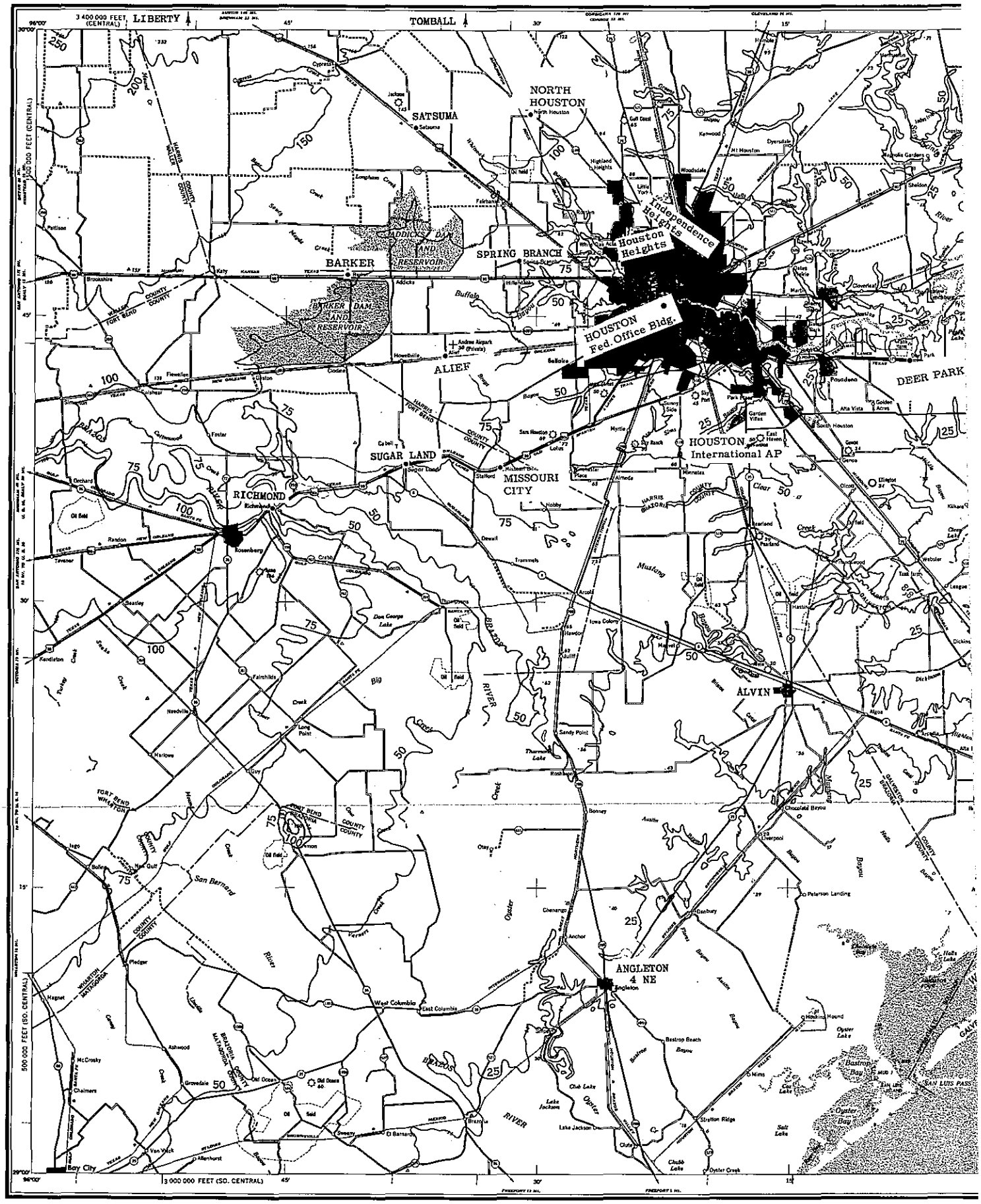
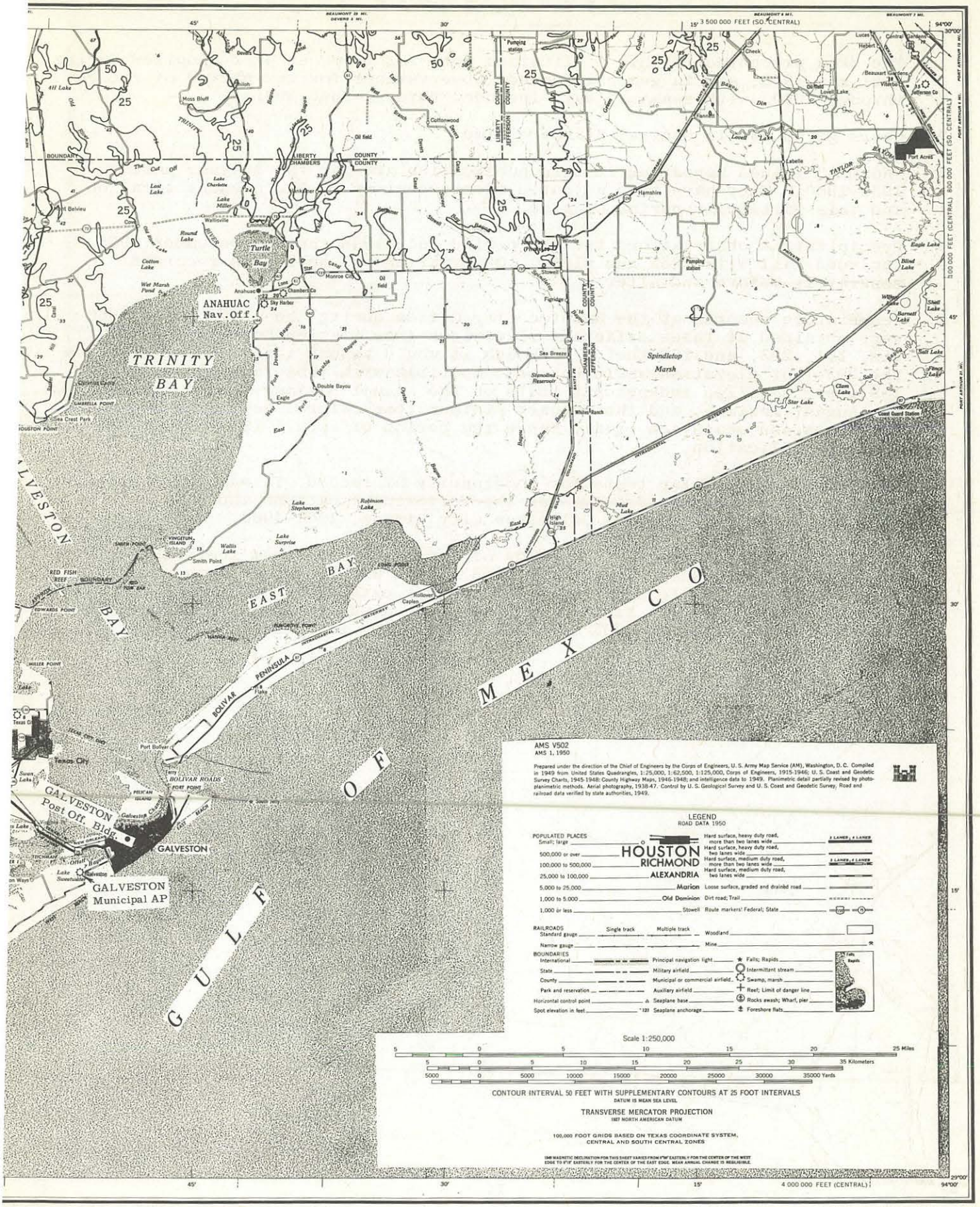

LIBERTY
TOMBALL
NORTH HOUSTON
SATSUMA
Independence Heights
Houston Heights
BARKER
SPRING BRANCH
ADDICKS DAM AND RESERVOIR
BARKER DAM AND RESERVOIR
HOUSTON Fed. Office Bldg.
ALIEF
DEER PARK
HOUSTON International AP
SUGAR LAND
MISSOURI CITY
RICHMOND
ALVIN
ANGLETON 4 NE
3 400 000 FEET (CENTRAL)
3 000 000 FEET (SO. CENTRAL)
500 000 FEET (SO. CENTRAL)
BRAZOS RIVER
Bay City


AMS V502
AMS 1, 1950
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LEGEND
ROAD DATA 1950
POPULATED PLACES
Small; large
500,000 or over HOUSTON
100,000 to 500,000 RICHMOND
25,000 to 100,000 ALEXANDRIA
5,000 to 25,000 Marion
1,000 to 5,000 Old Dominion
1,000 or less Stowell
Hard surface, heavy duty road, more than two lanes wide
Hard surface, heavy duty road, two lanes wide
Hard surface, medium duty road, more than two lanes wide
Hard surface, medium duty road, two lanes wide
Loose surface, graded and drained road
Dirt road; Trail
Route markers: Federal; State
RAILROADS
Standard gauge
Single track
Multiple track
Narrow gauge
Woodland
Mine
BOUNDARIES
International
State
County
Park and reservation
Horizontal control point
Spot elevation in feet
Principal navigation light
Military airfield
Municipal or commercial airfield
Auxiliary airfield
Seaplane base
Seaplane anchorage
Falls; Rapids
Intermittent stream
Swamp, marsh
Reef; Limit of danger line
Rocks awash; Wharf, pier
Foreshore flats
Scale 1:250,000
Miles
Kilometers
Yards
CONTOUR INTERVAL 50 FEET WITH SUPPLEMENTARY CONTOURS AT 25 FOOT INTERVALS
DATUM IS MEAN SEA LEVEL
TRANSVERSE MERCATOR PROJECTION
1927 NORTH AMERICAN DATUM
100,000 FOOT GRIDS BASED ON TEXAS COORDINATE SYSTEM, CENTRAL AND SOUTH CENTRAL ZONES
1948 MAGNETIC DECLINATION FOR THIS SHEET VARIES FROM 5°00' EASTERLY FOR THE CENTER OF THE WEST EDGE TO 5°15' EASTERLY FOR THE CENTER OF THE EAST EDGE. MEAN ANNUAL CHANGE IS NEGLIGIBLE.
TRINITY BAY
EAST BAY
GALVESTON BAY
GULF OF MEXICO
BOLIVAR PENINSULA
ANAHUAC Nav. Off.
GALVESTON Post Off. Bldg.
GALVESTON Municipal AP
HOUSTON
RICHMOND
ALEXANDRIA
Port Arthur
Port Acres
Spindletop Marsh
Texas City
Port Bolivar
Bolivar Roads
Coast Guard Station
3 500 000 FEET (SO. CENTRAL)
800 000 FEET (SO. CENTRAL)
100 000 FEET (CENTRAL)
4 000 000 FEET (CENTRAL)
ARMY MAP SERVICE, CORPS OF ENGINEERS, 4-52, 91261

GENERAL NOTES

1. The data presented in this publication were for the most part compiled during 1961 and 1962, and in general include observations for the period of record through 1960; with seasonal data included through June 1961.

2. Hours given are in Central Standard Time.

3. "Normal" values appearing in this publication are for the 30-year period 1931-1960. They have been adjusted when necessary to the present location and this particular period of time.

4. Precipitation observations for the period July 1948 through December 1955 included hail with snow and sleet. Observations of hail were recorded separately before and after.

5. Temperature records at the Houston City Office during the period 1909-1960 were obtained at three different elevations (see Station Location, page VI), viz, 111, 293, and 158 feet. Although it would appear that the records from the 293-foot elevation would not be compatible with those at 111 feet and 158 feet, detailed independent tests on the annual maximum, the annual minimum, the August maximum, and the January minimum temperatures reveal that the variances and means are equal, hence the period of record 1910-1960 is combined in this publication.

   As a result of similar tests for homogeneity of record, it was found possible to combine temperature records for the following locations and dates: Houston Airport, 1933-1960; Galveston City Office, 1901-1960.

   For climatological purposes, records of maximum and minimum temperatures and rainfall at Harrisburg, Texas have been listed with those from the Houston Airport Office. While an airport station was established in July 1930, the airport record prior to March 1, 1932 was not used, and that portion of the record from November 1, 1923 through February 29, 1932 is from the Harrisburg location.

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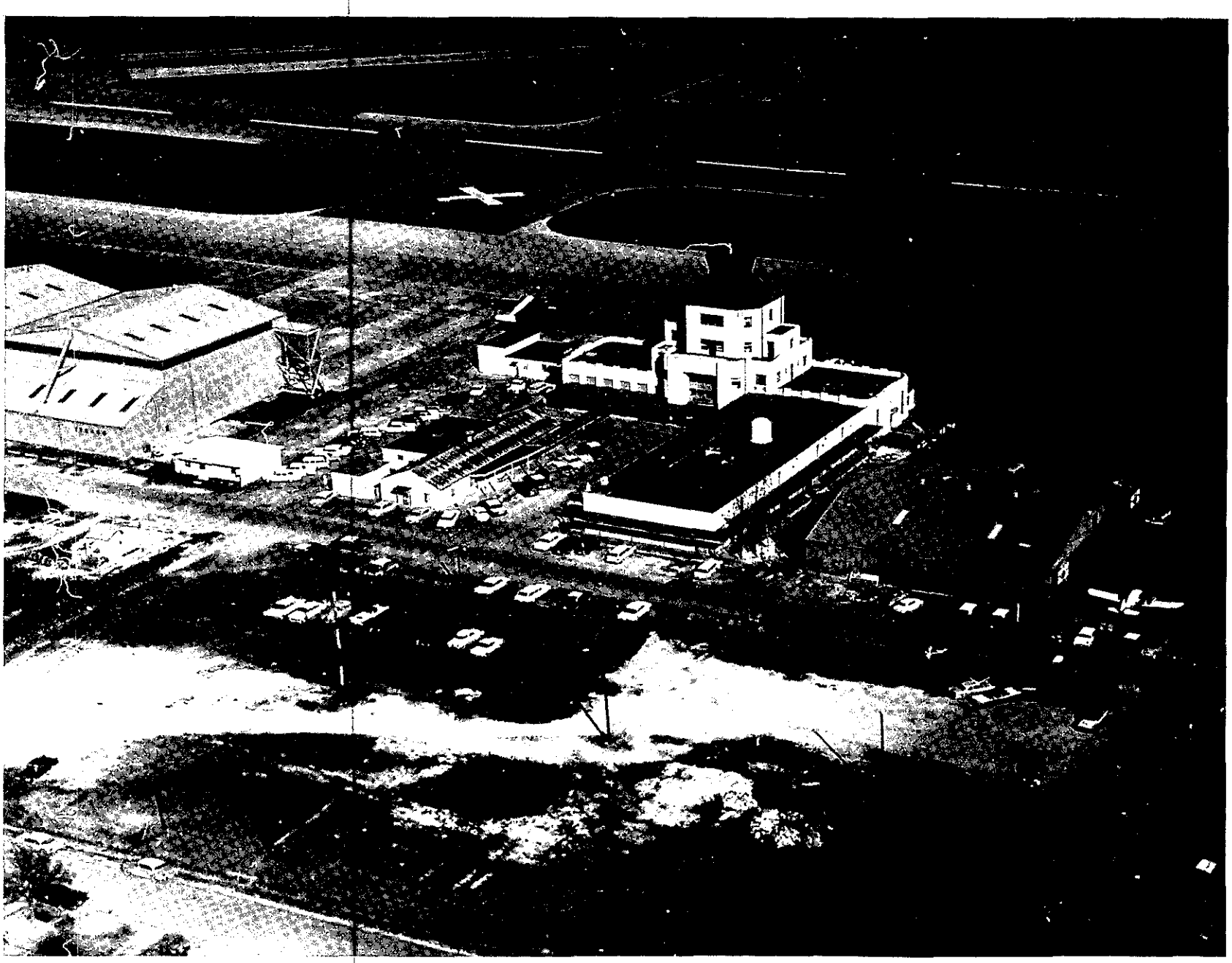
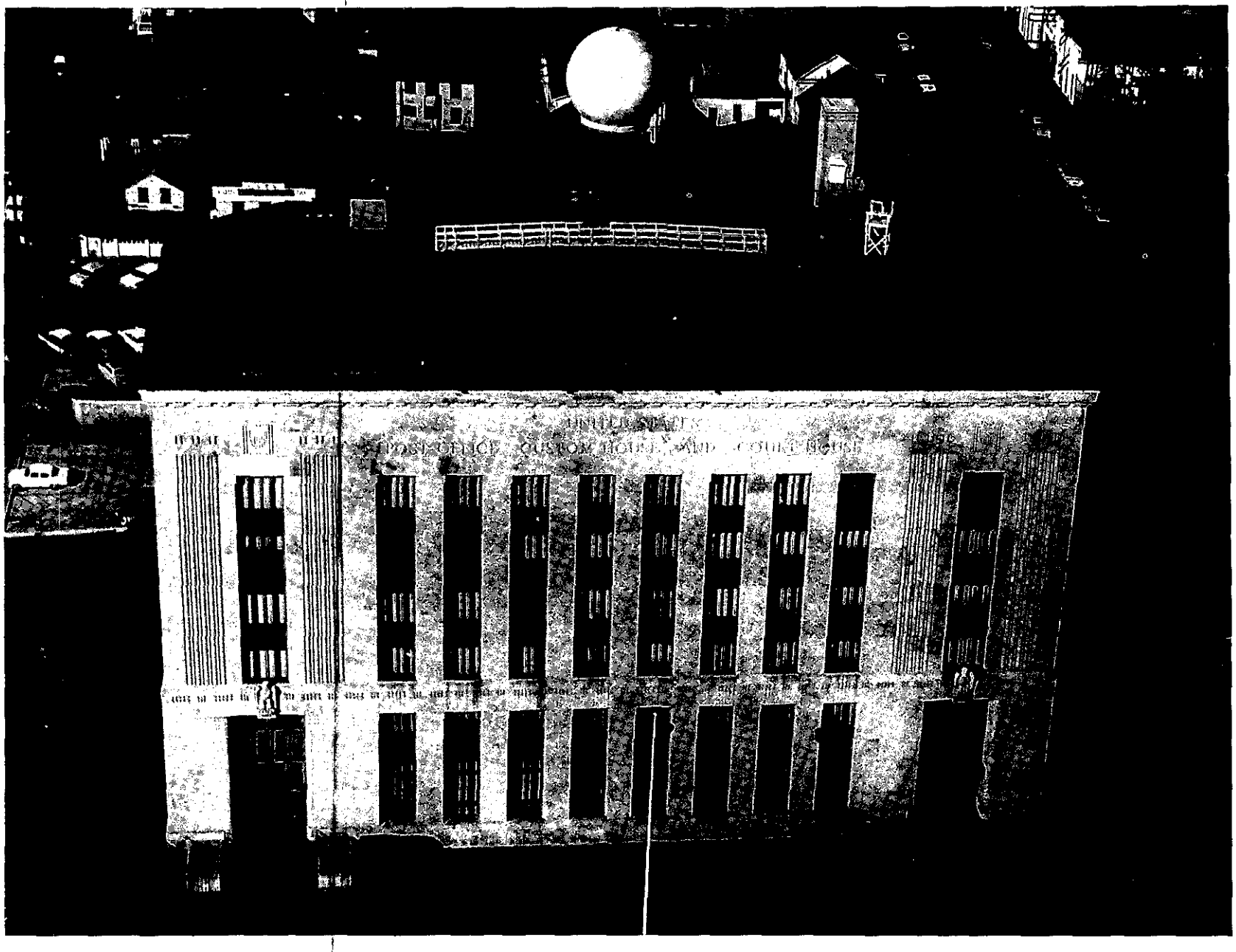
STATION LOCATION

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude (N)	Longitude (W)	Elevation above (in feet): Sea level: Ground	Sea level: Actual barometer elevation (H_z)	Ground: Wind instruments	Ground: Extreme thermometers	Ground: Psychrometer	Ground: Telepsychrometer	Ground: Tipping bucket rain gage	Ground: Weighing rain gage	Ground: 8" rain gage	Ground: Hygrothermometer		Remarks
Houston, Federal Office Building (City Office)																	
	7/14/81	9/15/09															Location of cotton station not available.
4th Floor, Stewart Bldg., Preston & Fannin Streets	9/16/09	12/13/09		25°45.7'	95°21.6'	51	94	122	111	111		104		104			Terrain favorable for fog development.
8th Floor, Stewart Bldg., Preston & Fannin Streets	12/14/09	2/28/26		29°45.7'	95°21.6'	51	138	122	111	111		104		104			
19th Floor, Shell Bldg., Texas & Fannin Streets	3/1/26	12/22/32	1/8 mi SW	29°45.6'	95°21.7	52	257	314	293	293		287		287			Improved instrumental exposure.
22nd Floor, Shell Bldg., Texas & Fannin Streets	12/23/32	6/21/35		29°45.6'	95°21.7'	52	297	314	293	293		287		287			
14th Floor, Shell Bldg., Texas & Fannin Streets	6/22/35	8/25/38		29°45.6'	95°21.7'	52	202	314	293	293		287		287			
10th Floor, Federal Bldg. Franklin & Fannin Sts.	8/26/38	Present	1/4 mi NE	29°45.8'	95°21.6'	41	170	190	158	158		152		149			Moved to obtain quarters in Federal Building.
Houston, International Airport																	
Harrisburg, Texas	11/1/23	7/16/30		29° 42'	95° 17'	38			4					4			Suburb of the City of Houston.
Houston Municipal Airport	7/16/30	8/1/40	3 mi SSW	29° 39'	95° 17'	50	62	37	30	30				25			
Houston International Airport	8/1/40	Present	1000 ft S	29° 39'	95° 17'	50	85	87	28	28				21			More suitable quarters. Known as Houston Municipal Airport until 4/15/55.
							51	20	23	23				22	4		Moved from 3d to ground floor of same building and hygrothermometer installed 7/29/60.
Galveston, Post Office Building (City Office)																	
67-69 Strand	4/19/71	8/31/74		29° 18'	94° 48'	6	41		37					51			
Strand & 23rd	9/1/74	7/29/78	1 3/4 mi WSW	29° 18'	94° 48'	6	40		37					51			
Bath Street & Strand Custom House	7/30/78	5/8/82	900' WSW	29° 18'	94° 48'	6	39		37					51			
25th & Strand: Gulf Colo. & Santa Fe R. R. Building	5/9/82	3/14/83	100' E	29° 18'	94° 48'	6	54		37					94			
21st & Mechanic Custom House	3/15/83	4/3/88	1800' E	29° 18'	94° 48'	6	38		37					51			
21st & Mechanic Cotton Exchange Bldg.	4/4/88	6/24/98		29° 18'	94° 48'	6	42		84					79			
2223 Market Street Levy Building	6/25/98	11/27/00	900' S	29° 18'	94° 48'	6	54	88	84					72			
Tremont & Post Office Sts., Trust Building	11/27/00	6/24/46	1400' S	29° 18'	94° 48'	6	69	112	106			98		98			Wind instruments elevation to 114 ft. 8/16/12. Poor wind equipment exposure from 10/24 to 6/25/46 with a NE wind due to bldg. constructed 170' ft. to the NE and 75 ft. higher than the anemometer.
601 Rosenberg, U.S. Post Office & Court House	6/25/46	Present	900' SW	29° 18'	94° 48'	7	69	143 137	122			120		120			Mercurial barometer and barograph to P.O. Bldg. on 7/26/46. Thermometers, sunshine recorder, rain gages and wind equipment not moved until 9/1/46. Poor wind equipment exposure from 6/25/46 to 3/8/50 with a wind NW thru NE, and SE thru SW, due to two large sloping skylights only 4 1/2 ft. below anemometers. Wind instruments elevation changed to 143 ft. 3/8/50. Barometer elevation 59 feet prior to 3/26/54. Wind instruments moved 8/1/60.
Galveston, Municipal Airport																	
Admin. Bldg., Galveston Municipal Airport	1/15/37	3/6/39		29° 16'	94° 52'	6	11	32	5	5							
CAA Room, Adm. Bldg., Galveston Mun. Airport	3/6/39	6/18/45		29° 16'	94° 52'	5	9	35	5	5				4			Instruments on the ground and fairly good exposure.
Adm. Bldg., Galveston Municipal Airport	6/18/45	1/3/51		29° 16'	94° 52'	5	21	46	5	5				4			Moved to 2nd floor of Adm. Bldg. 6/18/45 to have more space.
2nd Floor, New Admin. Bldg., Galveston Municipal Airport	1/3/51	Present	1/4 mi N	29° 16'	94° 52'	5	25	23	27	27				21			Station moved into New Adm. Bldg. in order to have better quarters. Wind instruments at 47 feet prior to 12/18/58.

Houston, Federal Office Building, U.S. Weather Bureau Office site. Note rooftop exposure of weather instruments.



Houston, International Airport (Old Terminal Building) U.S. Weather Bureau Airport Station site.



Galveston, U.S. Post Office Building, U.S. Weather Bureau City Office site. Office quarters on 5th floor (extreme left hand side of building). Looking toward building, Gulf is on left, and Galveston Bay on right. WSR-57 Radome, instrument shelter, rain gage platform, and sunshine transmitter. The wind instruments and tipping bucket rain gage are on the City Hall two blocks SSE.

Scholes Field (formerly Galveston Municipal Airport), location of U.S. Weather Bureau Airport Station site. Instrument shelter on 2nd floor observation deck adjacent to Station office. Most of weather instruments located in middle of field and remoted to office. WSR-1 Radome on roof.

GENERAL SUMMARY

Houston and Surrounding Mainland Area

ECONOMIC ASPECTS:

Houston ranks as the largest city in the South and the seventh largest city in the United States. According to the 1960 census, the population of the city proper was 938,219 and the population of the metropolitan area, which embraces all of Harris County, was 1,249,258.

The city is located in the flat Coastal Plains about 50 miles from the Gulf of Mexico and some 25 miles from Galveston Bay. A 50-mile long deep-draft (36-foot) ship channel extends from a turning basin in the heart of the industrial area to the open waters of the Gulf of Mexico. The channel is the hub of a vast industrial complex of oil refineries, chemical plants, and other heavy industries. The Port of Houston ranks as the second largest in the United States.

Houston's growth during the last 25 years has been phenomenal--due to several factors. These include the development of the ship channel; a climate which permits outdoor operations throughout the year; location in the heart of an area affording relatively cheap natural fuels (oil and gas); a surrounding area containing numerous raw materials such as oil, sulphur, petro-chemical, agricultural, livestock, and lumber products; and an abundant underground water supply.

Air traffic is an increasingly important factor in the city's progress. It is centered at Houston International Airport, which handles both domestic and international flights. There are also numerous smaller airports serving the area. Houston ranks third in the nation in the number of executive type aircraft flights. Under construction is Jetro Airport, which will be one of the largest in the country, and designed to accommodate the ever-increasing needs of jet flying.

Among the assets of the city are several universities and colleges. The largest of these are: Rice University, the University of Houston, University of St. Thomas, Texas Southern University, South Texas College, and Sacred Heart Dominican College. The Texas Medical Center is a 100-million-dollar complex of institutions for training, treatment, and research. Some of the largest units, in addition to the hospitals, are the Baylor University College of Medicine, University of Texas Dental Branch, the University of Texas Post-Graduate School of Medicine, and the M. D. Anderson Hospital for Cancer Research.

The city has numerous parks and playgrounds, and multiple facilities for outdoor recreations. The relatively mild climate is ideal for hunting, golfing, boating, and swimming.

CLIMATE:

The climate of the area is predominantly maritime with relatively high humidities. The daily range in temperatures is moderate compared to a continental type of climate. During the colder part of the year, however, numerous outbreaks of polar and, to a lesser extent, arctic air masses reach the Gulf Coast, causing sharp drops in temperature. The long trajectories of these air masses, together with the warming effects of the Gulf air, modify all but the most severe of these outbreaks. Rainfall is abundant during the normal year. As a result of these factors, the growing season is long, averaging over 300 days per year. Some types of vegetation continue throughout the year. Agriculture, therefore, is an important sector of the economy, the principal crops being cotton, corn, rice, forage crops, vegetables, and fruits. Poultry raising, dairying, and livestock raising are also of great importance. Harris County has the largest beef cattle population in the State.

TEMPERATURE: (Refer to Tables 1-6, 9-12, 27, 29, 31 and 33; Graphs A, B, and E)

The average annual temperature is 70°. The seasonal averages are winter, 56°; spring, 69°; summer, 83°; and fall, 71°. The most uncomfortable portion of the year is the period from mid-June to mid-September, when maxima above 90° are frequent and occasional maxima above 100° occur. As a general rule, the high temperatures reached during the summer afternoons and early evenings drop fairly rapidly after sundown under the effects of the nocturnal sea-breeze which reaches far enough inland to have a modifying effect. As a result, heat waves are seldom experienced, despite the frequent extended periods of high daytime temperatures. The least pleasant conditions generally arise when light southwesterly winds persist over the area for any extended period of time. Cold spells are the most severe from about mid-December to early March. They occur with greatest frequency in January and February. Favorable conditions for severe cold weather are the movements of southwestern "lows" across southern Texas, or the rapid development and eastward movement of "lows" over the northwestern Gulf of Mexico, followed by the invasion of cold air masses from the northwest. In most cases, freezing temperatures last for only a few hours, and are confined to the early morning; however, there have been some extended periods of freezing temperatures lasting several days.

PRECIPITATION: (Refer to Tables 13-17, 19, 29, 30, 31 and 33; Graphs C and D)

The normal amount of precipitation, which occurs on an average of 106 days per year, is 45.26 inches, but wide variations occur from year to year. The greatest annual amount of record was 72.86 inches in 1900 and the least was 17.66 inches in 1917, the latter occurring during the most severe drought of record in the State. Other than this extremely low annual measurement, there is no other year of record with an amount less than 27.00 inches. There is no seasonal bias in precipitation amounts, the averages by seasons being as follows: winter, 11.03 inches; spring, 10.25 inches; summer, 12.53 inches; and fall, 11.45 inches. Since much of the precipitation is of the convective type and there is an abundant supply of moisture, excessive rains of short duration are rather frequent, particularly during the period mid-April to early October when afternoon and evening thundershowers are most general. However, excessive amounts of rain also occur in connection with the passage of squall lines and fronts through the area during other portions of the year. The most persistent rains are generally associated with warm fronts and stationary fronts during the colder seasons and with tropical lows during the summer and early fall.

EVAPORATION:

Average annual evaporation in the area ranges from 70 to 75 inches from a 4-foot, Class A evaporation pan, equivalent to 52 to 54 inches from an open lake surface.

RELATIVE HUMIDITY: (Refer to Tables 22 and 33)

Prevailing southeasterly winds bring an abundant supply of moisture to the Houston area from the Gulf of Mexico and Galveston Bay. This results in relatively high humidities throughout the year with remarkable conformity in both the averages for the individual months and the diurnal changes. The annual average is 76% and the seasonal

averages are: winter, 77%; spring, 75%; summer, 76%; and fall, 75%. Because of these high humidities and the comparatively high temperatures from late spring to early fall, air-conditioning is of major importance.

SUNSHINE, CLOUDINESS, AND FOG:
(Refer to Tables 26, 29-30 and 33)

Approximately 59% of the possible amount of sunshine is received during the year. Seasonal averages are: winter, 46%; spring, 56%; summer, 69%; and fall, 63%.

The average number of clear days per year is 95; partly cloudy days, 123; and cloudy days, 147.

Fog occurs frequently during the period October 15 to May 1, with ground fog the most common type during the late fall and early spring, and advection fog the most common during the winter. Heavy fogs (surface visibility 1/4 mile or less) occur on an average of 40 days per year; these are usually confined to the late night and early morning hours.

THUNDERSTORMS, WIND AND HAILSTORMS, TORNADOES: (see later section on Hurricanes)
(Refer to Tables 20, 21, 29-30; Graph G)

Thunderstorms occur frequently during the warmer months of the year, April--September, when convective activity is at a maximum. The average number of days with thunderstorms for this 6-month period is 43. The great majority occur during the afternoon and early evening hours. During other months thunderstorms occur mainly as a result of squall lines and fronts moving through the area. Strong winds are experienced occasionally in connection with these thunderstorms but, as a rule, wind damage is rather spotted and of no major significance. Two major straight-line windstorms have been recorded, that of May 24, 1919, when damage in the upper coastal region amounted to over $1 million, and March 30, 1926, when damage in excess of $2 million was reported. Hail occurs at times, but there has never been a major hailstorm in the area. Tornadoes have struck in the area, but the overall damage from this type of storm has been rather light. The normal dynamic structure of the atmosphere in the region favors the formation of only small funnels that touch ground briefly with very short trajectories.

SNOW, SLEET, GLAZE:
(Refer to Tables 18, 27, and 29)

Measurable amounts of snow fall infrequently, averaging about once in six years. Sleet occurs more often, but in most cases is very light. During the period 1909-1960, only four severe ice storms occurred, resulting from a combination of snow, sleet, and freezing rain. These were the storms of January 2, 1919, December 19-21, 1924, January 22, 1940, and January 29--February 3, 1951. These storms caused severe damage to plumbing, vegetation, car radiators, and utility lines, and disrupted traffic. The storm of 1924 was probably the worst of record from an economic standpoint as, in addition to the types of damage enumerated above, some 80,000 head of cattle were killed in the Gulf Coast area. The storm of 1951 was noteworthy in that the longest period of freezing temperatures of record, 123 consecutive hours, occurred.

LOCAL FLOODING:

Because of the flat nature of the terrain, excessive rains on occasion cause flooding of underpasses and low-lying parts of the city for brief periods of time. Bayous in the area also flood at times. Two major floods of this nature of recent record are those of May 31, 1929, and December 6-8, 1935. In both these cases, excessive rains over the headwaters of Buffalo and White Oak Bayous, particularly in the Fairbanks-Satsuma area, caused large volumes of water to move down these bayous to their confluence in the heart of the city from whence Buffalo Bayou continues to Galveston Bay. Property damage from the 1929 flood amounted to approximately $1,000,000 and damage in the 1935 flood, which inundated over 100 city blocks, caused damage of over $2,500,000. Since the 1935 flood, protective dams have been built above the city in the Addicks-Barker section, greatly reducing the possibility of major flooding from these streams. Likewise, flood protection work is proceeding constantly along other bayous to eliminate flood-producing conditions.

Galveston Island and Adjacent Shoreline Areas

ECONOMIC ASPECTS:

Galveston Island is a long, narrow island approximately 29 miles in length and about 2 3/4 miles across at the widest point. The island is oriented northeast-southwest and separates Galveston Bay from the Gulf of Mexico. The City of Galveston occupies approximately the eastern third of the island and is the county seat of Galveston County. The lower two-thirds of Galveston Island is not heavily populated; however, some permanent residences as well as numerous beach homes and fishing camps are located throughout the area. According to the 1960 census, the population of Galveston was 67,175, and the population of Galveston County, 140,364.

In addition to Galveston Island, Galveston County includes a section of the mainland, Bolivar Peninsula, lower Galveston Bay, and East, and West Bays. Galveston County has the longest tidewater line of any Texas County. The greatest concentration of population and industry is in the Galveston--Texas City--LaMarque triangle.

Chambers County fronts on the north and eastern edge of Galveston Bay and on the northern edge of East Bay. Elevations in Galveston and Chambers Counties range from sea level to approximately 50 feet, with most of the area in the lower half of this range.

Galveston is primarily a port and tourist resort center; however, in addition to commerce and recreation, other important interests are industrial, mineral, agricultural, livestock, and fishing. Industries within Galveston and the adjoining mainland include petroleum refining, petrochemicals, flour milling, brewing, tea processing, meat packing, tin smelting, and metal products. Minerals include oil, gas, sulphur, salt, shell, sand and gravel. Farm products are principally rice and cattle.

The port of Galveston is the oldest deepwater port west of New Orleans on the Gulf of Mexico and handles a large volume of domestic and foreign commerce. Principal exports are cotton, sulphur, wheat, sugar, and petroleum products. The Galveston ship channel is approximately 4 miles long, 1200 feet wide, and 35 feet deep. It is navigable throughout the year and is only 10 miles, or about 40 minutes, from the open Gulf of Mexico.

The many miles of beaches, the choice of either open or protected waters, and the mild climate, make Galveston a prime resort center for year-around vacationing. Many large hotels and motor-hotels are provided for this purpose. Pleasure fishermen and hunters find a variety and an abundance of fish and water fowl in the area. Pleasure boating, ranging from small outboard rigs to yachts, is extensive throughout the year. Galveston is also a popular convention city. Four large hospitals and The University of Texas Medical School are located in Galveston, providing excellent facilities for medical care, education and research.

Galveston Island is linked to the mainland on the north by three causeways, approximately 1 3/4 miles across. Two of these are for highway traffic, the other is for rail and emergency vehicular traffic. Three toll-free ferries, approximately 50 to 55 car capacity each, connect the eastern end of the Island to Bolivar Peninsula. Galveston lies on the Intercoastal Waterways, which extends from Brownsville to New Orleans; thus the City has barge line connections with the entire Mississippi Valley and Great Lakes Region.

A valuable storm protection work, as well as an inter-

esting attraction to thousands of tourists each year, is the Galveston seawall. After the tragic hurricane of September 8, 1900, in which over 6000 persons lost their lives, a concrete seawall was constructed along the Gulf side of Galveston. This was a tremendous engineering project, because, in addition to the seawall construction, large areas were filled in behind the wall to increase land elevations. The initial stretch of seawall was completed in 1904, but it has been extended several times until, at present, approximately the eastern one-third of Galveston Island is fronted by a continuous seawall. The top of the seawall is 15.6 feet above mean sea level with fill behind the wall to more than 19 feet. The seawall has proved its worth by breaking the tremendous force of hurricane waves and swells. However, flooding of lower sections of the Island behind the seawall can occur during extreme tide situations, such as those accompanying a hurricane. This is caused by water working around either end of the seawall as well as from water flowing in from Galveston Bay on the north.

CLIMATE:

The climate of the area is predominantly maritime. However, from about mid-September to mid-April, this is modified by frequent surges of continental air. During the warmer months, steady on-shore breezes from the Gulf of Mexico prevail, while during the colder months, wind speed and direction are determined by daily fluxuations in the pressure configuration. Average wind speeds range from 9 miles per hour in August to 12 miles per hour in April.

Being surrounded by water, climatic conditions on Galveston Island are quite different in many respects from nearby areas just a few miles inland. The surrounding waters have a modifying influence, resulting in a much smaller temperature range on the Island than on the mainland. On many occasions during the summer months, Galveston records the coolest temperature in Texas.

TEMPERATURE: (Refer to Tables 1-6, 9-12, 27, 29, 31 and 33; Graphs A, B, and F)

Galveston's average annual temperature is 70°. Seasonal averages are: winter, 56°; spring, 69°; summer, 83°; and fall, 72°. Temperature maxima during the warmer months of the year are rarely above 90°, occurring on an average of 13 days annually. Only on two occasions since the beginning of records have readings equaled or exceeded 100°. The record maximum of 101° occurred on July 16, 1932. It is not uncommon for Galveston's daily maximum temperature to be in the 80's while temperatures in the surrounding mainland areas reach well into the 90's. During winter months, the opposite is true; temperatures on the Island are occasionally much warmer than on the mainland. Strong north or northwesterly winds, after the passage of a winter cold front, result in only a small difference between Island and mainland temperatures, but by the second night after a cold frontal passage, when winds have diminished and skies are clear, Island minima may be as much as 15° to 20° warmer.

PRECIPITATION: (Refer to Tables 13-17, 19, 29, 30, 31 and 33; Graphs C and D)

Average annual rainfall is 41.81 inches, evenly distributed throughout the year. The highest monthly average, 5.09 inches, is in September, while the lowest is 2.59 inches in April. Monthly extremes have ranged from zero in August, 1902, to 26.01 inches in September, 1885. The greatest annual amount of record was 78.39 inches in 1900, while the lowest was 21.40 inches in 1948. Normally, there is a pronounced difference in the timing of summer shower activity on the Island as compared to nearby mainland areas. The largest percentage of showers on the Island occur in the morning, whereas on the mainland, these are most prevalent during the afternoons and early evenings. This is due to the differences in the heat budget of water and land surfaces, and because of the surrounding bodies of water, shower activity on the Island is more characteristic of a water than of a land surface.

RELATIVE HUMIDITY: (Refer to Tables 22 and 33)

Relative humidity is generally higher than that experienced in the interior. However, during the winter months, readings of less than 20% are sometimes recorded following an influx of cold dry air. Average 6:00 A.M. relative humidity ranges from 80% to 86% all year around. Noon averages vary from 64% in October to 74% in February, while 6:00 P.M. relative humidity varies from 69% in October to 78% in January and February. Although the humidity is high, cool sea breezes during the summer months are very refreshing.

SUNSHINE, CLOUDINESS, AND FOG: (Refer to Tables 26, 29-30, and 33)

Sunshine is plentiful with only about 10% of the days during the year without some sunshine. Approximately 63% of the possible amount of sunshine is received each year. The average number of clear days per year is 141; partly cloudy days, 126; and cloudy days, 98.

Dense advection fog occurs at times from November through March. On many occasions, fog will lift over land and inland bay waters during the afternoons but will persist over the Gulf of Mexico and Bolivar Roads (the entrance to Galveston Bay). During the winter months, this type of situation may prevail for several days, and seriously handicap shipping and other Island interests.

THUNDERSTORMS, WIND AND HAILSTORMS, TORNADOES: (Refer to Tables 20, 21, 29-30; Graph H)

In general, occurrences of these phenomena are less frequent than for most inland areas. Convective activity is usually not as pronounced on the Island as on the mainland. Of the four categories listed, thunderstorms are, of course, the most prevalent. In most cases, the word, "thundershower" would be a more apt description. For short periods, thunderstorm winds may reach 40 to 50 miles per hour or higher in gusts, but hurricane force winds are infrequent. Tornadoes and hailstorms are quite rare.

Waterspouts are fairly common over the Gulf and Bay waters during the summer months, in connection with shower and thundershower activity. Because of their similarity to tornadoes, waterspouts sometime cause considerable excitement, especially among tourists unfamiliar with coastal weather. Normally, they are rather small funnels that dissipate rapidly after crossing the coast line and cause little or no damage. However, large waterspouts can be dangerous to small boats and to poorly constructed buildings.

SNOW, SLEET, GLAZE: (Refer to Tables 18, 27, and 29)

Frozen precipitation in any form occurs infrequently in Galveston, where just a few snowflakes will make newspaper headlines. Sleet and freezing rain occur a little more often, but amounts are very light. The greatest snowfall on record, 15.4 inches, occurred February 14-15, 1895. The second largest snowfall on record, 2.2 inches, occurred February 12-13, 1960. All other snowfalls recorded have been less than one inch. The annual average snowfall is 0.2 inch; however, several years may pass without so much as a trace of snow.

Occasional freezes cause damage to plumbing, automobile radiators, and vegetation, although extended seere freeze periods are quite rare. Early records indicate that a severe and prolonged freeze in January, 1886, resulted in Galveston Bay being frozen over as far as the

eye could see, including the deeper channel waters. The temperature fell from 65° at 1:20 P.M. on January 7, 1886, to 11° at 5:00 A.M. on January 8, a fall of 54° in less than 16 hours. It was reported that some persons bravely walked on the ice so that they might be able to say in the future that they had walked on Galveston Bay.

The two most recent damaging freezes occurred January 30--February 2, 1951, and January 9-12, 1962. Subfreezing temperatures were experienced for 102 consecutive hours in 1951, and for 69 consecutive hours in 1962. Temperature minima were 17° and 18°, respectively.

LOCAL FLOODING:

Excessive short-period rainfall can cause localized flooding on the Island. If tides happen to be a little higher than normal at the time, drainage is hampered and more flooding results. This is a rather unusual situation. On June 3, 1950, nearly 7.5 inches fell in downtown Galveston between 1:35 A.M. and 8:30 A.M., with nearly 14 inches falling at the Galveston Airport during the same period. The heaviest rainfall occurred shortly before time of high tide, with tides already above normal due to persistent southerly winds during the previous 48 hours. This resulted in parts of the business district and a greater portion of the residential areas being flooded to depths of from 1 to 4 feet.

Creeks and bayous emptying into the bays from the mainland are subject to serious flooding on occasions when excessive rainfall occurs. Here again, creek and bayou drainage is hampered and flooding increased if tides happen to be above normal at the time.

Except for the comparatively rare occasions mentioned above, the most serious flooding in this area is caused by hurricane tides, which are also infrequent.

NORMAL TIDES:

Tides are of interest and importance to many people for a wide variety of reasons. The normal tide range in this area is very small, averaging only about 1 to 1-1/2 feet between high and low tides. "Mixed tides" are experienced in the Galveston area as well as in other areas of the Gulf of Mexico. This means that, at times, two high tides and two low tides occur daily, and at other times only one high and one low tide occur. Near the time when the moon's declination is greatest north or south, with respect to the earth's equator, only one high and one low tide occur daily. When the moon is near the equator, two high and two low tides are observed daily. The basic cause of normal tides is the gravitational effect of the sun and moon upon the earth, with the moon having the most pronounced effect. At times of new and full moon, this effect is at a maximum. At the quarters, the gravitational effect is at a minimum. Consequently, high tides are a little higher, and low tides a little lower than normal at times of new and full moon. The opposite effect is true at times of the quarters, resulting in a smaller than normal daily tide range.

Excluding hurricanes, which cause the greatest fluctuations, other weather patterns cause significant changes in sea level. The two principal causes in this area are: 1) strong, persistent east, southeast, or south winds blowing across the Gulf of Mexico for several days; 2) strong, persistent north to northwest winds after the passage of a vigorous cold front. In Type 1, tides have been observed as much as three to four feet above normal as water is piled up in this part of the Gulf and Bays. In Type 2, tides have been observed two to three feet or more below normal as some of the bay water is forced out and the Gulf water level depressed.

When the proper combinations of the above gravitational forces and meteorological factors occur simultaneously, the result is a maximum or minimum tide effect, as the case may be. On some occasions, opposing factors occur at the same time, and depending upon the magnitude of each force, result in various ranges between the extremes.

Hurricanes and Hurricane Tides

HURRICANES:

The largest and most destructive storms which affect the Texas coast are tropical cyclones. Those tropical cyclones with sustained wind speeds of 64 knots (74 miles per hour) or greater are known as hurricanes. The term hurricane is derived from the Spanish huracan, which in turn is thought to have originated from several similar words used by various Caribbean Indian tribes to identify storms. The intensity of tropical cyclones may range from weak, barely-noticeable but possibly developing areas of bad weather to large and intense storms with maximum winds approaching 200 miles per hour.

Virtually all tropical cyclones which have affected the Texas coast originated in the Gulf of Mexico, the Caribbean Sea, or the southern part of the North Atlantic Ocean. The season extends from June to October; storms are most frequent in August and September, and rarely affect the region after the first days of October. The average frequency for the entire Texas coast is approximately one per year, and of these about two-thirds are of hurricane force. Due to the extent of the region and the size and intensity of the storms, however, only a fraction seriously affect the Galveston-Houston region. Fortunately, for any given reach of coast line, extremely severe hurricanes are infrequent.

Galveston's location on an island exposed to the open Gulf makes it susceptible to the full intensity of severe hurricanes which pass nearby. The most destructive storms occurred in 1900, 1915, and 1961. Houston's location about 50 miles inland results in conditions there less severe than in Galveston. The 1900, 1915, 1943, 1949, and 1961 hurricanes produced extensive damages in the Houston area, however.

Brief notes on these hurricanes follow:

1900, September 8: The hurricane crossed the lower end of Galveston Island. This storm was the greatest natural disaster in the history of the United States. Loss of life at Galveston has been estimated at 6,000 to 8,000, but the exact number has never been definitely ascertained. Property damage has been estimated at $30 to $40 million, but there has never been basis for a reliable estimate. The Island was completely inundated, and not a single structure in the city escaped damage. Most of the loss of life was due to drowning by storm tides. The Galveston seawall was not in existence at the time, and few elevations in the city were greater than about 8.5 feet. No tide gage records were preserved, but it has been estimated that storm tides of 15 feet or more were experienced. Wind gusts were estimated at 120 m.p.h. and the lowest barometric pressure measured 28.55 inches.

1915, August 16-17: The hurricane moved inland near the lower end of Galveston Island during the night of August 16, just southwest of where the 1900 storm moved inland. In Galveston and on the surrounding mainland, 275 persons lost their lives and property damage was estimated at $50 million. Only about $6 million damage was caused in Galveston. Peak wind gusts reached 120 m.p.h., and the lowest barometric pressure measured 28.63 inches. All tide gages were lost, but a thorough survey by the Corps of Engineers indicated tide heights ranging from 9.5 to 14.3 feet above mean sea level in the city, and up to 16.1 feet near the causeway. The seawall, fronting on the Gulf had been completed, and only 11 lives were lost within the confines of its protection. This was the first major test of the seawall, and proved beyond doubt that the structure was of untold value in breaking the force of hurricane waves and swells. However, practically the entire city was flooded as water worked around the ends of the wall and also backed in from Galveston Bay.

The center of this hurricane passed just west of Houston. The peak wind gusts there reached 105 m.p.h., and the barometric pressure dropped to 28.20 inches, the lowest measured in the United States up to that time.

GENERAL SUMMARY

1943, July 27 and 1949, October 4: These two storms illustrate that conditions may be as severe inland at Houston as at Galveston during a hurricane. The first moved inland over Galveston Bay and passed directly over Houston, and the second moved inland near Freeport and also passed directly over Houston: maximum winds in Galveston in the 1943 hurricane were 63 m.p.h.; at the Houston Weather Bureau Airport Station, 85 m.p.h. In the 1949 hurricane the corresponding values were 66 m.p.h., and 90 m.p.h.

1961, September 11 - Hurricane Carla: Carla is an example of an extreme hurricane. It was one of the largest, most intense, and destructive hurricanes ever to affect the Gulf Coast. The center of the storm proceeded slowly northwestward across the Gulf of Mexico from September 7 to 11. The storm center reached the middle Texas coast at Port O'Connor-Port Lavaca, but hurricane winds and high tides were experienced along much of the middle and upper Texas coast long before the center moved inland. The highest winds, gusts estimated at 175 m.p.h., and the lowest pressure on the coast, 27.62 inches, were recorded at Port Lavaca. However, at Galveston, some 120 miles to the northeast, wind gusts of 112 m.p.h., were recorded at the Weather Bureau Office and rainfall exceeded 15 inches over much of the Island. Tides ranged from 9 feet above mean sea level, on the coast in this area, to near 15 feet in some sections of Galveston Bay and associated inlets. Total damage from Carla in Galveston County was estimated at $84.5 million, $61.9 million from damage by high water. In Harris County the corresponding figures were $64.1 million and $23.9 million.

A series of tornadoes which struck before daylight on September 12 added to damage and to the death toll in Galveston. The most severe, in terms of loss of life and property damage, cut through a heavily populated area, resulting in 7 deaths and 49 injuries. Only 2 other deaths in the Galveston area were attributed to Carla. This is a tribute to all public and private agencies, as well as the individual citizens, for taking full advantage of hurricane warnings and advices, and for using good judgement during an emergency.

While tropical cyclones are an undesirable feature of the climate of the Gulf and Atlantic coasts of the United States, the present adequate warning services and good judgement on the part of industry and individual citizens in plant and home location and protection can reduce the severe effects of these storms.

HURRICANE TIDES:

Over inland areas with higher elevations, the greatest concern regarding hurricanes is possible damage from winds or damage from flooding due to excessive rainfall. Near and along the immediate coast, the additional hazard of hurricane tides (or storm tides) must be considered. Also, persons and property along the immediate shoreline, without some type of natural or man-made protective barrier, are exposed to the direct forces of hurricane waves and swells. These forces reach magnitudes almost beyond comprehension. (Just one cubic yard of sea water weighs about 1700 pounds.) Although hurricane winds can cause a great amount of damage and sometimes loss of life, surveys of past hurricanes indicate that storm tides cause by far the greatest destruction and largest number of deaths.

The most extreme storm tides occur near and to the right (looking forward along the line of progress from the storm center) of the area where the hurricane center moves inland. The extent of extreme tides along the coast depends upon the size and intensity of each individual hurricane. Tide heights in bays, especially near the heads of bays, along bayous and creeks emptying into bays, or in any geographical or physical configuration where water can be trapped, are usually much higher than tides along the immediate coast in the same area. The reverse is true of the coastal area to the left of the storm center. In this case, bay waters are depressed and forced out by strong winds blowing away from the coast, and lower tides result. Hurricanes Carla (1961) and Audrey (1957) illustrate these effects on the Galveston Bay area. In the case of Carla, starting from the Gulf at Galveston and moving northward along the western shore of the Bay, peak tides (heights in feet above m.s.l.) were as follows: Galveston, 9.3; Texas City, 11.0; Kemah, 14.2; and Houston Ship Channel, 15.4. The Galveston Bay area was to the right of the hurricane center. In the case of Audrey, the storm moved inland near the Texas--Louisiana border, and the Bay area was to the left of the hurricane center, with peak tides in the same areas as follows: Galveston, 6.6; Texas City, 5.8; Kemah, 4.1; Morgan Point (northwest end of bay on Houston Ship Channel), 3.7.

Storm tides are usually experienced long before hurricane conditions are observed on shore, especially in the case of major hurricanes. Because of this, persons in low coastal areas should evacuate well ahead of time in order to avoid being trapped by rising water. Based on present highway elevations, it is estimated that tides of 7 feet or more above mean sea level isolate Galveston Island from the mainland, and tides above 4 feet isolate Bolivar Peninsula. Persons situated on low ground near the coast in mainland areas can usually find higher ground by moving a short distance inland.

Further information on the climate of the Houston-Galveston Area may be obtained by writing to the Weather Bureau City or Airport Offices, or from the State Climatologist, 3600 Manor Road, Austin 2, Texas

TEMPERATURE

Table 1. Monthly and Annual Average Temperatures (°F), Houston, Federal Office Building (City Office)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1882	----	----	----	74.1	75.0	83.0	84.0	81.8	77.7	73.4	----	----	----
1883	----	----	----	71.2	76.2	83.2	83.6	83.8	78.6	74.4	----	----	----
1884	----	----	----	67.3	75.3	80.5	86.6	83.0	84.6	69.6	----	----	----
1885	----	----	----	----	73.6	80.4	82.0	81.3	78.5	68.7	----	----	----
1886	----	----	----	70.8	76.6	80.8	81.2	81.9	78.2	69.2	----	----	----
1887	----	----	----	----	72.5	80.8	84.3	83.6	78.0	68.6	----	----	----
1888	----	----	----	73.2	74.2	81.2	87.6	83.1	76.4	71.1	----	----	----
1889	51.2	55.2	----	73.0	73.6	79.6	84.5	81.2	75.7	69.3	54.4	65.7	----
1890	62.7	62.6	61.2	71.1	77.2	81.4	83.8	82.2	75.6	69.0	60.5	55.6	70.2
1891	50.5	58.6	59.0	67.6	71.2	80.7	80.0	79.5	76.7	66.0	59.4	53.8	66.9
1892	45.3	61.8	57.6	70.8	74.7	78.8	86.5	81.0	75.4	70.4	62.6	53.4	68.2
1893	51.4	57.2	61.4	72.9	75.5	80.2	81.7	80.5	79.3	67.2	59.0	52.4	68.2
1894	54.1	50.6	62.4	71.5	75.2	77.8	80.3	78.8	76.4	74.5	59.0	54.6	67.9
1895	51.7	42.2	60.0	66.2	71.8	79.4	82.8	82.4	----	70.0	58.5	53.5	----
1896	51.6	55.8	61.0	70.3	78.6	83.2	----	84.8	78.6	69.2	65.0	53.7	----
1897	49.6	56.1	67.0	68.6	73.3	81.3	84.8	82.2	76.6	73.9	62.2	50.8	68.9
1898	55.3	57.2	62.2	66.1	74.9	80.0	81.2	81.8	79.2	68.4	56.1	49.4	67.6
1899	50.0	45.4	64.0	65.8	77.8	79.8	81.9	84.0	76.4	72.4	61.0	52.0	67.5
1900	----	----	61.6	67.2	75.6	81.0	81.4	81.8	82.1	71.5	66.8	----	----
1901	----	51.3	60.0	----	74.8	82.2	84.3	84.5	77.6	69.6	60.8	51.9	----
1902	49.6	51.2	63.4	70.1	79.2	83.7	83.8	86.8	79.4	69.9	64.7	53.9	69.6
1903	50.9	52.6	62.2	69.6	74.0	78.7	82.6	82.0	77.8	67.9	59.2	52.6	67.5
1904	49.0	59.4	66.1	68.8	75.0	80.6	81.6	81.3	81.6	72.6	59.6	52.0	69.0
1905	50.8	44.0	66.2	69.7	79.0	82.8	82.5	84.5	81.8	----	----	----	----
1906	----	----	----	----	77.6	85.9	83.8	84.3	81.7	66.3	----	60.5	----
1907	61.6	58.6	72.1	67.4	72.2	80.8	84.0	84.9	80.2	71.6	57.0	55.0	70.4
1908	53.0	54.6	69.2	73.6	76.3	82.4	82.5	83.0	78.0	67.0	62.0	57.4	69.9
1909	57.0	57.2	63.6	68.0	74.8	82.0	85.3	86.0	79.4	71.8	67.8	49.4	70.2
1910	55.6	51.2	67.2	68.4	74.2	79.2	82.1	84.6	80.4	70.5	64.8	56.7	69.6
1911	61.8	62.8	67.5	70.6	74.5	83.8	81.4	83.5	82.6	71.2	57.8	52.6	70.8
1912	48.6	51.8	57.8	69.2	75.6	78.1	83.6	83.6	81.2	72.8	60.6	53.6	68.0
1913	54.8	54.2	59.8	67.2	73.8	78.9	84.0	83.5	76.0	67.7	67.2	53.4	68.4
1914	57.6	52.9	58.8	67.9	74.4	83.2	84.8	82.2	79.2	70.7	61.8	48.6	68.5
1915	51.3	57.8	53.4	67.8	75.9	83.7	83.6	81.8	80.9	72.7	65.0	56.8	69.2
1916	59.2	58.0	66.6	67.2	75.4	81.6	82.8	82.0	78.6	71.0	60.8	56.8	70.0
1917	57.2	59.4	64.0	67.9	71.7	81.4	84.2	85.0	78.9	67.8	61.3	52.0	69.2
1918	47.2	59.1	67.6	68.5	75.8	83.7	84.2	83.7	76.4	72.2	59.2	56.4	69.5
1919	50.6	54.7	61.9	69.0	73.1	77.6	82.4	83.6	79.0	76.0	63.4	55.4	68.9
1920	52.1	58.5	61.6	68.2	77.4	79.4	83.2	81.7	80.8	70.4	57.8	55.6	68.9
1921	59.2	58.2	68.7	67.0	74.9	80.0	82.6	83.9	81.2	70.4	66.7	60.3	71.1
1922	50.6	60.1	61.1	71.4	77.6	81.2	82.7	84.0	80.4	71.2	64.2	61.4	70.5
1923	62.1	56.5	59.8	69.8	76.0	81.6	82.7	83.2	79.2	69.4	59.2	58.6	69.8
1924	49.4	55.4	59.0	68.8	73.7	82.4	83.0	85.6	79.0	72.9	66.2	53.9	69.1
1925	51.0	61.9	66.6	73.0	76.0	82.4	84.6	83.9	81.2	69.6	61.0	50.1	70.1
1926	50.8	60.8	58.1	65.8	73.8	80.4	82.4	82.7	81.8	74.8	59.6	56.2	68.9
1927	57.9	62.6	63.0	72.1	78.4	80.1	83.4	85.8	79.8	74.0	69.3	51.4	71.5
1928	53.3	54.9	64.2	63.4	75.2	80.1	84.3	84.4	76.4	74.1	60.2	54.0	68.7
1929	55.2	49.0	64.9	72.4	74.0	81.0	82.0	84.0	80.0	72.2	55.0	54.2	68.7
1930	46.2	61.2	57.8	71.8	74.4	80.3	84.4	85.2	79.2	69.7	59.8	50.8	68.4
1931	53.8	58.4	56.0	64.7	72.1	81.6	84.2	82.0	81.6	75.6	67.6	56.0	69.5
1932	57.0	64.9	57.7	69.6	75.5	81.8	85.3	83.8	77.9	69.4	57.0	51.6	69.3
1933	61.0	53.7	63.6	70.8	79.1	80.8	82.6	83.0	82.6	73.4	64.8	64.4	71.6
1934	56.1	54.9	61.1	70.4	74.8	83.6	83.4	83.5	78.7	75.6	65.4	56.8	70.4
1935	57.6	56.7	67.2	70.0	74.0	81.0	83.2	84.4	76.8	73.6	60.6	52.2	69.8
1936	51.3	50.1	66.0	67.0	74.2	82.8	81.9	83.6	80.2	68.4	57.4	55.8	68.2
1937	53.4	56.3	57.8	68.4	76.8	82.6	84.0	84.0	79.2	71.6	58.4	54.8	68.9
1938	55.0	61.0	68.6	67.4	75.2	81.4	83.4	83.6	79.0	74.0	59.4	56.4	70.4
1939	57.1	56.8	64.6	68.7	76.8	81.8	83.8	83.8	81.0	72.4	58.8	59.0	70.4
1940	43.1	54.6	63.4	67.9	75.0	80.2	83.4	83.4	77.6	71.9	61.6	58.3	68.4
1941	57.0	53.4	57.4	70.2	76.6	81.2	84.2	84.6	80.4	75.7	59.8	57.6	69.8
1942	51.4	53.4	60.6	68.3	75.4	81.5	81.8	82.8	77.2	72.3	64.8	57.0	68.9
1943	52.5	59.8	59.2	70.8	77.2	82.6	83.2	84.0	76.3	70.0	59.2	53.7	69.0
1944	53.0	61.2	62.1	70.2	74.0	83.4	85.6	84.9	80.6	72.0	62.7	52.8	70.2
1945	53.5	59.0	68.8	69.6	74.2	81.6	83.6	83.6	80.7	69.6	67.2	52.4	70.3
1946	52.2	57.8	65.6	71.7	75.8	79.6	82.7	83.7	79.0	73.1	63.0	59.3	70.3
1947	52.6	50.2	56.9	69.8	75.4	81.8	83.6	83.8	81.0	76.6	60.2	56.0	69.0
1948	46.8	55.0	62.1	72.7	77.6	83.2	84.7	85.7	78.5	71.5	61.9	59.7	70.0
1949	52.5	59.4	63.2	66.4	78.6	83.0	83.7	82.6	80.4	71.8	64.4	58.2	70.4
1950	62.6	61.9	61.3	67.7	78.6	81.3	82.8	83.6	80.1	74.9	62.2	56.5	71.1
1951	54.8	56.5	64.0	68.0	76.2	82.4	85.5	87.1	80.1	73.3	59.2	59.0	70.5
1952	62.5	59.9	60.8	66.0	74.5	82.2	83.5	85.6	79.4	67.2	59.9	54.6	69.7
1953	57.6	56.0	69.4	69.3	76.9	84.8	84.4	82.8	80.6	72.5	60.7	52.3	70.6
1954	57.1	61.7	61.9	72.4	73.5	82.7	85.6	85.7	82.2	73.5	61.1	58.8	71.3
1955	54.5	56.3	65.0	72.0	78.2	80.3	83.4	83.4	81.4	72.1	61.8	57.3	70.5
1956	55.2	59.6	63.3	68.4	78.5	82.0	85.5	84.7	81.4	74.5	61.3	60.3	71.2
1957	57.9	63.5	62.4	69.2	77.1	81.1	86.6	85.0	77.3	68.5	61.9	58.9	70.8
1958	51.7	50.6	58.3	70.0	78.0	84.0	85.6	85.2	80.1	70.0	63.3	53.2	69.2
1959	51.3	56.4	61.4	66.7	77.8	82.4	82.7	82.7	80.6	72.3	56.5	56.2	68.9
1960	52.3	50.1	58.1	70.5	74.8	83.1	85.2	82.3	79.7	73.4	63.8	52.3	68.8
Mean Temperature (°F.) - By Decades													
1891-1900	51.1	53.9	61.6	68.7	74.9	80.2	82.3	81.7	77.9	70.4	61.0	52.6	68.0
1901-1910	53.4	53.3	65.6	69.5	75.7	81.8	83.3	84.2	79.8	69.7	62.0	54.4	69.4
1911-1920	54.0	56.9	61.9	68.4	74.8	81.1	83.4	83.1	79.4	71.3	61.5	54.1	69.1
1921-1930	53.6	58.1	62.3	69.6	75.4	81.0	83.2	84.3	79.8	71.8	62.1	55.1	69.7
1931-1940	54.5	56.7	62.6	68.5	75.4	81.8	83.5	83.5	79.5	72.6	61.1	56.5	69.7
1941-1950	53.4	57.1	61.7	69.7	76.3	81.9	83.6	83.9	79.4	72.8	62.5	56.3	69.9
1951-1960	55.5	57.1	62.5	69.3	76.6	82.5	84.8	84.5	80.3	71.7	61.0	56.3	70.2
Mean Temperature (°F.) 51 years #													
1910-1960	54.2	57.1	62.3	69.1	75.7	81.6	83.7	83.9	79.7	72.0	61.7	55.7	69.7

TEMPERATURE

Table 1. Monthly and Annual Average Temperature (°F), Houston, Federal Office Building (City Office)-Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Normal Values, Houston, Federal Office Building, adjusted to present location													
1931-1960---	54.6	57.1	62.4	69.3	76.2	82.2	83.9	84.1	79.8	72.4	61.6	56.5	70.0
Highest Monthly and Annual Average Temperatures (°F.)													
Highest-----	62.7	64.9	72.1	74.1	79.2	85.9	87.6	87.1	84.6	76.6	69.3	65.7	71.6
Year--------	1890	1932	1907	1882	1902	1906	1888	1951	1884	1947	1927	1889	1933
Lowest Monthly and Annual Average Temperatures (°F.)													
Lowest------	43.1	42.2	53.4	63.4	71.2	77.6	80.0	78.8	75.4	66.0	54.4	48.6	66.9
Year--------	1940	1895	1915	1928	1891	1919	1891	1894	1892	1891	1889	1914	1891
Houston International Airport													
1924--------	49.4	55.2	58.6	68.8	73.1	81.6	82.8	85.0	79.4	72.2	65.6	54.2	68.8
1925--------	51.2	60.6	66.1	72.6	74.2	82.0	83.3	83.2	80.4	70.3	60.0	49.4	69.4
1926--------	49.4	58.8	58.2	65.4	73.0	79.6	81.4	82.2	81.1	74.4	58.4	56.6	68.2
1927--------	57.8	62.7	62.1	72.2	78.1	80.1	82.6	84.4	79.5	72.2	69.4	52.2	71.1
1928--------	53.2	55.0	63.8	62.7	74.0	80.1	83.0	84.0	77.0	72.6	60.2	52.6	68.2
1929--------	55.6	50.4	64.5	72.8	74.2	80.4	81.9	83.4	80.5	72.2	55.9	53.6	68.8
1930--------	47.3	60.6	57.6	70.2	74.8	79.2	82.8	84.2	79.8	69.6	60.2	50.0	68.0
1931--------	52.4	58.4	55.9	64.0	70.8	80.8	83.5	81.2	81.6	76.0	67.4	56.6	69.0
1932--------	57.5	64.2	57.0	67.3	73.8	80.1	83.4	82.7	77.6	67.6	55.8	52.1	68.3
1933--------	59.9	55.3	63.8	69.4	78.4	79.0	82.0	82.1	81.2	72.6	63.2	64.0	70.9
1934--------	55.8	54.3	59.6	69.6	73.9	81.4	82.4	82.4	77.5	73.4	63.8	56.4	69.2
1935--------	57.6	56.0	67.4	69.4	73.7	79.8	82.5	83.0	76.8	72.5	60.6	53.0	69.4
1936--------	50.8	51.1	64.9	65.7	74.0	81.4	80.8	82.0	79.4	67.3	57.2	55.1	67.5
1937--------	56.6	56.4	56.6	65.5	74.0	81.4	82.6	83.2	78.0	68.4	56.3	54.1	67.8
1938--------	54.4	59.8	66.6	65.4	73.8	79.8	82.2	81.9	77.4	72.1	57.9	55.7	68.9
1939--------	55.8	55.9	63.4	67.6	75.6	80.6	82.4	82.1	79.5	71.2	57.6	56.6	69.0
1940--------	42.1	52.9	61.4	66.3	72.8	78.6	81.7	81.8	76.0	70.0	60.6	57.4	66.8
1941--------	56.1	52.4	56.7	69.0	74.9	80.8	83.3	83.4	79.7	75.2	58.4	56.1	68.8
1942--------	50.1	53.0	59.6	67.1	74.9	81.2	81.4	82.4	76.2	71.2	63.5	55.8	68.0
1943--------	52.4	58.3	58.6	70.2	77.0	81.6	83.0	83.6	76.0	68.6	57.8	53.2	68.4
1944--------	52.3	61.4	61.7	69.5	73.3	82.0	84.4	83.8	79.4	69.9	61.8	52.2	69.3
1945--------	52.4	58.6	67.8	68.8	73.1	80.9	83.0	83.0	79.9	68.5	65.5	51.4	69.4
1946--------	51.6	56.4	64.0	70.6	75.4	79.2	82.2	82.8	78.4	72.1	62.2	57.8	69.4
1947--------	52.2	48.8	56.0	69.4	75.4	81.6	82.5	82.6	80.0	75.0	59.0	55.0	68.1
1948--------	46.1	54.8	61.7	71.4	76.7	82.4	84.3	84.6	77.4	69.7	60.5	59.0	69.0
1949--------	52.5	59.0	62.5	66.1	78.0	82.6	83.2	82.0	80.0	71.9	62.8	58.2	69.9
1950--------	63.1	61.3	60.5	67.0	78.0	80.3	82.3	82.4	79.3	73.0	60.7	55.1	70.2
1951--------	53.8	55.2	62.9	67.0	75.0	82.1	84.3	85.8	79.6	72.4	58.2	58.1	69.5
1952--------	62.0	58.8	60.1	64.9	73.3	81.3	82.7	84.6	78.5	65.9	59.0	53.7	68.7
1953--------	56.6	55.8	68.5	68.7	76.7	83.9	84.1	82.1	79.4	71.5	60.0	51.4	69.9
1954--------	56.4	60.6	60.9	71.5	72.4	81.3	84.8	84.5	81.4	73.0	60.0	57.4	70.3
1955--------	54.1	56.1	64.7	71.2	77.0	79.4	83.1	82.8	80.3	70.7	61.5	56.2	69.8
1956--------	54.3	59.2	62.6	67.7	77.3	80.8	84.3	83.8	80.2	73.3	59.9	59.0	70.2
1957--------	57.9	62.9	61.2	68.6	76.5	80.5	85.4	83.8	76.9	67.9	61.3	57.3	70.0
1958--------	50.3	49.9	57.8	69.2	77.2	83.4	84.8	84.2	79.7	69.6	62.5	52.6	68.4
1959--------	50.3	56.3	60.3	66.7	76.9	82.3	82.3	82.3	80.1	72.2	55.8	55.0	68.4
1960--------	51.8	49.7	57.4	69.8	73.9	82.4	84.7	82.4	79.5	73.2	64.3	52.8	68.5
Mean Temperature (°F.) - By Decades													
1931-1940---	54.3	56.4	61.7	67.0	74.1	80.3	82.4	82.2	78.5	71.1	60.0	56.1	68.7
1941-1950---	52.9	56.4	60.9	68.9	75.7	81.3	83.0	83.1	78.6	71.4	61.2	55.4	69.1
1951-1960---	54.8	56.5	61.6	68.5	75.6	81.7	84.1	83.6	79.6	71.0	60.3	55.4	69.4
Mean Temperature (°F.) 28 years #													
1933-1960---	53.9	56.1	61.8	68.3	75.3	81.1	83.1	83.1	78.9	71.2	60.4	55.7	69.1
Normal Values, Houston International Airport, adjusted to present location													
1931-1960---	54.6	57.3	62.8	70.0	77.0	82.6	84.0	83.7	79.7	72.4	61.3	56.2	70.1
Highest Monthly and Annual Average Temperature (°F.)													
Highest-----	63.1	64.2	68.5	72.8	78.4	83.9	85.4	85.8	81.6	76.0	69.4	64.0	71.1
Year--------	1950	1932	1953	1929	1933	1953	1957	1951	1931	1931	1927	1933	1927
Lowest Monthly and Annual Average Temperature (°F.)													
Lowest------	42.1	48.8	55.9	62.7	70.8	78.6	80.8	81.2	76.0	65.9	55.8	49.4	66.8
Year--------	1940	1947	1931	1928	1931	1940	1936	1931	1940-43	1952	1932-59	1925	1940

TEMPERATURE

Table 1. Monthly and Annual Average Temperatures (°F), Galveston, Post Office Building (City Office)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1874	55.0	58.0	67.0	66.0	75.0	82.2	82.8	84.5	80.0	72.0	65.0	59.0	70.5
1875	48.4	55.4	62.6	66.1	78.2	85.2	87.4	83.8	77.2	71.4	66.2	61.8	69.9
1876	61.2	60.3	61.5	70.4	77.0	83.2	86.3	84.5	80.6	71.8	60.0	49.8	69.9
1877	50.7	55.8	62.6	69.4	75.8	82.2	85.2	85.2	80.6	71.6	59.2	55.7	68.9
1878	52.2	56.3	66.8	71.9	77.2	84.1	85.0	84.1	78.7	73.4	62.1	50.7	70.0
1879	51.4	55.8	67.2	71.1	78.0	82.1	85.0	81.4	79.5	73.3	66.2	60.2	70.8
1880	64.8	57.8	63.8	71.8	77.8	81.8	83.4	82.8	77.8	69.8	53.9	53.8	69.8
1881	47.3	54.6	61.3	68.5	77.6	85.6	84.6	84.7	81.4	77.0	62.4	59.1	70.1
1882	59.2	63.4	68.2	73.0	75.6	81.8	83.3	81.4	78.4	74.9	64.0	57.2	71.5
1883	51.8	55.4	63.0	71.3	76.3	83.6	84.7	84.9	79.8	77.4	65.2	61.0	70.6
1884	48.4	60.6	65.0	67.5	75.6	81.6	85.6	84.0	83.4	72.2	62.2	57.8	70.3
1885	50.8	53.0	60.9	71.8	76.0	84.0	85.0	84.0	79.8	69.4	64.8	57.4	69.8
1886	47.4	53.2	58.6	66.8	75.2	80.5	83.2	83.8	79.6	71.8	62.4	56.4	68.1
1887	51.0	63.2	65.6	69.8	76.0	80.2	83.2	83.2	79.5	69.4	63.6	53.1	69.7
1888	50.2	58.5	59.9	71.5	74.9	80.4	83.0	82.6	78.2	73.1	61.6	57.4	68.8
1889	54.8	54.4	60.0	70.4	73.7	79.0	83.8	81.5	77.5	72.1	59.6	66.4	69.3
1890	64.0	63.7	62.1	69.8	75.0	80.3	82.7	82.6	77.8	72.0	64.7	58.0	71.0
1891	52.6	59.5	59.5	68.2	73.8	81.3	82.6	82.0	78.3	71.0	62.6	57.2	69.0
1892	48.2	60.5	58.4	69.2	75.6	79.6	82.1	82.9	78.6	74.2	65.4	56.2	69.2
1893	53.4	57.6	61.8	71.2	75.7	80.4	84.0	81.9	81.0	72.0	63.7	60.4	70.3
1894	58.0	53.5	63.2	71.8	77.0	78.6	81.3	80.2	80.0	74.4	63.8	58.8	70.0
1895	53.4	42.6	60.0	68.0	73.2	80.9	83.2	83.0	81.5	69.7	61.0	55.2	67.6
1896	53.2	57.1	60.9	69.0	78.4	82.3	83.6	84.0	80.2	71.4	65.2	56.7	70.2
1897	50.9	56.7	66.5	69.4	74.8	81.7	84.2	82.8	79.1	75.9	65.2	55.4	70.2
1898	57.4	58.8	62.6	67.5	74.9	81.0	82.4	83.2	80.3	71.4	58.2	50.4	69.0
1899	53.0	48.6	62.7	66.8	78.2	80.6	83.3	83.4	79.7	74.6	63.6	55.8	69.2
1900	54.2	49.3	60.8	67.2	76.2	81.8	82.4	82.8	84.1	76.4	65.4	56.4	70.0
1901	57.1	54.6	61.4	66.2	74.6	81.7	83.2	83.9	77.8	72.7	63.7	53.2	69.2
1902	51.7	51.8	62.2	69.3	77.2	82.2	82.3	83.6	79.0	72.4	68.0	56.7	69.7
1903	52.2	53.6	62.0	67.6	72.9	76.0	81.4	82.0	79.1	70.5	61.9	55.0	67.8
1904	51.6	57.8	64.6	68.6	74.4	80.4	81.0	81.2	81.5	74.6	62.5	55.0	69.4
1905	51.0	45.6	63.4	69.7	77.8	82.0	82.0	83.4	82.0	72.1	65.1	51.6	68.8
1906	53.2	53.0	59.0	68.7	75.0	82.7	82.6	83.0	81.8	69.0	64.0	61.6	69.5
1907	62.1	60.2	70.4	68.5	72.8	81.2	83.3	83.3	80.4	73.6	60.0	56.6	71.0
1908	55.0	55.0	66.3	72.9	75.9	82.2	81.9	83.1	78.0	69.6	64.6	59.2	70.3
1909	57.8	57.1	62.8	67.8	73.4	81.4	84.0	83.4	79.7	73.6	70.3	52.4	70.3
1910	55.2	51.0	66.0	69.1	74.0	79.2	81.7	83.8	80.6	72.1	65.6	57.8	69.7
1911	59.0	62.2	66.0	70.4	75.2	82.4	81.1	82.8	83.6	72.7	58.3	54.1	70.6
1912	49.2	52.0	57.6	68.4	75.4	77.8	83.2	83.8	81.6	73.4	62.3	55.4	68.3
1913	54.6	55.0	59.4	67.2	74.0	78.5	83.2	82.9	76.8	69.6	66.4	55.6	68.6
1914	57.0	52.8	57.2	66.7	74.6	82.3	83.0	82.2	80.2	71.7	63.1	50.2	68.4
1915	51.2	56.9	53.8	66.1	75.5	82.6	83.0	81.3	81.2	74.2	67.0	57.9	69.2
1916	58.4	58.3	65.8	67.0	75.0	81.0	82.8	83.0	79.4	72.5	62.9	57.7	70.3
1917	56.6	57.2	63.3	67.8	71.6	80.3	83.3	83.5	79.4	68.6	62.6	52.8	68.9
1918	47.8	57.0	66.6	68.3	75.2	82.8	83.6	82.7	77.0	72.7	60.9	56.8	69.3
1919	50.6	55.4	60.7	68.4	73.0	77.4	82.0	83.4	80.0	77.6	65.4	57.2	69.3
1920	54.0	58.8	60.0	67.3	76.6	79.6	82.2	82.4	81.4	72.3	59.2	56.0	69.2
1921	58.2	58.0	68.0	67.4	74.8	80.6	82.2	83.6	82.6	72.2	67.7	60.2	71.3
1922	52.0	59.9	61.6	71.6	77.3	81.2	82.2	83.1	80.2	71.0	65.6	62.4	70.7
1923	62.0	56.3	59.6	69.4	76.0	81.4	81.8	82.4	79.8	71.1	60.0	58.8	69.9
1924	50.4	55.6	58.8	67.2	72.9	81.5	82.7	85.2	80.2	73.7	67.4	54.6	69.2
1925	51.7	60.6	66.2	72.2	75.2	80.8	82.9	82.1	81.0	71.0	61.6	51.0	69.7
1926	50.0	58.8	58.9	66.6	73.8	80.8	82.4	83.7	83.2	76.7	60.9	58.0	69.5
1927	58.8	62.8	62.8	72.3	77.9	80.8	83.8	84.8	81.3	75.2	71.3	52.8	72.1
1928	52.9	55.4	62.7	63.6	74.4	80.3	83.8	84.3	78.0	75.6	62.4	54.8	69.0
1929	55.9	51.0	64.4	73.4	74.6	81.6	82.6	83.8	80.5	73.3	56.6	53.1	69.2
1930	48.6	60.0	58.4	70.9	75.5	80.6	83.2	83.4	79.8	71.5	60.8	52.8	68.8
1931	54.0	58.8	56.0	64.4	71.8	80.5	84.2	82.2	82.4	76.6	69.2	57.4	69.8
1932	58.4	65.0	58.2	69.0	75.8	81.2	84.4	84.4	80.0	71.0	58.3	53.4	69.9
1933	60.3	55.0	63.2	70.5	79.0	81.5	82.6	83.6	83.8	75.6	66.4	65.6	72.3
1934	57.6	56.2	60.6	69.5	75.4	83.0	82.3	83.2	79.8	76.5	67.7	57.4	70.8
1935	57.6	56.8	66.0	70.2	75.8	81.9	83.2	84.8	78.8	75.0	62.8	54.6	70.6
1936	52.0	51.2	64.7	66.3	75.0	83.1	82.8	84.0	81.6	70.9	59.9	56.1	69.0
1937	57.2	57.8	58.4	67.3	76.2	82.9	84.0	84.2	80.6	72.5	60.0	54.8	69.7
1938	55.4	59.4	67.8	67.4	75.6	82.0	83.2	84.0	80.2	75.3	61.8	58.0	70.8
1939	57.6	57.2	63.8	68.6	76.6	81.7	83.2	83.5	80.8	73.2	60.6	59.8	70.6
1940	44.4	53.0	61.0	66.4	73.8	80.3	83.0	82.0	77.7	73.0	63.0	59.0	68.0
1941	57.3	53.9	57.2	68.6	75.7	81.0	83.5	84.2	80.7	77.6	60.6	58.2	69.9
1942	51.6	54.0	59.0	67.2	75.1	81.9	82.4	83.8	78.2	74.3	67.2	58.4	69.4
1943	53.5	59.1	58.7	70.4	77.7	82.2	82.6	84.1	76.8	71.0	60.8	54.6	69.3
1944	53.0	61.0	62.4	69.4	73.7	82.6	83.6	83.8	80.8	73.0	65.1	55.1	70.3
1945	54.6	59.0	67.5	70.0	74.7	81.2	82.6	82.6	81.7	70.6	68.5	55.0	70.7
1946	53.4	57.1	64.4	71.8	76.0	80.2	82.0	83.6	79.6	73.9	64.5	59.4	70.5
1947	52.1	51.0	56.2	68.4	75.4	82.2	83.2	82.8	80.9	76.8	62.6	56.3	69.0
1948	47.6	54.2	61.2	72.0	77.4	82.2	84.6	83.0	78.0	71.7	63.4	60.8	69.7
1949	54.0	58.8	63.2	65.9	77.8	82.5	82.9	82.4	80.6	73.4	65.1	59.6	70.5
1950	63.0	63.8	62.2	67.6	78.2	81.1	83.1	83.6	80.1	75.4	63.5	57.1	71.5
1951	55.4	55.2	62.7	66.4	75.2	81.5	83.3	85.4	80.1	74.5	60.4	59.5	70.0
1952	62.4	60.0	61.5	66.3	74.0	82.0	82.6	84.0	79.0	68.5	61.0	55.5	69.7
1953	58.0	55.7	66.8	69.5	76.5	84.1	84.2	82.0	80.9	74.2	61.5	54.1	70.7
1954	56.9	60.9	59.7	71.1	73.8	81.5	83.7	84.3	81.9	74.7	63.0	59.2	70.9
1955	55.2	56.0	63.2	70.9	77.7	80.0	83.4	83.2	81.5	73.5	62.5	57.1	70.4
1956	55.5	59.1	62.2	67.7	77.8	81.1	83.1	83.4	80.8	75.3	63.1	60.8	70.8
1957	58.9	62.7	62.3	68.4	76.3	81.1	84.6	83.7	78.1	69.8	63.1	59.2	70.7
1958	51.9	51.2	57.9	68.8	77.3	83.2	84.6	83.6	79.5	71.0	64.3	54.0	68.9
1959	51.3	55.4	60.8	66.3	77.1	81.3	82.1	82.3	81.1	73.2	57.6	56.8	68.8
1960	52.5	51.1	56.8	68.6	73.5	81.1	84.4	82.0	79.7	74.0	65.2	53.4	68.5

TEMPERATURE

Table 1. Monthly and Annual Average Temperature (°F) Galveston , Post Office Building (City Office) - Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Mean Temperature (°F.) - By Decades													
1881-1890---	52.5	58.0	62.5	70.0	75.6	81.7	83.9	83.3	79.5	72.9	63.1	58.4	69.9
1891-1900---	53.4	54.4	61.6	68.8	75.8	80.8	82.9	82.6	80.3	73.1	63.4	56.3	69.5
1901-1910---	54.7	54.0	63.8	68.8	74.8	80.9	82.3	83.1	80.0	72.0	64.6	55.9	69.6
1911-1920---	53.8	56.6	61.0	67.8	74.6	80.5	82.7	82.8	80.1	72.5	62.8	55.4	69.2
1921-1930---	54.1	57.8	62.1	69.5	75.2	81.0	82.8	83.6	80.7	73.1	63.4	55.9	69.9
1931-1940---	55.5	57.0	61.0	68.0	75.5	81.8	83.3	83.6	80.6	74.0	63.0	57.6	70.2
1941-1950---	54.0	57.2	61.2	69.1	76.2	81.7	83.1	83.4	79.7	73.8	64.1	57.5	70.1
1951-1960---	55.8	56.7	61.4	68.0	75.9	81.7	83.6	83.4	80.3	72.9	62.2	57.0	69.9
Mean Temperature (°F.) 60 years #													
1901-1960---	54.6	56.6	61.9	68.5	75.3	81.3	83.0	83.3	80.2	73.0	63.3	56.5	69.8
Normal Values, Galveston Post Office Building (City Office) adjusted to present location													
1931-1960---	54.9	56.8	61.4	68.5	75.8	81.7	83.1	83.3	80.1	73.5	63.0	57.2	70.0
Highest Monthly and Annual Average Temperatures (°F.)													
Highest-----	64.8	65.0	70.4	73.4	79.0	85.6	87.4	85.4	84.1	77.6	71.3	69.7	72.3
Year--------	1880	1932	1907	1929	1933	1881	1875	1951	1900	1919 1941	1927	1948	1933
Lowest Monthly and Annual Average Temperatures (°F.)													
Lowest------	44.4	42.6	53.8	63.6	71.6	76.0	81.0	80.2	76.8	63.4	53.9	49.8	67.6
Year--------	1940	1895	1915	1928	1917	1903	1904	1894	1913 1943	1948	1880	1876	1895
Galveston, Municipal Airport													
1939--------							83.0	83.0	80.8	73.3	60.0	58.3	----
1940--------	43.8	52.0	60.2	66.6	73.7	80.2	83.5	82.7	78.1	73.2	63.0	59.0	68.0
1941--------	57.0	53.6	57.2	68.8	75.6	81.4	83.4	84.1	81.0	78.7	60.6	57.8	69.9
1942--------	51.0	53.9	58.9	67.9	76.1	82.5	82.8	84.4	78.5	74.5	67.4	58.1	69.7
1943--------	53.4	59.0	59.1	71.0	78.3	83.1	83.2	84.9	78.1	72.1	61.5	54.3	69.8
1944--------	53.0	61.2	63.0	70.2	77.4	83.7	84.9	84.7	81.8	73.6	65.8	55.3	71.2
1945--------	55.3	59.3	68.1	70.8	75.6	82.2	83.6	83.4	82.5	71.6	68.8	55.0	71.4
1946--------	53.4	57.0	64.8	72.6	76.6	80.6	82.4	84.6	81.0	74.8	65.5	59.7	71.1
1947--------	52.4	51.6	56.8	69.0	76.4	83.6	84.2	83.5	82.0	77.9	62.7	56.6	69.7
1948--------	48.1	54.0	61.6	72.6	78.4	83.2	85.6	84.7	78.8	72.6	64.0	60.7	70.4
1949--------	54.3	59.3	63.6	66.5	78.3	83.5	83.5	82.8	81.1	74.0	64.6	59.8	71.0
1950--------	63.5	63.8	62.0	68.3	78.6	81.1	84.1	84.0	80.9	75.7	63.5	56.7	71.9
1951--------	55.2	55.2	63.0	66.6	75.6	82.0	84.0	85.5	79.8	74.6	59.9	58.9	70.4
1952--------	62.1	60.1	61.2	66.2	73.9	81.8	82.5	84.1	79.0	68.0	61.2	55.3	69.6
1953--------	57.6	55.4	66.7	69.9	76.9	84.2	84.6	82.2	80.5	74.2	61.4	53.6	70.6
1954--------	56.4	60.5	59.9	71.1	73.9	82.2	84.1	84.7	82.6	74.8	62.3	58.7	70.9
1955--------	54.8	55.9	63.4	70.8	77.9	80.2	83.8	83.1	81.6	73.4	62.5	57.1	70.4
1956--------	55.1	58.8	62.2	67.9	77.8	81.2	83.7	83.6	81.1	75.1	62.1	60.1	70.7
1957--------	58.8	62.8	62.1	68.5	76.7	81.5	85.0	84.2	78.5	69.7	62.9	58.8	70.8
1958--------	51.2	50.8	57.7	69.0	77.5	83.9	85.9	84.4	80.1	71.4	64.2	53.6	69.1
1959--------	50.8	55.7	60.7	66.6	77.7	82.4	82.9	82.8	80.5	72.9	56.9	56.0	68.8
1960--------	51.7	50.6	56.3	68.9	73.7	81.6	84.9	82.8	80.0	74.2	65.1	53.3	68.6
Mean Temperature (°F.) - By Decades													
1941-1950---	54.1	57.3	61.5	69.8	77.1	82.5	83.8	84.1	80.6	74.6	64.4	57.4	70.6
1951-1960---	55.4	56.6	61.3	68.6	76.2	82.1	84.1	83.7	80.4	72.8	61.9	56.5	70.0
Mean Temperature (°F.) for Period of Record, 22 years													
1939-1960---	54.2	56.7	61.4	69.0	76.5	82.2	83.9	83.8	80.4	73.7	63.0	57.1	70.2
Normal Values, Galveston, Municipal Airport, adjusted to present location													
1931-1960---	54.4	56.6	61.4	68.6	76.0	82.1	83.6	83.6	80.2	73.4	62.7	56.8	70.0
Highest Monthly and Annual Average Temperatures (°F.)													
Highest-----	63.5	63.8	68.1	72.6	78.6	84.2	85.9	85.5	82.6	78.7	68.8	60.7	71.9
Year--------	1950	1950	1945	1946 1948	1950	1953	1958	1951	1954	1941	1945	1948	1950
Lowest Monthly and Annual Average Temperatures (°F.)													
Lowest------	43.8	50.6	56.3	66.2	73.7	80.2	82.4	82.2	78.1	68.0	56.9	53.3	68.0
Year--------	1940	1960	1960	1952	1940 1960	1940 1955	1946	1953	1940 1943	1952	1959	1960	1940

Data were listed and indicated extremes were selected without regard to changes in location during the period of record. In general the reader should consider indicated location changes carefully for homogeneity of record (refer to Station Location, Page VI) before utilizing data for exact analysis.

Tests for homogeneity indicated that records could be combined for the period indicated. See General Notes, item 5, Page IV.

TEMPERATURE

Table 2. Highest Temperature of Record for Each Day of Year With Year of Occurrence

Houston, Federal Office Building (City Office) (1881 - 1960)

	Jan.	Year	Feb.	Year	Mar.	Year	Apr.	Year	May	Year	June	Year	July	Year	Aug.	Year	Sept.	Year	Oct.	Year	Nov.	Year	Dec.	Year
1	81	1917	82	1911	84	1904	89	1936	94	1947	96	1921	99	1909	102	1907	99	*1951	99	1900	87	1934	80	1954
2	79	1917	83	1911	91	1909	89	*1939	89	*1943	96	1953	104	1894	101	1907	99	1902	97	1938	89	1945	83	1922
3	79	1949	79	*1957	86	1893	86	1925	91	*1943	98	1960	98	1894	100	1958	100	1907	94	1904	85	1959	84	1933
4	78	*1921	81	1957	86	1893	88	1897	92	1947	96	*1960	99	1901	102	1951	96	*1948	94	*1956	84	*1948	81	*1954
5	79	1894	83	1957	84	1907	90	1908	94	1906	95	*1960	98	*1957	101	*1951	98	1908	94	1917	85	1915	82	1916
6	80	1956	81	1911	85	*1949	88	1909	94	1906	96	*1916	101	1957	101	1947	99	*1909	93	1907	87	1919	82	1951
7	79	1923	80	*1957	90	1911	91	1907	91	1933	99	1903	100	1939	101	1907	98	*1909	95	1956	86	1915	81	*1956
8	79	1957	82	1932	88	1911	90	1930	91	*1956	96	*1903	104	1939	103	1947	100	1907	91	1931	86	1927	82	1922
9	80	*1957	82	*1957	88	1911	89	*1953	90	1937	97	*1956	101	1939	103	1947	100	1909	92	1904	85	*1927	81	1929
10	79	1909	85	1957	88	*1911	89	1907	94	1927	100	1902	101	1909	101	1907	99	1940	93	1914	87	1910	83	1939
11	80	1911	79	1922	87	1911	89	1934	92	1902	101	1902	101	1917	101	1907	99	1893	93	1904	85	1910	80	1933
12	79	1923	84	1922	89	1904	89	*1936	91	1922	100	1902	100	1954	102	1924	101	1909	92	*1954	85	1896	82	*1939
13	78	*1952	82	1936	88	1942	87	1936	94	1907	101	1911	101	*1930	100	*1951	98	1912	92	1954	85	*1945	82	1921
14	80	1911	83	1911	86	1936	87	*1921	91	1955	100	1911	100	*1925	100	1951	97	*1918	92	1954	89	1921	80	*1924
15	79	*1936	82	1957	87	*1945	90	1944	91	1902	99	1902	102	1909	100	*1951	96	1920	92	1931	85	*1951	79	1902
16	81	1936	81	1911	87	1908	92	1920	92	*1948	100	1902	103	1909	101	1909	98	1906	92	1933	85	1948	82	1908
17	80	1907	86	1907	88	*1908	88	1918	95	1894	100	1902	102	1932	104	1909	99	1906	93	1895	84	1958	80	1908
18	80	1895	80	1917	89	1907	87	*1908	92	*1956	103	1918	100	*1944	108	1909	99	1927	96	1895	82	*1948	80	1924
19	79	1952	81	1922	89	1908	87	1951	93	1908	101	1902	100	1951	107	1909	97	*1956	90	1921	82	1950	77	1899
20	79	*1952	81	1909	90	1907	89	1903	92	1900	101	1902	101	1913	107	1909	97	1956	89	1934	82	1949	81	1921
21	81	1911	84	1917	87	1907	87	*1951	92	1904	100	*1906	98	*1947	106	1909	97	1950	90	*1940	83	1909	77	*1949
22	80	1909	81	1909	89	1916	89	1908	92	*1905	101	1906	98	*1908	100	1921	98	1944	89	1934	84	1955	80	1931
23	82	1943	83	1920	89	1929	87	1958	93	1905	98	*1915	99	1934	102	1917	94	*1944	88	1919	82	*1924	79	1955
24	81	1909	87	1927	87	1907	92	1894	95	1955	99	1944	101	1954	100	1924	97	1907	92	1931	84	1910	82	*1955
25	80	*1950	85	*1918	93	1928	90	*1945	95	1927	99	1902	101	1924	103	1924	94	1906	91	1950	84	1910	79	*1955
26	82	1909	84	*1917	94	1928	91	1944	95	1958	99	1930	105	1954	101	1906	95	1939	88	*1950	81	1945	78	*1950
27	79	1947	86	1954	89	1935	93	1933	98	1928	100	1930	98	*1960	101	1902	96	1953	89	*1939	81	*1960	78	1946
28	80	1908	90	1940	88	1909	93	1933	98	1906	100	*1930	101	1907	101	1902	96	1956	88	1950	82	*1949	79	1928
29	81	1911	85	1932	89	1909	88	1959	96	1906	98	*1914	101	1907	101	1902	94	1956	87	*1938	80	1927	78	1951
30	84	1911			96	1946	90	*1955	96	1906	99	1937	102	1914	102	1902	95	1905	89	*1951	82	1917	78	1951
31	82	1911			87	1908			97	1911			100	1930	102	1927			88	1919			80	1951
Extreme	84		90		96		93		98		103		105		108		101		99		89		84	
Date	30	1911	28	1940	30	1946	27 28	1933	27	*1928	18	1918	26	1954	18	1909	12	1909	1	1900	2	*1945	3	1933

Galveston, Post Office Building (City Office) (1874-1960)

	Jan.	Year	Feb.	Year	Mar.	Year	Apr.	Year	May	Year	June	Year	July	Year	Aug.	Year	Sept.	Year	Oct.	Year	Nov.	Year	Dec.	Year
1	76	1934	72	*1957	77	1875	81	1935	88	1875	92	1921	95	1949	97	1877	94	1947	91	1938	82	*1946	76	1954
2	73	1952	75	1950	75	1932	78	*1935	87	1900	94	1953	97	1894	97	1877	93	*1907	94	*1952	82	*1946	76	1921
3	74	1943	75	1954	78	1956	80	*1941	83	*1931	92	1875	95	1875	95	1877	92	1876	89	1904	85	1886	77	*1933
4	74	1957	74	*1957	75	1880	81	1890	88	1951	92	1875	95	1875	96	1875	92	*1899	89	1900	82	1875	77	1933
5	74	1880	74	*1922	77	1880	80	1958	87	1908	92	1875	95	1875	96	1951	93	*1936	90	1900	83	1886	77	1942
6	74	1880	74	*1950	77	*1918	84	1930	84	*1952	90	1878	94	1875	96	1913	94	1912	91	1897	82	1919	76	1890
7	74	*1890	75	1950	78	1916	86	1930	87	*1934	89	1880	95	*1935	97	1926	94	1876	91	1900	81	1927	75	*1956
8	76	1953	75	1950	75	*1958	82	1881	87	1956	91	1876	97	1935	94	1874	94	*1876	89	1892	82	1900	75	*1922
9	74	*1952	75	1957	76	1876	82	1882	86	1875	94	1929	96	*1935	98	1935	94	*1931	90	1885	81	*1946	75	*1926
10	74	*1890	75	1957	77	1907	83	*1929	84	*1941	95	1906	96	1931	97	1928	94	1954	91	1885	81	*1935	80	1918
11	74	*1890	74	*1950	76	*1950	80	*1946	86	1875	94	1936	97	1875	93	*1946	94	1937	90	1885	81	*1927	75	1933
12	74	*1907	75	*1957	76	*1911	85	1943	87	1880	94	1911	96	*1876	96	1928	94	1912	90	1885	81	1882	78	1933
13	74	1935	76	1923	79	1960	85	1943	88	1959	97	1911	98	1901	96	1951	93	1912	90	1885	79	1945	77	1933
14	72	*1949	78	1957	80	*1922	81	*1923	88	1879	94	*1936	95	1875	98	1874	93	1900	90	1885	80	1921	75	1922
15	73	*1950	78	1957	78	1887	85	1878	89	1875	93	*1936	96	1875	96	1874	94	1900	87	1910	80	*1927	75	1933
16	73	*1950	78	1957	80	1946	84	1939	90	1875	96	1934	101	#1932	96	1874	94	1900	87	1878	79	*1957	75	1933
17	75	1935	80	1957	78	1882	83	1918	86	1875	95	*1901	98	1932	94	1909	94	1900	86	1879	80	1958	75	1889
18	76	1929	74	*1911	79	1882	81	1930	89	1875	99	1918	96	1875	95	1909	96	1927	86	1910	79	1885	73	1941
19	76	1950	75	*1894	79	*1938	82	1908	87	1875	95	1875	96	1951	93	1909	90	1911	86	1883	78	1931	72	1889
20	74	*1935	75	1890	78	1907	82	*1920	88	*1876	94	*1933	99	1913	95	1925	91	1956	86	1883	78	1956	77	1916
21	73	*1920	72	*1949	82	1955	83	1929	91	1959	96	1897	95	1875	95	1921	94	1953	87	1927	79	1900	75	1921
22	73	*1952	75	1884	78	1879	84	1883	89	1876	97	1875	95	1875	96	1921	90	*1950	84	*1935	79	1885	74	1933
23	74	1876	75	1916	78	*1907	83	1906	90	1877	95	1875	95	1875	94	1886	89	*1900	84	*1926	79	1955	74	1933
24	75	1950	76	1937	79	1909	87	1955	91	1877	96	1875	95	*1943	94	*1935	90	1956	86	1894	76	*1927	75	1933
25	75	1950	75	*1957	78	1907	83	*1908	89	1958	96	1875	95	1924	100	1924	89	1905	84	1919	76	*1910	73	1955
26	75	1950	74	*1906	78	*1907	84	1898	90	1958	95	1875	94	1875	97	1924	90	1939	87	1927	77	1896	73	1875
27	75	1882	80	1956	79	*1907	86	1933	90	1922	94	1875	96	1960	94	1884	88	*1955	85	*1927	79	1896	72	1889
28	75	1876	83	1932	83	1950	84	*1948	90	1958	94	*1876	95	1874	94	*1934	89	1956	84	1883	78	1960	72	1889
29	74	*1957	77	1952	80	1928	83	1912	90	1959	95	1875	96	1875	95	1883	90	1915	85	1875	79	1916	75	1889
30	75	1950			85	1879	92	1953	91	1911	95	1954	95	1876	97	1954	90	*1930	84	*1919	75	*1913	74	1879
31	76	1950			80	1941			93	1911			95	1875	95	1947			84	1919			74	1921
Extreme	76		83		85		92		93		99		101		100		96		94		85		80	
Date	8	*1953	28	1932	30	1879	30	1953	31	1911	18	1918	16	1932	25	1924	18	1927	2	*1952	3	1886	10	1918

* Also in previous years

Table 3. Lowest Temperature of Record for Each Day of Year With Year of Occurrence

Houston, Federal Office Building (City Office) (1881 - 1960)

	Jan.	Year	Feb.	Year	Mar.	Year	Apr.	Year	May	Year	June	Year	July	Year	Aug.	Year	Sept.	Year	Oct.	Year	Nov.	Year	Dec.	Year
1	18	1928	15	1951	30	*1922	40	1915	45	1908	59	1903	68	1946	70	*1936	63	*1915	47	1895	42	*1949	35	1911
2	16	1928	14	1951	29	1943	42	1915	46	1908	55	1892	66	1924	70	*1936	60	1893	54	*1946	37	1951	30	1896
3	16	1911	23	1951	21	1943	39	*1936	50	1908	55	1892	66	1910	66	*1949	63	1893	50	1908	33	1951	25	1929
4	18	1911	22	1912	32	1960	43	*1920	46	1954	59	1919	66	1910	69	1892	62	1934	48	1893	32	1936	27	1897
5	25	1947	24	*1917	31	1917	38	1920	51	1944	61	1950	66	1924	70	*1914	55	1891	50	1932	36	1936	27	1897
6	22	1924	30	*1923	33	*1932	34	1891	54	*1957	62	1950	68	1924	65	1894	56	1891	51	1932	36	*1959	20	1950
7	22	1912	11	1895	29	1943	40	1938	49	1908	65	*1916	63	1905	63	1905	59	1891	50	1952	30	1959	24	1950
8	24	1913	10	1895	33	1932	37	1938	49	*1917	64	1916	68	1892	70	1914	60	*1918	42	1952	34	1938	25	1927
9	25	*1944	15	1933	27	1932	38	*1938	51	1917	64	1892	64	1905	64	1905	61	1932	41	1917	38	*1938	25	1917
10	24	1895	23	1929	27	1932	39	1928	55	*1909	57	1955	55	1893	71	1958	63	1918	43	1908	36	1892	27	1919
11	14	1918	25	1955	27	1948	41	1928	53	1904	64	1955	64	1905	64	1905	56	1907	44	1891	33	1950	26	1898
12	11	1918	6	1899	24	1948	41	1900	50	1895	64	1913	65	1896	69	1931	59	1940	46	1946	32	1900	28	*1957
13	17	1912	6	1899	27	1932	39	1940	50	1895	63	1903	66	1895	69	1894	56	*1907	43	1893	29	1907	27	1919
14	22	1892	10	1899	35	1954	40	1928	53	1895	55	1903	68	1894	69	1922	55	1902	44	1901	30	*1940	26	1914
15	21	1892	18	1905	35	1909	38	1928	51	1926	55	1903	66	1898	68	1933	55	1892	44	1901	28	1916	21	1901
16	24	1930	13	1895	34	1913	46	1928	51	1907	60	1904	66	1895	64	1931	58	1892	41	1893	28	1932	21	1901
17	15	1930	16	1895	30	1900	40	1921	52	1945	62	*1917	70	*1919	70	*1912	55	1903	45	1893	33	1959	20	1932
18	5	1930	19	*1936	27	1892	44	1901	53	1895	66	*1917	70	*1895	69	1945	54	1903	41	1948	28	1959	25	1901
19	10	1940	20	1900	27	1923	40	1901	54	1892	60	1904	70	*1922	69	1894	55	1903	44	1898	31	1903	20	1929
20	20	1892	25	1908	24	1923	44	1901	48	1894	62	1912	69	*1917	67	1940	58	1903	40	1916	28	1937	22	1924
21	19	1935	31	1939	36	1927	45	1901	53	1892	63	1912	70	1922	63	1940	53	1918	44	1898	29	1937	24	1901
22	15	1930	31	1939	32	1915	43	1931	48	1892	66	*1912	69	*1942	65	*1940	53	1918	41	1898	32	*1937	23	1916
23	14	1940	30	1911	38	1915	46	1927	45	1892	67	*1921	68	1915	64	1893	55	1897	42	1937	32	*1929	25	1929
24	18	1894	26	*1914	32	1897	52	1901	54	1892	61	1902	68	1894	67	1949	54	1897	39	1908	32	1938	27	1953
25	19	1894	26	1901	38	*1955	41	1910	57	1892	65	1912	65	1894	69	*1923	55	1909	42	*1908	29	1950	27	1924
26	23	*1943	29	*1960	30	1955	50	1910	59	1925	64	1926	69	1911	65	1926	53	*1942	39	1892	34	1895	27	1924
27	19	1897	31	1935	31	1955	49	1908	50	1901	68	*1928	66	1902	65	1926	45	1942	36	1898	30	1938	19	1892
28	19	1897	34	1937	33	1931	49	1908	54	1901	70	*1958	69	*1904	66	1906	48	*1909	36	1898	33	1911	15	1894
29	22	1897	37	1920	35	1894	51	1925	58	1901	70	*1899	70	1904	65	1896	47	1908	39	1910	23	1911	15	1894
30	18	1949			38	1894	42	1908	60	1947	68	*1948	70	1904	62	1893	49	1908	33	1917	23	1911	22	1917
31	14	1949			36	1926			60	1930			70	*1938	62	1893			39	1925			25	1927
Extreme	5		6		21		34		45		55		55		62		45		33		23		15	
Date	18	1930	12	1899	3	1943	6	1891	1	*1908	14	*1903	10	1893	30	1893	27	1942	30	1917	29	1911	28	1894
			13								15				31						30		29	

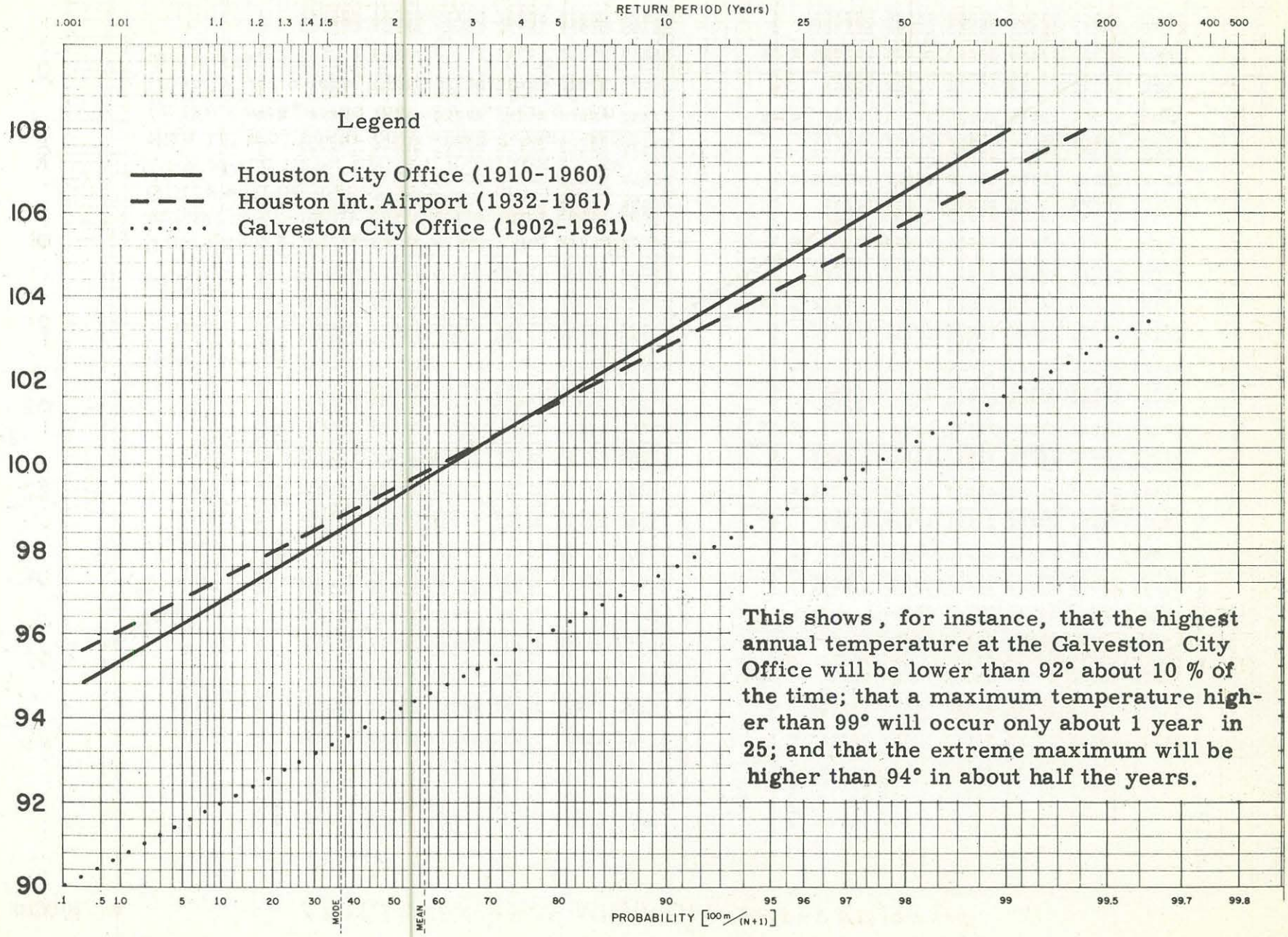
Galveston, Post Office Building (City Office) (1874-1960)

	Jan.	Year	Feb.	Year	Mar.	Year	Apr.	Year	May	Year	June	Year	July	Year	Aug.	Year	Sept.	Year	Oct.	Year	Nov.	Year	Dec.	Year
1	23	1928	17	1951	30	1890	44	*1931	52	1903	63	1903	68	1923	72	1893	68	1949	57	*1895	43	1874	33	1876
2	20	1928	18	1951	33	*1943	44	1915	53	1929	61	1892	71	1924	71	*1953	71	*1960	59	*1958	41	1951	34	1929
3	24	1887	27	1951	27	1943	46	1936	54	1876	59	1919	67	1908	69	1949	71	1919	57	1886	39	1951	29	1929
4	23	1911	29	1905	38	*1960	47	1920	52	1954	67	1946	69	*1910	70	*1890	67	1891	57	1885	38	1936	30	*1897
5	25	1879	28	*1917	35	1920	41	1920	57	1957	67	*1950	69	*1924	71	1893	69	1928	57	1932	44	1936	25	1886
6	23	1879	30	1923	38	*1954	47	1886	53	1917	65	*1955	68	1886	70	1914	68	*1950	57	1932	39	1959	23	1950
7	22	1884	15	1895	32	1943	41	1938	53	1917	64	1916	72	*1928	71	*1909	67	1918	58	1889	35	1959	29	1950
8	11	1886	15	1895	37	*1957	38	1938	54	1917	68	1890	69	1916	72	*1913	67	1957	54	1917	39	1938	29	1927
9	15	1886	21	1933	31	1932	47	1938	58	1885	67	1890	68	1905	70	1889	66	1880	51	1917	42	*1956	31	1917
10	24	*1887	28	1885	30	1932	41	1928	59	1894	60	1955	69	1894	70	1903	62	1880	52	1945	41	1877	28	1898
11	16	1918	25	1899	31	1948	41	1928	60	1924	66	1955	67	1959	69	1911	68	*1907	58	*1946	38	1907	30	1898
12	17	1918	8	#1899	31	1948	46	1940	56	1960	67	1951	71	*1955	70	1960	65	1959	53	1946	36	1907	35	1917
13	22	1912	10	1899	32	1932	43	1940	62	*1960	57	1903	72	1910	69	1960	61	*1902	56	1887	35	1911	32	1919
14	25	1892	22	1905	38	1954	43	1928	62	1914	57	1903	67	1901	68	1915	62	*1913	54	1914	37	*1940	28	1914
15	24	1888	24	1909	40	1880	41	1928	57	1926	61	1903	71	1920	70	1899	63	1913	53	1937	35	1916	25	1901
16	23	1888	19	1895	37	1880	51	1928	56	1945	64	1903	71	1911	70	*1931	65	1939	51	1876	35	1920	30	1932
17	23	1885	24	*1903	36	1892	43	1921	58	1945	68	1917	70	1881	69	1915	60	1903	54	1880	35	1880	28	1932
18	13	1930	24	1910	32	1892	44	1901	58	1916	69	1957	71	*1911	70	1957	59	1875	54	1922	29	1880	29	1884
19	15	1940	34	1936	30	1923	52	1901	60	1886	68	1900	66	1910	72	*1955	58	1901	53	*1917	33	1880	30	*1945
20	22	1882	34	1908	32	1923	52	1884	63	*1952	67	1912	72	1926	71	1897	60	1901	45	1916	33	1937	28	*1945
21	20	1882	34	1902	38	1876	50	1899	61	1883	68	1904	68	1895	70	1940	59	1918	49	1877	36	1906	28	1924
22	19	1935	33	1939	38	1915	48	1844	54	1892	69	*1902	70	1901	68	1891	61	1918	49	1911	34	1898	26	1916
23	19	1940	34	1901	40	1915	50	1884	59	1892	67	1910	69	*1904	70	*1925	62	1947	52	1908	35	1929	30	1953
24	22	1948	30	1960	40	1912	54	1877	62	*1919	68	*1929	68	*1929	70	*1959	63	*1928	49	1908	36	*1938	30	1953
25	24	1894	27	1960	43	1912	45	1910	64	1951	68	1929	67	1887	69	1891	61	1875	51	1879	38	1950	28	1879
26	25	1940	33	1935	34	1955	57	1911	62	1901	66	1928	71	*1902	68	1904	56	1940	44	1898	37	1895	24	1879
27	21	1897	35	1935	33	1955	52	1920	63	1901	69	1916	71	*1904	67	1913	52	1942	45	1957	36	1938	25	1892
28	25	1897	34	1890	35	1931	57	1890	62	1901	70	1887	70	1903	71	*1948	54	1908	49	*1957	34	1911	21	1894
29	29	*1949	39	1884	39	1894	53	1908	64	1881	70	1948	72	*1951	70	1953	58	1942	47	1910	26	1911	18	1880
30	24	1949			38	1886	49	1908	57	1889	69	1950	70	1879	70	*1946	56	*1920	41	1917	30	1877	20	1880
31	21	1951			38	1926			61	1889			70	1951	68	1915			41	1925			25	1880
Extreme	11		8		27		38		52		57		66		67		52		41		26		18	
Date	8	1886	12	1899	3	1943	8	1938	4	*1954	13,14	1903	19	1910	27	1913	27	1942	31	*1925	29	1911	29	1880

* Also in previous years

GRAPH A

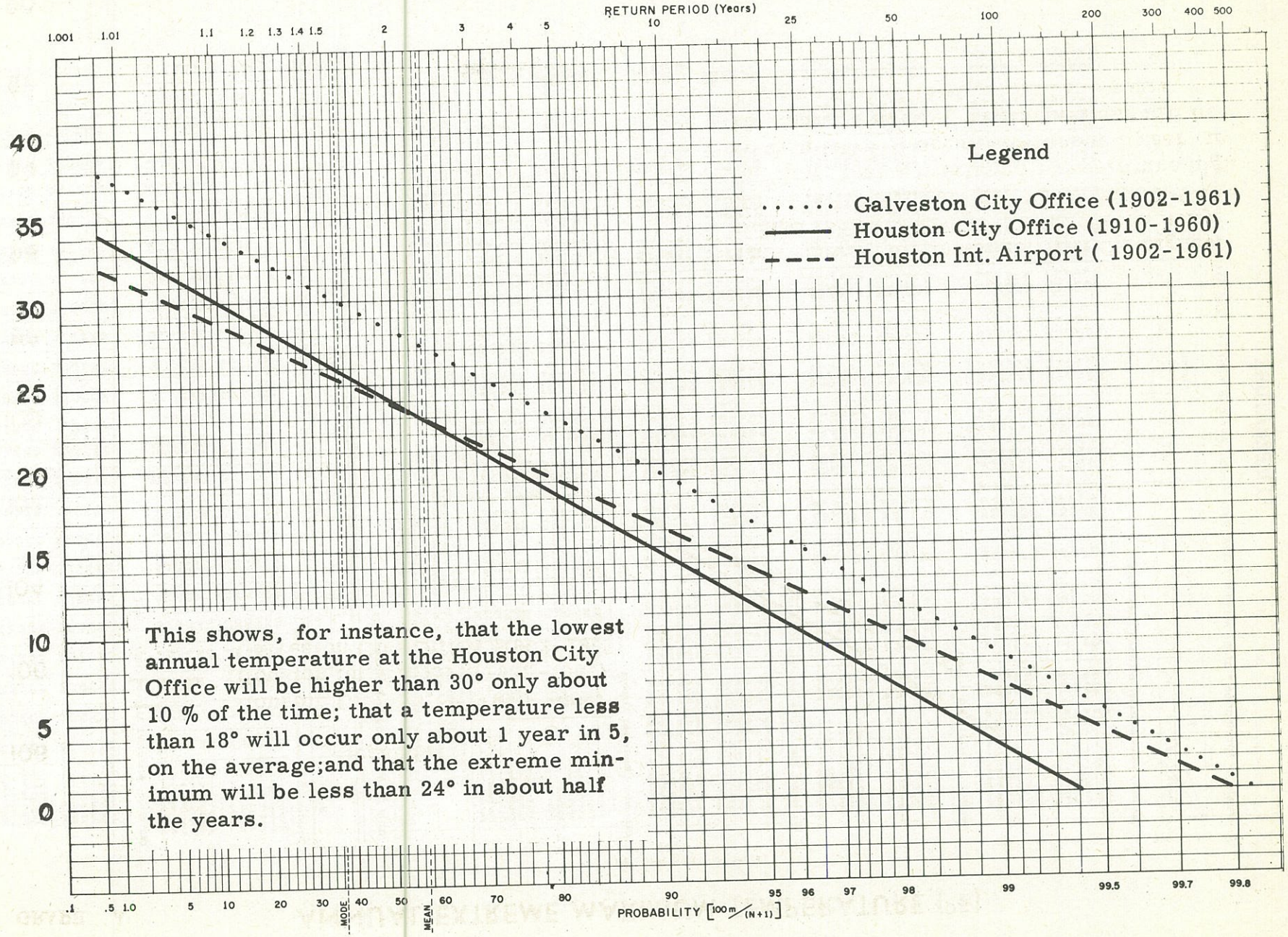
ANNUAL EXTREME MAXIMUM TEMPERATURE (°F)



This shows, for instance, that the highest annual temperature at the Galveston City Office will be lower than 92° about 10 % of the time; that a maximum temperature higher than 99° will occur only about 1 year in 25; and that the extreme maximum will be higher than 94° in about half the years.

GRAPH B

ANNUAL EXTREME MINIMUM TEMPERATURE (°F)



TEMPERATURE

Table 4. Distribution * of the Monthly Average Maximum , Average Minimum , and Average Temperature (°F)

Month	σ	Average 95	Average 75	Average 50	Average 25	Average 5	Maximum 95	Maximum 75	Maximum 50	Maximum 25	Maximum 5	Minimum 95	Minimum 75	Minimum 50	Minimum 25	Minimum 5
Houston, Federal Office Building (City Office)																
January	4.5	62.0	57.6	54.6	51.6	47.2	70.0	65.6	62.6	59.6	55.2	54.0	49.6	46.6	43.6	39.2
February	4.3	64.2	60.0	57.1	54.2	50.0	72.3	68.1	65.2	62.3	58.1	56.1	51.9	49.0	46.1	41.9
March	3.6	68.3	64.8	62.4	60.0	56.5	76.8	73.3	70.9	68.5	65.0	59.7	56.2	53.8	51.4	47.9
April	2.7	73.7	71.1	69.3	67.5	64.9	81.9	79.3	77.5	75.7	73.1	65.4	62.8	61.0	59.2	56.6
May	1.8	79.2	77.4	76.2	75.0	73.2	87.4	85.6	84.4	83.2	81.4	70.9	69.1	67.9	66.7	64.9
June	1.1	84.0	82.9	82.2	81.5	80.4	92.2	91.1	90.4	89.7	88.6	75.7	74.6	73.9	73.2	72.1
July	0.8	85.2	84.4	83.9	83.4	82.6	93.3	92.5	92.0	91.5	90.7	77.1	76.3	75.8	75.3	74.5
August	1.1	85.9	84.8	84.1	83.4	82.3	94.2	93.1	92.4	91.7	90.6	77.5	76.4	75.7	75.0	73.9
September	1.6	82.4	80.9	79.8	78.7	77.2	90.9	89.4	88.3	87.2	85.7	73.9	72.4	71.3	70.2	68.7
October	2.2	76.0	73.9	72.4	70.9	68.8	85.2	83.1	81.6	80.1	78.0	66.7	64.6	63.1	66.6	59.5
November	3.0	66.5	63.6	61.6	59.6	56.7	75.3	72.4	70.4	68.4	65.5	57.6	54.7	52.7	50.7	47.8
December	3.8	62.7	59.0	56.5	54.0	50.3	70.8	67.1	64.6	62.1	58.4	54.6	50.9	48.4	45.9	42.2
Houston, International Airport																
January		62.0	57.6	54.6	51.6	47.2	72.0	67.6	64.6	61.6	57.2	52.0	47.6	44.6	41.6	37.2
February		64.4	60.2	57.3	54.4	50.2	74.6	70.4	67.5	64.6	60.4	54.1	49.9	47.0	44.1	39.9
March		68.7	65.2	62.8	60.4	56.9	79.6	76.1	73.7	71.3	67.8	57.7	54.2	51.8	49.4	45.9
April		74.4	71.8	70.0	68.2	65.6	84.4	81.8	80.0	78.2	75.6	64.4	61.8	60.0	58.2	55.6
May		80.0	78.2	77.0	75.8	74.0	89.7	87.9	86.7	85.5	83.7	70.2	68.4	67.2	66.0	64.2
June		84.4	83.3	82.6	81.9	80.8	93.9	92.8	92.1	91.4	90.3	74.8	73.7	73.0	72.3	71.2
July		85.3	84.5	84.0	83.5	82.7	94.4	93.6	93.1	92.6	91.8	76.1	75.3	74.8	74.3	73.5
August		85.5	84.4	83.7	83.0	81.9	94.6	93.5	92.8	92.1	91.0	76.4	75.3	74.6	73.9	72.8
September		82.3	80.8	79.7	78.6	77.1	91.7	90.2	89.1	88.0	86.5	72.9	71.4	70.3	69.2	67.7
October		76.0	73.9	72.4	70.9	68.8	86.9	84.8	83.3	81.8	79.7	65.0	62.9	61.4	59.9	57.8
November		66.2	63.3	61.3	59.3	56.4	77.0	74.1	72.1	70.1	67.2	55.4	52.5	50.5	48.5	45.6
December		62.4	58.7	56.2	53.7	50.0	72.6	68.9	66.4	63.9	60.2	52.1	48.4	45.9	43.4	39.7
Galveston, Post Office Building (City Office)																
January	4.5	62.3	57.9	54.9	51.9	47.5	67.9	63.5	60.5	57.5	53.1	56.7	52.3	49.3	46.3	41.9
February	4.2	63.7	59.6	56.8	54.0	49.9	69.3	65.2	62.4	59.6	55.5	58.1	54.0	51.2	48.4	44.3
March	3.6	67.3	63.8	61.4	59.0	55.5	72.5	69.0	66.6	64.2	60.7	62.1	58.6	56.2	53.8	50.3
April	2.6	72.8	70.2	68.5	66.8	64.2	77.3	74.7	73.0	71.3	68.7	68.3	65.7	64.0	62.3	59.7
May	1.6	78.4	76.9	75.8	74.7	73.2	82.7	81.2	80.1	79.0	77.5	74.1	72.6	71.5	70.4	68.9
June	1.0	83.3	82.4	81.7	81.0	80.1	87.2	86.3	85.6	84.9	84.0	79.3	78.4	77.7	77.0	76.1
July	0.8	84.4	83.6	83.1	82.6	81.8	88.6	87.8	87.3	86.8	86.0	80.2	79.4	78.9	78.4	77.6
August	1.1	85.1	84.0	83.3	82.6	81.5	89.3	88.2	87.5	86.8	85.7	80.8	79.7	79.0	78.3	77.2
September	1.6	82.7	81.2	80.1	79.0	77.5	87.2	85.7	84.6	83.5	82.0	78.1	76.6	75.5	74.4	72.9
October	2.2	77.1	75.0	73.5	72.0	69.9	82.1	80.0	78.5	77.0	74.9	72.0	69.9	68.4	66.9	64.8
November	3.0	67.9	65.0	63.0	61.0	58.1	73.5	70.6	68.6	66.6	63.7	62.3	59.4	57.4	55.4	52.5
December	3.8	63.4	59.7	57.2	54.7	51.0	68.9	65.2	62.7	60.2	56.5	57.8	54.1	51.6	49.1	45.4
Galveston, Municipal Airport																
January		61.8	57.4	54.4	51.4	47.0	67.8	63.4	60.4	57.4	53.0	55.8	51.4	48.4	45.4	41.0
February		63.5	59.4	56.6	53.8	49.7	69.5	65.4	62.6	59.8	55.7	57.4	53.3	50.5	47.7	43.6
March		67.3	63.8	61.4	59.0	55.5	73.0	69.5	67.1	64.7	61.2	61.5	58.0	55.6	53.2	49.7
April		72.9	70.3	68.6	66.9	64.3	78.0	75.4	73.7	72.0	69.4	67.8	65.2	63.5	61.8	59.2
May		78.6	77.1	76.0	74.9	73.4	83.7	82.2	81.1	80.0	78.5	73.5	72.0	70.9	69.8	68.3
June		83.7	82.8	82.1	81.4	80.5	88.5	87.6	86.9	86.2	85.3	78.8	77.9	77.2	76.5	75.6
July		84.9	84.1	83.6	83.1	82.3	89.9	89.1	88.6	88.1	87.3	79.9	79.1	78.6	78.1	77.3
August		85.4	84.3	83.6	82.9	81.8	90.3	89.2	88.5	87.8	86.7	80.5	79.4	78.7	78.0	76.9
September		82.8	81.3	80.2	79.1	77.6	87.9	86.4	85.3	84.2	82.7	77.7	76.2	75.1	74.0	72.5
October		77.0	74.9	73.4	71.9	69.8	82.6	80.5	79.0	77.5	75.4	71.4	69.3	67.8	66.3	64.2
November		67.6	64.7	62.7	60.7	57.8	73.8	70.9	68.9	66.9	64.0	61.4	58.5	56.5	54.5	51.6
December		63.0	59.3	56.8	54.3	50.6	69.0	65.3	62.8	60.3	56.6	56.9	53.2	50.7	48.2	44.5

* Percentage frequency of monthly averages shown; for example, the average temperature for the month of July at Houston International Airport of 85.3° or less occurred in 95 percent of the years; while at Galveston Municipal Airport in July temperature of 84.9° or less occurred in 95 percent of the years.

σ Standard deviation (smoothed) used in computing to the nearest tenth of a degree by statistical methods from 30-year-normal monthly values (1931-1960). Same values used for Houston CO and Airport; and same values used for Galveston CO and AP.

Table 5. Mean Hourly Temperatures (°F)

Month	a.m. 1	2	3	4	5	6	7	8	9	10	11	Noon	p.m. 1	2	3	4	5	6	7	8	9	10	11	Midnight
Houston, International Airport (1951 - 1960)																								
January	51	51	50	50	49	49	49	50	53	56	58	59	61	61	62	61	60	58	56	54	54	53	52	52
February	53	52	52	51	51	51	51	52	55	57	59	61	62	63	63	63	62	60	58	56	55	54	54	53
March	57	57	56	56	55	55	56	58	61	63	65	67	68	69	69	69	67	66	63	61	60	59	59	58
April	64	64	63	63	62	62	64	66	69	71	73	73	75	75	75	75	74	72	70	68	67	66	65	65
May	70	70	69	69	69	69	72	75	77	79	80	81	82	82	82	81	80	79	76	74	73	72	72	71
June	76	75	75	74	74	74	78	81	83	85	86	87	88	88	88	87	87	85	82	80	78	78	77	76
July	78	77	77	76	76	76	80	83	85	87	88	89	90	90	90	89	88	87	84	82	81	80	79	78
August	78	77	77	76	76	76	78	82	84	86	87	89	89	90	89	89	88	86	83	81	80	79	79	78
September	74	73	73	73	72	72	74	77	80	83	84	85	86	86	86	86	84	82	79	78	77	76	75	75
October	66	65	64	64	63	63	64	68	72	74	76	77	78	79	79	78	76	73	71	69	68	67	66	66
November	56	56	55	55	54	54	54	56	60	63	65	66	67	68	68	67	65	63	61	59	59	58	57	57
December	52	51	51	50	50	50	49	51	54	57	59	61	62	63	63	62	60	58	56	55	54	53	53	52
Galveston, Municipal Airport (1951 - 1960)																								
January	54	54	53	53	53	53	52	53	54	56	57	58	58	59	59	58	58	56	56	55	55	55	54	54
February	55	55	55	54	54	54	54	54	56	57	58	59	59	60	60	60	59	58	57	57	56	56	56	56
March	60	59	59	59	59	58	59	60	61	62	63	64	64	64	64	64	64	63	62	61	61	61	60	60
April	67	66	66	66	66	66	66	68	69	70	70	71	71	72	72	72	71	70	69	68	68	68	67	67
May	74	73	73	73	73	73	74	76	77	78	78	79	79	79	79	79	78	77	76	75	75	75	75	74
June	80	79	79	79	79	79	80	82	83	84	84	85	85	85	85	85	85	84	82	81	81	80	80	80
July	82	82	81	81	81	81	82	83	84	85	86	87	87	87	87	87	86	86	84	83	83	83	82	82
August	82	82	81	81	81	81	82	83	84	85	86	86	87	87	87	87	86	85	84	83	83	83	82	82
September	79	78	78	78	77	77	78	79	80	81	82	83	83	84	84	83	83	81	80	80	80	79	79	79
October	71	71	70	70	70	69	70	72	73	74	75	76	76	76	77	76	75	74	73	73	72	72	71	72
November	61	60	60	59	59	59	59	60	61	63	64	65	65	66	66	65	64	63	62	62	62	61	61	61
December	55	55	55	54	54	54	54	54	56	57	58	59	60	60	60	60	58	57	57	57	56	56	56	56

TEMPERATURE

Table 6. Selected Threshold Temperature Statistics

Station	Threshold Temperature (T °F) or Lower						
	24°	28°	32°	36°	40°	44°	48°
Houston, Federal Office Building (City Office) (1910-1960)							
Mean Last Date in Spring	Jan. 14	Jan. 24	Feb. 11	Mar. 1	Mar. 17	Mar. 27	Apr. 8
Standard Deviation of Spring Dates (Days)	21	23	25	20	16	14	12
Mean First Date in Fall	Dec. 29	Dec. 22	Dec. 13	Dec. 3	Nov. 17	Nov. 6	Oct. 29
Standard Deviation of Fall Dates (Days)	6	14	18	17	16	13	11
(a) Mean Length of Warm Season	349	332	305	277	245	224	204
Extreme Dates							
Latest Spring Occurrence	Mar. 20	Mar. 20	Mar. 27	Mar. 31	Apr. 17	Apr. 22	May 4
Earliest Fall Occurrence	Nov. 29	Nov. 16	Nov. 5	Oct. 30	Oct. 21	Oct. 9	Sep. 27
* Occurrence of Threshold Temperature (T °F)							
Number of years (and Percent) Experiencing (T °F) in Spring	25 49%	37 73%	45 88%	49 96%	51 100%	51 100%	51 100%
Number of years (and Percent) Experiencing (T °F) in Fall	7 14%	21 41%	37 73%	49 96%	51 100%	51 100%	51 100%
Houston, International Airport (1940-1960)							
Mean Last Date in Spring	Jan. 9	Jan. 26	Feb. 14	Mar. 6	Mar. 18	Apr. 1	Apr. 13
Standard Deviation of Spring Dates (Days)	17	23	28	22	20	10	13
Mean First Date in Fall	Dec. 29	Dec. 17	Dec. 11	Nov. 24	Nov. 10	Nov. 4	Oct. 25
Standard Deviation of Fall Dates (Days)	7	18	18	15	11	12	12
(a) Mean Length of Warm Season	354	325	300	263	237	217	195
Extreme Dates							
Latest Spring Occurrence	Mar. 3	Mar. 13	Apr. 14	Apr. 14	Apr. 20	Apr. 21	May 17
Earliest Fall Occurrence	Dec. 6	Nov. 3	Nov. 3	Nov. 2	Oct. 19	Oct. 9	Sep. 27
* Occurrence of Threshold Temperature (T °F)							
Number of years (and Percent) Experiencing (T °F) in Spring	7 33%	16 76%	19 91%	21 100%	21 100%	21 100%	21 100%
Number of years (and Percent) Experiencing (T °F) in Fall	2 10%	12 57%	19 91%	21 100%	21 100%	21 100%	21 100%
Galveston, Post Office Building (City Office) (1901-1960)							
Mean Last Date In Spring	Jan. 7	Jan. 13	Jan. 24	Feb. 11	Mar. 1	Mar. 16	Mar. 28
Standard Deviation of Spring Dates (Days)	14	19	22	22	19	17	17
Mean First Date in Fall	Dec. 30	Dec. 29	Dec. 25	Dec. 15	Dec. 5	Nov. 22	Nov. 13
Standard Deviation of Fall Dates (Days)	4	6	10	17	17	15	12
(a) Mean Length of Warm Season	357	350	335	307	279	251	230
Extreme Dates							
Latest Spring Occurrence	Feb. 18	Mar. 3	Mar. 20	Mar. 28	Apr. 8	Apr. 18	Apr. 30
Earliest Fall Occurrence	Dec. 6	Nov. 29	Nov. 18	Nov. 7	Nov. 3	Oct. 27	Oct. 21
* Occurrence of Threshold Temperature (T °F)							
Number of years (and Percent) Experiencing (T °F) in Spring	16 27%	28 47%	42 70%	54 90%	59 98%	60 100%	60 100%
Number of years (and Percent) Experiencing (T °F) in Fall	2 3%	2 3%	22 37%	39 65%	56 93%	59 98%	60 100%
Angleton 4NE (1914-1917) (1919-1960)							
Mean Last Date in Spring	Jan. 16	Feb. 12	Mar. 5	Mar. 20	Apr. 1	Apr. 11	Apr. 19
Standard Deviation of Spring Dates (Days)	23	25	25	17	15	13	13
Mean First Date in Fall	Dec. 22	Dec. 12	Nov. 28	Nov. 13	Nov. 5	Oct. 24	Oct. 19
Standard Deviation of Fall Dates (Days)	16	19	17	14	12	13	12
(a) Mean Length of Warm Season	340	303	268	238	218	194	183
Extreme Dates							
Latest Spring Occurrence	Mar. 20	Mar. 31	Apr. 14	Apr. 22	May 3	May 13	May 17
Earliest Fall Occurrence	Oct. 30	Oct. 30	Oct. 30	Oct. 9	Oct. 9	Sep. 27	Sep. 27
* Occurrence of Threshold Temperature (T °F)							
Number of years (and Percent) Experiencing (T °F) in Spring	22 48%	41 89%	45 98%	46 100%	46 100%	46 100%	46 100%
Number of years (and Percent) Experiencing (T °F) in Fall	16 35%	33 72%	44 96%	46 100%	46 100%	46 100%	46 100%
Sugarland (1931-1960)							
Mean Last Date in Spring	Jan. 12	Jan. 28	Feb. 14	Mar. 11	Mar. 27	Apr. 7	Apr. 13
Standard Deviation of Spring Dates (Days)	18	25	25	18	12	11	9
Mean First Date in Fall	Dec. 28	Dec. 21	Dec. 7	Nov. 21	Nov. 10	Oct. 31	Oct. 24
Standard Deviation of Fall Dates (Days)	9	14	20	14	12	14	11
(a) Mean Length of Warm Season	350	327	296	255	228	207	194
Extreme Dates							
Latest Spring Occurrence	Mar. 4	Mar. 14	Mar. 27	Apr. 14	Apr. 16	Apr. 24	May 4
Earliest Fall Occurrence	Nov. 25	Nov. 7	Nov. 3	Oct. 27	Oct. 20	Sep. 27	Sep. 27
* Occurrence of Threshold Temperature (T °F)							
Number of years (and Percent) Experiencing (T °F) in Spring	12 40%	21 70%	28 93%	30 100%	30 100%	30 100%	30 100%
Number of years (and Percent) Experiencing (T °F) in Fall	4 13%	16 53%	26 87%	30 100%	30 100%	30 100%	30 100%

Means and standard deviations have been adjusted to take into account years of non-occurrence of freeze. All dates (including those occurring in a leap year) adjusted to the average year.

(a) Number of days between the mean dates of Spring and Fall temperatures shown.

* Spring date is arbitrarily last occurrence of (T °F) on or after January 1, and Fall date is arbitrarily first occurrence of (T °F) on or before December 31.

Table 7 Total Heating Degree Days , Base 65 (°F)

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Apr.	May	June	Total
Houston, Federal Office Building													
1904-1905----	0	0	0	25	167	413	503	590	51	11	0	0	1760
1905-1906----	0	0	0	24	55	470	352	327	239	12	0	0	1479
1906-1907----	0	0	0	50	114	209	192	208	27	63	2	0	865
1907-1908----	0	0	0	12	248	319	371	299	53	15	8	0	1325
1908-1909----	0	0	7	56	154	263	290	244	126	50	5	0	1195
1909-1910----	0	0	3	11	33	503	302	389	32	24	0	0	1297
1910-1911----	0	0	0	59	115	280	183	172	56	17	8	0	890
1911-1912----	0	0	0	28	266	389	516	382	247	39	0	0	1867
1912-1913----	0	0	0	4	163	359	336	306	218	52	0	0	1438
1913-1914----	0	0	1	101	47	382	252	348	231	54	0	0	1416
1914-1915----	0	0	0	28	129	507	422	205	372	55	0	0	1718
1915-1916----	0	0	0	6	126	269	233	227	62	55	1	0	979
1916-1917----	0	0	3	29	186	297	297	235	140	39	27	0	1253
1917-1918----	0	0	0	92	124	425	556	217	48	37	2	0	1501
1918-1919----	0	0	2	18	226	286	446	288	122	15	0	0	1403
1919-1920----	0	0	0	4	127	325	408	213	180	51	0	0	1308
1920-1921----	0	0	3	33	251	301	202	201	46	59	1	0	1097
1921-1922----	0	0	0	17	63	193	455	185	163	8	0	0	1084
1922-1923----	0	0	0	14	111	185	138	266	208	24	0	0	946
1923-1924----	0	0	0	50	196	243	481	279	212	31	4	0	1496
1924-1925----	0	0	1	22	66	397	434	116	46	20	5	0	1107
1925-1926----	0	0	0	92	174	468	444	139	234	52	3	0	1606
1926-1927----	0	0	0	8	197	311	245	131	146	28	1	0	1067
1927-1928----	0	0	0	3	48	451	374	301	111	120	2	0	1410
1928-1929----	0	0	0	19	180	355	328	450	98	1	5	0	1436
1929-1930----	0	0	0	22	321	359	590	138	238	0	0	0	1668
1930-1931----	0	0	0	38	183	435	348	186	287	67	1	0	1545
1931-1932----	0	0	0	8	73	312	276	97	272	15	0	0	1053
1932-1933----	0	0	0	30	266	426	160	338	124	27	0	0	1371
1933-1934----	0	0	0	2	82	113	287	286	166	9	0	0	945
1934-1935----	0	0	0	0	102	274	273	237	61	15	8	0	970
1935-1936----	0	0	1	6	198	400	430	440	54	78	0	0	1607
1936-1937----	0	0	2	61	253	289	374	273	244	44	0	0	1540
1937-1938----	0	0	0	29	256	328	323	160	45	83	1	0	1225
1938-1939----	0	0	0	13	241	276	259	239	96	45	0	0	1169
1939-1940----	0	0	0	18	204	220	680	323	117	48	0	0	1610
1940-1941----	0	0	1	7	161	221	255	326	256	5	0	0	1232
1941-1942----	0	0	0	24	183	243	423	327	178	28	0	0	1406
1942-1943----	0	0	15	10	121	269	408	159	212	16	0	0	1210
1943-1944----	0	0	2	39	195	371	374	164	133	22	4	0	1304
1944-1945----	0	0	0	8	147	380	358	195	28	36	11	0	1163
1945-1946----	0	0	0	33	75	396	401	216	64	3	0	0	1188
1946-1947----	0	0	0	13	129	212	414	421	267	33	0	0	1489
1947-1948----	0	0	0	0	182	297	574	305	191	8	0	0	1557
1948-1949----	0	0	0	23	152	214	420	188	127	72	0	0	1196
1949-1950----	0	0	0	32	87	239	158	131	167	38	0	0	852
1950-1951----	0	0	0	0	171	279	325	271	118	42	0	0	1206
1951-1952----	0	0	0	1	245	239	157	176	147	40	0	0	1005
1952-1953----	0	0	0	51	218	327	233	252	23	30	3	0	1137
1953-1954----	0	0	0	15	138	396	253	109	187	8	13	0	1119
1954-1955----	0	0	0	30	119	216	336	258	157	18	0	0	1134
1955-1956----	0	0	0	12	190	260	320	209	131	30	0	0	1152
1956-1957----	0	0	0	0	174	189	254	119	118	37	1	0	892
1957-1958----	0	0	0	71	175	208	406	397	221	21	0	0	1499
1958-1959----	0	0	0	52	133	363	426	254	133	69	0	0	1430
1959-1960----	0	0	0	10	293	267	404	427	248	5	2	0	1656
1960-1961----	0	0	0	16	111	402	473	224	59	59	0	0	1344
Mean 1904-1961----	0	0	1	25	155	305	341	247	141	34	2	0	1251
Houston International Airport													
1948-1949----	---	---	---	---	---	---	420	196	137	75	0	0	----
1949-1950----	0	0	1	34	120	238	149	139	179	45	0	0	905
1950-1951----	0	0	0	0	193	321	358	299	136	59	0	0	1366
1951-1952----	0	0	0	3	261	251	163	196	161	50	0	0	1085
1952-1953----	0	0	0	58	233	352	263	263	28	33	2	0	1232
1953-1954----	0	0	0	19	162	422	271	138	206	10	14	0	1242
1954-1955----	0	0	0	36	151	260	347	259	162	15	0	0	1230
1955-1956----	0	0	0	21	196	290	320	219	141	27	0	0	1214
1956-1957----	0	0	0	0	204	220	256	129	138	45	3	0	995
1957-1958----	0	0	0	71	185	245	449	417	234	30	0	0	1631
1958-1959----	0	0	0	48	145	375	452	254	163	58	0	0	1495
1959-1960----	0	0	0	7	309	306	416	441	260	8	1	0	1748
1960-1961----	0	0	0	17	104	390	473	227	56	61	0	0	1328
Mean 1948-1961----	0	0	0	26	189	306	334	237	154	40	2	0	1288

Table 7. Total Heating Degree Days, Base 65 (°F) Galveston, Post Office Building (City Office)

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Apr.	May	June	Total
1872-1873------	0	0	0	8	237	432	479	156	94	49	0	0	1455
1873-1874------	0	0	0	64	99	256	303	214	45	69	2	0	1052
1874-1875------	0	0	0	10	95	168	548	277	139	52	0	0	1289
1875-1876------	0	0	0	4	74	145	147	156	146	12	1	0	684
1876-1877------	0	0	5	10	190	474	449	249	116	12	0	0	1505
1877-1878------	0	0	0	30	194	288	407	245	33	7	0	0	1194
1878-1879------	0	0	0	30	127	432	426	249	37	7	0	1	1309
1879-1880------	0	0	0	15	102	205	65	227	114	15	1	0	744
1880-1881------	0	0	0	18	344	353	552	290	120	35	0	0	1712
1881-1882------	0	0	0	0	146	207	204	94	43	21	0	0	715
1882-1883------	0	0	0	2	138	250	416	287	96	0	0	0	1189
1883-1884------	0	0	0	6	107	158	508	164	68	58	0	0	1069
1884-1885------	0	0	0	10	120	263	444	339	144	0	0	0	1320
1885-1886------	0	0	0	28	96	236	547	322	189	42	0	0	1460
1886-1887------	0	0	0	13	161	272	425	80	56	12	0	0	1019
1887-1888------	0	0	1	53	84	374	456	201	214	1	0	0	1384
1888-1889------	0	0	0	12	181	241	378	220	165	1	2	0	1200
1889-1890------	0	0	3	6	179	33	108	107	149	7	0	0	592
1890-1891------	0	0	4	19	71	235	381	173	186	37	0	0	1106
1891-1892------	0	0	0	5	159	235	521	136	208	8	6	0	1278
1892-1893------	0	0	0	19	85	311	358	218	127	9	1	0	1128
1893-1894------	0	0	0	1	97	156	232	331	131	0	0	0	948
1894-1895------	0	0	0	13	93	222	367	628	172	19	0	0	1514
1895-1896------	0	0	1	24	160	308	363	230	142	29	0	0	1257
1896-1897------	0	0	0	1	103	253	443	242	36	12	0	0	1090
1897-1898------	0	0	0	3	103	303	242	178	142	43	1	0	1015
1898-1899------	0	0	0	39	233	452	375	459	96	57	0	0	1711
1899-1900------	0	0	0	8	126	287	335	345	141	32	0	0	1274
1900-1901------	0	0	0	0	94	270	244	290	123	35	0	0	1056
1901-1902------	0	0	0	2	104	359	412	378	107	10	0	0	1372
1902-1903------	0	0	0	1	63	279	400	320	110	23	9	5	1210
1903-1904------	0	0	0	15	162	309	415	214	90	17	0	0	1222
1904-1905------	0	0	0	3	89	320	435	549	75	12	0	0	1483
1905-1906------	0	0	0	18	73	418	363	342	194	12	1	0	1421
1906-1907------	0	0	0	15	92	158	133	155	22	25	6	0	606
1907-1908------	0	0	0	2	180	264	316	289	50	16	2	0	1119
1908-1909------	0	0	3	36	96	194	247	227	112	42	6	0	963
1909-1910------	0	0	0	5	34	407	304	390	36	15	0	0	1191
1910-1911------	0	0	0	38	87	232	201	143	44	13	6	0	764
1911-1912------	0	0	0	16	243	338	490	375	237	28	0	0	1727
1912-1913------	0	0	0	5	123	301	323	277	191	25	0	0	1245
1913-1914------	0	0	0	71	46	313	254	340	248	47	0	0	1319
1914-1915------	0	0	0	18	101	458	424	226	348	54	0	0	1629
1915-1916------	0	0	0	0	84	229	219	200	46	50	0	0	828
1916-1917------	0	0	0	19	144	249	275	234	115	34	18	0	1088
1917-1918------	0	0	0	61	93	388	533	228	41	29	0	0	1373
1918-1919------	0	0	0	11	193	268	445	272	142	12	0	0	1343
1919-1920------	0	0	0	0	85	273	346	173	174	45	0	0	1096
1920-1921------	0	0	2	16	218	289	206	200	32	45	1	0	1009
1921-1922------	0	0	0	7	35	176	406	160	137	2	0	0	923
1922-1923------	0	0	0	12	70	142	121	256	194	12	0	0	807
1923-1924------	0	0	0	26	157	205	454	274	205	34	1	0	1356
1924-1925------	0	0	0	10	48	350	412	131	37	14	3	0	1005
1925-1926------	0	0	0	63	147	444	465	174	199	28	0	0	1520
1926-1927------	0	0	0	1	153	130	198	91	120	13	0	0	706
1927-1928------	0	0	0	0	28	388	374	286	105	103	0	0	1284
1928-1929------	0	0	0	6	116	320	296	392	89	0	3	0	1222
1929-1930------	0	0	0	10	279	372	510	145	206	1	0	0	1523
1930-1931------	0	0	0	20	150	381	337	176	278	58	2	0	1391
1931-1932------	0	0	0	4	44	258	219	61	243	16	0	0	845
1932-1933------	0	0	0	16	228	362	149	286	108	14	0	0	1163
1933-1934------	0	0	0	0	53	80	240	250	157	3	0	0	783
1934-1935------	0	0	0	0	68	242	258	232	54	11	1	0	866
1935-1936------	0	0	0	2	152	327	407	398	58	58	0	0	1402
1936-1937------	0	0	0	26	180	273	256	217	214	42	0	0	1208
1937-1938------	0	0	0	19	222	315	301	161	34	73	0	0	1125
1938-1939------	0	0	0	7	191	223	233	217	74	36	0	0	981
1939-1940------	0	0	0	11	163	185	638	348	135	45	0	0	1525
1940-1941------	0	0	1	2	128	193	243	311	251	4	0	0	1133
1941-1942------	0	0	0	5	159	217	413	306	194	27	0	0	1321
1942-1943------	0	0	7	0	77	220	363	169	203	7	0	0	1046
1943-1944------	0	0	0	28	156	334	374	136	113	20	2	0	1163
1944-1945------	0	0	0	5	109	308	320	175	24	33	2	0	976
1945-1946------	0	0	0	24	43	327	360	225	65	1	0	0	1045
1946-1947------	0	0	0	6	113	203	403	394	274	18	0	0	1411
1947-1948------	0	0	0	0	121	287	540	314	176	7	0	0	1445
1948-1949------	0	0	0	16	112	157	352	185	111	60	0	0	993
1949-1950------	0	0	0	21	62	190	127	88	137	30	0	0	655
1950-1951------	0	0	0	0	135	254	295	278	118	35	0	0	1115
1951-1952------	0	0	0	0	193	196	117	159	126	30	0	0	821
1952-1953------	0	0	0	33	168	288	210	253	32	27	0	0	1011
1953-1954------	0	0	0	7	117	337	243	115	187	10	9	0	1025
1954-1955------	0	0	0	19	80	192	301	247	142	9	0	0	990
1955-1956------	0	0	0	4	148	246	291	188	123	19	0	0	1019
1956-1957------	0	0	0	0	147	154	204	104	106	32	2	0	749
1957-1958------	0	0	0	49	145	175	401	379	220	13	0	0	1382
1958-1959------	0	0	0	35	102	334	418	263	134	43	0	0	1329
1959-1960------	0	0	0	10	253	248	384	400	264	11	3	0	1573
1960-1961------	0	0	0	15	74	366	484	235	51	55	1	0	1281
Mean 1901-1961------	0	0	0	15	124	274	331	245	135	27	1	0	1152

TEMPERATURE

Table 7. Total Heating Degree Days, Base 65 (°F) Galveston, Municipal Airport

Season	July	August	September	October	November	December	January	February	March	April	May	June	Total
1944------							369	136	102	14	1	0	----
1944-1945------	0	0	0	3	102	302	303	167	23	26	1	0	927
1945-1946------	0	0	0	15	42	318	361	226	63	0	0	0	1025
1946-1947------	0	0	0	3	94	193	394	378	262	16	0	0	1340
1947-1948------	0	0	0	0	120	283	522	321	160	3	0	0	1409
1948-1949------	0	0	0	13	111	164	345	158	101	54	0	0	946
1949-1950------	0	0	0	19	75	178	120	92	137	25	0	0	646
1950-1951------	0	0	0	0	142	269	300	283	121	36	0	0	1151
1951-1952------	0	0	0	0	200	207	117	160	133	31	0	0	848
1952-1953------	0	0	0	36	167	297	224	262	36	25	0	0	1047
1953-1954------	0	0	0	6	121	356	259	123	185	11	9	0	1070
1954-1955------	0	0	0	23	95	206	307	253	145	7	0	0	1036
1955-1956------	0	0	0	9	150	245	303	196	123	18	0	0	1044
1956-1957------	0	0	0	0	169	172	206	103	111	34	2	0	797
1957-1958------	0	0	0	52	152	189	419	390	226	13	0	0	1441
1958-1959------	0	0	0	32	107	347	433	254	137	41	0	0	1351
1959-1960------	0	0	0	8	275	273	404	409	276	13	2	0	1660
1960-1961------	0	0	0	11	73	371	486	260	58	57	0	0	1316
Mean 1944-1961------	0	0	0	14	129	257	326	232	133	24	1	0	1116

See Tables 8 and 31 for corresponding 30-year Normals Values.

Table 8. Distribution of Total Heating Degree Days, Base 65 (°F)

Month	Normal 1931-1960	Cumulative Percentage of Degree Days Equal to or Less than Indicated Totals * 95%	75%	50%	25%	5%
Houston, Federal Office Building (1904-1961)						
July----------	0	0	0	0	0	0
August----------	0	0	0	0	0	0
September--------	0	3	0	0	0	0
October----------	0	71	33	19	8	0
November---------	165	266	197	163	114	48
December---------	288	468	389	301	243	189
January----------	363	556	423	352	255	158
February---------	258	427	306	239	185	116
March----------	174	267	212	133	61	28
April----------	30	72	51	31	15	3
May----------	0	8	2	0	0	0
June----------	0	0	0	0	0	0
Seasonal---------	1278	1668	1489	1297	1107	890

Month	1931-1960 Normal	Cumulative Percentage of Degree Days Equal to or Less than Indicated Totals * 95%	75%	50%	25%	5%
Galveston, Post Office Building (1872-1961)						
July----------	0	0	0	0	0	0
August----------	0	0	0	0	0	0
September--------	0	3	0	0	0	0
October---------	0	53	19	10	3	0
November--------	138	237	160	117	85	43
December--------	270	432	327	270	205	142
January---------	350	540	425	363	243	121
February--------	258	398	290	232	173	91
March----------	189	251	186	123	68	32
April----------	30	58	37	20	11	0
May----------	0	6	1	0	0	0
June----------	0	0	0	0	0	0
Seasonal--------	1235	1629	1356	1163	99	684

Month	1931-1960 Normal	Cumulative Percentage of Degree Days Equal to or Less than Indicated Totals * 95%	75%	50%	25%	5%
Houston, International Airport (1949 - 1961)						
July----------	0	0	0	0	0	0
August----------	0	0	0	0	0	0
September--------	0	0	0	0	0	0
October----------	0	58	36	19	3	0
November---------	174	261	204	185	145	104
December---------	298	390	352	290	245	220
January----------	363	452	420	347	256	149
February---------	252	417	263	219	139	129
March----------	167	234	179	161	136	28
April----------	24	61	58	45	15	8
May----------	0	3	1	0	0	0
June----------	0	0	0	0	0	0
Seasonal---------	1278	1631	1366	1232	1085	905

Month	1931-1960 Normal	Cumulative Percentage of Degree Days Equal to or Less than Indicated Totals * 95%	75%	50%	25%	5%
Galveston, Municipal Airport (1944 - 1961)						
July----------	0	0	0	0	0	0
August----------	0	0	0	0	0	0
September--------	0	0	0	0	0	0
October----------	6	36	19	9	0	0
November---------	147	200	152	120	94	42
December---------	276	356	302	269	189	164
January----------	360	486	407	307	259	117
February---------	263	390	283	226	158	92
March----------	189	262	160	123	101	23
April----------	33	54	34	18	13	0
May----------	0	2	1	0	0	0
June----------	0	0	0	0	0	0
Seasonal---------	1274	1441	1340	1047	927	646

Distribution compiled from preceeding Table 7.

* Percentage Frequency of monthly total degree days less than stated values. For example, total of degree days at Houston International Airport in December was 290 or less 50 percent of the time; while at Galveston Municipal Airport, for the same month, was 269 or less 50 percent of the time.

TEMPERATURE

Table 9. Mean and Distribution of Dry-Bulb Temperature (°F)

Month	Mean				Frequency of Occurrence of Dry-Bulb Temperatures Equal to or Greater than Values Shown *																			
					Midnight Frequency in %					6 am Frequency in %					Noon Frequency in %					6 pm Frequency in %				
	Mid.	6 am	Noon	6 pm	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5
Houston International Airport (January 1951 - December 1960)																								
January----	52	49	59	58	34	45	52	59	68	31	41	48	58	68	39	51	59	70	76	42	52	57	66	71
February---	53	51	61	60	35	47	54	61	68	33	44	51	60	68	38	52	63	70	76	40	53	62	68	73
March------	58	55	67	66	43	51	58	66	70	37	47	56	64	70	47	60	69	75	80	49	60	67	72	77
April------	65	62	73	72	53	60	65	70	74	48	57	63	69	73	61	70	75	79	82	62	69	73	76	80
May--------	71	69	81	79	62	68	71	74	78	58	65	69	73	76	68	79	83	85	88	70	76	79	82	86
June-------	76	74	87	85	71	75	77	78	80	69	73	75	76	79	77	86	88	90	93	76	83	85	88	92
July-------	78	76	89	86	76	77	78	79	81	74	75	76	77	79	81	88	90	91	93	79	85	87	89	94
August-----	78	76	89	86	75	77	78	79	81	73	75	76	77	79	78	86	90	92	94	77	84	87	89	92
September--	75	72	85	82	68	73	76	77	79	63	69	73	75	77	75	82	86	89	91	75	80	82	85	88
October----	66	63	77	73	54	61	68	72	76	48	58	64	69	75	62	73	79	83	88	61	70	74	78	82
November---	57	54	66	63	41	49	57	64	72	37	46	54	62	71	44	59	67	74	82	45	56	63	70	77
December---	52	50	61	58	38	45	51	60	68	33	42	49	58	68	45	53	61	69	77	44	51	58	64	71
Galveston Municipal Airport (January 1951 - December 1960)																								
January----	54	53	58	56	38	49	55	60	65	36	46	53	60	64	40	51	59	66	71	42	52	57	62	66
February---	56	54	59	58	39	51	57	61	66	37	48	55	61	66	40	53	61	67	71	42	53	60	64	68
March------	60	58	64	63	46	55	62	65	69	43	53	61	65	69	47	58	65	70	74	50	59	64	67	71
April------	67	66	71	70	58	65	67	70	74	53	63	67	70	73	60	68	72	75	78	62	67	70	73	76
May--------	74	73	79	77	67	72	74	77	79	64	71	74	76	79	69	77	80	82	84	70	75	78	80	84
June-------	80	79	85	84	75	79	80	82	83	74	78	80	81	83	79	84	85	87	88	78	82	84	85	88
July-------	82	81	87	86	79	81	82	83	84	78	80	81	82	84	80	86	87	88	90	81	85	86	87	89
August-----	82	81	86	85	79	81	83	83	84	77	80	81	82	84	78	85	87	88	90	79	84	86	87	88
September--	79	77	83	81	73	77	80	81	83	69	75	78	80	82	75	81	84	86	88	76	80	82	83	85
October----	72	69	76	74	59	67	73	76	81	55	64	71	75	80	61	71	77	81	85	62	70	75	78	82
November---	61	59	65	63	46	55	62	68	73	42	51	60	67	72	46	59	67	73	78	47	58	65	70	74
December---	56	54	59	57	42	50	56	62	67	38	48	54	61	67	45	53	60	66	72	45	53	58	62	67

* At Houston International Airport at 6 am in July the mean dry-bulb temperature was 76° and at this hour a temperature 76° or higher occurred 50 percent of the time; while at Galveston Municipal Airport, for the same hour in July, the mean temperature was 81° and at this hour a temperature of 81° or higher occurred 50 percent of the time.

See Tables 22, 23 and 24 for corresponding data for Relative Humdity, and dew-point and wet-bulb temperatures.

Table 10. Mean Daily Maximum Temperature (°F) At Substations In the Houston - Galveston Area

Station	1960 Elevation (ft.)	Period of Record (yrs.)	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Anahuac NAV.----------	23	29	(28)62.8	(28)64.9	70.3	76.6	(28)83.3	89.1	90.9	(28)91.3	(28)87.8	(28)81.6	(27)70.8	64.4	77.8
Angleton 4NE----------	27	30	65.6	67.8	72.4	78.3	84.5	90.0	91.8	92.2	88.9	83.3	73.5	(29)68.1	79.7
Liberty----------	38	30	(29)64.4	67.3	72.9	79.2	86.0	92.0	94.1	94.4	90.4	84.0	73.0	66.6	80.3
Sugar Land----------	79	30	63.6	66.3	72.5	79.0	86.1	91.8	93.8	94.2	90.3	84.2	72.3	65.9	80.0

Table 11. Mean Daily Minimum Temperature (°F) At Substations In the Houston - Galveston Area

Station	1960 Elevation (ft.)	Period of Record (yrs.)	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Anahuac NAV.----------	23	29	(28)43.3	(28)45.5	50.0	58.1	(28)65.6	71.8	74.1	(28)73.5	(28)68.4	58.6	(27)48.3	(28)44.0	58.4
Angleton 4NE----------	27	30	45.0	47.4	51.6	58.6	65.4	71.0	72.8	72.5	68.7	59.6	49.9	(29)46.2	59.0
Liberty----------	38	30	(29)43.2	46.1	50.6	57.8	64.8	70.6	72.6	72.1	67.4	(29)58.0	47.7	44.2	57.9
Sugar Land----------	79	30	43.0	45.5	50.2	58.4	65.7	(29)71.4	73.3	73.0	68.9	60.2	49.2	44.5	58.6

Table 12. Mean Daily Temperature (°F) At Substations In the Houston - Galveston Area

Station	1960 Elevation (ft.)	Period of Record (yrs.)	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Anahuac NAV.----------	23	28	53.1	55.2	(29)60.2	(29)67.4	74.5	(29)80.5	(29)82.5	82.4	78.1	70.1	(27)59.6	54.2	68.1
Angleton 4NE----------	27	30	55.3	57.6	62.0	68.5	75.0	80.5	82.3	82.4	78.8	71.5	61.7	(29)57.2	69.4
Liberty----------	38	30	(29)53.8	56.7	61.8	68.5	75.4	81.3	83.4	83.3	78.9	(29)71.0	60.4	55.4	69.1
Sugar Land----------	79	30	53.3	55.9	61.4	68.7	75.9	(29)81.6	83.6	83.6	79.6	72.2	60.8	55.2	69.3

Means are for the period 1931-1960.
Numbers in parenthesis indicate numbers of years for which that month's data are computed if different from that given in Column headed Period of Record, years.

PRECIPITATION

Table 13. Total Precipitation * , Inches , Houston , Federal Office Building (City Office)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1882--------	----	----	----	0.70	6.05	1.97	4.89	5.37	2.93	5.56	----	----	-----
1883--------	----	----	----	2.31	6.08	7.32	2.20	0.37	7.45	3.21	----	----	-----
1884--------	----	----	----	4.39	16.88	4.30	1.61	1.33	10.02	5.28	----	----	-----
1885--------	----	----	----	----	4.55	2.43	3.88	1.48	4.65	1.49	----	----	-----
1886--------	----	----	----	4.17	0.05	5.84	1.37	3.59	12.83	.67	----	----	-----
1887--------	----	----	----	----	3.36	7.81	1.38	8.57	3.72	3.99	----	----	-----
1888--------	----	----	----	3.69	13.39	10.93	2.91	6.61	1.17	4.92	----	----	-----
1889--------	9.45	3.32	3.35	2.46	3.72	10.67	1.83	1.53	6.33	0.03	2.94	0.43	46.06
1890--------	5.48	3.60	3.94	10.59	4.41	5.79	2.04	5.75	3.50	7.36	3.50	1.55	57.51
1891--------	13.11	3.44	2.26	2.64	1.44	0.81	4.85	1.44	5.81	0.74	4.61	5.29	46.44
1892--------	1.78	1.13	2.82	3.20	0.04	8.12	4.51	7.13	2.61	3.17	6.01	2.71	43.23
1893--------	0.65	2.12	3.52	3.21	3.00	4.75	1.62	3.07	0.34	0.73	4.96	1.06	29.03
1894--------	3.59	4.17	5.01	1.45	2.31	5.45	2.69	5.75	3.25	0.69	0.84	1.05	36.25
1895--------	1.89	4.08	1.80	1.38	8.76	5.63	0.84	3.37	0.68	1.92	4.91	1.77	37.03
1896--------	4.09	7.50	8.58	3.02	1.87	1.21	3.44	2.38	9.93	3.10	1.99	5.67	52.78
1897--------	5.93	1.78	2.93	0.83	7.16	0.91	2.00	7.53	5.07	6.59	1.08	4.78	46.59
1898--------	4.53	3.49	2.87	5.92	1.50	6.46	4.89	5.59	2.42	0.92	5.28	2.94	46.81
1899--------	4.59	3.03	0.27	4.57	3.49	9.26	2.47	4.91	4.24	6.09	2.61	4.17	49.70
1900--------	7.26	4.66	4.22	6.57	3.07	3.75	14.80	10.74	5.36	1.75	4.96	5.72	72.86
1901--------	2.16	2.08	2.40	1.10	0.40	1.47	4.39	2.14	3.78	2.29	1.65	3.23	27.09
1902--------	1.16	3.86	1.13	3.65	3.77	5.01	7.44	0.37	6.78	2.92	8.81	2.38	47.28
1903--------	4.39	6.38	6.80	3.85	2.75	3.70	4.35	6.46	2.00	1.93	1.12	2.36	46.09
1904--------	0.30	2.43	2.66	4.83	4.90	3.20	7.31	4.10	1.20	1.00	3.26	2.39	37.58
1905--------	2.25	3.70	9.85	7.44	1.46	7.92	2.80	0.58	0.97	----	----	----	-----
1906--------	----	----	----	----	0.15	1.81	5.60	1.75	5.80	6.31	----	3.31	-----
1907--------	1.76	2.28	3.74	0.70	15.87	0.94	3.60	3.52	5.15	9.89	10.30	4.76	62.51
1908--------	2.72	9.01	2.78	3.09	3.93	3.57	6.52	3.82	7.28	1.76	2.47	2.16	49.11
1909--------	0.07	2.25	1.02	2.29	5.64	9.52	2.53	0.78	0.48	8.22	2.68	2.32	37.80
1910--------	1.59	2.31	0.84	0.80	7.21	2.10	4.49	2.45	1.04	1.98	0.88	4.90	30.59
1911--------	0.18	0.80	3.52	8.67	1.82	3.10	6.59	1.87	3.14	4.72	1.92	11.55	47.88
1912--------	1.73	3.30	2.91	6.62	5.02	0.77	7.06	2.59	1.27	3.23	0.67	10.09	45.26
1913--------	3.34	3.16	3.31	4.49	3.56	2.63	1.37	0.88	13.37	9.86	2.31	6.22	54.50
1914--------	0.49	3.32	3.94	3.26	15.47	0.95	1.77	9.24	1.21	2.53	7.83	11.43	61.44
1915--------	2.22	3.16	1.54	1.90	1.39	0.39	2.92	15.43	1.14	1.08	1.51	6.12	38.80
1916--------	2.81	0.03	T	2.25	4.40	1.80	8.41	6.66	2.45	1.05	2.31	3.68	35.85
1917--------	1.29	1.56	0.65	2.30	2.21	0.83	3.30	1.13	1.95	0.32	0.93	1.19	17.66
1818--------	0.96	1.69	3.25	7.20	2.59	3.74	6.11	1.68	2.62	8.44	6.02	3.16	47.46
1919--------	8.52	3.12	3.25	1.16	6.14	15.85	7.30	3.82	8.68	9.72	1.78	3.04	72.38
1920--------	6.44	1.20	2.31	0.39	4.79	3.81	3.84	11.26	4.30	9.04	6.07	3.98	57.43
1921--------	3.58	1.45	3.04	3.38	1.57	6.78	1.95	1.66	4.02	1.15	1.91	3.50	33.99
1922--------	5.98	2.25	10.66	5.22	6.07	5.51	2.11	1.72	2.34	2.90	3.82	2.97	51.55
1923--------	1.31	4.03	5.37	9.66	3.89	6.79	0.82	3.82	6.25	2.88	3.64	14.38	62.84
1924--------	4.87	4.87	2.24	2.67	7.11	3.67	2.60	0.64	1.25	0.44	1.35	3.77	35.48
1925--------	5.41	0.63	0.94	2.93	1.71	3.01	2.49	3.95	3.41	5.99	9.21	3.20	42.88
1926--------	4.93	1.20	9.18	2.97	3.94	8.95	2.58	6.87	2.43	4.96	2.27	3.78	54.06
1927--------	3.07	1.82	2.81	2.66	0.34	5.98	4.81	T	3.86	1.71	2.12	7.51	36.69
1928--------	0.40	3.85	1.35	1.54	2.14	4.71	3.43	2.14	6.18	4.02	2.66	4.37	36.79
1929--------	4.12	1.43	2.33	8.02	12.03	3.20	3.84	1.33	0.15	2.97	5.30	1.68	46.40
1930--------	3.52	2.34	1.58	0.93	6.00	0.46	2.81	0.79	2.14	7.57	2.23	4.07	34.44
1931--------	3.42	4.76	2.45	4.54	0.37	0.61	3.39	3.62	2.27	1.09	5.25	6.01	37.78
1932--------	5.45	4.27	1.22	2.56	0.56	2.14	1.88	8.03	2.64	1.06	1.20	2.89	33.90
1933--------	3.88	3.28	3.07	0.63	1.83	1.85	7.97	6.36	4.47	1.92	2.03	3.27	40.56
1934--------	9.94	3.12	4.46	4.10	1.70	0.12	4.39	1.61	3.57	T	4.93	4.04	41.98
1935--------	1.64	3.78	3.49	3.63	4.30	3.59	4.84	1.68	6.77	4.96	2.99	7.93	49.60
1936--------	1.94	2.11	2.31	2.03	11.55	0.53	5.12	2.95	3.56	1.06	2.15	5.81	41.12
1937--------	3.25	0.45	3.89	0.33	T	3.12	2.94	4.18	4.69	6.82	1.37	7.14	38.18
1938--------	3.34	3.74	1.71	2.41	10.27	3.67	7.37	1.66	4.25	1.83	1.89	3.31	45.45
1939--------	4.89	4.08	0.63	1.25	3.12	3.17	9.39	0.52	2.30	1.64	3.16	2.62	36.77
1940--------	1.53	3.18	0.66	3.21	2.22	7.21	2.79	0.82	2.49	4.85	9.06	5.30	43.32
1941--------	2.06	3.06	5.59	7.23	5.33	9.21	5.21	3.13	6.91	10.23	1.71	2.32	61.99
1942--------	0.98	2.25	1.91	5.21	1.09	4.89	14.10	4.08	3.28	1.50	2.55	3.43	45.27
1943--------	3.48	1.04	3.99	0.74	6.27	1.40	13.53	1.32	4.41	1.31	14.10	3.80	55.39
1944--------	8.52	1.87	5.28	0.58	10.10	1.63	0.24	6.95	8.05	0.01	6.28	5.03	54.54
1945--------	4.53	2.40	2.98	4.21	6.28	5.38	1.98	11.13	2.85	6.37	0.55	7.58	56.24
1946--------	6.34	2.84	1.95	3.15	15.03	9.37	5.44	1.15	7.76	2.21	10.77	2.96	68.97
1947--------	3.79	0.68	2.21	1.19	10.24	5.04	0.55	4.52	0.83	2.34	5.47	4.15	41.01
1948--------	4.03	2.92	1.64	1.59	5.55	1.84	2.13	1.25	0.90	0.09	6.14	1.38	29.46
1949--------	4.59	5.40	3.05	6.53	1.36	1.19	7.48	3.83	3.44	17.64	0.09	9.62	64.22
1950--------	4.64	5.09	0.92	6.82	3.23	7.41	5.31	0.94	2.10	0.28	2.35	1.13	40.22
1951--------	3.55	0.98	3.91	0.69	1.90	2.53	3.74	1.54	4.83	0.82	1.42	1.32	27.23
1952--------	1.21	5.78	1.86	5.44	2.76	2.48	3.42	0.74	1.26	0.02	7.73	4.36	37.06
1953--------	2.60	3.28	0.14	2.30	8.13	2.44	0.92	7.43	0.34	2.64	5.11	4.97	40.30
1954--------	2.55	0.17	0.81	6.09	2.97	0.53	7.66	1.57	0.45	4.91	1.76	2.31	31.78
1955--------	5.51	5.26	0.63	2.05	2.79	2.50	10.04	6.66	1.67	0.71	1.36	1.90	41.08
1956--------	3.19	1.80	1.23	2.33	2.07	4.41	2.37	1.05	1.08	3.44	3.59	5.00	31.56
1957--------	1.41	2.29	7.05	9.46	1.99	3.49	4.68	1.30	9.37	6.61	8.24	1.38	57.27
1958--------	5.35	2.63	1.40	3.08	1.55	2.10	1.94	3.60	11.74	5.90	1.65	0.54	41.48
1959--------	1.90	9.80	0.80	6.92	7.50	6.52	8.17	6.99	4.24	4.89	1.45	4.67	63.85
1960--------	2.00	3.99	0.85	2.21	0.88	14.38	5.48	5.87	1.86	10.85	4.72	6.73	59.82
Mean Total Precipitation (Inches) - By Decades													
1891-1900---	4.74	3.54	3.43	3.28	3.26	4.64	4.21	5.19	3.97	2.57	3.73	3.52	46.08
1901-1910---	1.82	3.81	3.47	3.08	4.61	3.92	4.90	2.60	3.45	4.03	3.90	3.09	42.68
1911-1920---	2.80	2.13	2.47	3.82	4.74	3.39	4.87	5.46	4.01	5.00	3.14	6.05	47.88
1921-1930---	3.72	2.39	3.95	4.00	4.48	4.91	2.74	2.29	3.20	3.46	3.45	4.92	43.51
1931-1940---	3.93	3.28	2.39	2.47	3.59	2.60	5.01	3.14	3.70	2.52	3.40	4.83	40.86
1941-1950---	4.30	2.76	2.95	3.73	6.45	4.74	5.60	3.83	4.05	4.20	5.00	4.14	51.75
1951-1960---	2.93	3.60	1.87	4.06	3.25	4.14	4.84	3.68	3.68	4.08	3.70	3.32	43.15
Mean Total Precipitation (Inches) for Period of Record, 79 years													
1882-1960---	3.60	3.07	2.93	3.55	4.59	4.31	4.35	3.75	3.97	3.68	3.74	4.19	45.73

Table 13. Total Precipitation . Inches . Houston , Federal Office Building (City Office) - Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Normal Precipitation, Houston, Federal Office Building, adjusted to present location													
1931-1960---	3.72	3.21	2.40	3.42	4.43	3.83	5.15	3.55	3.81	3.60	4.04	4.10	45.26
Highest Monthly and Annual Total Precipitation (Inches)													
Highest-----	13.11	9.80	10.66	10.59	16.88	15.85	14.80	15.43	13.37	17.64	14.10	14.38	72.86
Year--------	1891	1959	1922	1890	1884	1919	1900	1915	1913	1949	1943	1923	1900
Lowest Monthly and Annual Total Precipitation (Inches)													
Lowest------	0.07	0.03	T	0.33	T	0.12	0.24	T	0.15	T	0.09	0.43	17.66
Year--------	1909	1916	1916	1937	1937	1934	1944	1927	1929	1934	1949	1889	1917
Houston International Airport													
1924--------	4.89	4.35	1.92	2.19	6.40	3.78	0.26	2.15	1.29	0.12	1.26	5.36	33.97
1925--------	4.87	0.46	1.08	2.64	0.62	3.40	3.97	2.44	4.55	5.76	10.41	3.13	43.33
1926--------	5.42	1.26	10.70	5.03	4.12	5.63	3.17	2.40	2.38	4.35	2.82	4.49	51.77
1927--------	2.22	2.57	1.92	2.94	0.28	4.87	5.22	0.20	6.15	1.68	2.04	8.88	38.97
1928--------	0.45	4.12	4.54	1.62	3.38	4.87	2.35	1.76	5.12	2.60	3.41	4.16	38.38
1929--------	4.18	1.41	3.17	11.13	11.20	3.25	5.91	0.39	1.25	2.20	7.76	2.10	53.95
1930--------	5.17	3.48	1.94	1.48	8.94	0.77	2.69	3.84	2.91	7.59	2.85	5.48	47.14
1931--------	3.94	6.78	2.92	1.88	0.53	1.46	4.04	1.83	0.13	1.47	5.04	5.80	35.82
1932--------	5.17	6.03	0.93	2.40	1.64	1.56	2.49	5.84	3.43	2.29	1.85	4.02	37.65
1933--------	3.14	3.51	2.36	0.62	2.32	0.63	7.66	5.42	4.66	1.76	2.07	3.45	37.60
1934--------	9.80	1.88	3.50	5.86	1.33	0.08	2.45	1.04	4.61	0.29	5.37	3.77	39.98
1935--------	2.02	4.03	2.43	3.63	3.89	2.74	2.58	0.38	6.62	3.25	1.46	9.59	42.62
1936--------	2.77	2.06	0.85	1.72	12.19	0.13	6.86	3.23	3.68	1.85	2.57	6.05	43.96
1937--------	2.92	1.82	4.41	0.36	T	4.91	2.82	3.64	4.81	4.73	2.22	5.73	38.37
1938--------	5.88	1.83	1.03	3.88	7.77	4.12	2.05	3.09	4.42	1.55	2.17	2.08	39.87
1939--- ----	3.16	1.98	1.21	1.10	5.86	2.55	8.27	2.39	1.42	3.36	1.98	2.04	35.32
1940--------	0.92	2.25	1.89	1.12	1.20	5.80	3.11	0.76	3.67	4.20	9.53	4.58	39.03
1941--------	1.97	2.57	6.45	6.56	4.51	9.25	5.70	3.24	11.17	11.48	2.41	2.35	67.66
1942--------	1.29	2.41	2.03	4.94	1.77	3.31	12.38	5.56	2.72	1.57	3.99	3.72	45.69
1943--------	3.69	1.31	3.98	1.76	3.91	2.43	9.14	1.92	3.19	1.04	12.14	4.79	49.30
1944--------	10.51	2.15	6.64	1.14	12.44	2.17	0.24	2.61	9.15	0.65	3.71	6.38	57.79
1945--------	1.97	2.58	2.18	4.33	7.35	5.69	2.29	18.51	3.44	4.44	0.51	7.15	60.44
1946--------	6.56	2.82	2.48	3.87	9.60	9.77	5.35	4.32	8.84	2.01	14.36	2.88	72.86
1947--------	4.39	1.09	2.79	2.02	8.54	1.74	2.17	8.86	1.29	1.91	4.58	3.82	43.20
1948--------	4.54	4.11	1.94	2.19	5.35	3.59	2.74	2.80	2.74	0.92	7.23	1.37	39.52
1949--------	4.76	5.24	4.43	6.17	1.18	2.55	9.39	3.87	1.31	22.31	0.18	9.80	71.19
1950--------	4.62	5.00	1.22	4.96	2.49	7.10	3.29	0.72	1.50	0.69	1.17	1.12	33.88
1951--------	5.37	1.42	4.84	1.28	3.32	3.32	1.06	2.01	5.40	1.18	1.55	2.53	33.28
1952--------	0.86	7.12	2.16	6.12	3.51	3.74	4.33	1.09	2.62	T	6.58	5.53	43.66
1953--------	1.57	3.40	0.07	1.27	7.86	3.49	2.06	8.38	0.14	2.62	5.27	7.24	43.37
1954--------	1.65	0.09	0.89	2.81	2.70	1.24	4.86	3.89	0.49	6.98	1.74	1.42	28.76
1955--------	5.57	6.03	0.93	3.51	3.54	1.56	2.01	10.10	5.34	0.63	1.06	1.60	41.88
1956--------	3.96	2.42	0.78	1.84	3.32	4.07	0.38	0.38	1.88	2.66	1.52	5.11	28.32
1957--------	0.91	2.46	11.42	8.07	1.87	3.96	0.84	3.23	8.29	11.53	6.70	1.83	61.11
1958--------	4.69	3.59	1.47	2.58	2.40	0.47	6.04	3.16	15.40	2.03	1.32	0.78	43.93
1959--------	2.70	11.33	1.58	7.76	6.20	2.78	9.67	8.45	4.76	5.76	1.90	5.34	68.23
1960--------	2.05	3.93	0.38	1.42	0.90	14.66	2.34	7.42	0.61	7.32	3.69	8.97	53.69
Mean Total Precipitation (Inches) - By Decades													
1931-1940---	3.96	3.22	2.15	2.26	3.67	2.40	4.23	2.76	3.75	2.48	3.43	4.71	39.02
1941-1950---	4.43	2.93	3.41	3.79	5.71	4.76	5.27	5.24	4.54	4.70	5.03	4.34	54.15
1951-1960---	2.93	4.18	2.45	3.67	3.56	3.93	3.36	4.81	4.49	4.07	3.13	4.04	44.62
Mean Total Precipitation (Inches) For Period of Record, 37 years													
1924-1960---	3.80	3.27	2.85	3.36	4.44	3.71	4.11	3.82	4.09	3.70	3.96	4.44	45.55
Normal Precipitation, Houston International Airport, adjusted to present location													
1931-1960---	3.78	3.44	2.67	3.24	4.32	3.69	4.29	4.27	4.26	3.77	3.86	4.36	45.95
Highest Monthly and Annual Total Precipitation (Inches)													
Highest-----	10.51	11.33	11.42	11.13	12.44	14.66	12.38	18.51	15.40	22.31	14.36	9.80	72.86
Year--------	1944	1959	1957	1929	1944	1960	1942	1945	1958	1949	1946	1949	1946
Lowest Monthly and Annual Total Precipitation (Inches)													
Lowest------	0.45	0.09	0.07	0.36	T	0.08	0.24	0.20	0.13	T	0.18	0.78	28.32
Year--------	1928	1954	1953	1937	1937	1934	1944	1927	1931	1952	1949	1958	1956

PRECIPITATION

Table 13. Total Precipitation *, Inches, Galveston, Post Office Building (City Office)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1871--------	----	----	----	----	3.79	11.89	2.63	4.32	3.66	17.78	5.67	2.38	-----
1872--------	4.62	2.27	2.77	5.96	2.21	3.39	0.34	2.63	2.33	1.86	7.98	5.37	41.73
1873--------	3.43	0.50	2.80	2.27	5.36	8.61	6.83	8.04	7.37	2.26	8.91	2.53	58.91
1874--------	1.35	3.11	3.09	3.38	5.80	1.68	9.30	7.19	5.84	0.12	1.58	6.92	49.36
1875--------	4.31	2.94	3.51	2.55	1.50	0.89	1.11	6.10	18.41	1.41	4.88	9.71	57.32
1876--------	1.49	4.79	5.94	2.65	10.27	2.63	3.22	10.19	0.64	1.41	3.93	3.71	50.92
1877--------	4.53	1.12	1.35	8.36	1.80	2.68	1.89	1.27	13.85	17.39	6.77	5.86	66.87
1878--------	4.66	3.88	1.03	3.50	3.90	3.48	7.70	7.58	5.08	3.61	7.31	9.07	60.80
1879--------	1.88	1.36	0.91	2.55	1.91	1.96	3.09	7.18	1.47	0.60	1.95	2.07	26.93
1880--------	0.66	2.13	6.54	1.71	4.09	8.33	2.48	1.62	10.20	2.20	8.85	2.16	50.97
1881--------	3.94	8.29	1.47	4.76	3.50	0.03	4.92	5.98	3.66	10.38	2.85	3.50	53.28
1882--------	8.15	5.57	1.58	0.83	3.75	6.16	4.34	9.85	4.68	6.79	2.20	3.78	57.68
1883--------	6.46	1.15	3.93	1.26	6.01	1.04	1.38	1.09	3.22	6.78	4.88	2.91	40.11
1884--------	5.10	0.89	4.84	5.55	8.42	6.84	1.16	1.77	7.04	7.37	4.25	9.44	62.87
1885--------	6.97	2.04	3.17	4.12	6.41	3.28	2.20	1.74	26.01	2.20	2.32	2.10	62.56
1886--------	3.45	2.31	3.19	2.15	0.03	6.19	1.20	3.46	13.31	1.93	2.65	2.10	41.97
1887--------	1.19	1.86	1.98	0.01	4.84	8.28	1.62	6.43	2.52	4.37	0.05	10.28	43.43
1888--------	2.70	7.54	2.84	3.13	5.18	9.77	1.54	14.46	3.32	5.67	6.73	3.00	65.88
1889--------	7.81	2.94	3.31	1.40	1.81	4.79	0.75	5.11	3.98	T	5.39	0.23	37.52
1890--------	2.86	1.92	4.96	5.14	5.38	7.42	1.82	5.09	4.79	4.38	2.37	1.67	47.80
1891--------	6.79	4.35	2.55	1.73	0.25	3.52	4.31	4.01	7.01	1.06	3.44	2.49	41.51
1892--------	1.99	1.52	1.45	1.14	0.33	4.26	1.50	5.29	0.58	1.69	2.80	2.23	24.78
1893--------	0.54	1.99	0.88	5.70	2.98	7.45	2.96	5.02	1.72	0.55	3.92	1.72	35.43
1894--------	2.41	2.69	1.96	1.42	1.00	9.89	6.32	9.49	2.64	0.51	1.59	0.72	40.64
1895--------	1.24	4.93	2.77	0.33	5.13	1.91	3.07	4.51	1.86	2.93	5.95	4.28	38.91
1896--------	1.91	2.70	3.59	1.49	0.82	0.34	3.90	0.35	2.20	2.14	3.84	2.33	25.61
1897--------	2.97	2.25	4.59	1.24	1.27	0.37	0.78	4.65	2.40	5.12	1.02	2.58	29.24
1898--------	4.48	4.03	4.10	3.04	1.58	1.94	3.62	3.68	6.78	0.84	5.65	2.26	42.00
1899--------	10.39	2.83	0.53	2.80	T	5.61	6.02	2.52	1.85	1.86	3.48	4.87	42.76
1900--------	3.18	3.59	6.87	4.65	4.53	5.51	18.74	6.94	11.80	5.54	1.64	5.40	78.39
1901--------	1.39	2.24	1.96	2.86	0.46	0.85	6.11	6.58	7.84	15.00	2.06	3.98	51.33
1902--------	0.92	2.12	0.92	2.85	2.72	8.22	2.81	0.00	7.11	1.48	6.59	1.93	37.67
1903--------	4.55	6.84	8.11	1.14	0.79	3.14	13.79	5.45	2.76	3.60	0.03	2.27	52.47
1904--------	1.01	0.99	0.57	11.04	5.20	4.03	3.41	4.03	5.43	0.80	4.14	2.00	42.65
1905--------	5.40	5.23	2.21	7.62	1.70	7.48	2.39	2.00	2.41	1.07	5.77	5.32	48.60
1906--------	1.17	2.92	2.05	0.19	0.14	1.73	5.85	1.47	2.68	10.88	0.45	1.63	31.16
1907--------	1.44	2.09	2.28	4.00	6.80	T	1.49	0.94	7.56	6.96	6.33	4.04	43.93
1908--------	2.15	3.35	0.69	1.44	3.40	0.54	7.28	4.16	14.64	0.34	1.28	2.74	42.01
1909--------	0.02	1.46	1.97	3.39	5.85	3.08	0.61	4.06	2.50	7.61	1.89	2.51	34.95
1910--------	2.05	4.41	1.48	0.92	5.10	6.70	6.19	2.01	4.74	9.36	0.95	3.58	47.49
1911--------	0.90	0.69	3.88	7.63	1.90	1.45	4.73	5.48	3.50	5.92	5.06	9.99	51.13
1912--------	2.44	1.91	2.00	4.29	4.50	4.03	0.16	1.59	1.04	2.04	0.41	8.61	33.02
1913--------	2.92	3.27	1.43	2.46	3.87	2.51	1.48	3.88	18.68	15.37	2.49	2.11	60.47
1914--------	0.34	3.31	4.63	8.54	7.54	0.12	1.29	8.17	5.20	2.95	9.19	4.43	55.71
1915--------	4.52	2.65	1.43	3.37	2.70	0.08	2.45	19.08	2.12	2.81	1.47	5.69	48.37
1916--------	0.86	0.19	0.25	1.37	8.08	3.15	4.64	4.14	4.24	0.99	2.16	0.79	30.86
1917--------	2.21	2.51	0.91	1.45	3.47	0.65	0.46	2.71	3.60	1.49	0.97	1.00	21.43
1918--------	0.54	1.11	1.65	6.63	0.22	2.79	2.24	3.04	2.03	2.78	8.15	3.46	34.64
1919--------	6.22	2.43	2.20	2.17	9.96	15.49	3.73	2.17	5.29	8.30	1.97	2.02	61.95
1920--------	7.09	1.80	1.77	0.70	3.86	6.68	3.21	2.65	2.86	7.92	3.64	6.49	48.67
1921--------	2.77	0.30	3.59	2.47	2.04	4.97	5.77	1.42	8.37	3.83	1.61	2.76	39.90
1922--------	4.84	3.03	2.69	1.66	4.93	8.96	1.60	2.53	8.89	4.78	2.54	2.56	49.01
1923--------	6.99	5.09	4.53	4.45	3.56	3.24	5.80	4.61	9.91	3.11	4.11	7.84	63.24
1924--------	5.87	5.67	1.43	1.14	3.33	2.51	T	0.49	0.04	0.03	1.52	5.33	27.36
1925--------	4.54	0.20	0.07	1.58	1.37	12.95	3.90	2.78	11.06	17.34	3.42	2.63	61.84
1926--------	4.36	1.27	9.39	5.49	4.08	1.53	5.00	0.92	3.89	2.02	1.81	4.37	44.13
1927--------	1.17	1.74	0.96	2.58	0.12	3.09	3.61	0.02	2.00	0.50	1.43	6.18	23.40
1928--------	0.41	5.41	0.70	1.43	1.54	4.23	1.14	5.24	7.20	3.82	3.87	4.20	39.19
1929--------	5.53	2.73	3.57	9.92	10.50	1.96	7.17	0.94	0.44	4.02	7.68	3.28	57.74
1930--------	5.07	2.74	1.05	3.99	2.69	0.01	0.31	2.73	4.41	6.92	4.45	3.26	37.63
1931--------	5.58	4.23	2.01	2.26	3.14	1.74	1.02	4.23	0.94	3.40	3.74	7.81	40.10
1932--------	6.67	4.46	1.10	2.17	1.56	1.82	1.89	4.85	5.47	1.30	2.51	2.82	36.62
1933--------	3.32	4.34	5.52	0.46	1.43	0.98	8.66	2.06	3.65	4.80	4.76	5.54	45.52
1934--------	8.42	2.95	7.29	5.67	0.62	0.01	4.55	9.35	3.04	1.56	6.01	3.42	52.89
1935--------	2.83	5.00	1.00	4.17	0.71	3.89	5.36	3.61	7.40	1.86	1.97	7.22	45.02
1936--------	2.75	1.42	1.89	1.93	8.90	0.88	4.57	2.52	4.10	1.68	2.74	3.11	36.49
1937--------	3.34	1.22	3.32	1.07	0.10	1.18	2.02	3.24	6.10	2.95	2.93	4.41	31.88
1938--------	3.63	1.91	1.82	4.41	5.03	1.29	4.00	6.03	7.13	1.26	3.78	2.71	43.00
1939--------	3.75	1.38	0.31	0.68	1.97	2.58	13.55	1.99	3.28	2.22	2.50	2.31	36.52
1940--------	1.59	3.02	1.20	2.43	0.83	2.42	1.53	1.95	6.87	2.97	16.18	8.08	49.07
1941--------	2.33	2.59	6.65	8.38	4.41	4.27	9.11	3.16	15.32	11.47	1.52	1.38	70.59
1942--------	0.77	7.05	3.19	2.44	0.35	3.06	13.79	5.56	1.86	2.82	4.20	2.21	47.30
1943--------	4.24	2.40	3.62	0.33	1.05	2.62	17.96	2.85	6.49	0.65	9.24	5.23	56.68
1944--------	9.92	1.11	8.79	1.98	7.34	0.47	0.79	4.32	4.21	2.92	2.02	6.46	50.33
1945--------	3.52	4.45	3.60	4.30	1.01	9.01	4.08	13.18	6.95	5.62	2.51	5.08	63.31
1946--------	8.12	3.24	4.41	2.17	8.85	4.31	7.24	3.22	11.55	2.93	8.90	2.26	67.20
1947--------	2.83	0.45	3.46	1.24	7.88	0.60	0.59	4.85	1.48	2.11	3.66	5.19	34.34
1948--------	3.43	2.06	1.40	0.78	1.73	0.46	0.38	2.62	4.83	0.31	2.47	0.93	21.40
1949--------	3.27	2.61	3.04	5.76	2.56	3.54	5.95	3.32	1.21	8.37	0.47	7.86	47.96
1950--------	0.85	2.24	1.54	5.27	2.29	11.86	2.75	2.01	5.08	0.07	0.70	1.50	36.14
1951--------	3.45	0.34	3.12	0.63	2.86	1.72	4.75	0.38	11.64	1.61	0.53	2.48	33.51
1952--------	1.56	7.84	4.49	3.24	2.74	1.95	9.65	0.41	0.98	T	3.94	2.89	39.69
1953--------	2.32	1.49	0.06	0.93	6.44	4.05	1.59	15.29	0.56	2.14	5.30	3.30	43.47
1954--------	1.39	0.09	1.69	2.02	1.21	1.60	1.05	1.28	2.87	4.16	3.60	1.33	22.29
1955--------	4.53	3.12	0.21	3.18	3.73	1.76	3.36	5.11	3.49	2.68	0.51	2.41	34.09
1956--------	2.44	1.87	1.14	2.35	1.00	0.90	0.05	1.86	1.84	1.46	0.78	6.15	21.84
1957--------	1.54	2.03	7.73	3.76	0.94	4.89	0.46	2.98	5.62	3.00	3.17	1.19	37.31
1958--------	3.50	1.66	0.95	0.84	0.46	0.23	1.69	6.59	13.77	0.96	1.39	2.67	34.71
1959--------	1.22	7.54	0.23	1.94	2.31	3.16	10.68	5.76	3.62	2.09	0.76	3.23	42.54
1960--------	0.58	2.29	0.93	0.83	0.26	2.35	0.75	6.97	1.21	6.47	3.88	5.37	31.89

PRECIPITATION

Table 13. Total Precipitation *, Inches, Galveston, Post Office Building (City Office) - Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Mean Total Precipitation (Inches) - By Decades													
1871-1880---	2.99	2.46	3.10	3.66	4.06	4.55	3.86	5.61	6.89	4.86	5.78	4.98	52.80
1881-1890---	4.86	3.45	3.13	2.84	4.53	5.38	2.09	5.50	7.25	4.99	3.37	3.90	51.29
1891-1900---	3.59	3.09	2.93	2.35	1.79	4.08	5.12	4.65	3.88	2.22	3.33	2.89	39.93
1901-1910---	2.01	3.17	2.22	3.55	3.22	3.58	4.99	3.07	5.77	5.71	2.95	3.00	43.23
1911-1920---	2.80	1.99	2.02	3.86	4.61	3.70	2.44	5.29	4.86	5.06	3.55	4.46	44.64
1921-1930---	4.16	2.82	2.80	3.47	3.42	4.35	3.43	2.17	5.62	4.64	3.24	4.24	44.34
1931-1940---	4.19	2.99	2.55	2.53	2.43	1.68	4.72	3.98	4.80	2.40	4.71	4.74	41.72
1941-1950---	3.93	2.82	3.97	3.27	3.75	4.02	6.26	4.51	5.90	3.73	3.57	3.81	49.54
1951-1960---	2.25	2.83	2.06	1.97	2.20	2.26	3.40	4.66	4.56	2.46	2.39	3.10	34.14
Mean Total Precipitation (Inches) For Period of Record, 90 years													
1871-1960---	3.43	2.85	2.75	3.02	3.33	3.73	4.04	4.38	5.50	4.01	3.66	3.90	44.60
Normal Precipitation, Galveston, Post Office Building (City Office) (adjusted to present location)													
1931-1960---	3.46	2.88	2.86	2.59	2.79	2.65	4.79	4.39	5.09	2.86	3.56	3.89	41.81
Highest Monthly and Annual Total Precipitation (Inches)													
Highest-----	10.39	9.18	9.39	11.04	10.50	15.49	18.74	19.08	26.01	17.78	16.18	10.28	78.39
Year--------	1899	1959	1926	1904	1929	1919	1900	1915	1885	1871	1940	1887	1900
Lowest Monthly and Annual Total Precipitation (Inches)													
Lowest------	0.02	0.09	0.06	0.01	T	T	T	0.00	0.04	T	0.03	0.23	21.40
Year--------	1909	1954	1953	1887	1899	1907	1924	1902	1924	1889 1952	1903	1889	1948
Galveston, Municipal Airport													
1939---------							13.09	0.84	3.05	1.95	1.64	2.42	-----
1940---------	1.94	3.32	0.84	2.82	1.28	0.92	2.53	3.64	6.06	3.12	17.61	9.43	53.51
1941---------	2.52	2.64	7.09	8.52	4.74	2.54	8.97	3.42	15.70	9.82	1.90	2.17	70.03
1942---------	0.88	7.36	3.02	2.04	0.13	2.70	7.64	3.60	2.88	2.36	4.01	2.63	39.25
1943---------	3.06	2.52	3.26	0.30	2.49	2.25	16.69	2.34	10.08	0.51	8.69	7.09	59.28
1944---------	9.26	1.33	7.94	2.02	6.31	0.27	0.20	3.79	6.30	1.37	2.16	7.19	48.14
1945---------	3.10	4.25	4.19	4.07	0.69	7.95	4.80	12.50	5.38	5.89	1.34	4.91	59.07
1946---------	7.50	2.76	4.35	2.33	8.48	3.03	6.04	2.23	9.21	3.42	11.59	3.06	64.00
1947---------	3.75	0.39	3.91	1.28	10.76	0.51	1.76	6.93	1.27	3.82	6.18	6.21	46.79
1948---------	5.25	3.65	2.22	1.06	2.11	1.33	1.12	4.38	5.02	0.25	2.54	1.62	30.55
1949---------	4.80	3.23	3.73	8.56	3.45	0.48	10.05	3.39	6.21	12.99	0.55	8.41	65.85
1950---------	1.43	2.65	1.70	5.53	1.69	20.57	1.42	1.05	3.12	0.14	0.88	1.80	41.98
1951---------	3.86	0.41	2.93	0.72	2.50	0.72	5.27	1.61	12.63	1.56	0.86	2.58	35.65
1952---------	1.01	10.79	4.43	2.75	2.47	0.57	11.84	0.66	1.94	T	3.97	3.35	43.78
1953---------	2.28	2.34	0.14	0.37	8.09	1.51	2.27	13.31	0.28	2.40	4.68	5.16	42.83
1954---------	1.27	0.18	1.91	2.14	1.68	0.55	1.33	1.77	2.22	3.91	2.81	1.21	20.98
1955---------	4.75	3.12	0.39	4.24	2.41	1.51	2.62	5.34	3.46	1.71	0.68	3.07	33.30
1956---------	3.14	2.08	1.62	4.05	0.87	1.94	0.51	1.64	0.57	2.71	1.14	8.27	28.54
1957---------	1.50	3.38	7.73	5.87	0.88	4.70	0.54	1.60	6.54	3.62	4.28	1.28	41.92
1958---------	4.91	2.84	1.31	1.14	0.52	0.86	0.73	5.23	25.06	1.97	1.41	2.56	48.54
1959---------	1.80	9.18	0.24	3.37	3.36	2.66	11.04	8.50	3.90	3.93	0.95	4.43	53.36
1960---------	0.80	2.89	1.57	1.16	0.34	2.00	0.63	6.87	0.63	7.97	4.39	6.73	35.98
Mean Total Precipitation (Inches) - By Decades													
1941-1950----	4.16	3.08	4.14	3.57	4.09	4.16	5.87	4.36	6.52	4.06	3.98	4.51	52.50
1951-1960----	2.53	3.72	2.23	2.58	2.31	1.70	3.68	4.65	5.72	2.98	2.52	3.86	38.48
Mean Total Precipitation (Inches) For Period of Record, 22 years													
1939-1960----	3.28	3.40	3.07	3.06	3.11	2.84	5.05	4.30	5.98	3.43	3.83	4.34	45.69
Normal Precipitation, Galveston, Municipal Airport, adjusted to present location													
1931-1960----	3.76	3.35	3.03	2.97	3.01	2.49	4.87	4.52	5.76	3.19	3.84	4.42	45.21
Highest Monthly and Annual Total Precipitation (Inches)													
Highest------	9.26	10.79	7.94	8.56	10.76	20.57	16.69	13.31	25.06	12.99	17.61	9.43	70.03
Year---------	1944	1952	1944	1949	1947	1950	1943	1953	1958	1949	1940	1940	1941
Lowest Monthly and Annual Total Precipitation (Inches)													
Lowest-------	0.80	0.18	0.14	0.30	0.13	0.27	0.20	0.66	0.28	T	0.55	1.21	20.98
Year---------	1960	1954	1953	1943	1942	1944	1944	1952	1953	1952	1949	1954	1954

* This table shows total precipitation amounts, including rain and water melted from frozen precipitation (not adjusted to a single location).

Refer to Station Location, Page VI, for locations of weather instruments.

Table 14. Distribution of Precipitation Totals, Inches

Month	γ	β	Percentage of time Totals were Less than Values Shown				
			95%	75%	50%	25%	5%
Houston, Federal Office Building (City Office) (1931-1960)							
January-----	3.51	1.06	7.42	4.77	3.39	2.23	1.17
February----	2.26	1.42	7.38	4.40	2.70	1.70	0.71
March-------	1.92	1.25	5.88	3.25	2.00	1.13	0.38
April-------	1.83	1.86	8.37	4.65	2.79	1.49	0.56
May---------	1.49	2.98	11.62	5.96	3.58	1.79	0.60
June--------	1.47	2.61	10.18	5.22	3.13	1.57	0.52
July--------	1.85	2.79	13.11	7.25	4.46	2.51	0.84
August------	1.72	2.06	8.65	4.74	2.88	1.44	0.41
September---	1.84	2.08	9.36	5.20	3.12	1.66	0.62
October-----	0.75	4.77	12.40	5.25	2.39	0.95	T
November----	1.49	2.72	10.61	5.44	3.26	1.63	0.54
December----	2.93	1.40	8.54	5.18	3.64	2.24	1.12
Annual------	17.09	2.65	64.93	52.21	44.52	37.63	28.89
Houston, International Airport (1931-1960)							
January-----	2.71	1.40	8.12	4.90	3.22	2.10	0.98
February----	2.22	1.55	7.91	4.50	2.95	1.71	0.62
March-------	1.53	1.74	6.79	3.48	2.09	1.04	0.35
April-------	2.13	1.52	7.45	4.26	2.74	1.67	0.61
May---------	1.90	2.27	10.67	5.90	3.63	2.04	0.68
June--------	1.32	2.80	10.08	5.04	2.80	1.40	0.28
July--------	1.73	2.49	10.46	5.73	3.49	1.74	0.50
August------	1.50	2.84	11.08	5.68	3.41	1.70	0.57
September---	1.30	3.29	11.84	5.92	3.29	1.65	0.33
October-----	1.19	3.17	10.46	5.07	2.85	1.27	0.32
November----	1.52	2.54	9.91	5.08	3.05	1.52	0.51
December----	2.77	1.57	9.42	5.65	3.93	2.51	1.10
Annual------	15.49	2.97	66.83	53.46	45.14	37.42	28.51

Month	γ	β	Percentage of time Totals were Less than Values Shown				
			95%	75%	50%	25%	5%
Galveston, Post Office Building (City Office) (1931-1960)							
January-----	2.50	1.38	7.59	4.55	2.90	1.93	0.83
February----	1.82	1.58	7.11	3.95	2.37	1.26	0.47
March-------	1.22	2.34	7.72	3.74	2.11	0.94	0.23
April-------	1.88	1.38	6.49	3.59	2.21	1.24	0.41
May---------	1.17	2.38	7.85	3.81	2.14	0.95	0.24
June--------	1.16	2.28	7.52	3.65	2.05	0.91	0.23
July--------	0.98	4.91	14.73	6.87	3.44	1.47	0.49
August------	1.97	2.23	10.70	6.02	3.79	2.01	0.67
September---	1.81	2.82	12.69	7.05	4.23	2.26	0.85
October-----	1.60	1.79	7.34	3.94	2.33	1.25	0.36
November----	1.59	2.24	9.18	4.93	2.91	1.57	0.45
December----	3.20	1.22	7.93	5.00	3.54	2.20	1.10
Annual------	12.04	3.47	62.81	48.93	40.25	32.97	23.60
Galveston, Municipal Airport (1931-1960)							
January-----	2.43	1.54	8.32	4.93	3.08	2.00	0.92
February----	1.58	2.12	8.69	4.66	2.76	1.48	0.42
March-------	1.40	2.17	8.03	4.12	2.39	1.09	0.22
April-------	1.62	1.83	7.50	4.03	2.38	1.28	0.37
May---------	1.21	2.49	8.22	3.98	2.24	1.00	0.25
June--------	1.02	2.44	7.32	3.42	1.71	0.73	0.24
July--------	0.95	5.12	15.36	7.17	3.58	1.54	0.51
August------	1.79	2.53	11.39	6.33	3.80	2.02	0.76
September---	1.20	4.79	15.81	7.66	4.31	1.92	0.48
October-----	1.30	2.46	7.38	3.94	2.21	1.23	0.25
November----	1.28	3.00	10.80	5.40	3.00	1.50	0.30
December----	2.94	1.50	9.15	5.55	3.90	2.40	1.20
Annual------	12.28	3.68	68.45	53.36	44.16	36.06	26.50

Data in this table were computed using the statistical method of Gamma distributions - Gamma (γ) and Beta (β) values - fitted to the Normal Precipitation values for the period 1931-1960.

Source: "Gamma Distribution Parameters from the 2 and 3-week Precipitation Totals in the North Central Region of the United States", Second Report to North Central Region Technical Commission on Weather Information for Agriculture, Agricultural and Home Economics Experiment Station, Iowa State University, Ames, Iowa, Dec. 1959.

Table 15. Maximum Precipitation, Inches, by Time Intervals

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Greatest Amount
Houston, Federal Office Building (1910-1960)													
5 Minutes--------	0.60	0.48	0.56	0.77	0.69	0.75	0.60	0.84	0.60	0.59	0.74	0.65	0.84
Date and Year----	18/1955	2/1939	5/1933	28/1925	21/1945	24/1960	20/1960	11/1926	21/1928	16/1937 10/1958	1/1943	10/1923	
10 Minutes-------	1.02	0.62	0.93	1.30	1.20	1.30	1.08	1.52	0.97	1.08	1.34	1.16	1.52
Date and Year----	18/1955	2/1939	5/1933	28/1925	19/1946	24/1960	20/1960	11/1926	21/1928	16/1937 10/1958	1/1943	10/1923	
15 Minutes-------	1.16	0.90	1.21	1.46	1.63	1.62	1.39	2.00	1.21	1.58	1.81	1.66	2.00
Date and Year----	18/1955	18/1938	5/1933	28/1925	19/1946	24/1960	20/1960	11/1926	21/1928	10/1958	1/1943	10/1923	
30 Minutes-------	1.59	1.25	1.63	2.09	2.55	1.99	2.15	2.44	1.97	2.40	2.78	2.92	2.92
Date and Year----	18/1955	22/1949	25/1922	29/1950	6-7/ 1938	24/1960	18/1916	11/1926	6/1944	7/1918	1/1943	10/1923	
1 Hour----------	1.83	1.79	2.18	2.76	3.75	2.44	2.75	2.73	2.62	3.23	4.36	3.67	4.36
Date and Year----	18/1955	18/1938	25/1922	29/1950	6-7/ 1938	24/1960	18/1916	28/1915	7/1913	7/1918	1/1943	10/1923	
2 Hours---------	2.45	1.97	3.45	3.11	5.06	3.73	4.00	3.74	4.28	3.94	6.05	3.96	6.05
Date and Year----	1/1950	4/1955	25/1922	13/1929	6-7/ 1938	8/1946	2/1918	27/1945	7/1913	6/1930	1-2/ 1943	10/1923	
24 Hours--------	4.48	3.89	7.36	6.44	7.06	8.28	6.92	9.06	6.15	7.63	10.83	7.47	10.83
Date and Year----	23-24/ 1920	1-2/ 1959	25/1922	12-13/ 1929	6-7/ 1938	25-26/ 1960	11-12/ 1939	27-28/ 1945	14-15/ 1919	7-8/ 1949	1-2/ 1943	1-2/ 1914	
Galveston, Post Office Building (1903-1960)													
5 Minutes-------	0.44	0.53	0.58	0.85	0.74	0.61	0.68	0.73	0.51	0.74	0.55	0.48	0.85
Date and Year---	22/1923	27/1915	5/1933	13/1929	9/1921	2/1912	6/1942	27/1945	24/1911	22/1913	15/1903	31/1949	
10 Minutes------	0.80	0.86	1.07	1.47	1.46	0.99	1.10	1.22	0.98	1.32	0.86	0.79	1.47
Date and Year---	25/1934	18/1946	5/1933	13/1929	9/1921	2/1912	6/1942	27/1945	24/1911	22/1913	15/1903	31/1949	
15 Minutes------	1.03	1.05	1.46	1.94	1.71	1.36	1.35	1.74	1.31	1.80	1.30	0.93	1.94
Date and Year---	22/1923	18/1946	5/1933	13/1929	9/1921	3/1950	24/1929	27/1945	24/1911	6/1910	17/1907	10/1936	
30 Minutes------	1.80	1.35	2.24	2.81	2.13	1.92	2.13	3.02	2.05	3.06	2.06	1.49	3.06
Date and Year---	22/1923	1/1952	5/1933	13/1929	18/1929	3/1950	24/1929	27/1945	21/1940	6/1910	17/1907	6/1915	
1 Hour----------	3.26	2.31	2.49	4.41	3.32	3.18	3.48	4.21	3.40	5.31	2.47	2.17	5.31
Date and Year---	22/1923	1/1952	31/1952*	22/1904	18/1929	3/1950	24/1929	27/1945	21/1940	22/1913	25/1940	21/1907	
2 Hours---------	4.02	3.35	3.10	7.58	5.18	4.87	5.03	4.44	4.51	6.61	3.66	2.67	7.58
Date and Year---	22/1923	1/1952	31/1952	22/1904	18/1929	3/1950	24-25/ 1929	27/1945	21/1940	22/1913	25/1940	21/1907	
#24 Hours--------	5.38	6.55	4.58	9.23	6.13	10.27	14.35	9.05	10.00	14.10	9.01	4.50	14.35
Date and Year---	22/1923	Jan. 31-Feb. 1/ 1952	15-16/ 1944	22/1904	21/1916	12/1925	13-14/ 1900	17/1915	8/1900	7-8/ 1901	24-25/ 1940	27-28/ 1844	

Galveston 24-hour maxima are for period 1871-1960.
* Also in earlier years.

PRECIPITATION

Table 16. Probability of Measurable Precipitation (0.01 Inch or more) Occurring on Any Day During Each 5 - Day Period

Day	January	February	March	April	May	June	July	August	September	October	November	December
Houston, Federal Office Building (1910-1960)												
1-5------	33	29	30	27	25	22	35	24	32	24	25	32
6-10-----	34	28	25	32	21	27	31	28	31	20	27	35
11-15-----	32	33	28	20	28	25	33	30	33	22	33	40
16-20-----	35	38	25	26	32	28	36	30	22	19	27	34
21-25-----	36	37	26	27	23	35	31	32	28	21	30	32
26-31-----	36	30	29	30	25	28	27	41	31	24	25	36
Galveston, Post Office Building (City Office) (1872-1960)												
1-5------	31	34	25	22	20	18	31	24	33	20	20	30
6-10-----	36	34	28	23	21	24	26	28	35	20	26	31
11-15-----	38	32	28	20	21	20	30	29	31	22	29	36
16-20-----	31	32	28	22	21	20	33	35	28	22	29	33
21-25-----	33	32	26	24	17	22	27	29	32	20	28	33
26-31-----	29	25	22	23	19	28	27	32	27	24	29	37

Probability expressed in percentage.
Houston figures are based on 5-day period averages for the past 51 years.
Galveston figures are based on 5-day period averages for the past 89 years.

Data in above table should be used as a guide in long range planning. The data should not be considered as forecasts for any specific day or period of the day.

Table 17. Mean Total Precipitation , Inches , At Substations In the Houston - Galveston Area

Station	1960 Elevation (ft.)	Period of Record (yrs.)	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Alvin----------	49	30	3.74	(29)3.67	3.06	2.90	3.88	3.30	5.08	4.23	4.78	3.29	3.65	4.11	45.69
Anahuac Nav. Office------	23	29	4.41	4.13	3.27	3.82	4.18	3.96	6.65	5.01	(30)4.87	(30)3.56	(30)4.02	(30)4.89	52.77
Angleton 4 NE----------	27	30	3.62	3.84	3.18	3.20	3.90	3.51	5.53	4.82	5.44	3.85	3.70	4.61	49.20
Houston - Alief---------	81	19	(21)3.16	3.00	(20)2.28	3.51	3.80	3.95	(20)3.80	3.96	(20)3.28	4.13	(20)4.30	(20)3.50	42.67
Houston - Barker--------	130	18	3.27	2.97	2.58	3.62	4.05	2.88	3.44	3.92	3.15	3.59	3.73	3.91	41.11
Houston - Deer Park------	35	16	(15)3.48	(15)4.04	(13)2.24	(13)3.84	(14)3.76	(15)4.71	(14)3.87	5.58	4.06	4.11	3.99	4.10	47.78
Houston - Heights--------	65	18	3.97	3.38	2.47	3.48	4.68	4.00	4.51	4.53	3.78	3.72	5.14	3.67	47.33
Houston-Independence Hts.	85	18	3.89	3.85	2.74	3.37	4.57	3.95	4.94	3.81	3.64	4.29	4.61	(17)3.92	47.58
Houston - Missouri City--	85	18	3.63	3.67	2.43	3.47	4.29	4.27	3.36	4.61	3.30	3.94	4.18	3.40	44.55
Houston - North Houston--	107	18	3.61	3.25	2.55	3.57	4.52	3.36	3.91	3.59	2.93	3.29	4.44	3.83	42.85
Houston - Satsuma--------	113	20	3.07	(19)2.84	2.75	3.59	(19)4.70	3.49	4.28	3.31	3.66	3.91	(19)4.15	(19)3.97	43.72
Houston - Spring Branch--	92	18	4.17	3.67	2.58	3.48	4.68	3.46	3.97	4.82	3.29	4.15	4.50	3.67	46.44
Liberty----------	38	30	(29)4.84	4.21	3.13	4.33	4.49	4.18	5.05	4.01	4.00	3.74	4.08	5.16	51.22
Richmond----------	110	26	(25)3.34	3.06	2.52	3.13	5.08	3.64	4.08	3.88	3.98	3.59	3.92	3.84	44.06
Sugar Land----------	79	30	3.56	3.55	2.55	3.67	4.53	3.28	4.22	3.77	3.85	3.82	4.16	4.14	45.10
Tomball----------	200	18	(17)3.67	(17)3.28	(17)2.58	4.03	4.55	3.71	3.71	(17)3.38	(16)2.95	(15)4.73	3.94	3.74	44.27

Means are for Period of Record ending with 1960.
Numbers in parenthesis indicate number of years for which that months data are computed, if different from that given in Column headed- Period of Record.

Table 18. Occurrence of Measurable Snowfall * , Inches

Date			Amount
Year	Month	Day	
Houston, Federal Office Building (City Office) (1909-1960#)			
1912----	January	12	0.1
1918----	January	11	0.2
1925----	December	28	0.4
1926----	January	23	0.8
1929----	December	21-22	2.5
1932----	March	10-11	0.8
1940----	January	22	3.0
1949----	January	30	2.6
1960----	February	12	3.0

Prior to establishment of the First-Order Weather Bureau station in 1909 the most severe snowstorm of record occurred in the coastal area of Texas in 1895. Total measurement at Houston on February 14-15 of that year was 20.0 inches.

* Snowfall includes sleet. Hail included with sleet and snow July 1948 through December 1955.

Date			Amount
Year	Month	Day	
Galveston, Post Office Building (City Office) (1871-1960)			
1885----	February	11	0.5
1886----	January	12	0.6
1895----	February	14-15	15.4
1897----	January	26	0.1
1899----	February	7	0.1
1910----	February	17	0.1
1914----	February	24-25	0.5
1918----	January	11-12	0.5
1924----	December	19	0.2
1926----	January	23	0.1
1940----	January	22	0.9
1949----	January	30	0.8
1958----	February	12	0.1
1960----	February	12-13	2.2

Date			Amount
Year	Month	Day	
Houston, International Airport (1932-1960)			
1932-----	March	10	1.0
1940-----	January	22	2.8
1949-----	January	29	3.1
1958-----	February	12	1.7
1960-----	February	12-13	4.4

PRECIPITATION

Table 19. Frequency of Precipitation Amounts for Each Hour of the Day, Houston, Federal Office Building (City Office)

(EXPRESSED IN PERCENTAGE)

March 1950 – December 1960	Hours given are in Central Standard Time																								Number of days with
	am												pm												
	1	2	3	4	5	6	7	8	9	10	11	Noon	1	2	3	4	5	6	7	8	9	10	11	Mid-night	
JANUARY																									
Trace	9.4	7.1	8.1	7.4	8.7	5.2	9.4	11.6	10.3	8.1	8.7	10.3	11.9	8.1	6.8	6.8	6.1	4.8	7.4	8.1	9.0	8.1	6.8	7.7	15.6
.01 inch	1.3	2.6	1.9	1.3	2.6	2.9		1.0	1.3	2.3	2.3	1.3	1.9	1.6	1.3	2.6	2.3	2.3	1.0	1.3	0.6	1.3	1.0	1.9	3.2
.02 to .09 inch	1.6	1.9	1.6	2.9	1.6	1.9	2.9	2.6	2.9	2.6	1.3	3.5	1.9	3.2	4.3	3.5	4.8	3.5	1.6	1.6	2.6	1.0	2.3	2.3	7.7
.10 to .24 inch	0.6	0.3	1.0	1.3	1.6	1.3	1.0	0.6	1.3	0.6	1.6	0.6	1.3	1.9	0.6	1.9	1.0	0.3	0.6	1.3	0.3	0.3		1.0	4.8
.25 to .49 inch			0.3	0.3			0.3	0.6	0.3	0.6	0.3				1.3	0.3					0.3	0.6	0.3		3.5
.50 to .99 inch			0.3			0.3											0.3						0.3		2.6
1.00 to 1.99 inch			0.3																						2.3
2.00 inches and over																									0.3
TOTAL	12.9	11.9	13.5	13.2	14.5	11.6	13.6	16.4	16.1	14.2	14.2	15.7	17.0	14.8	14.5	14.8	14.5	10.9	10.6	12.3	12.8	11.3	10.7	12.9	40.2
FEBRUARY																									
Trace	8.5	8.8	5.7	6.0	8.8	9.5	11.0	11.3	9.5	8.8	7.8	10.0	8.1	6.7	8.5	6.7	6.0	9.5	6.7	7.4	9.9	7.8	6.0	3.9	18.0
.01 inch	2.5	3.5	1.4	1.8	3.2	3.9	2.5	0.4	1.4	1.1	2.8	0.4	3.5	2.5	2.1	1.8	2.5	1.1	2.8	1.8	1.1	1.1	2.1	2.5	4.6
.02 to .09 inch	1.8	1.1	3.2	2.8	2.5	4.2	3.2	4.2	3.9	3.5	3.5	3.9	4.2	4.9	3.5	4.2	3.5	3.5	3.2	3.2	2.1	2.8	3.5	3.5	9.9
.10 to .24 inch	1.4	1.4	1.8	2.1	1.4	0.7	0.4	2.1	1.1	2.5	1.4	1.1	0.7	1.1	1.1	1.1	1.1	0.7	0.4	1.4	1.1	1.1	0.4	0.7	6.7
.25 to .49 inch		0.7	0.4	0.4	0.4		1.1	0.4	1.4	0.7		0.4	0.4	0.7	0.4	0.4	0.4		0.4	0.4	0.4		0.4	0.7	4.6
.50 to .99 inch											0.4		0.4		0.4	0.7	0.4								4.6
1.00 to 1.99 inch																									2.1
2.00 inches and over																									1.1
TOTAL	14.2	15.5	12.5	13.1	16.3	18.3	18.2	18.4	17.3	16.6	15.9	16.4	17.3	15.9	16.0	14.9	13.9	14.8	13.5	14.2	14.6	12.8	12.4	11.3	51.6
MARCH																									
Trace	4.1	5.9	6.5	6.2	6.5	6.5	8.2	8.2	7.3	6.5	5.3	7.3	6.7	9.1	5.6	4.1	5.6	4.4	4.7	3.5	4.1	5.6	4.1	5.3	21.1
.01 inch	1.8	0.6	1.2	2.6	1.8	0.9	0.3	0.9	0.9		0.3	1.8	1.5	0.6	2.1	1.2	0.3	1.2	0.9	1.2	0.6	0.6	1.2	1.5	5.0
.02 to .09 inch	0.6	0.6	1.5	0.9	2.3	1.8	0.9	2.6	2.1	0.9	1.2	1.5	1.8	1.8	1.5	1.2	2.1	2.6	1.2	1.5	1.5	1.2	0.6	1.2	8.6
.10 to .24 inch	0.3	1.2	1.2	0.6	0.3		0.3	0.6	0.3	1.2	0.6		0.3	0.6	0.3	0.6	0.9	0.6	0.9	0.9	0.3		0.9	0.6	2.9
.25 to .49 inch	0.3	0.3	0.3	0.3		0.3				0.3	0.6	0.3	0.6		0.3	0.3								0.3	3.8
.50 to .99 inch													0.3	0.3			0.6								2.3
1.00 to 1.99 inch																									0.6
2.00 inches and over																									0.3
TOTAL	7.1	8.6	10.7	10.6	10.9	9.5	9.7	12.3	10.6	8.9	8.0	10.9	11.2	12.4	9.8	7.4	9.5	8.8	7.7	7.1	6.5	7.4	6.8	8.9	44.8
APRIL																									
Trace	4.2	4.5	6.4	8.5	8.5	6.1	8.5	7.9	7.6	6.1	5.8	5.8	7.6	4.2	6.1	5.8	3.9	4.5	7.0	4.8	3.6	5.2	5.2	5.2	16.4
.01 inch	1.8	3.0	0.6	2.1	1.5	1.5	1.2	1.2	1.5	1.5	1.2	1.8		1.2	1.2	2.1	0.9	2.7	0.9	1.2	1.2	0.6	1.5	1.5	3.3
.02 to .09 inch	2.1	2.4	1.8	1.5	2.4	2.4	1.2	2.4	0.9	2.4	1.8	2.1	1.5	1.5	2.4	1.8	4.2	2.4	1.2	2.4	3.0	1.8	2.4	2.1	7.9
.10 to .24 inch	0.9	0.3	0.6	0.3	0.6	0.6	0.3	0.9	0.3	1.5	0.6	0.6	0.6	1.5	0.6	1.2	0.9	0.9	1.2	0.9	1.2	1.5	0.6	0.9	4.5
.25 to .49 inch	0.3	0.3	0.6	0.3			0.3	0.3	0.3					0.3	0.3	0.3			0.3	0.6	0.3	0.9	1.2	0.6	6.1
.50 to .99 inch			0.3		0.3	0.9	0.9	0.9	0.3		0.3		0.6	0.3			0.3	0.3		0.3		0.3	0.3		2.4
1.00 to 1.99 inch																0.3			0.3						2.7
2.00 inches and over																									2.1
TOTAL	9.3	10.5	10.3	12.7	13.3	11.5	12.4	13.6	10.9	11.5	9.7	10.3	10.3	9.0	10.6	11.5	10.2	10.8	10.9	10.2	9.3	10.3	11.2	10.3	45.4
MAY																									
Trace	3.2	3.8	3.0	0.9	1.8	3.0	2.3	3.5	5.0	2.6	2.1	6.2	5.0	5.6	3.2	3.8	6.5	5.9	3.8	1.8	1.5	2.6	3.0	3.5	12.9
.01 inch	0.9	0.9	0.9	1.2	0.6	0.3	0.9	1.5	0.9	0.9	0.6		1.5	0.9	0.6	1.2	1.2	1.5	0.6	0.3	0.3	0.6	0.9	0.9	1.2
.02 to .09 inch	0.6	1.2	1.5	1.2	2.3	1.5	1.8	0.6	1.8	1.2	1.8	1.5	1.2	1.2	2.6	1.8	1.2	1.5	0.9	0.3	0.3	1.5	0.6	0.6	5.9
.10 to .24 inch	0.6	0.3	0.6	0.6	0.6	0.6	0.3	0.9	0.3	1.2	0.6	0.6	1.2	1.5	0.6	0.9	0.9	1.2	0.6	0.6	0.6	0.3	0.3	0.3	4.1
.25 to .49 inch				0.3		0.6	0.3	0.3	0.6	0.6	0.3	0.3		0.3	0.6	0.3			0.3				0.3		4.1
.50 to .99 inch	0.6		0.3	0.3			0.3		0.3	0.3			0.6	0.3			0.3	0.3			0.3		0.3	0.6	3.5
1.00 to 1.99 inch									0.3	0.3		0.3													2.1
2.00 inches and over																									0.9
TOTAL	5.9	6.2	6.3	4.5	5.3	6.0	5.9	6.8	9.2	7.1	5.4	6.9	9.5	9.8	7.6	8.0	10.1	10.4	6.2	3.0	3.0	5.0	5.4	5.9	34.7
JUNE																									
Trace	1.2	2.4	2.1	2.1	2.7	1.8	2.1	3.3	1.8	2.4	3.6	3.9	5.2	4.8	3.3	3.3	1.8	1.8	1.8	0.6	1.5	0.6	1.5	1.2	14.5
.01 inch	0.6	0.6	0.9	0.6	0.6	0.3		0.3	0.6	0.6	1.2	2.1	0.3	1.8	1.5	1.2	0.9	0.6	0.3	0.6	0.9	0.9		0.3	0.9
.02 to .09 inch	1.2	0.6	0.6	1.2	0.6	0.9	0.3	1.5	1.5	1.2	1.2	2.7	2.1	1.5	2.1	1.5	1.5	1.2	1.5	1.2	1.5	0.9	0.9	0.9	6.4
.10 to .24 inch	0.9	0.3	0.9	0.6	0.3	1.5	0.9	0.9	0.6	1.2	0.6	1.5	1.2	2.1	0.6	1.5	1.2	0.9	0.3	0.6	0.3	0.3	0.6		4.8
.25 to .49 inch	0.3	0.6		0.6	0.3	0.6	0.3		0.3	0.3	0.6	0.3	0.3		1.2	0.3		0.3	0.6	0.3		0.6		0.6	3.0
.50 to .99 inch					0.9	0.3		0.6	0.3	0.3	0.3		0.3	0.3	0.3	0.9	0.3	0.3							2.7
1.00 to 1.99 inch							0.6		0.3	0.3			0.3			0.3	0.3	0.3							2.1
2.00 inches and over																							0.3		2.1
TOTAL	4.2	4.5	4.5	5.1	5.4	5.4	4.2	6.6	5.4	6.3	7.5	10.5	9.7	10.5	9.0	9.0	6.0	5.4	4.5	3.3	4.2	3.3	3.3	3.0	36.5
JULY																									
Trace	0.9	1.2	1.5	2.6	1.5	1.5	0.9	1.5	1.8	1.8	3.5	5.0	9.4	7.6	6.7	5.6	7.3	4.1	2.3	2.3	1.5	0.9	0.9	0.9	16.4
.01 inch		0.9	0.3		0.9	0.6	0.3				0.6	0.6	0.9	2.6	2.6	1.8	3.2	1.8	1.8	0.3		0.6			1.8
.02 to .09 inch	0.6			0.9	1.5	0.9	1.5	0.9	1.5	2.3	2.3	2.3	3.2	3.8	3.5	3.5	2.6	3.8	1.2	0.9	0.6	0.6			9.1
.10 to .24 inch	0.3	0.3	0.6			0.3	0.6	0.3	0.9	0.3	0.6		2.1	1.2	1.8	0.9	1.8	0.3	0.3		0.9	0.6	0.6	0.3	7.9
.25 to .49 inch				0.3	0.3	0.3	0.6	0.3			0.6	0.3	0.3	0.9	0.9	1.2	0.3	0.3						0.3	3.8
.50 to .99 inch		0.3								0.3	0.6		0.6	0.8	0.6	0.9	0.9	0.3		0.6	0.6	0.3			3.5
1.00 to 1.99 inch										0.6						1.5	0.3		0.9						3.2
2.00 inches and over																									2.1
TOTAL	1.8	2.7	2.4	3.8	4.2	3.6	3.9	3.0	4.2	5.3	8.2	8.2	16.5	16.7	16.1	15.4	16.4	10.6	6.5	4.1	3.6	3.0	1.5	1.5	47.8
AUGUST																									
Trace	0.9	1.8	0.9	0.9	1.8	0.6	2.3	2.6	3.2	4.4	5.9	7.0	5.9	7.0	10.0	6.7	4.7	2.3	3.0	3.0	1.2	1.8	1.5	0.9	15.0
.01 inch	0.3	0.3	0.3	0.3	1.2	0.9	1.5	2.1	0.9	0.9	0.9	0.9	0.9	2.1	1.2	1.5	0.6	2.1	0.9	0.3	0.9	0.3	0.3		2.3
.02 to .09 inch	0.9	1.2	0.9	1.8	1.5	0.9	1.2	0.6	3.2	1.8	1.5	2.3	5.0	4.7	3.2	3.8	1.8	1.2	0.9	1.5	1.8	0.3	0.9	0.9	7.3
.10 to .24 inch	0.6	0.6	0.6	1.2	0.9	0.9	0.6	1.2	0.3	0.6	3.0	1.8	1.2	0.3	1.8	0.9	1.2	0.3	0.6	0.6		0.6	0.6	0.3	5.6
.25 to .49 inch			0.9	0.3			0.6	0.9		0.6	0.6	0.3	0.3	0.3			1.5	0.3	0.6			0.3		0.6	5.0
.50 to .99 inch							0.3					0.9		0.3		0.3	0.3	0.6					0.3		5.0
1.00 to 1.99 inch									0.3				0.3	0.3											2.6
2.00 inches and over																									0.3
TOTAL	2.7	3.9	3.6	4.5	5.4	3.3	6.5	7.4	7.9	8.3	11.9	13.2	13.6	15.0	16.2	13.2	10.1	6.8	6.0	5.4	3.9	3.3	3.6	2.7	43.1
SEPTEMBER																									
Trace	2.4	3.3	1.8	2.1	3.0	3.3	3.3	3.6	5.2	3.6	4.8	4.8	4.8	8.2	6.1	5.8	6.1	3.9	3.3	2.1	2.7	4.5	0.6	2.4	11.5
.01 inch	0.9	0.3	0.9	1.5	0.3	0.6	0.6	0.6	0.6	0.6	0.9	0.9	2.7	1.5	1.2	2.4	2.1	1.5	0.9	0.9	0.9		1.2	1.2	3.3
.02 to .09 inch	0.3	1.5	0.6	0.9	1.5	1.2	0.9	1.8	2.1	2.7	2.7	3.9	3.3	4.8	3.3	1.2	2.1	2.1	1.5	0.9	1.2	1.2	2.1	0.6	7.6
.10 to .24 inch	0.9	0.3	1.2	0.3	1.6	0.3	0.6	0.3	0.3	0.9	0.6	1.5	2.4	0.9	0.9	0.3	1.2		0.3	0.9	0.9			1.2	5.5
.25 to .49 inch				0.3		0.6		0.3	0.3			0.6	1.8	0.9	0.3	0.9		0.6		0.9					3.0
.50 to .99 inch				0.3					0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.3								4.5
1.00 to 1.99 inch													0.3		0.3	0.9									1.8
2.00 inches and over																									1.5
TOTAL	4.5	5.4	4.5	5.4	6.3	6.0	5.4	6.6	8.8	8.1	9.3	12.0	15.6	16.6	12.4	12.1	11.8	8.1	6.0	5.7	5.7	5.7	3.9	5.4	38.7
OCTOBER																									
Trace	3.5	3.0	2.1	3.0	1.2	1.2	3.5	4.4	3.5	4.4	5.0	4.7	5.3	5.9	3.8	1.8	2.3	0.9	1.2	1.8	3.2	2.6	1.8	3.0	8.5
.01 inch	0.3	0.6	0.9	0.6	0.6	1.2	0.6	0.9	0.6	0.9	1.8	2.1	0.6	0.6	1.2	1.5	1.2	1.8	0.6	0.3		0.9		0.6	1.8
.02 to .09 inch	0.6	1.2	1.8	1.8	2.3	1.8	2.1	0.6	2.6	1.5	2.1	1.8	2.6	2.6	3.0	3.0	2.1	2.1	1.2	1.2	1.2	1.5	1.8	1.5	7.3
.10 to .24 inch		0.3	0.3		0.3	0.3	0.3	0.6	0.6	0.3	1.2	0.9	0.3	0.3	1.5	1.2	0.9	0.6	0.6	0.3	0.3		0.3		3.2
.25 to .49 inch	0.6		0.3		0.3	0.9	0.6		0.3			0.3	0.6		0.9	0.6			0.3	0.6	0.3	0.3			3.0
.50 to .99 inch				0.3	0.3		0.3	0.6				0.3		0.3	0.3	0.6	0.6								2.1
1.00 to 1.99 inch				0.3										0.3	0.6	0.3			0.3						1.8
2.00 inches and over																		0.3							2.1
TOTAL	5.0	5.1	5.4	6.0	5.0	5.4	7.4	7.1	7.6	7.1	10.1	9.8	9.4	10.0	11.3	9.0	7.1	5.7	4.2	4.2	5.0	5.3	3.9	5.1	29.8
NOVEMBER																									
Trace	2.7	3.6	5.5	4.8	6.4	4.8	5.2	7.6	4.5	4.2	5.2	7.0	5.5	5.2	6.7	3.6	3.3	4.8	3.6	4.2	7.3	4.8	4.8	5.5	12.4
.01 inch	1.5	1.5	1.2	1.2	1.5	3.0	1.2	1.5	0.9	1.8	1.5	1.2	2.4	1.8	3.0	2.1	1.8	2.7	0.6	1.8	0.6	0.9	1.8	0.6	2.7
.02 to .09 inch	2.7	1.5	1.5	2.1	3.0	1.5	3.3	1.8	1.3	2.7	2.4	2.7	3.3	3.0	1.5	3.3	2.4	2.4	3.0	2.1	0.6	0.3	1.2	0.9	7.9
.10 to .24 inch	0.3	0.9	0.9	0.9	0.3	0.9	0.9	0.6	1.2	0.9	1.2	0.6	1.5	0.9	0.6	0.6	0.6	0.3	0.6	0.9	0.9	0.6	0.9	1.2	5.2
.25 to .49 inch		0.3		0.3	0.3		0.6	0.3	0.3	0.6	0.6	0.3		0.3	0.3		0.3	0.3		0.9					3.6
.50 to .99 inch				0.3		0.6		0.3	0.3			0.6	0.6	0.6				0.3	0.6	0.6		0.3			3.3
1.00 to 1.99 inch					0.3								0.3	0.3											3.0
2.00 inches and over																									0.9
TOTAL	7.2	7.8	9.1	9.6	11.8	10.6	11.2	12.1	10.5	10.2	10.9	12.4	13.6	12.1	12.1	9.6	8.4	10.8	8.4	9.9	9.4	6.9	8.7	8.2	39.0
DECEMBER																									
Trace	5.3	5.6	5.3	4.4	6.2	5.3	7.3	8.2	6.5	6.5	7.9	8.2	8.5	5.3	4.7	6.2	5.9	6.2	3.8	5.0	4.1	3.6	5.0	5.6	12.9
.01 inch	2.1	1.8	1.5	3.0	1.5	1.8	2.1	2.6	3.0	1.2	2.4	2.1	1.5	2.6	2.6	3.3	1.5	3.5	0.3	1.5	0.9	1.2	1.8	0.6	2.1
.02 to .09 inch	2.4	2.6	4.4	3.2	2.4	3.0	3.2	3.2	3.2	4.4	2.6	2.4	3.2	3.2	3.8	3.5	3.2	1.8	4.1	2.1	2.4	2.1	2.6	3.5	8.5
.10 to .24 inch	0.6	1.5	0.3	1.5	1.2	0.6	0.3	1.2	1.2	0.6	0.9	0.6	1.2	0.6	1.2	0.3	0.3	0.3	0.3		1.2	2.1	2.1	0.6	4.4
.25 to .49 inch		0.6	0.3			0.3	0.6	0.3		0.3		0.6	0.6			0.9	0.6					0.3		0.3	5.6
.50 to .99 inch	0.3		0.3		0.3	0.3	0.3		0.3							0.3									5.6
1.00 to 1.99 inch																									2.1
TOTAL	10.7	12.1	12.1	12.1	11.6	11.3	13.8	15.5	14.2	13.0	13.8	13.9	15.0	11.7	12.3	14.7	11.5	11.8	8.5	8.6	8.6	9.5	11.2	10.6	41.2

PRECIPITATION

Table 19. Frequency of Precipitation Amounts for Each Hour of the Day, Galveston, Post Office Building (City Office)

(EXPRESSED IN PERCENTAGE)

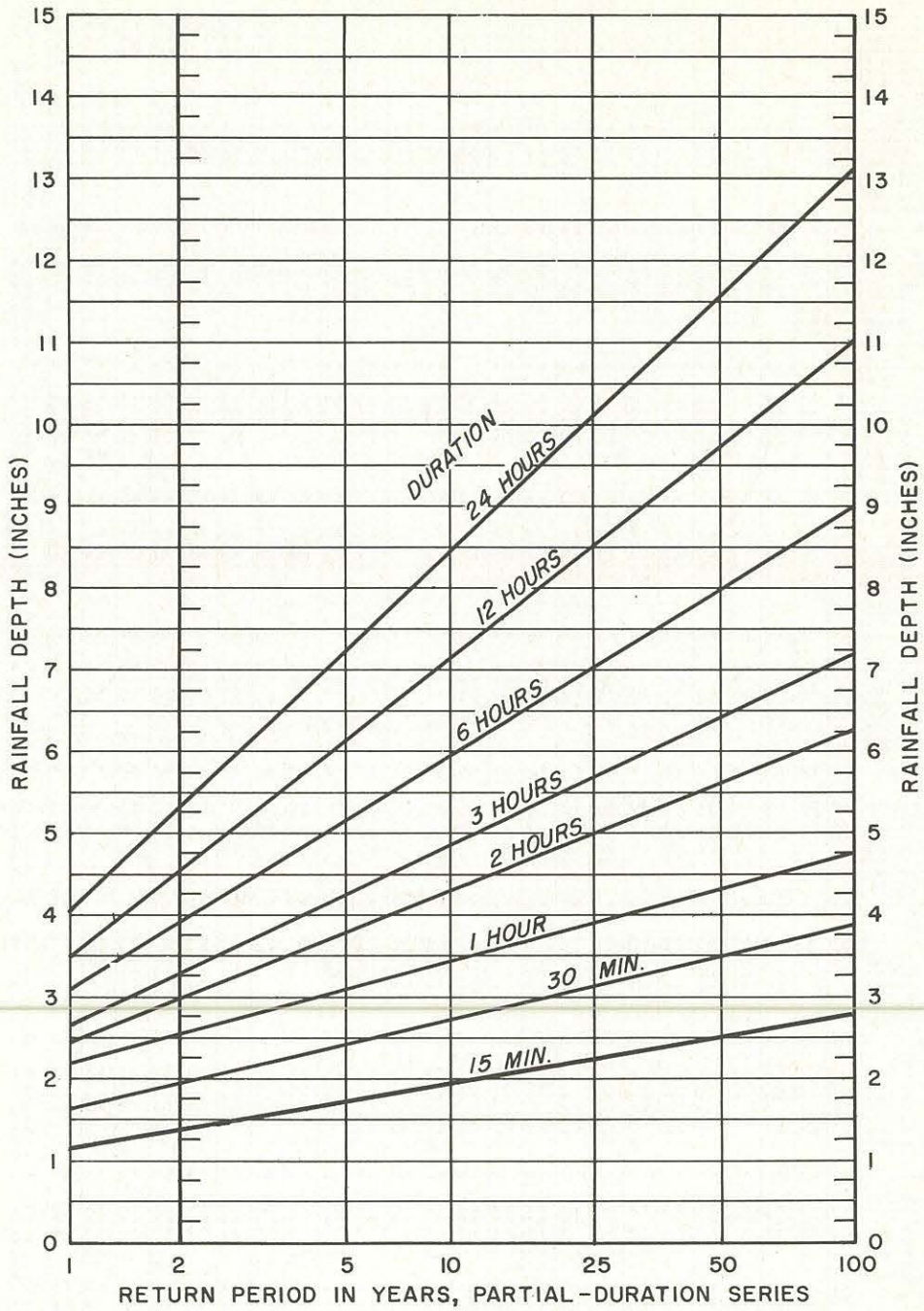
March 1950 - December 1960	Hours given are in Central Standard Time																								
	am												pm												
	1	2	3	4	5	6	7	8	9	10	11	Noon	1	2	3	4	5	6	7	8	9	10	11	Mid-night	Number of days with
JANUARY																									
Trace	5.5	4.2	5.2	5.8	3.5	7.7	6.8	7.4	9.4	7.1	11.0	9.0	7.4	7.1	4.2	6.8	8.7	5.8	7.4	5.2	6.5	5.5	5.2	6.5	12.6
.01 inch	1.6	1.6	1.0	0.6	1.6	0.6	2.6	1.9	1.3	2.9	0.6	1.0	1.3	1.9	1.6	1.9	1.6	1.6	1.0	2.3	2.9	1.9	0.3	0.6	3.9
.02 to .09 inch	0.3	1.0	1.3	1.3	1.6	1.9	1.3	2.3	1.0	1.3	2.3	2.6	1.9	1.9	2.3	1.6	2.6	1.9	1.3	1.0	1.6	1.6	3.5	1.3	6.1
.10 to .24 inch	1.0		0.6	0.3	1.0	0.3	0.6	1.0	1.3	1.0	1.0	0.3	0.6	1.3	1.6	1.6	0.6	0.6	1.0	1.0	0.6	0.3		0.6	5.8
.25 to .49 inch							0.3	0.3		0.3		0.3	0.6			0.3		0.6	0.3	0.3				0.6	4.8
.50 to .99 inch										0.3						0.6	0.3		0.3						2.6
1.00 to 1.99 inch																									1.9
TOTAL	8.4	6.8	8.1	8.0	7.7	10.5	11.6	12.9	13.0	12.9	14.9	13.2	11.8	12.2	9.7	12.8	13.8	10.5	11.3	9.8	11.6	9.3	9.0	9.6	37.7
FEBRUARY																									
Trace	6.0	7.4	6.4	6.4	7.1	8.5	5.3	9.2	10.6	8.8	7.8	9.5	9.5	8.1	10.6	10.6	10.2	9.2	7.1	8.8	8.5	9.2	7.4	5.7	13.1
.01 inch	2.5	0.4	1.1	3.5	1.8	2.5	1.8	2.5	2.8	1.8	1.8	1.1	1.8	2.1	0.7	1.4	1.4	2.1	2.5	1.8	2.8	2.1	2.5	2.5	4.6
.02 to .09 inch	1.8	1.4	2.5	1.1	2.5	3.5	4.6	4.2	2.8	3.9	3.5	3.2	2.1	3.5	1.8	2.8	2.8	2.5	2.8	1.4	0.7	1.4	1.8	2.1	9.9
.10 to .24 inch	1.1	1.1	0.7	1.1	2.5	1.1	0.7	0.7	1.4	1.1	1.1	1.4	0.4		0.7	0.7	1.1	1.1	0.7	0.7	1.1	1.1	1.1	0.7	4.6
.25 to .49 inch				0.4		0.4	0.4		0.4			0.4	0.4				0.7	0.4							4.6
.50 to .99 inch							0.4											0.4	0.4	0.4					3.5
1.00 to 1.99 inch														0.4	0.4										0.7
2.00 inches and over																									0.7
TOTAL	11.4	10.3	10.7	12.5	13.9	16.0	13.2	16.6	18.0	15.6	14.2	15.6	14.2	14.1	14.2	15.5	16.2	15.7	13.5	13.1	13.1	13.8	12.8	11.0	41.7
MARCH																									
Trace	2.3	2.6	2.9	5.6	6.2	7.0	5.3	5.9	8.5	5.3	5.9	6.7	6.7	8.2	2.1	5.0	4.7	3.8	3.2	3.2	5.0	2.9	2.6	3.2	16.4
.01 inch	0.6	0.9	1.2	1.5	1.2	1.8	0.9	0.6	0.3	1.5	0.6	0.3	0.9	2.1	2.3	1.8	0.9	0.9	1.2	0.6	0.3		0.6	0.6	5.8
.02 to .09 inch	1.2	0.6	0.9	0.9	1.5	1.2	1.8	2.3	2.1	2.1	1.5	1.5	1.5	0.6	1.2	1.2	0.9	1.2	0.5	1.2	0.9	2.1	1.2	0.9	5.9
.10 to .24 inch			0.6	0.3	0.9	0.9	0.6	0.3	0.6	0.3	0.6	0.3	0.6	0.3	0.3	0.6	0.6						0.3		4.4
.25 to .49 inch	0.3	0.3					0.6	0.3		0.6		0.6	0.3		0.6		0.3		0.3					0.3	2.9
.50 to .99 inch		0.3											0.3				0.3						0.6		2.1
1.00 to 1.99 inch		0.3											0.3	0.3											0.9
2.00 inches and over																									0.6
TOTAL	4.4	5.0	5.6	8.3	9.8	10.9	9.2	9.4	11.5	9.8	8.6	9.4	10.6	11.5	6.5	8.6	7.7	5.9	5.3	5.0	6.2	5.0	5.3	5.0	37.0
APRIL																									
Trace	3.3	3.9	3.9	4.2	3.8	3.0	3.8	5.5	7.0	6.7	5.8	4.8	6.1	5.5	3.9	3.0	4.5	4.8	5.5	5.5	5.5	4.8	5.2	3.8	14.8
.01 inch	1.2	1.2	0.6	1.2	1.8	1.5	0.6	0.6	0.8	0.6	0.9	1.2	0.8	0.3	1.5	1.2	0.3	0.6	0.6	1.5	1.2	0.9	1.2	1.2	3.6
.02 to .09 inch	0.3	1.2	1.5	1.2	2.4	2.7	2.4	2.4	2.1	2.1	0.6	0.6	0.6	2.7	1.5	0.9	1.8	0.9	1.2	1.8	0.9	0.6	1.5	1.8	7.3
.10 to .24 inch	1.2	1.2	0.9	0.3	0.3	0.3	0.6	0.6	0.9	0.6	0.3	0.6	0.6	0.9	0.6				0.3	0.3	0.6	1.2	0.6	0.3	2.1
.25 to .49 inch	0.3		0.3	0.6	0.3			0.3	0.6	0.3	0.6				0.6	0.6	0.3		0.3		0.6	0.6		0.3	3.9
.50 to .99 inch										0.3													0.3		3.0
1.00 to 1.99 inch			0.6																					0.3	1.5
2.00 inches and over																									0.6
TOTAL	6.3	7.5	7.8	7.5	8.6	7.5	7.4	9.4	11.2	10.6	8.2	7.2	8.2	9.4	8.1	5.7	6.9	6.3	7.9	9.1	8.8	8.1	8.8	7.7	36.8
MAY																									
Trace	1.2	1.5	1.2	1.5	1.8	2.6	1.2	2.6	2.6	3.2	2.9	4.1	3.2	2.1	2.1	2.3	3.5	1.8	2.1	2.3	2.9	2.3	2.1	1.8	6.7
.01 inch	1.2	0.3	0.3	0.6	0.6	1.2	0.6	0.6	0.3	0.6	1.2		0.6	0.9	0.9	1.5	0.6	0.6	0.9	0.6	0.6	0.6	0.6	0.6	1.8
.02 to .09 inch	0.6	0.3	0.3	1.2	2.3	1.8	2.1	1.5	0.6	1.5	1.5	1.5	0.9	1.2	1.2	0.9	0.6	1.5	0.9	0.3	0.3	0.3	1.2	0.6	5.9
.10 to .24 inch	0.3		0.9	1.5	0.6	0.6	0.6	1.2	0.9					0.3	0.3		0.9	0.3	0.6	0.3					2.3
.25 to .49 inch		0.9	0.3				0.3	0.3	0.6	0.3	0.3	0.3	0.3							0.6					2.1
.50 to .99 inch	0.3	0.3	0.6									0.3												0.3	3.5
1.00 to 1.99 inch							0.3		0.3	0.3			0.3	0.3											1.5
2.00 inches and over																									0.6
TOTAL	3.6	3.3	3.6	4.8	5.3	6.2	5.1	6.2	5.3	5.9	5.9	6.2	5.3	4.8	4.5	4.7	5.6	4.2	4.5	4.1	3.8	3.2	3.9	3.3	24.4
JUNE																									
Trace	0.3	2.1	1.8	1.5	2.7	1.2	3.0	3.0	3.9	4.8	3.0	1.8	3.3	1.2	3.0	1.5	2.1	1.5	1.8	1.5	1.2	1.5	0.9	1.2	10.6
.01 inch	0.6	0.3	0.6	0.6		0.6		0.6	0.6	0.6	0.9	0.6		0.3	0.3	0.9	0.6	0.3	0.3	0.3		0.9		0.3	0.9
.02 to .09 inch	1.2	0.9	0.3	2.4	1.2	2.1	1.2	0.6	2.1	1.5	1.5	3.0	2.1	1.5	0.3	0.9	0.9		0.6	0.3	0.9	0.3	1.2	0.9	4.8
.10 to .24 inch	0.9	1.2	0.9	0.3	0.6	0.6	0.9	0.6	1.2	0.6	0.9	0.3		0.3				0.3	0.3	0.3	0.6	0.3	0.3	0.3	3.6
.25 to .49 inch	0.3		0.3	0.6	0.6	0.6	0.6	0.3		0.3		0.6	0.3	0.3					0.3	0.3				0.3	2.4
.50 to .99 inch			0.3		0.3	0.3	0.6	0.6				0.3	0.3		0.6	0.3	0.3		0.3						3.0
1.00 to 1.99 inch							0.3															0.3			2.1
2.00 inches and over						0.3		0.3																	0.9
TOTAL	3.3	4.5	4.2	5.4	5.4	5.7	6.6	6.0	7.8	7.8	6.3	6.6	6.0	3.6	4.2	3.6	3.9	2.1	3.6	2.7	2.7	3.3	2.4	3.0	28.3
JULY																									
Trace	0.6	1.5	1.2	1.5	2.1	3.2	3.8	4.1	5.9	4.1	4.7	4.1	3.2	2.6	2.6	1.5	1.5	2.1	1.8	1.5	0.9	0.6	1.2	0.9	8.8
.01 inch		0.3	0.3	1.5	0.3	0.3	0.3	0.8	0.3	0.3	1.2	1.2	0.3	1.2	0.8		0.6	0.3		0.6	0.3	0.3		0.3	2.6
.02 to .09 inch	0.9	0.6	1.2	0.9	2.1	1.5	1.5	1.8	2.1	1.8	1.2	3.0	1.8	1.2	1.2	1.8	0.6	0.3	0.6		0.9	1.5	1.5	0.3	7.3
.10 to .24 inch	0.6	0.6	1.2	0.8	0.8	0.6	1.2	0.6		0.3	0.6	0.8	0.6	0.8	0.6	0.6		0.3	0.3	0.3	0.3			0.6	7.6
.25 to .49 inch	0.3			0.3	0.6	0.6	0.6	0.6	1.2	1.2	1.5				0.3		0.3		0.6		0.3				3.5
.50 to .99 inch				0.3		0.3		0.6	0.3	0.8	0.6	1.2	0.3			0.3		0.3		0.3					3.2
1.00 to 1.99 inch			0.3										0.3	0.3											0.6
2.00 inches and over																									1.5
TOTAL	2.4	3.0	4.2	5.3	5.9	6.5	7.4	8.5	9.8	8.5	9.8	10.3	6.5	6.1	5.5	4.2	3.2	3.3	3.3	2.7	2.7	2.4	2.7	2.1	35.1
AUGUST																									
Trace	0.3	1.2	0.9	3.0	1.5	3.2	2.6	3.0	7.3	7.3	4.4	4.1	3.0	5.0	2.6	3.0	2.3	3.0	2.6	0.6	1.2	0.3	0.9	0.9	12.0
.01 inch	0.6	0.6	0.9	1.8	1.5	0.3	0.9	1.2	1.8	0.9	0.3	0.6	1.5	0.9	0.6	0.6		0.6	0.3	0.6		1.2	0.9	0.3	1.5
.02 to .09 inch	0.6	0.6	1.5	0.3	1.8	0.9	2.6	4.4	3.0	3.2	3.8	2.6	3.0	1.8	1.8	2.6	1.2	1.2	0.9	1.5	0.6	0.6	0.6	0.3	6.2
.10 to .24 inch	0.3	0.9	0.9	0.9	0.9	1.2	0.9	2.1	0.3	0.9	1.8	2.3	0.3	0.6	1.8	0.9	0.6		0.3	0.3	0.9	0.3			4.4
.25 to .49 inch		0.3	0.3	0.3	1.2	0.6	1.5	0.6	0.3	1.5		0.3	1.2	0.9	0.6					0.3					4.1
.50 to .99 inch		0.3	0.6	0.3		0.9		0.3	0.3			1.5									0.3				3.8
1.00 to 1.99 inch							0.3		0.3		0.9														4.1
2.00 inches and over																									1.2
TOTAL	1.8	3.9	5.1	6.6	6.9	7.1	8.8	11.6	13.3	13.8	11.2	11.4	9.0	9.2	7.4	7.1	4.1	4.8	4.1	3.3	3.0	2.4	2.4	1.5	37.3
SEPTEMBER																									
Trace	1.8	2.1	1.5	2.4	1.2	2.7	3.9	3.9	5.2	4.5	7.3	6.1	3.6	3.9	4.5	4.8	2.7	3.0	4.5	2.7	1.5	2.7	3.3	2.1	10.0
.01 inch	0.9	0.9	1.5	0.6		1.2	0.6	2.1	1.2	2.1	0.6	0.9	1.8	0.6	0.6	0.9	0.9	0.3	0.9		0.6	1.2	0.6	1.2	1.5
.02 to .09 inch	2.1	1.8	2.4	2.1	4.2	2.4	4.5	3.3	5.5	3.0	3.0	2.7	1.5	3.3	1.8	1.8	1.8	1.8	0.3	1.2	0.6	1.8	0.9	1.2	7.0
.10 to .24 inch	0.6	1.5	0.6	0.6	1.8	1.2	0.6	1.8	0.6	1.8	1.2	0.9	1.5	0.6	0.6	0.9	0.9	0.6	0.3	0.9	0.3	0.6	0.3	0.3	4.2
.25 to .49 inch	0.3		0.3	0.9	0.9		0.6	0.9	1.2	0.9	0.3	1.2	0.6	0.9	0.6		0.3	0.3							5.5
.50 to .99 inch		0.3	0.3			0.6		0.3	0.6	0.6	0.3	0.3	0.3	0.3	0.3						0.3				5.5
1.00 to 1.99 inch							0.3	0.3			0.3	0.3					0.6	0.3							3.0
2.00 inches and over																									1.5
TOTAL	5.7	6.6	6.6	6.6	8.1	8.1	10.5	12.6	14.3	12.9	13.0	12.4	9.3	9.6	8.4	8.4	7.2	6.3	6.0	4.8	3.3	6.3	5.1	4.8	38.2
OCTOBER																									
Trace	1.5	1.5	2.1	2.1	3.5	7.0	4.7	5.6	4.4	3.8	2.3	2.6	2.3	2.6	4.7	3.5	3.8	1.5	1.2	2.1	1.8	1.8	1.5	6.5
.01 inch		1.8	1.2	0.6	1.2	0.3		1.5	1.2	2.3	0.9	0.9	0.9	1.2	0.9	0.3	1.5	0.6	0.3	0.9	0.6	0.6	0.6	0.3	0.6
.02 to .09 inch	1.5	0.6	0.3	1.5	1.8	0.9	1.5	2.1	1.2	1.8	3.5	1.8	0.9	1.2	1.2	1.5	1.2	0.6	2.1	1.2	0.9	0.9	2.3	1.2	5.6
.10 to .24 inch	0.6	0.3	0.6	0.3	0.6	0.6	0.6	0.3	1.2	0.3	0.3	0.3	1.2		0.6		0.9	0.3	0.6	0.3	0.9	0.3	1.8	3.8
.25 to .49 inch		0.3				0.9	0.3	0.6	0.6	0.9			0.3			0.3	0.6		0.3				0.3	3.2
.50 to .99 inch				0.3		0.6		0.3	0.3	0.3				0.3			0.3				0.6			5.0
1.00 to 1.99 inch																								1.2
TOTAL	3.6	4.5	4.2	4.8	5.7	6.8	9.4	9.5	10.1	10.0	8.5	5.3	5.9	5.0	5.3	6.8	7.1	5.9	4.5	3.9	4.5	4.2	5.3	4.8	25.9
NOVEMBER																									
Trace	2.7	3.6	2.7	2.1	2.7	3.0	5.5	6.4	6.4	4.8	6.1	5.8	4.8	3.6	4.2	4.2	4.5	3.3	3.6	3.3	4.5	4.5	3.3	3.0	9.7
.01 inch	1.5	1.5	0.3	0.9	0.6	1.2	1.8	1.5	1.2	0.9	1.2	1.2	0.9	0.3	1.8	1.8	0.6	0.3	0.3		0.6	0.9	1.2	1.5	2.4
.02 to .09 inch	1.5	1.5	1.8	1.8	2.1	1.8	1.5	2.4	1.2	2.1	1.5	1.5	0.9	1.2	1.5	0.9	1.2	1.5	0.9	1.2	1.2	0.6	0.6	0.3	5.5
.10 to .24 inch			0.9	0.9	0.6		0.3	0.6	0.9	0.6	0.3	0.9	1.2	1.5	0.6	0.3	1.2	0.3	0.3		0.3	1.2		0.3	5.2
.25 to .49 inch	0.3		0.6	0.3		0.3			0.3	0.9	0.3		0.3			0.3		0.3		0.3	0.3		0.3	0.6	2.7
.50 to .99 inch	0.3						0.3							0.3		0.3								0.3	2.7
1.00 to 1.99 inch																							0.6		0.9
2.00 inches and over																									0.6
TOTAL	6.3	6.6	6.3	6.0	6.0	6.3	9.4	10.9	10.0	9.3	9.4	9.4	8.1	6.9	8.1	7.8	7.5	5.7	5.1	4.8	6.9	7.2	6.0	6.0	29.7
DECEMBER																									
Trace	5.3	4.1	4.4	4.1	5.3	6.2	6.7	8.5	9.7	9.4	7.3	7.9	5.9	6.5	7.0	9.4	8.2	7.9	9.4	7.9	7.6	6.2	6.2	5.3	10.6
.01 inch	0.9	2.3	1.2	0.3	0.9	1.8	2.9	0.6	2.1	2.3	1.2	1.5	1.5	1.5	1.8	0.6	3.2	1.5	1.8	2.1	1.2	1.2	2.6	1.8	3.5
.02 to .09 inch	3.0	3.0	2.6	3.5	4.1	2.3	3.2	3.2	3.0	1.5	3.2		2.6	2.1	2.6	3.0	2.1	3.2	2.1	1.8	2.3	2.1	2.6	2.3	4.7
.10 to .24 inch	0.9	0.9	1.5	1.8	0.9	1.8	0.3	1.5	0.3	0.6		1.2	0.9	0.9	0.9	1.5	0.6		0.3	0.3		1.5	0.3	1.5	6.7
.25 to .49 inch				0.6	0.6	0.6	0.6			0.3	0.6	0.3	0.3	0.9	0.3		0.6	0.3	0.3	0.3	0.6				8.2
.50 to .99 inch									0.3	0.3			0.3	0.3	0.3										3.2
1.00 to 1.99 inch																									2.1
TOTAL	10.1	10.3	9.7	10.3	11.8	12.7	13.7	13.8	15.4	14.4	12.3	10.9	11.5	12.2	12.9	14.5	14.7	12.9	13.9	12.4	11.7	11.0	11.7	10.9	39.0

GRAPH C

PRECIPITATION

RAINFALL DEPTH - DURATION - FREQUENCY CURVES

Houston-Galveston Area



This graph can be used to estimate the expectancy of heavy rainfalls within the indicated time periods. For example, on the average, once in 25 years a 12-hour rainfall can be expected to exceed 8 1/2 inches, while in any one year there is only a 2% chance that a rainfall will exceed 3 1/2 inches in a 30-minute period.

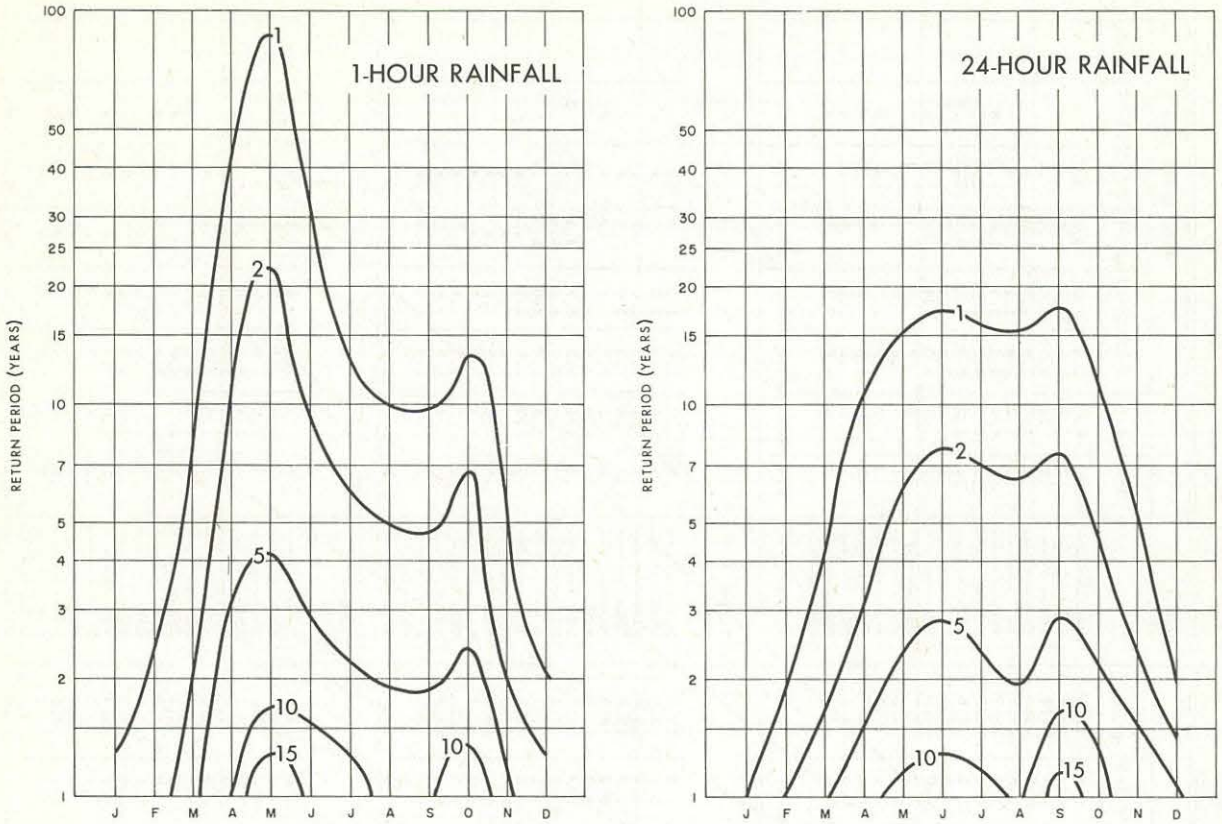
Source: Frequency Curves based on data from Weather Bureau Technical Paper No. 40. Rainfall Frequency Atlas of the United States. May 1961 (Hydrologic Services Division)

GRAPH D

PRECIPITATION

Seasonal Precipitation Probability Curves
Intense 1- and 24-Hour Rainfall

Houston-Galveston Area



PROBABILITY IN PERCENT OF OBTAINING A RAINFALL IN ANY MONTH OF A PARTICULAR YEAR EQUAL TO OR EXCEEDING THE RETURN PERIOD VALUES TAKEN FROM GRAPH C.

Source: Probability curves based on data from Weather Bureau Technical Paper No. 40. Rainfall Frequency Atlas of the United States. May 1961 (Hydrologic Services Division)

WIND

Table 20. Percentage Frequency and Mean Speed of Surface Winds (1951 - 1960) , Houston International Airport

7440* January	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N----------	0.1	0.6	2.4	2.5	1.1	0.1				6.8	13.7
NNE--------	.1	.8	1.4	2.3	.7	.1				5.4	13.4
NE---------	.1	.6	2.0	1.4	.2	.1	#			4.4	11.8
ENE--------	.1	1.1	2.9	3.0	.6	.1				7.8	12.4
E----------	.2	1.2	2.6	2.1	.2	#				6.3	11.2
ESE--------	.2	1.7	2.8	1.9	.3	.1				7.0	10.7
SE---------	.1	.8	2.3	2.1	.7	.1	#			6.1	12.5
SSE--------	.1	.8	4.0	4.3	1.6	.3	#			11.1	13.8
S----------	.2	.6	3.2	3.0	1.4	.4	#			8.8	14.1
SSW--------	.1	.6	2.1	1.9	1.1	.2	#			6.0	13.9
SW---------	.1	.5	1.1	.9	.5	.1				3.2	12.7
WSW--------	.1	.6	1.2	.6	.3					2.8	11.3
W----------	.2	.4	1.5	.2	.2	#				2.5	10.5
WNW--------	.1	.5	2.2	1.4	.6	.3	#			5.1	13.7
NW---------	.1	.8	1.8	2.3	1.1	.4	#			6.5	14.4
NNW--------	.1	.7	2.7	4.3	1.5	.2	#	#		9.5	14.4
Calm-------										.7	
Totals-----	2.0	12.3	36.2	34.1	12.1	2.5	#	#		100.0	12.9

6792* February											
N----------	.1	.6	1.6	2.4	1.0	.1				5.8	13.9
NNE--------	.2	.6	1.2	2.2	.7	.2				5.1	13.9
NE---------	.3	.6	1.7	2.4	.6	.1				5.7	13.0
ENE--------	.2	.8	3.1	3.0	.6	.1				7.8	12.6
E----------	.2	.5	2.1	2.0	.6	.3				5.7	13.2
ESE--------	.2	1.1	2.7	3.1	1.0	.2				8.3	12.9
SE---------	.2	.4	2.3	2.1	.7	.1	.1	#		5.9	13.6
SSE--------	.2	.9	3.2	4.3	1.9	.5	.1			11.1	14.5
S----------	.1	.6	2.3	2.9	1.8	.5	.1			8.3	15.1
SSW--------	.2	.3	1.9	1.9	.8	.4	.1			5.6	14.6
SW---------	.1	.5	1.4	1.0	.4	.1				3.5	12.4
WSW--------	.2	.6	1.5	1.3	.4	.2				4.2	12.4
W----------	.1	.6	1.1	.7	.3	.1	#			2.9	11.4
WNW--------	.1	.7	1.5	1.5	.7	.1	#			4.6	13.3
NW---------	.2	.7	1.8	1.9	1.1	.4	#			6.1	14.6
NNW--------	.2	.5	2.1	3.6	1.9	.5	#			8.8	15.3
Calm-------										.6	
Totals-----	2.8	10.0	31.5	36.3	14.5	3.9	.4	#		100.0	13.7

7440* March											
N----------	.1	.7	2.2	2.2	1.2	.2				6.6	14.0
NNE--------	.2	.5	1.2	1.6	.8	.2	#			4.5	13.6
NE---------	.1	.4	1.5	1.9	.4	#	#			4.3	12.8
ENE--------	.3	.9	2.5	2.9	.4	#				7.0	12.1
E----------	.2	.9	2.0	1.5	.4	#				5.0	11.5
ESE--------	.3	1.3	3.1	3.3	.8	.1				8.9	12.2
SE---------	.2	.8	3.5	3.3	1.7	.3	.1	#		9.9	14.0
SSE--------	.2	.9	3.6	5.2	2.6	.7	.1	#		13.3	15.3
S----------	.2	.6	2.8	3.7	1.9	.6	.1			9.9	15.2
SSW--------	.1	.6	2.0	1.8	1.2	.3	.1			6.1	14.3
SW---------	.1	.5	1.2	1.0	.2	#				3.0	11.5
WSW--------	.3	.6	1.0	.7	.3	.1	#			3.0	11.4
W----------	.1	.6	.7	.3	.2	.2	#			2.1	12.0
WNW--------	.3	.5	1.0	.7	.6	.3	.1	#		3.5	13.8
NW---------	.1	.7	1.3	1.4	.8	.5	.1			4.9	14.8
NNW--------	.1	.6	1.9	2.3	1.5	.6	.1			7.1	15.7
Calm-------										.9	
Total------	2.9	11.1	31.5	33.8	15.0	4.1	.7	#		100.0	13.6

7200* April	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N----------	0.1	0.3	1.4	2.0	0.8	0.1				4.7	14.2
NNE--------	.1	.3	1.0	1.3	.6	.1				3.4	13.6
NE---------	.2	.8	1.3	1.4	.4	.1				4.2	12.1
ENE--------	.2	1.3	1.8	1.7	.3	#				5.3	11.0
E----------	.2	1.2	1.8	1.1	.3	#				4.6	10.4
ESE--------	.3	1.4	3.2	3.6	1.0	.2	#			9.7	12.7
SE---------	.3	.8	4.3	7.2	3.3	1.4	.1	#		17.4	15.8
SSE--------	.1	1.0	3.9	7.1	5.6	2.2	.4	#		20.3	17.3
S----------	.1	.4	2.3	3.4	1.3	.3	.1			7.9	14.5
SSW--------	.1	.4	1.5	1.4	.4	.1	#			3.9	13.2
SW---------	.1	.4	.8	.5	.1	.1	#			2.0	11.8
WSW--------	.1	.4	.8	.6	.1					2.0	10.4
W----------	.2	.2	.9	.4	.1	#	#			1.8	11.5
WNW--------	.1	.3	1.3	.9	.4	.2	#			3.2	13.6
NW---------	.1	.3	.9	1.2	.6	.2	#			3.3	14.7
NNW--------	.1	.6	1.6	2.1	.9	.2	#			5.5	14.3
Calm-------										.8	
Totals-----	2.4	10.1	28.8	35.9	16.2	5.2	.6	#		100.0	14.2

7440* May											
N----------	.2	.8	1.6	1.1	.3	#				4.0	10.9
NNE--------	.1	.8	1.4	1.3	.5	#				4.1	11.8
NE---------	.2	.7	1.3	1.0	.2	#				3.4	10.6
ENE--------	.2	.6	1.7	1.6	.2	#				4.3	11.7
E----------	.3	1.1	1.3	.8	.2	#	#			3.7	10.2
ESE--------	.3	1.9	2.5	2.3	.6	.2				7.8	11.5
SE---------	.4	1.1	5.2	6.7	3.4	.7	.2			17.7	14.8
SSE--------	.3	1.8	5.7	8.5	5.5	1.4	.1			23.3	15.5
S----------	.2	1.3	3.2	2.6	1.4	.2				8.9	12.8
SSW--------	.3	1.2	2.0	1.5	.3	#				5.3	10.9
SW---------	.2	.8	1.4	.6	#	#				3.0	9.3
WSW--------	.2	.9	1.1	.3	#	#				2.5	8.3
W----------	.2	.8	.7	.3	#	#				2.0	8.5
WNW--------	.2	.9	1.1	.5	.1	#				2.8	9.4
NW---------	.1	.6	1.0	.5	.3	#				2.5	10.7
NNW--------	.1	.6	1.4	1.0	.4	#				3.5	11.8
Calm-------										1.2	
Totals-----	3.5	15.9	32.6	30.6	13.4	2.5	.3			100.0	12.6

7200* June											
N----------	.1	.5	.6	.4	.1	#				1.7	10.3
NNE--------	.2	.6	.8	.5	.1					2.2	9.6
NE---------	.2	.8	1.6	.9	.2					3.7	10.2
ENE--------	.4	1.1	2.1	1.0	.1					4.7	9.6
E----------	.3	1.3	1.6	.8	#	#				4.0	8.8
ESE--------	.5	1.9	3.2	1.8	.4	#				7.8	10.3
SE---------	.3	1.5	6.1	4.5	1.9	.4	#			14.7	12.9
SSE--------	.3	2.5	8.0	8.1	3.2	.3	#			22.4	13.2
S----------	.4	2.2	5.5	4.6	1.9	.2	#			14.8	12.4
SSW--------	.3	1.3	3.0	2.5	.9	#				8.0	12.0
SW---------	.3	1.4	2.3	.6	.1	#				4.7	9.0
WSW--------	.2	1.0	1.4	.3	#	#	#			2.9	8.7
W----------	.2	.6	.7	.2	#	#				1.7	8.2
WNW--------	.1	.8	.7	.5	.1	.1	#			2.3	10.0
NW---------	.2	.6	.6	.1	#	#				1.5	7.8
NNW--------	.2	.4	.5	.2	#	#				1.3	9.0
Calm-------										1.6	
Total------	4.2	18.5	38.7	27.0	9.0	1.0	#			100.0	11.3

Less than 0.05 percent
* Number of hourly observations

Table 20. Percentage Frequency and Mean Speed of Surface Winds (1951 - 1960) , Houston International Airport - Continued

7440* July	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.1	0.5	0.6	0.2						1.4	7.1
NNE-------	.2	.5	.9	.3	.1				#	2.0	8.1
NE--------	.2	.9	1.1	.4	.1	#	#	.1		2.8	9.6
ENE-------	.4	1.3	1.3	.4	.1	.1				3.6	8.8
E---------	.3	1.2	1.0	.3	#					2.8	7.8
ESE-------	.8	2.0	1.9	.9	.1	#				5.7	8.5
SE--------	.6	1.9	4.5	2.6	.9	.1				10.6	11.1
SSE-------	.7	3.1	7.1	5.4	1.6	.2				18.1	11.7
S---------	.8	4.0	6.3	4.1	.8	.1				16.1	10.5
SSW-------	.6	3.4	4.9	2.4	.4	#				11.7	9.6
SW--------	.6	2.9	3.2	1.0	#					7.7	8.3
WSW-------	.6	2.2	2.3	.9	.1	#	#	#		6.1	8.7
W---------	.4	1.3	1.2	.3				#		3.2	7.7
WNW-------	.3	1.4	1.1	.2	#				#	3.0	7.4
NW--------	.2	.7	.5	.2						1.6	7.6
NNW-------	.1	.5	.4	.1						1.1	7.5
Calm------										2.5	
Totals----	6.9	27.8	38.3	19.7	4.2	.5	#	.1	#	100.0	9.5

7440* August	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.4	1.2	0.8	0.2						2.6	6.9
NNE-------	.3	1.2	1.2	.3	#		#			3.0	8.1
NE--------	.7	1.7	2.5	.5	#					5.4	8.1
ENE-------	.9	1.6	2.6	.9	#					6.0	8.4
E---------	.9	2.0	2.1	.7	#					5.7	7.8
ESE-------	.8	2.2	2.8	1.3	.2	#				7.3	9.1
SE--------	.7	2.5	3.7	2.2	.3	#				9.4	9.9
SSE-------	.7	3.3	5.2	4.0	.9	.1		#		14.2	10.8
S---------	.9	3.0	4.9	2.7	.8	#				12.3	10.2
SSW-------	.6	2.7	4.6	2.0	.4	#				10.3	9.8
SW--------	.6	2.3	2.8	.7	#					6.4	8.1
WSW-------	.6	2.0	2.2	.6	.1					5.5	8.2
W---------	.5	1.3	.9	.3						3.0	7.4
WNW-------	.6	1.5	1.1	.2	#					3.4	7.0
NW--------	.3	.8	.5	.2						1.8	7.1
NNW-------	.2	.9	.5	.1	#					1.7	7.1
Calm------										2.0	
Totals----	9.7	30.2	38.4	16.9	2.7	.1	#	#		100.0	8.9

7200* September	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.7	1.6	3.0	1.7	0.2					7.2	9.7
NNE-------	.3	1.6	3.2	2.1	.3	#				7.5	10.7
NE--------	.6	2.1	4.3	3.5	.8	#	#			11.3	11.2
ENE-------	.8	2.4	4.5	3.3	.5	.1	#			11.6	10.8
E---------	.6	2.1	3.8	1.4	.3	.1				8.3	9.7
ESE-------	.8	3.1	4.1	2.1	.3	.1				10.5	9.5
SE--------	.7	2.2	4.6	2.4	.3	.1				10.3	10.3
SSE-------	.5	1.9	3.4	2.0	.8	.1	#			8.7	10.9
S---------	.4	1.8	2.2	1.2	.1	.1				5.8	9.6
SSW-------	.4	1.0	1.0	.6	.1					3.1	8.9
SW--------	.3	1.0	.9	.2						2.4	7.6
WSW-------	.3	.9	.6	.1						1.9	7.0
W---------	.4	.8	.3	.1						1.6	6.0
WNW-------	.4	1.1	.4	.1						2.0	6.1
NW--------	.3	1.0	.5	.1	#					1 9	6.8
NNW-------	.4	1.2	1.5	.8	.1					4.0	8.9
Calm------										1.9	
Totals----	7.9	25.8	38.3	21.7	3.8	.6	#			100.0	9.7

7440* October	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.3	1.3	3.1	2.6	0.6	0.1				8.0	11.8
NNE-------	.3	1.2	2.7	2.5	.7	.1				7.5	11.9
NE--------	.5	2.0	3.5	3.2	.3	.1				9.6	10.9
ENE-------	.6	2.2	4.0	2.9	.2	#				9.9	10.4
E---------	.4	2.0	3.0	1.4	.2					7.0	9.5
ESE-------	.8	2.8	4.0	2.9	.5	.1				11.1	10.2
SE--------	.2	1.8	4.8	2.5	.6	.2	#			10.1	11.2
SSE-------	.4	1.5	3.6	2.4	.8	.1	.1			8.9	11.8
S---------	.3	.9	2.1	1.3	.3	#				4.9	10.5
SSW-------	.2	.8	1.4	.8	.1	#				3.3	10.0
SW--------	.1	.8	.7	.4	#					2.0	8.9
WSW-------	.2	.6	.8	.4	.1					2.1	9.0
W---------	.1	.6	.7	.2	#					1.6	8.5
WNW-------	.3	.7	1.2	.5	.1	#				2.8	9.5
NW--------	.1	.8	1.5	1.0	.2	#		#		3.6	11.2
NNW-------	.2	1.1	2.4	2.1	.4	.1		#	#	6.3	11.9
Calm------										1.3	
Totals-----	5.0	21.1	39.5	27.1	5.1	.8	.1	#	#	100.0	10.6

7200* November	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.1	1.0	2.8	3.1	1.8	0.4	#	#		9.2	14.4
NNE-------	.2	.9	2.1	2.3	.8	.2	#			6.5	13.0
NE--------	.2	1.0	2.5	1.6	.8	.1				6.2	12.2
ENE-------	.3	1.6	3.3	3.3	.9	#				9.4	12.0
E---------	.3	1.4	2.8	1.5	.2					6.2	10.2
ESE-------	.2	1.7	3.3	2.0	.5	#				7.7	10.9
SE--------	.1	.8	3.2	1.8	.3	#				6.2	11.2
SSE-------	.2	.8	2.9	4.0	1.6	.4				9.9	14.1
S---------	.2	.7	1.8	2.6	1.0	.5	#			6.8	14.2
SSW-------	.2	.5	1.3	1.4	.6	.1				4.1	12.8
SW--------	.1	.5	1.2	.7	.2	#				2.7	11.1
WSW-------	.2	.7	1.5	.8	.1	#				3.3	10.5
W---------	.1	.6	1.2	.3	#					2.2	9.4
WNW-------	.3	.8	1.4	1.3	.3	.1				4.2	11.4
NW--------	.2	.8	1.7	1.3	.6	.1	#	#		4.7	12.3
NNW-------	.1	1.1	2.7	3.1	1.9	.6	.1			9.6	14.7
Calm------										1.1	
Totals-----	3.0	14.9	35.7	31.1	11.6	2.5	.1	#		100.0	12.4

7440* December	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.2	0.9	2.3	2.2	0.8	0.1				6.5	12.7
NNE-------	.2	.9	1.7	1.8	.4	#				5.0	11.6
NE--------	.3	1.3	1.9	1.3	.4					5.2	10.8
ENE-------	.4	1.4	3.7	2.0	.4					7.9	10.6
E---------	.3	1.1	2.9	1.7	.2	#				6.2	10.7
ESE-------	.4	1.9	3.3	1.5	.7	.1	#			7.9	10.9
SE--------	.3	.9	2.9	2.1	.5	.1	.1			6.9	11.9
SSE-------	.1	.8	2.8	3.0	1.0	.2	#			7.9	13.2
S---------	.1	.5	2.0	2.0	1.0	.1				5.7	13.5
SSW-------	.2	.7	1.8	1.9	.6	.3	#			5.5	13.2
SW--------	.2	.8	1.5	1.0	.3	.1				3.9	11.4
WSW-------	.1	.8	2.2	1.2	.4	#				4.7	11.2
W---------	.1	.6	1.8	.6	.1	#				3.2	10.3
WNW-------	.3	1.1	2.7	1.7	.6	.4	#			6.8	12.4
NW--------	.2	1.0	2.5	2.2	.7	.2	#			6.8	12.6
NNW-------	.1	1.1	2.5	3.5	1.4	.5	#			9.1	14.1
Calm------										.8	
Totals-----	3.5	15.8	38.5	29.7	9.5	2.1	.1			100.0	12.0

Less than 0.05 percent
* Number of hourly observations

See Page 34 for Annual data

WIND

Table 20. Percentage Frequency and Mean Speed of Surface Winds (1951 - 1960) , Galveston Municipal Airport

7440* January	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.3	0.8	1.9	3.2	2.3	0.4	#	#		8.9	15.3
NNE-------	.1	.6	2.0	2.5	1.3	.5	.1			7.1	15.1
NE--------	.1	.5	1.7	2.1	.8	.3	#			5.5	14.1
ENE-------	.1	.5	1.8	1.9	1.1	.3				5.7	14.5
E---------	.2	1.0	2.5	2.1	.7	.3	.2	.1		7.1	13.4
ESE-------	.1	1.5	4.0	3.1	.6	.3	.1	#		9.7	12.3
SE--------	.2	1.8	6.6	2.6	.2					11.4	10.5
SSE-------	.1	1.2	6.2	4.0	.2	#				11.7	11.4
S---------	.2	1.0	3.5	2.4	.3	#				7.4	11.4
SSW-------	#	.5	1.6	1.3	.3	#				3.7	12.2
SW--------	.1	.5	.9	.8	.4	.2				2.9	13.3
WSW-------	.1	.4	.9	.3	.1	#				1.8	10.1
W---------	.1	.4	.8	.4	.1	.1	#			1.9	10.9
WNW-------	#	.4	1.0	.7	.7	.4	.1			3.3	15.8
NW--------	.1	.5	1.1	1.4	1.1	.4	.1	#		4.7	15.5
NNW-------	#	.4	.7	1.4	2.2	1.2	.3	.1		6.3	20.0
Calm------										.9	
Totals----	1.8	12.0	37.2	30.2	12.4	4.4	.9	.2		100.0	13.3

6792* February											
N---------	.2	.9	1.8	2.6	2.5	1.1	.3	.1		9.5	17.5
NNE-------	#	.4	1.5	2.6	2.4	.7	#			7.6	16.9
NE--------	.1	.7	1.8	3.1	1.4	.1	#			7.2	14.5
ENE-------	#	.3	1.3	1.9	1.2	.1				4.8	14.9
E---------	.1	.8	2.7	3.3	1.3	.1				8.3	13.8
ESE-------	#	.9	3.7	3.4	1.0	.1				9.1	12.9
SE--------	.1	1.1	4.7	3.8	.6	.1				10.4	12.2
SSE-------	.1	.7	4.2	3.8	.6	.1				9.5	12.4
S---------	.2	1.1	3.3	3.1	.6	#				8.3	12.0
SSW-------	.1	.4	1.5	1.7	.7	.1				4.5	13.8
SW--------	.2	.4	.9	1.5	.6	.2	#			3.8	13.9
WSW-------	.1	.2	.6	.6	.1	#				1.6	11.7
W---------	.2	.5	.9	.6	.2	#				2.4	10.9
WNW-------	.1	.3	.8	1.0	.5	.3	#			3.0	15.0
NW--------	#	.4	.9	1.4	1.3	1.0	.1	#		5.1	18.2
NNW-------	#	.2	.9	1.1	1.0	.8	.2	#		4.2	18.4
Calm------										.7	
Totals----	1.5	9.3	31.5	35.5	16.0	4.8	.6	.1		100.0	14.2

7440* March											
N---------	.1	.7	1.8	2.4	2.1	.9	.2	.1		8.3	17.1
NNE-------	#	.5	1.3	2.1	1.4	.4	.1	#		5.8	16.1
NE--------	.1	.5	2.0	2.1	1.0	#				5.7	13.5
ENE-------	#	.6	1.4	2.0	.6	.1				4.7	13.5
E---------	.1	.8	2.6	2.5	.4	#				6.4	12.3
ESE-------	.1	1.2	4.3	4.1	.6	.1	#			10.4	12.4
SE--------	.2	2.0	6.6	4.2	.5	.1				13.6	11.4
SSE-------	.1	1.3	6.4	5.1	.6	#				13.5	12.0
S---------	.4	1.4	5.0	4.4	.5	#				11.7	11.8
SSW-------	.1	.7	1.7	1.8	.4	#				4.7	12.3
SW--------	.2	.6	1.2	1.0	.3	.1				3.4	11.8
WSW-------	#	.3	.4	.1	.1	#				.9	11.2
W---------	.1	.3	.4	.2	.1	.2	#	#		1.3	14.0
WNW-------	#	.3	.5	.4	.4	.4	.1			2.1	16.9
NW--------	#	.3	.6	.7	.8	.3	.2	.1		3.0	17.6
NNW-------	#	.2	.5	1.1	.8	.6	.3	#		3.5	19.4
Calm------										1.0	
Totals----	1.5	11.7	36.7	34.2	10.6	3.2	.9	.2		100.0	13.2

7220* April	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.1	0.5	1.1	1.9	1.2	0.5	0.1			5.4	15.9
NNE-------	#	.3	1.4	1.4	.9	.2	#			4.2	15.1
NE--------	.1	.5	1.5	1.3	.6	.1	#			4.1	13.0
ENE-------	.1	.5	.7	1.1	.3	#				2.7	12.8
E---------	.1	.8	1.5	2.2	.8	#				5.4	13.3
ESE-------	.1	.8	4.6	7.3	1.2	.1				14.1	13.4
SE--------	.2	1.8	8.9	8.5	.9	.1				20.4	12.3
SSE-------	#	1.6	6.7	6.8	1.0	.1				16.2	12.6
S---------	.1	1.1	4.0	4.7	.8	#				10.7	12.7
SSW-------	.1	.4	1.2	1.6	.6	.1				4.0	13.9
SW--------	.1	.4	.9	.5	.3					2.2	11.2
WSW-------	.1	.2	.4	.2	.1	#				1.0	10.4
W---------	.1	.2	.5	.2	.2	#				1.2	12.2
WNW-------	#	.2	.3	.5	.3	.1	#			1.4	15.2
NW--------	#	.3	.8	1.2	.7	.3	#			3.3	15.6
NNW-------	.1	.1	.4	.7	1.0	.5	.1			2.9	19.3
Calm------										.8	
Totals-----	1.3	9.7	34.9	40.1	10.9	2.1	.2			100.0	13.2

7440* May											
N---------	.1	.5	1.7	1.3	.8	.3	#			4.7	13.9
NNE-------	#	.3	1.1	1.2	.7	.1				3.4	14.5
NE--------	.1	.5	1.5	1.3	.3	.1				3.8	12.5
ENE-------	.1	.3	.6	.8	.3	#				2.1	13.0
E---------	.1	.4	1.3	1.3	.5	#				3.6	13.4
ESE-------	.1	.4	2.5	3.7	1.2	.1				8.0	14.1
SE--------	.1	1.0	5.5	8.5	1.3	.1	#			16.5	13.5
SSE-------	.1	1.2	7.6	10.2	2.0	.1				21.2	13.4
S---------	.1	1.7	7.0	8.4	1.3	.1				18.6	12.8
SSW-------	.1	.4	2.5	2.4	.5					5.9	12.7
SW--------	.2	.8	1.0	.8	.2					3.0	10.3
WSW-------	.1	.5	.7	.1						1.4	7.9
W---------	.1	.5	.7	.3	.1	#		#		1.7	10.2
WNW-------	#	.3	.6	.3	.1	#				1.3	10.5
NW--------	.1	.5	.6	.6	.3	.1	#			2.2	12.2
NNW-------	#	.3	.6	.4	.2	.1				1.6	12.7
Calm------										1.0	
Totals-----	1.4	9.6	35.5	41.6	9.8	1.1	#	#		100.0	12.9

7200* June											
N---------	.0	.2	.5	.3	.1		#	#		1.1	12.0
NNE-------	#	.2	1.0	.6	.1			#		1.9	11.5
NE--------	.1	.4	1.3	.8	.1	#				2.7	11.1
ENE-------	#	.3	.9	.5	.3	#	.1			2.1	13.1
E---------	.1	.6	1.3	1.2	.1	#				3.3	11.3
ESE-------	.1	.4	2.1	2.4	.4					5.4	12.6
SE--------	.2	.9	5.1	5.4	1.3	.2				13.1	13.1
SSE-------	.1	1.1	8.2	9.8	1.4	.1				20.7	13.1
S---------	.2	1.6	10.4	12.9	2.5	.1	#			27.7	13.4
SSW-------	.1	.8	3.8	4.5	1.2	.1	#			10.5	13.4
SW--------	.3	1.0	2.0	.9	.3	#				4.5	10.3
WSW-------	.2	.4	.7	.1	#		#			1.4	8.8
W---------	.1	.4	.5	.1	#			#		1.1	9.0
WNW-------	.1	.3	.6	.1	.1			#		1.2	9.8
NW--------	.1	.5	.5	.4	.1				#	1.6	10.6
NNW-------	#	.2	.4	.1	.1				#	.8	11.2
Calm------										.9	
Totals-----	1.7	9.3	39.3	40.1	8.1	.5	.1	#	#	100.0	12.6

Less than 0.05 percent
* Number of hourly observations

Table 20. Percentage Frequency and Mean Speed of Surface Winds (1951 - 1960) , Galveston,Municipal Airport - Continued

7440* July	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N---------	0.1	0.6	0.9	0.3	#					1.9	9.1
NNE--------	.1	.2	.6	.2	.1					1.2	9.8
NE---------	.2	.4	.6	.2	.1					1.5	10.5
ENE--------	.1	.3	.3	.2	.1	#				1.0	11.2
E---------	.2	.5	.7	.3	.1	#				1.8	9.2
ESE--------	.1	.8	1.6	.9	.2		#	#		3.6	11.3
SE---------	.2	1.1	4.8	1.9	.1			#	#	8.1	10.6
SSE--------	.1	1.5	7.7	5.2	.4	#			#	14.9	11.7
S---------	.4	2.2	12.5	9.2	2.0	#	#	#	#	26.3	12.3
SSW--------	.3	1.2	5.8	7.4	1.9	.1	#			16.7	13.4
SW---------	.6	1.3	3.7	3.1	1.3	.1				10.1	12.3
WSW--------	.3	1.0	1.8	.9	.1					4.1	9.4
W---------	.2	.9	1.3	.4						2.8	8.8
WNW--------	.1	.4	1.0	.5	.1					2.1	9.9
NW---------	.1	.7	1.1	.2	.1					2.2	9.3
NNW--------	.1	.3	.5	.1						1.0	8.7
Calm------										.7	
Totals----	3.2	13.4	44.9	31.0	6.6	.2	#	#	#	100.0	11.6

7440* August											
N---------	.2	.6	.9	.4	#	#	#			2.1	9.4
NNE--------	.1	.6	1.3	.4	#					2.4	9.8
NE---------	.1	1.0	2.1	.6	.1					3.9	9.5
ENE--------	#	.6	1.2	.6		#				2.4	10.1
E---------	.2	.7	2.3	1.5	.1					4.8	10.8
ESE--------	.2	.8	3.8	1.9	.1	#				6.8	11.1
SE---------	.2	1.4	6.8	2.6	.1					11.1	10.5
SSE--------	.2	1.5	6.1	3.3	.1					11.2	10.7
S---------	.3	2.3	11.1	6.9	.7	#				21.3	11.4
SSW--------	.1	1.0	5.9	5.9	1.4	.1				14.4	13.1
SW---------	.2	1.1	3.2	2.0	.5	.2	#	#		7.2	11.8
WSW--------	.2	1.0	1.3	.4	.1					3.0	8.9
W---------	.1	.8	1.0	.2	.1	#				2.2	8.4
WNW--------	.1	.7	1.2	.3	#	#				2.3	9.3
NW---------	.1	.6	1.3	.3	.1					2.4	9.3
NNW--------	.1	.4	1.0	.1						1.6	8.9
Calm------										.9	
Totals----	2.4	15.1	50.5	27.4	3.4	.3	#	#		100.0	10.9

7200* September											
N---------	.2	1.0	2.3	2.5	.5	#	#			6.5	12.0
NNE--------	.2	.7	2.9	2.5	.4	#				6.7	12.1
NE---------	.3	1.4	4.5	3.4	.7	.1		#		10.4	12.0
ENE--------	.2	1.2	2.9	2.2	.7	.1	#			7.3	12.2
E---------	.3	1.3	3.0	2.8	.8	.1				8.3	12.0
ESE--------	.4	1.8	6.6	3.8	.7	#				13.3	11.1
SE---------	.5	2.5	6.8	2.3	.1	.1				12.3	9.8
SSE--------	.2	1.8	5.9	2.7	.2					10.8	10.5
S---------	.3	2.1	5.8	2.5	.3					11.0	10.4
SSW--------	.2	.7	1.5	1.0	.1	#				3.5	10.4
SW---------	.3	.6	.8	.3	.1	#				2.1	9.0
WSW--------	.2	.4	.4	.1	#	#				1.1	8.0
W---------	.2	.5	.4	#		#	#			1.1	7.6
WNW--------	.2	.6	.8	.1	#					1.7	7.7
NW---------	.2	.4	.5	.2	#					1.3	8.1
NNW--------	.1	.4	.6	.3	#					1.4	9.7
Calm------										1.2	
Totals----	4.0	17.4	45.7	26.7	4.6	.4	#	#		100.0	10.8

7440* October	Wind Speed (m.p.h.)										
	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
N----------	0.3	1.1	3.0	2.9	1.2	0.3	0.1			8.9	13.3
NNE--------	.2	.8	3.1	3.1	1.4	.7	.1	#		9.4	14.5
NE---------	.5	1.0	4.5	2.9	.8	.3	.1			10.1	12.4
ENE--------	.2	1.0	2.1	1.9	.4	#				5.6	11.7
E---------	.3	.8	2.4	1.7	.2	#				5.4	10.9
ESE--------	.2	1.4	4.0	3.6	.4	#	#			9.6	11.7
SE---------	.3	2.8	5.7	3.8	.8	.1				13.5	11.2
SSE--------	.1	2.2	5.4	2.3	.4	.1				10.5	10.5
S---------	.4	2.1	4.6	2.0	.5	.3				9.9	10.8
SSW--------	.2	.8	1.4	.6	.2					3.2	9.9
SW---------	.3	.9	1.1	.5	.1	.1				3.0	9.8
WSW--------	.2	.5	.3	.1	.1		#			1.2	9.2
W---------	.2	.4	.5	.1	#	#				1.2	8.2
WNW--------	.2	.4	.6	.3	.1	#				1.6	9.2
NW---------	.1	.7	.7	.5	.2	#	#	#		2.2	11.0
NNW--------	.1	.6	.9	1.1	.6	.1				3.4	12.9
Calm------										1.3	
Totals-----	3.8	17.5	40.3	27.4	7.4	2.0	.3	#		100.0	11.5

7200* November											
N----------	.3	1.3	2.0	3.1	3.1	1.2	.2	#		11.2	16.3
NNE--------	.3	1.1	2.2	2.6	2.2	.8	.4	.1	#	9.7	16.0
NE---------	.2	1.2	3.0	2.7	1.4	.4	.3	.1		9.3	14.6
ENE--------	.2	.9	1.7	1.6	.9	.4	.1			5.8	13.7
E---------	.5	1.4	3.2	2.0	.8	.3	.1			8.3	12.0
ESE--------	.3	1.5	3.7	2.2	.6	.1	#	#		8.4	11.4
SE---------	.3	2.0	5.4	1.9	.3					9.9	10.2
SSE--------	.2	.9	4.0	2.7	.5					8.3	11.7
S---------	.3	.9	2.9	2.2	1.2	.2	#			7.7	12.9
SSW--------	.2	.5	.8	.7	.3	.1				2.6	12.5
SW---------	.2	.5	1.0	.5	.3	.1	#			2.6	12.0
WSW--------	.1	.4	.7	.2	.2					1.6	10.1
W---------	.2	.5	.8	.3	.1	#				1.9	9.0
WNW--------	.1	.3	.6	.5	.3	#				1.8	12.8
NW---------	.2	.8	1.4	1.0	.7	.1	.1	#		4.3	13.1
NNW--------	.1	.5	.8	1.2	1.3	.8	.2	#		4.9	18.0
Calm------										1.7	
Totals-----	3.7	14.7	34.2	25.4	14.2	4.5	1.4	.2	#	100.0	13.1

7440* December											
N----------	.4	1.5	2.4	3.6	2.1	1.1	.4	#		11.5	15.6
NNE--------	.2	1.1	2.1	2.5	1.5	.4	.1			7.9	14.3
NE---------	.3	1.0	2.3	2.1	.4	.4	.1	.1		6.7	13.0
ENE--------	.2	.6	1.9	1.3	.4	.2	#			4.6	12.4
E---------	.4	1.1	2.8	2.4	1.0	.2				7.9	12.4
ESE--------	.1	1.3	3.3	2.7	.4	.1	#			7.9	11.9
SE---------	.3	1.5	5.4	2.7	.4	#				10.3	10.9
SSE--------	.2	1.1	4.6	3.0	.2					9.1	11.1
S---------	.1	.9	3.1	2.0	.3	#				6.4	11.3
SSW--------	.1	.6	1.2	1.3	.3	#				3.5	12.4
SW---------	.1	.6	1.3	1.2	.4	.2				3.8	13.1
WSW--------	.2	.4	.8	.6	.2	#				2.2	11.4
W---------	.1	.5	1.1	.8	.2	#	#	#		2.7	11.6
WNW--------	.2	.7	1.3	1.0	.3	.1	.1			3.7	11.8
NW---------	.1	.6	1.4	2.0	.8	.3	#			5.2	14.2
NNW--------	.1	.3	1.2	1.4	1.1	.7	.2			5.0	16.9
Calm------										1.6	
Totals-----	3.1	13.8	36.2	30.6	10.0	3.7	.9	.1		100.0	12.7

Less than 0.05 percent
* Number of hourly observations

See Page 34 for Annual data

Table 20. Percentage Frequency and Mean Speed of Surface Winds - Continued

87,672* Annual	Wind Speed (m.p.h.) 1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47 & over	Total %	Mean Speed
Houston, International Airport (1951-1960)											
N----------	0.2	0.8	1.9	1.7	0.6	0.1	#	#	#	5.4	12.4
NNE--------	.2	.8	1.6	1.5	.5	.1	#		#	4.7	12.0
NE---------	.3	1.1	2.1	1.6	.4	#	#	#	#	5.5	11.1
ENE--------	.4	1.4	2.8	2.2	.4	#	#			7.1	11.0
E----------	.4	1.3	2.3	1.3	.2	#	#			5.5	10.2
ESE--------	.5	1.9	3.1	2.2	.5	.1	#			8.3	10.8
SE---------	.3	1.3	3.9	3.3	1.2	.3	#	#		10.5	12.7
SSE--------	.3	1.6	4.4	4.8	2.3	.5	.1	#		14.0	13.8
S----------	.3	1.4	3.2	2.8	1.1	.2	#			9.2	12.6
SSW--------	.3	1.1	2.3	1.7	.6	.1	#			6.0	11.7
SW---------	.2	1.0	1.5	.7	.2	#	#			3.7	9.8
WSW--------	.3	.9	1.4	.6	.2	#	#	#		3.4	9.8
W----------	.2	.7	1.0	.3	.1	#	#	#		2.3	9.3
WNW--------	.3	.9	1.3	.8	.3	.1	#	#	#	3.6	11.2
NW---------	.2	.7	1.2	1.0	.4	.2	#	#	#	3.8	12.4
NNW--------	.2	.8	1.7	1.9	.8	.2	#	#	#	5.6	13.5
Calm-------										1.3	
Totals	4.6	17.7	35.7	28.4	9.8	1.9	.1	#	#	99.9	11.8
Galveston, Municipal Airport (1951-1960)											
N----------	0.2	0.8	1.7	2.0	1.3	0.5	0.1	#	#	6.7	15.0
NNE--------	.1	.6	1.7	1.8	1.0	.3	.1	#	#	5.6	14.6
NE---------	.2	.8	2.2	1.9	.6	.2	#	#		5.9	12.9
ENE--------	.1	.6	1.4	1.3	.5	.1	#			4.0	12.9
E----------	.2	.9	2.2	1.9	.6	.1	#	#		5.9	12.3
ESE--------	.1	1.1	3.6	3.2	.6	.1	#	#		8.8	12.2
SE---------	.2	1.6	6.0	4.0	.6	.1	#	#	#	12.5	11.5
SSE--------	.1	1.4	6.2	4.9	.6	#			#	13.2	12.0
S----------	.3	1.5	6.1	5.1	.9	.1	#	#	#	14.0	12.1
SSW--------	.1	.7	2.4	2.5	.7	.1	#			6.4	12.9
SW---------	.2	.7	1.5	1.1	.4	.1	#	#		4.0	11.8
WSW--------	.1	.5	.8	.3	.1	#	#			1.8	9.7
W----------	.1	.5	.7	.3	.1	#	#	#		1.8	10.1
WNW--------	.1	.4	.8	.5	.2	.1	#	#		2.1	12.4
NW---------	.1	.5	.9	.8	.5	.2	#	#	#	3.1	13.9
NNW--------	.1	.3	.7	.8	.7	.4	.1	#	#	3.0	16.6
Calm-------										1.1	
Totals-----	2.3	12.9	38.8	32.4	9.4	2.4	.3	#	#	99.9	12.5

Less than 0.05 percent
* Number of hourly observations

Table 21. Number of Days of Wind Speed , Fastest Mile , Houston , Federal Office Building (City Office) *

m.p.h. / Year	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74
1939	18	1	0	2	1	0	0	0	0
1940	21	3	3	1	0	0	0	0	0
1941	13	2	0	0	0	0	0	1	0
1942	17	5	4	2	1	0	0	0	0
1943	16	5	2	0	0	0	0	0	1
1944	16	4	1	0	1	0	0	0	0
1945	32	5	5	2	0	0	0	0	0
1946	9	4	2	1	1	0	0	0	0
1947	20	3	1	2	1	0	0	0	0
1948	21	6	0	0	0	2	0	0	0
1949	19	3	2	0	0	1	0	0	1
1950	18	7	0	1	0	0	0	0	0
1951	27	6	3	0	0	0	0	0	0
1952	18	2	0	1	0	0	0	0	0
1953	20	2	1	0	1	1	0	0	0
1954	14	2	0	0	0	0	0	0	0
1955	20	5	2	0	0	1	0	0	0
1956	12	2	0	1	1	0	0	0	0
1957	19	8	1	0	0	0	0	0	0
1958	9	2	0	0	0	0	0	0	0
1959	26	6	0	3	0	0	0	0	0
1960	18	3	4	0	0	0	0	0	0
1939-1960 Mean	18	4	1	1	#	#	0	#	#

Table 21. Number of Days of Wind Speed , Fastest Mile , Galveston , Post Office Building (City Office) *

m.p.h. / Year	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94
1912	25	5	4	0	0	0	0	0	0	0	0	0	0
1913	20	5	1	0	0	0	0	0	0	0	0	0	0
1914	23	3	0	0	0	0	0	0	0	0	0	0	0
1915	22	6	5	0	2	0	0	0	0	0	1	0	1
1916	20	5	0	0	1	1	0	0	0	0	0	0	0
1917	16	4	1	0	0	0	0	0	0	0	0	0	0
1918	19	3	1	0	1	0	0	0	0	0	0	0	0
1919	20	10	2	1	0	0	0	0	0	0	0	0	0
1920	19	5	1	0	0	0	0	0	0	0	0	0	0
1921	15	6	2	1	0	0	1	0	0	0	0	0	0
1922	13	6	2	3	1	0	0	0	0	0	0	0	0
1923	16	7	0	1	0	0	0	0	0	0	0	0	0
1924	12	4	3	0	1	0	0	0	0	0	0	0	0
1925	11	2	2	0	0	0	0	0	0	0	0	0	0
1926	11	4	0	0	0	0	0	0	0	0	0	0	0
1927	17	4	0	2	0	0	1	0	0	0	0	0	0
1928	7	7	2	0	0	0	0	0	0	0	0	0	0
1929	15	4	1	1	0	0	0	0	0	0	0	0	0
1930	11	4	1	0	0	0	0	0	0	0	0	0	0
1931	11	3	0	0	0	0	0	0	0	0	0	0	0
1932	10	5	1	0	1	0	0	1	0	0	0	0	0
1933	7	4	0	0	0	0	0	0	0	0	0	0	0
1934	11	4	2	2	1	0	0	0	0	0	0	0	0
1935	9	3	1	1	0	0	0	0	0	0	0	0	0
1936	13	4	1	1	0	0	0	0	0	0	0	0	0
1937	11	3	1	0	0	0	0	0	0	0	0	0	0
1938	15	9	2	1	0	0	0	0	0	0	0	0	0
1939	5	4	0	0	0	0	0	0	0	0	0	0	0
1940	16	6	1	1	0	0	0	0	0	0	0	0	0
1941	7	1	0	2	0	0	1	0	0	0	0	0	0
1942	14	9	3	2	0	0	1	0	0	0	0	0	0
1943	9	5	1	0	1	0	0	1	0	0	0	0	0
1944	13	1	2	0	0	0	0	0	0	0	0	0	0
1945	12	4	2	0	1	0	0	0	0	0	0	0	0
1946	12	5	3	0	0	0	0	0	0	0	0	0	0
1947	15	9	3	2	0	0	0	0	1	0	0	0	0
1948	25	4	3	0	0	0	0	0	0	0	0	0	0
1949	15	4	2	3	0	0	1	1	0	0	0	0	0
1950	16	4	4	0	1	0	0	0	0	0	0	0	0
1951	22	9	7	0	1	0	0	0	0	0	0	0	0
1952	24	11	6	0	1	1	0	0	0	0	0	0	0
1953	23	9	4	0	0	1	1	0	0	0	0	0	0
1954	24	11	7	1	1	0	0	0	0	0	0	0	0
1955	22	10	6	2	1	0	0	0	0	0	0	0	0
1956	22	4	2	1	0	1	0	0	0	0	0	0	0
1957	19	6	9	2	1	0	1	0	0	0	0	0	0
1958	17	6	4	0	0	0	0	0	0	0	0	0	0
1959	21	13	3	1	1	1	0	1	0	0	0	0	0
1960	28	3	3	0	0	0	0	0	0	0	0	0	0
1912-1960 Mean	16	5	2	1	#	#	#	#	#	0	#	0	#

* Distribution of days when the fastest single mile of wind speed was over 29 miles per hour.
\# Less than one.

AIR MOISTURE CONTENT

Table 22. Mean and Distribution * of Relative Humidity (%) (1951 - 1960)

Month	Mean Relative Humidity				Frequency of Occurrence of Relative Humidity Equal to or Greater than Values Shown *																			
					Midnight Frequency in %					6 am Frequency in %					Noon Frequency in %					6 pm Frequency in %				
	Mid.	6 am	Noon	6 pm	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5
Houston International Airport (January 1951 - December 1960)																								
January----	81	84	64	69	47	66	88	95	100	52	75	91	96	100	32	48	65	80	96	31	52	75	86	95
February---	83	86	64	68	44	76	89	95	100	54	80	92	97	100	28	50	64	78	97	30	55	74	84	95
March------	80	83	56	62	41	68	88	94	99	49	73	90	96	100	25	42	58	70	88	26	44	65	77	92
April------	85	88	60	67	51	78	90	94	97	59	84	92	96	99	28	48	61	71	89	30	52	71	81	94
May--------	87	90	58	66	69	84	89	92	95	74	87	91	95	98	38	49	57	65	83	40	55	67	76	90
June-------	87	90	56	63	76	84	88	91	94	82	88	91	94	96	43	50	55	61	81	42	56	63	69	84
July-------	87	91	56	63	79	85	88	90	92	85	89	91	94	96	44	50	54	59	79	47	57	63	67	83
August-----	88	92	58	66	77	86	88	91	95	84	90	92	95	97	42	50	55	63	86	47	58	64	73	91
September--	85	90	59	67	63	82	89	93	97	69	88	93	96	100	33	48	57	69	90	41	57	68	78	91
October----	80	87	57	66	46	75	87	92	98	60	82	91	95	100	25	43	56	65	85	29	54	70	80	92
November---	80	85	58	68	45	69	85	94	100	49	78	90	97	100	28	41	58	73	91	32	50	73	84	95
December---	82	85	63	70	47	71	87	95	100	53	76	91	97	100	29	46	63	80	96	35	55	74	88	96
Galveston Municipal Airport (January 1951 - December 1960)																								
January----	82	84	74	79	51	70	88	96	99	54	76	89	97	99	42	64	79	87	96	41	65	85	94	98
February---	84	86	74	78	53	76	88	95	99	58	79	90	96	100	40	63	78	87	95	45	68	84	92	97
March------	83	84	71	76	51	70	89	95	99	52	75	90	96	99	41	60	76	84	93	39	62	82	90	96
April------	84	86	73	78	56	76	90	95	99	59	80	90	95	99	43	62	78	85	93	45	68	85	91	96
May--------	83	85	71	74	63	78	85	90	95	66	80	86	91	96	48	64	72	79	87	50	68	76	84	91
June-------	82	83	70	72	71	78	81	87	93	72	79	83	88	93	57	66	70	74	83	59	68	72	78	85
July-------	80	83	69	71	72	76	80	83	91	75	78	82	87	94	59	64	68	72	82	61	67	70	75	82
August-----	78	82	69	71	67	75	79	82	88	72	79	82	87	93	55	64	68	72	86	58	67	71	76	84
September--	78	83	68	72	59	72	79	85	91	67	77	83	89	95	47	59	69	75	90	51	65	73	80	89
October----	76	81	65	70	52	68	79	85	94	60	75	82	89	96	38	56	66	75	87	43	60	72	80	92
November---	78	81	68	73	47	67	83	92	98	54	72	86	93	99	39	55	71	82	93	41	58	79	89	95
December---	80	83	70	77	48	66	84	93	98	56	73	86	94	98	37	56	74	85	95	46	63	81	91	98

See Table 9 for corresponding data for dry-bulb temperature.

* At Houston International Airport at 6 am in July, the mean relative humidity was 91%, and at this hour a relative humidity of 91% or greater occurred 50 percent of the time; while at Galveston Municipal Airport, for the same hour in July, the mean relative humidity was 83%, and a relative humidity of 82% occurred 50 percent of the time.

Table 23. Mean and Distribution * of Wet-Bulb Temperature (°F) (1951 - 1960)

Month	Mean				Frequency of Occurrence of Wet-Bulb Temperature (°F) Equal to or Greater than Values Shown *																			
					Midnight Frequency in %					6 am Frequency in %					Noon Frequency in %					6 pm Frequency in %				
	Mid.	6 am	Noon	6 pm	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5
Houston International Airport (January 1951 - December 1960)																								
January----	49	47	52	52	31	40	48	58	67	28	37	45	58	66	34	44	53	63	69	35	45	53	60	68
February---	51	49	53	54	34	43	50	59	68	31	40	49	58	67	35	45	54	62	69	37	47	53	61	69
March------	55	53	57	58	38	46	55	64	69	33	44	53	63	68	39	49	58	67	70	41	51	59	66	70
April------	62	60	64	64	47	56	63	68	72	44	53	62	68	71	50	58	66	70	73	52	59	66	70	73
May--------	68	67	70	70	57	65	69	72	75	55	64	68	71	75	59	67	71	74	76	61	68	71	74	76
June-------	73	72	75	75	68	72	74	75	77	66	70	73	74	76	69	73	75	77	79	70	73	75	77	79
July-------	75	75	76	77	73	74	75	76	77	72	73	74	75	77	73	75	76	77	78	74	76	77	78	79
August-----	75	74	76	77	72	74	76	76	78	70	73	74	75	77	72	75	77	78	79	73	75	77	78	80
September--	72	70	73	73	62	69	73	75	77	58	67	72	74	76	63	70	75	77	79	65	71	75	77	79
October----	64	61	68	67	45	57	65	70	74	43	54	62	68	74	51	60	68	73	77	51	60	67	72	76
November---	54	52	57	57	37	45	53	63	72	34	42	51	62	70	39	48	57	67	73	40	48	57	65	72
December---	50	48	53	52	33	42	48	58	67	30	39	47	57	67	38	45	52	62	69	38	45	52	60	68
Galveston Municipal Airport (January 1951 - December 1960)																								
January----	51	50	53	53	34	44	52	59	65	33	43	51	59	64	35	45	54	62	68	35	47	54	60	65
February---	53	52	54	54	37	48	54	60	65	34	45	53	60	65	38	48	56	62	68	39	48	55	61	66
March------	57	56	58	58	40	50	59	64	68	38	49	58	63	68	40	51	60	66	70	43	52	60	65	68
April------	64	63	65	65	52	60	65	69	72	48	58	65	69	72	51	60	67	70	74	54	61	67	70	73
May--------	70	70	72	71	60	68	71	74	76	59	67	70	74	76	61	69	73	75	78	61	69	72	75	77
June-------	75	75	77	76	71	74	76	77	79	70	73	75	77	79	71	75	77	79	81	72	75	77	79	80
July-------	77	77	78	78	75	76	77	78	80	74	76	77	78	79	75	77	78	79	80	75	77	78	79	80
August-----	77	76	78	78	73	76	77	78	80	72	75	77	78	79	73	76	78	79	80	73	76	78	79	80
September--	74	73	74	74	65	71	75	77	79	64	70	74	76	79	65	72	75	78	80	67	72	75	77	79
October----	67	65	67	67	52	62	68	72	76	50	60	67	71	76	52	61	70	74	78	53	62	68	72	76
November---	57	55	59	58	40	50	58	66	71	38	47	57	65	70	40	51	60	68	73	41	50	60	66	71
December---	52	51	54	53	37	46	53	60	66	34	44	51	59	65	38	47	54	62	68	40	47	53	60	66

See Table 9 for corresponding dry-bulb temperature.

* At Houston International Airport at 6 am in July the mean wet-bulb temperature was 75°, and at this hour a wet-bulb temperature 74° or greater occurred 50 percent of the time; while at Galveston Municipal Airport, for the same hour in July, the mean wet-bulb temperature was 77°, and at that hour a wet-bulb temperature of 77° or greater occurred 50 percent of the time.

AIR MOISTURE CONTENT

Table 24. Mean and Distribution * of Dew-Point Temperature (°F) (1951 - 1960)

Month	Mean				Frequency of Occurrence of Dew-Point Temperature (°F) Equal to or Greater than Values Shown *																			
	Mid.	6 am	Noon	6 pm	Midnight Frequency in %					6 am Frequency in %					Noon Frequency in %					6 pm Frequency in %				
					95	75	50	25	5	95	75	50	25	5	95	75	50	25	5	95	75	50	25	5
Houston, International Airport (January 1951 - December 1960)																								
January----	45	44	46	47	22	34	45	58	67	22	33	44	57	67	19	35	46	59	67	22	35	48	57	67
February---	48	47	47	48	28	38	48	58	67	25	37	47	58	66	24	36	48	58	66	27	38	49	59	67
March------	51	50	49	50	26	42	53	63	68	26	39	52	62	68	22	38	51	62	67	24	41	52	63	68
April------	59	58	57	59	40	53	62	68	71	38	51	61	67	71	34	51	61	67	70	37	51	62	67	71
May--------	67	66	64	66	53	64	68	71	74	53	62	67	71	73	48	59	66	69	72	51	62	67	71	74
June-------	73	73	68	70	65	70	73	74	76	63	68	71	72	74	61	67	70	72	75	63	69	72	73	76
July-------	74	74	71	73	71	73	74	75	76	71	72	74	74	76	67	70	72	73	75	68	71	73	74	76
August-----	74	73	71	73	69	73	74	75	77	68	72	74	75	76	66	70	71	73	76	67	72	75	76	77
September--	70	69	68	69	58	67	72	74	76	54	65	71	73	76	52	64	70	73	76	56	65	71	74	77
October----	60	59	59	60	36	54	63	69	73	38	52	63	68	73	31	50	61	69	73	34	53	63	70	74
November---	50	49	50	51	28	39	50	62	71	26	38	50	62	70	24	37	51	64	71	26	38	53	63	71
December---	46	45	47	47	24	36	46	57	67	23	35	45	57	66	24	35	47	59	66	25	37	48	58	67
Galveston, Municipal Airport (January 1951 - December 1960)																								
January----	48	48	49	49	28	39	50	59	64	25	39	49	58	64	25	39	50	61	67	26	40	52	59	64
February---	50	50	50	50	32	43	51	59	65	30	40	51	59	65	30	40	51	60	66	31	42	52	60	65
March------	54	53	54	54	31	46	57	63	68	31	44	57	63	67	30	43	56	64	68	31	45	57	63	68
April------	62	61	61	62	45	57	64	69	72	42	56	64	68	71	41	55	64	69	72	44	57	64	69	72
May--------	68	68	68	68	55	66	70	72	75	55	65	69	72	75	52	66	70	73	76	53	66	69	72	76
June-------	74	73	73	74	67	72	74	76	79	67	71	74	76	78	67	72	74	76	78	67	72	74	76	79
July-------	75	75	75	75	72	74	75	77	78	72	74	75	76	78	71	74	75	76	78	72	74	75	76	78
August-----	75	75	74	75	69	74	75	77	78	70	73	75	76	78	69	73	75	76	78	68	73	75	76	78
September--	71	71	70	71	61	68	73	75	78	60	68	72	75	78	58	68	72	75	78	61	68	72	75	77
October----	63	63	62	63	45	57	65	71	75	44	57	65	70	74	41	56	65	71	76	44	56	65	70	74
November---	54	53	53	54	32	45	56	65	70	30	43	55	64	69	29	43	56	65	71	30	43	57	65	70
December---	49	48	49	49	28	40	51	59	65	27	39	49	58	64	25	39	50	59	67	29	41	51	59	65

See Table 9 for corresponding dry-bulb temperature.

* At Houston International Airport at 6 am in July, the mean dew-point temperature was 74°, and at this hour a dew-point temperature 74° or greater occurred 50 percent of the time; while at Galveston Municipal Airport, for the same hour in July, the mean dew-point temperature was 75° and a dew-point temperature of 75° or greater occurred 50 percent of the time.

Table 25. Cooling Degree Hour Totals, Base 72 (°F), Houston, International Airport

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1949-------	165	142	390	860	4403	7205	7330	6818	5475	2285	666	184	35,923
1950-------	608	272	473	804	4151	5605	6858	6998	4796	2641	730	174	34,110
1951-------	107	163	520	886	3073	6480	8355	9345	4878	2323	472	330	36,932
1952-------	406	144	186	485	2803	6196	7198	8213	4693	1326	501	67	32,218
1953-------	101	38	891	1340	4365	8132	8241	6835	5456	2265	83	70	37,817
1954-------	44	309	581	1688	2402	6391	8556	8425	6165	3152	151	134	37,998
1955-------	67	85	1122	1773	4167	5440	7503	7172	5087	2455	953	182	36,006
1956-------	124	290	554	1044	4328	5881	8041	7927	5471	2462	516	300	36,938
1957-------	268	462	217	1061	3893	5720	8995	7846	3726	1277	635	37	34,137
1958-------	1	3	104	1492	3839	7753	8604	7900	5001	1522	680	30	36,929
1959-------	12	69	177	764	3895	6675	6740	6911	5269	2372	361	2	33,247
1960-------	30	13	278	999	2927	6895	8623	6646	5290	2408	700	98	34,907
1961-------	19	170	702	1379	4297	5465	6995	6572	5263	2063	231	155	33,311
13 year Average----	150	166	477	1121	3742	6449	7849	7508	5121	2196	514	136	35,429

The values in this table, computed from hourly observations, have proved useful for research in the cooling problem, and have been found very valuable through actual use in engineering applications. The use of a uniform base provides a numerical method of comparing the difference in residential and commercial cooling requirements in the Houston area from month to month and year to year.

CEILING AND VISIBILITY

Table 26. Percentage Frequencies of Ceiling-Visibility Categories (Hourly Observations) Houston, International Airport

Visibility (Miles)	CEILING (FEET) 0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7400* January										
0 to 1/8	.2	1.2	.1	#	#	#	#		.4	1.9
3/16 to 3/8	.1	.9	.1	#	.1	.1	.1	#	.4	1.8
1/2 to 3/4		.6	.6	.1	.1	.1	.1	.1	.4	2.1
1 to 2 1/2		.7	1.5	1.5	.6	.2	.2	.2	.5	5.4
3 to 6		.1	1.2	3.1	1.4	.6	.9	.6	3.0	10.9
7 to 15			.6	3.8	6.5	5.2	7.8	8.3	45.7	77.9
20 to 30										.0
35 or more										.0
Total	.3	3.5	4.1	8.5	8.7	6.2	9.1	9.2	50.4	100.0
6792* February										
0 to 1/8	.1	.6	.1			#			.3	1.1
3/16 to 3/8	#	1.0	.1	.1					.4	1.6
1/2 to 3/4	#	.7	.3	.3	#	#	#	#	.4	1.7
1 to 2 1/2		.6	1.1	1.6	.7	.2	.3	.3	1.1	5.9
3 to 6		.1	1.2	3.3	1.7	.5	.5	.6	3.2	11.1
7 to 15		#	.5	5.1	7.1	6.3	6.8	8.0	44.8	78.6
20 to 30										.0
35 or more										.0
Total	.1	3.0	3.3	10.4	9.5	7.0	7.6	8.9	50.2	100.0
7440* March										
0 to 1/8	#	.8	.1						.4	1.3
3/16 to 3/8		.8	.1	#	#	#		#	.4	1.3
1/2 to 3/4		.6	.2	#	.1	#	#	#	.3	1.2
1 to 2 1/2		.4	.9	1.2	.5	.2	.3	.2	1.0	4.7
3 to 6		.1	1.0	2.2	1.3	.7	.7	.7	3.6	10.3
7 to 15		#	.3	3.1	8.1	6.3	7.2	7.4	48.8	81.2
20 to 30										.0
35 or more										.0
Total	#	2.7	2.6	6.5	10.0	7.2	8.2	8.3	54.5	100.0
7220* April										
0 to 1/8	#	.3	#			#			.1	.4
3/16 to 3/8	#	.3	#	#	#	#			.2	.5
1/2 to 3/4	#	.3	.2	.1	.1	.1		#	.3	1.1
1 to 2 1/2		.3	.7	.9	.6	.3	.2	.1	.9	4.0
3 to 6		.1	.9	2.5	1.6	.7	.6	.6	3.3	10.3
7 to 15		#	.3	5.3	10.5	8.6	7.1	4.3	47.6	83.7
20 to 30										.0
35 or more										.0
Total	#	1.3	2.1	8.8	12.8	9.7	7.9	5.0	52.4	100.0

Visibility (Miles)	CEILING (FEET) 0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7440* May										
0 to 1/8		.1	#						.2	.3
3/16 to 3/8			#	#					.1	.1
1/2 to 3/4		#		.1	#	#	#		.3	.4
1 to 2 1/2		#	.1	.4	.3	.1	.1	#	1.2	2.2
3 to 6		#	.2	.9	1.2	.3	.6	.6	4.1	7.9
7 to 15			.1	1.5	8.1	8.1	8.0	3.7	59.6	89.1
20 to 30										.0
35 or more							#			#
Total		.1	.4	2.9	9.6	8.5	8.7	4.3	65.5	100.0
7200* June										
0 to 1/8		#							#	#
3/16 to 3/8									#	#
1/2 to 3/4			.1	#	#	#			.1	.2
1 to 2 1/2			#	.1	.2	.1	.1	#	1.3	1.8
3 to 6			#	.1	.4	.6	.6	.4	5.4	7.5
7 to 15				.1	1.9	4.6	8.5	2.4	73.0	90.5
20 to 30										.0
35 or more										.0
Total		#	.1	.3	2.5	5.3	9.2	2.8	79.8	100.0
7440* July										
0 to 1/8										
3/16 to 3/8										
1/2 to 3/4									#	#
1 to 2 1/2				.2	.1	.1	.1	.1	1.0	1.6
3 to 6				.1	.3	.5	.6	.3	3.6	5.4
7 to 15				.1	.9	3.4	6.3	1.5	80.8	93.0
20 to 30										.0
35 or more										.0
Total				.4	1.3	4.0	7.0	1.9	85.4	100.0
7440* August										
0 to 1/8										
3/16 to 3/8				#		#			#	#
1/2 to 3/4		#			#				.1	.1
1 to 2 1/2			#	.2	.2	.2	.1	.2	2.0	2.9
3 to 6			#	.3	.4	.5	.6	.7	6.0	8.5
7 to 15			#	.1	1.0	3.3	4.8	2.7	76.6	88.5
20 to 30										.0
35 or more										.0
Total		#	#	.6	1.6	4.0	5.5	3.6	84.7	100.0

CEILING AND VISIBILITY

Table 26. Percentage Frequencies of Ceiling - Visibility Categories (Hourly Observations) Houston, International Airport - Continued

Visibility (Miles)	CEILING (FEET) 0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7200* September										
0 to 1/8------		.1	#						.2	.3
3/16 to 3/8----		#	#						.2	.2
1/2 to 3/4-----			#	#	.1				.5	.6
1 to 2 1/2-----		#	.1	.5	.2	.3	.2	.2	2.9	4.4
3 to 6--------			.1	.7	.6	.6	.4	.5	8.3	11.2
7 to 15--------		#	#	.5	2.3	4.0	4.4	2.7	69.4	83.3
20 to 30-------										.0
35 or more-----										.0
Total----------		.1	.2	1.7	3.2	4.9	5.0	3.4	81.5	100.0
7440* October										
0 to 1/8------	.1	.2	#		#				.3	.6
3/16 to 3/8----		#	#	#	.1			#	.3	.4
1/2 to 3/4-----			#	#	#	#		#	.5	.5
1 to 2 1/2-----		#	.1	.4	.2	.1	.1	.2	2.7	3.8
3 to 6--------			.2	.4	.9	.2	.5	.9	8.4	11.5
7 to 15--------			#	.6	1.8	3.5	5.8	4.5	67.0	83.2
20 to 30-------										.0
35 or more-----										.0
Total----------	.1	.2	.3	1.4	3.0	3.8	6.4	5.6	79.2	100.0

Visibility (Miles)	CEILING (FEET) 0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7200* November										
0 to 1/8-----	.1	.5	#			#	#	#	.7	1.3
3/16 to 3/8--		.3	.1	#	#	#	.1	#	.7	1.2
1/2 to 3/4---		.3	.2	.1	#	#	#	.1	.5	1.2
1 to 2 1/2---		.2	.5	1.3	.4	.3	.2	.7	1.3	4.9
3 to 6-------		#	.5	1.7	.9	.3	.9	1.1	4.2	9.6
7 to 15------			.2	3.1	5.4	4.7	7.4	8.9	52.1	81.8
20 to 30-----										.0
35 or more---										.0
Total--------	.1	1.3	1.5	6.2	6.7	5.3	8.6	10.8	59.5	100.0
7440* December										
0 to 1/8-----	.1	.8	.1		#	#		#	.7	1.7
3/16 to 3/8--		.6	.1	#	.1	#		#	.3	1.1
1/2 to 3/4---		.4	.4	.1	.1	.1	#	.1	.5	1.7
1 to 2 1/2---		.3	1.3	1.4	.5	.3	.2	.2	.9	5.1
3 to 6-------		.1	1.1	2.8	1.8	.9	.7	.8	3.5	11.7
7 to 15------		#	.6	3.0	4.7	4.5	7.4	9.5	49.0	78.7
20 to 30-----										.0
35 or more---										.0
Total--------	.1	2.2	3.6	7.3	7.2	5.8	8.3	10.6	54.9	100.0

ANNUAL

Visibility (Miles)	CEILING (FEET) 0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
87,672*										
0 to 1/8------	#	.4	#	#	#	#	#		.4	.8
3/16 to 3/8---	#	.3	#	#	#	#	#	#	.3	.6
1/2 to 3/4----	#	.2	.2	#	#	#	#	#	.3	.7
1 to 2 1/2----	#	.2	.5	.8	.4	.2	.2	.2	1.4	3.9
3 to 6-------		#	.5	1.5	1.0	.5	.6	.7	4.7	9.5
7 to 15------		#	.2	2.2	4.9	5.2	6.8	5.3	59.9	84.5
20 to 30-----										.0
35 or more----							#			#
Total--------	#	1.1	1.4	4.5	6.3	5.9	7.6	6.2	67.0	100.0

CEILING AND VISIBILITY

Table 26. Percentage Frequencies of Ceiling - Visibility Categories (Hourly Observations) Galveston, Municipal Airport

Visibility (Miles)	CEILING (FEET)									
	0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7400* January										
0 to 1/8-------	.4	1.2	#	#	.1	#	.1	#	.8	2.6
3/16 to 3/8----	.1	.6	.1	.1	.1	.1	.1	.1	.7	2.0
1/2 to 3/4-----	#	.8	.2	.1	.3	.1	.2	.1	.4	2.2
1 to 2 1/2-----	#	.8	.6	.7	.6	.3	.2	.3	.6	4.1
3 to 6---------		.3	.9	2.4	1.7	.7	1.4	1.0	2.7	11.1
7 to 15--------		.1	.4	3.5	4.9	3.6	7.7	7.6	50.2	78.0
20 to 30-------										.0
35 or more-----										.0
Total----------	.5	3.8	2.2	6.8	7.7	4.8	9.7	9.1	55.4	100.0
6792* February										
0 to 1/8-------	.6	.8	.1	.1		#	#		.5	2.1
3/16 to 3/8----	.2	.5	.1	.1	.2	.1	#	.1	.7	2.0
1/2 to 3/4-----	.1	.3	.2	.2	.2	#	.1	#	.5	1.6
1 to 2 1/2-----	#	.6	.6	.7	.5	.3	.2	.1	.6	3.6
3 to 6---------		.5	1.3	2.6	1.9	.8	.9	.6	3.2	11.8
7 to 15--------		.1	1.0	5.7	5.9	4.4	5.5	7.3	49.0	78.9
20 to 30-------										.0
35 or more-----										.0
Total----------	.9	2.8	3.3	9.4	8.7	5.6	6.7	8.1	54.5	100.0
7440* March										
0 to 1/8-------	.6	.8	.1	#		#	#	#	.2	1.7
3/16 to 3/8----	.2	.7	.3	.1	.1	#	.1	#	.4	1.9
1/2 to 3/4-----	.1	.6	.1	.1	.1	.1	.1	.1	.3	1.6
1 to 2 1/2-----	#	.8	.7	.6	.4	.2	.2	.1	.5	3.5
3 to 6---------		.6	.7	2.1	1.8	1.0	1.0	.4	3.9	11.5
7 to 15--------		.2	.5	2.3	5.9	4.7	5.8	6.1	54.3	79.8
20 to 30-------										.0
35 or more-----										.0
Total----------	.9	3.7	2.4	5.2	8.3	6.0	7.2	6.7	59.6	100.0
7220* April										
0 to 1/8-------	.4	.3							#	.7
3/16 to 3/8----	.1	.7	#			.1			.1	1.0
1/2 to 3/4-----	.1	.6	.1	#	#	#			.2	1.0
1 to 2 1/2-----	#	.8	.3	.5	.3	.1	#	#	.3	2.3
3 to 6---------		.8	1.6	2.8	1.6	1.0	.8	.5	3.1	12.2
7 to 15--------		.4	1.1	5.3	7.9	5.0	3.6	4.1	55.4	82.8
20 to 30-------										.0
35 or more-----										.0
Total----------	.6	3.6	3.1	8.6	9.8	6.2	4.4	4.6	59.1	100.0

Visibility (Miles)	CEILING (FEET)									
	0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7440* May										
0 to 1/8-------	#	#								#
3/16 to 3/8----	#	#								#
1/2 to 3/4-----		.1			#					.1
1 to 2 1/2-----		.1	.1	.1	#				.1	0.4
3 to 6---------		.1	.3	.9	.5	.1	.1	.3	1.3	3.6
7 to 15--------		.1	.3	5.3	13.1	4.0	2.8	3.4	66.9	95.9
20 to 30-------										.0
35 or more-----										.0
Total----------	#	.4	.7	6.3	13.6	4.1	2.9	3.7	68.3	100.0
7200* June										
0 to 1/8-------										.0
3/16 to 3/8----										.0
1/2 to 3/4-----					#				#	#
1 to 2 1/2-----				#	.1	#			#	.1
3 to 6---------			#	#	.2	.1	#	.1	2.6	3.0
7 to 15--------				.2	4.6	2.3	.9	1.4	87.5	96.9
20 to 30-------										.0
35 or more-----										.0
Total----------			#	.2	4.9	2.4	.9	1.5	90.1	100.0
7440* July										
0 to 1/8-------										.0
3/16 to 3/8----										.0
1/2 to 3/4-----				#	.1					.1
1 to 2 1/2-----				.1	.2		#		#	.3
3 to 6---------				.1	.3	.1	#	#	.3	.8
7 to 15--------				.1	1.9	2.2	1.0	1.4	92.2	98.8
20 to 30-------										.0
35 or more-----									.#	#
Total----------				.3	2.5	2.3	1.0	1.4	92.5	100.0
7440* August										
0 to 1/8-------										.0
3/16 to 3/8----					#					#
1/2 to 3/4-----										.0
1 to 2 1/2-----	#		#	#	#	#	#		#	#
3 to 6---------			#	.1	.3	.2	.1	.1	1.4	2.2
7 to 15--------				.1	2.2	2.3	.9	1.9	90.4	97.8
20 to 30-------										.0
35 or more-----										.0
Total----------	#		#	.2	2.5	2.5	1.0	2.0	91.8	100.0

CEILING AND VISIBILITY

Table 26. Percentage Frequencies of Ceiling - Visibility Categories (Hourly Observations) Galveston, Municipal Airport - Continued

Visibility (Miles)	CEILING (FEET)									
	0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000-9500	over 9500	Total
7200* September										
0 to 1/8-------										.0
3/16 to 3/8----			#							#
1/2 to 3/4-----		#			#				#	#
1 to 2 1/2-----		#	#	.2	.1		#		.1	.4
3 to 6---------			#	.4	.8	.3	.2	.2	2.8	4.7
7 to 15--------			#	.7	3.6	2.2	1.5	2.8	84.1	94.9
20 to 30-------										.0
35 or more-----										.0
Total----------		#	#	1.3	4.5	2.5	1.7	3.0	87.0	100.0
7440* October										
0 to 1/8-------	#								.1	.1
3/16 to 3/8----		#		#						#
1/2 to 3/4-----	#	#		#	#				.1	.1
1 to 2 1/2-----		.1	#	.1	.1	#	#	#	.4	.7
3 to 6---------		.1	.1	.5	.6	.2	.1	.2	3.1	4.9
7 to 15--------		#	.2	.9	3.6	2.7	3.1	3.7	80.0	94.2
20 to 30-------										.0
35 or more-----										.0
Total----------	#	.2	.3	1.5	4.3	2.9	3.2	3.9	83.7	100.0

Visibility (Miles)	CEILING (FEET)									
	0	100-200	300-400	500-900	1000-1900	2000-2900	3000-4900	5000 9500	over 9500	Total
7200* November										
0 to 1/8------	.1	.2		#	#		.1		.2	.6
3/16 to 3/8---	#	.2		#	#		#		.2	.4
1/2 to 3/4----		.1	.1				#		.4	.6
1 to 2 1/2----		.2	.3	.4	.1	.1	#	.2	.7	2.0
3 to 6--------		.1	.5	1.9	.9	.4	.6	1.0	4.3	9.7
7 to 15-------		#	.3	3.9	5.1	3.3	6.1	7.2	60.8	86.7
20 to 30------										.0
35 or more----										.0
Total---------	.1	.8	1.2	6.2	6.1	3.8	6.8	8.4	66.6	100.0
7440* December										
0 to 1/8------	.3	.2	#	#	#				.3	.8
3/16 to 3/8---	.1	.4	#	#	.1	#	#	.1	.7	1.4
1/2 to 3/4----	.1	.3	.2	.1	.1	#	#	#	.3	1.1
1 to 2 1/2----	#	.6	.6	.5	.4	.2	.2	.1	.5	3.1
3 to 6--------		.4	1.1	2.2	1.6	1.2	1.1	1.0	3.3	11.9
7 to 15-------		.1	.6	3.0	4.4	4.2	6.0	9.1	54.3	81.7
20 to 30------										.0
35 or more----										.0
Total---------	.5	2.0	2.5	5.8	6.6	5.6	7.3	10.3	59.4	100.0

ANNUAL

Visibility (Miles)	CEILING (FEET)									
	0	100-200	300-400	500-900	1000-1900	2000 2900	3000-4900	5000-9500	over 9500	Total
87672*										
0 to 1/8------	.2	.3	#	#	#	#	#	#	.2	.7
3/16 to 3/8---	.1	.3	#	#	#	#	#	#	.2	.6
1/2 to 3/4----	#	.2	.1	#	.1	#	#	#	.2	.6
1 to 2 1/2----	#	.3	.3	.3	.2	.1	.1	.1	.3	1.7
3 to 6--------		.2	.5	1.3	1.0	.5	.5	.4	2.7	7.1
7 to 15-------		.1	.4	2.6	5.3	3.4	3.7	4.6	69.2	89.3
20 to 30------										.0
35 or more----									#	#
Total---------	.3	1.4	1.3	4.2	6.6	4.0	4.3	5.1	72.8	100.0

\# Less than 0.05 percent.

* Number of hourly observations.

OTHER CLIMATIC DATA

Table 27. Extended Freezing Temperatures - Number of Consecutive Hours

Date			Hours 32 °F or lower	Lowest Temperature °F
Year	Month	Day		
Houston, Federal Office Building (City Office) (1909-1962)				
1909--------	December	18-20	44	25°
1911--------	January	2-4	51	16°
1912--------	January	11-13	38	15°
1913--------	January	7-8	37	24°
1918--------	January	11-13	51	11°
1919--------	January	1-3	40	24°
1924--------	December	19-22	74	22°
1925--------	December	28-29	36	26°
1927-28-----	Dec-Jan	31-2	42	16°
1930--------	January	17-19	42	5°
1932--------	December	16-17	27	20°
1933--------	February	7-9	47	13°
1935--------	January	21-22	34	17°
1936--------	January	27-29	52	28°
1940--------	(January	18-20	48	10°
	(January	22-23	32	14°
	(January	25-26	35	23°
1943--------	January	25-26	27	23°
1947--------	January	3-5	42	22°
1948--------	January	27-30	68	25°
1948--------	March	11-12	32	24°
1949--------	January	29-31	59	14°
1951--------	Jan-Feb	29-3	123	14°
1962--------	January	9-12	65	20°

Date			10 or more Hours 28°F or lower	Lowest Temperature °F
Year	Month	Day		
Galveston, Post Office Building (City Office) (1906-1962)				
1910----------	February	17-18	12	24°
1911----------	(January	2-3	20	19°
	(January	3-4	12	23°
1912----------	January	12-13	33	20°
1918----------	January	11-12	33	16°
1925----------	December	28	13	26°
1928----------	January	1-2	34	20°
1929----------	December	19	10	23°
1930----------	(January	17-18	22	13°
	(January	18-19	11	24°
	(January	22-23	36	20°
1933----------	(February	7-8	15	19°
	(February	8-9	15	21°
1935----------	January	21-22	23	19°
1940----------	(January	18-19	20	15°
	(January	19-20	17	27°
	(January	22-23	15	19°
	(January	26	13	25°
1943----------	January	19	10	24°
1947----------	January	4	11	25°
1948----------	January	23-24	13	22°
1949----------	(January	30	15	26°
	(January	30-31	16	24°
1951----------	(January	30-31	12	27°
	(Jan.-Feb.	31-2	44	17°
1962----------	January	9-12	63	18°

Table 28. Mean Station Pressure and Extremes of Sea Level Pressure , Inches

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Houston, Federal Office Building (City Office)													
Mean Station Pressure (Length of Record - 51 years; Elevation 138 feet)													
1910-1960-----	29.98	29.94	29.88	29.83	29.80	29.80	29.85	29.83	29.82	29.88	29.96	29.97	29.88
Extremes of Pressure - Period of Record: 51 years, 1910-1960 (Inches - Reduced to Sea Level)													
Highest--------	30.91	30.84	30.60	30.61	30.34	30.25	30.25	30.23	30.35	30.61	30.68	30.76	30.91
Year----------	1924	1917	1943	1950	1918	1946*	1956	1916	1918	1930	1959	1925	1924
Lowest--------	29.46	29.24	29.38	29.30	29.45	29.37	28.95	28.20	29.60	29.43	29.54	29.24	28.20
Year----------	1918	1960	1950	1953	1933	1921	1943	1915	1947	1923	1948	1940	1915
* Also in 1917													
Galveston, Post Office Building (City Office)													
Mean Station Pressure (Length of Record - 78 years; Elevation 54 feet)													
1873-1950-----	30.08	30.04	29.98	29.93	29.90	29.90	29.95	29.93	29.92	29.98	30.06	30.07	29.98
Extremes of Pressure - Period of Record: 80 years: 1871-1950 (Inches - Reduced to Sea Level)													
Highest--------	30.90	30.84	30.61	30.53	30.41	30.27	30.26	30.25	30.31	30.62	30.68	30.83	30.90
Year----------	1924	1917	1894	1921	1872	1896	1883	1916	1924	1930	1882	1894	1924
Lowest--------	29.43	29.19	29.18	29.36	29.45	29.50	29.17	28.63	28.55	29.39	29.38	29.23	28.55
Year----------	1915	1902	1875	1878	1933	1871	1943	1915	1900	1886	1906	1940	1900

OTHER CLIMATIC DATA

Table 29. Summary of Selected Climatic Elements

Month	Percent of Possible Sunshine	Mean Sky Cover Sunrise to Sunset (tenths)	Mean Number of Days: Sunrise to Sunset: Clear	Partly Cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet, Hail 1.0 inch or more	Thunderstorms	Heavy Fog	Temperature: Maximum: 90° and above	32° and below	Minimum: 32° and below	Zero and below
Houston, Federal Office Building													
(a)	22	22	22	22	22	22	22	22	22	22	22	22	22
January	46	6.6	8	7	16	10	*	2	3	0	*	3	0
February	44	6.7	6	7	15	10	*	2	2	*	*	1	0
March	51	6.4	8	8	15	9	0	2	2	*	0	1	0
April	54	6.4	7	8	15	8	0	5	1	*	0	0	0
May	63	6.2	6	12	13	8	0	6	1	4	0	0	0
June	70	5.5	7	15	8	8	0	7	*	19	0	0	0
July	69	5.9	6	16	9	10	0	11	0	25	0	0	0
August	68	5.7	7	15	9	9	0	9	*	25	0	0	0
September	64	5.4	9	11	10	9	0	5	*	15	0	0	0
October	67	4.7	12	10	9	7	0	3	2	2	0	0	0
November	57	5.6	10	8	12	8	0	2	2	0	0	*	0
December	48	6.2	9	6	16	10	0	2	3	0	0	1	0
Annual	59	5.9	95	123	147	106	*	56	16	90	*	6	0
Galveston, Municipal Airport													
(a)		10	10	10	10	10	10	10	10	10	10	10	10
January		6.5	7	8	16	8	0	2	6	0	*	1	0
February		6.4	7	7	14	9	*	3	5	0	*	1	0
March		6.5	7	10	14	7	0	2	7	0	0	0	0
April		6.4	7	8	15	7	0	4	4	*	0	0	0
May		5.6	8	13	10	5	0	4	*	1	0	0	0
June		4.7	11	14	5	6	0	5	0	4	0	0	0
July		5.4	9	14	8	8	0	9	*	13	0	0	0
August		5.4	10	13	8	9	0	9	0	14	0	0	0
September		4.8	12	10	8	10	0	6	0	3	0	0	0
October		4.3	14	9	8	7	0	3	1	*	0	0	0
November		5.7	10	7	13	7	0	3	3	0	0	*	0
December		6.3	9	6	16	9	0	2	5	0	0	*	0
Annual		5.7	111	119	135	92	*	52	31	35	*	2	0

(a) Length of record years.

* Less than one-half.

Snowfall includes sleet. Hail included with sleet and snow July 1948 through December 1955.

Heavy Fog: Includes data referred to in the past as "dense" or "thick". The upper visibility limit for heavy fog is 1/4 mile.

Clear: Average cloudiness does not exceed 3/10 of sky.

Partly Cloudy: Average cloudiness is 4/10 to 7/10.

Cloudy: Average cloudiness is 8/10 or more.

Source: Local Climatological Data, 1960 Annual

Table 30. Percentage Frequency of Selected Climatic Elements (Hourly Observations 1951 - 1960)

	Fog with visibility as indicated: Less than 1/2 mile	Less than 1 mile	Less than 3 miles	3 miles or more	Haze, Smoke or Dust with visibility as indicated: Less than 1/2 mile	Less than 1 mile	Less than 3 miles	3 miles or more	Thunder	Precipitation#
Houston, International Airport										
January	3.6	5.6	10.0	5.8	0.8	1.5	3.8	5.4	0.3	9.9
February	2.7	4.3	8.7	5.4	.4	.9	3.7	5.9	.4	11.5
March	2.7	3.9	7.3	4.3	.4	.7	3.5	6.4	.5	5.9
April	1.2	2.2	5.0	5.4	.2	.6	2.6	5.1	1.4	7.9
May	.5	.8	2.4	3.7	*	.3	1.6	4.4	1.7	5.2
June	.1	.2	.9	1.2	*	.2	1.6	6.1	1.7	3.4
July	.0	*	.3	.9	.0	*	1.3	4.2	2.1	3.5
August	.1	.2	.8	.9	*	.1	2.7	7.6	2.3	4.8
September	.5	.9	2.5	1.9	.2	.6	4.3	9.9	1.6	5.5
October	1.1	1.6	3.2	2.4	.5	.8	4.0	9.9	1.3	4.7
November	2.8	3.9	6.6	3.5	.8	1.4	5.0	6.7	.4	7.9
December	3.0	4.7	9.1	5.2	.8	1.4	4.7	7.8	.4	9.6
Annual	1.5	2.3	4.7	3.4	.4	.7	3.2	6.6	1.2	6.6
Galveston, Municipal Airport										
January	4.8	7.0	11.0	8.3	0.1	0.2	0.5	2.1	0.6	7.5
February	4.2	5.6	9.0	8.3	.0	.2	.6	3.0	.9	10.2
March	3.6	5.0	8.1	7.9	.1	.2	.8	3.4	.8	5.3
April	1.6	2.6	4.5	8.9	*	.1	.5	2.9	1.5	5.5
May	*	.1	.3	1.3	.0	.0	.1	1.7	1.6	3.3
June	*	*	*	.2	*	*	.1	2.6	1.6	2.7
July	.0	.1	.2	.1	.0	.0	*	.4	2.9	2.8
August	.0	.0	.0	.2	.0	.0	*	1.3	3.2	4.6
September	.0	*	.2	.9	.0	*	.2	2.8	2.2	5.6
October	.1	.1	.5	1.3	.0	*	.4	3.1	1.2	4.5
November	1.1	1.7	3.2	5.4	*	.1	.8	4.1	.7	6.3
December	2.4	3.7	6.6	8.2	*	.1	.7	3.4	.8	9.2
Annual	1.5	2.2	3.6	4.2	*	.1	.4	2.6	1.5	5.6

* Less than 0.05 percent

All precipitation amounts, including Trace.

NORMALS

Table 31. Daily Normal Temperatures and Accumulated Heating Degree Days with Monthly and Annual Normals, Houston, Federal Office Building

Jan.	Temperature Max.	Min.	Avg.	* Degree Days
1---	63	47	55	464
2---	63	47	55	475
3---	63	47	55	486
4---	63	47	55	497
5---	63	47	55	508
6---	63	47	55	519
7---	63	47	55	530
8---	63	47	55	542
9---	63	47	55	554
10---	62	47	55	566
11---	62	46	54	578
12---	62	46	54	590
13---	62	46	54	602
14---	62	46	54	615
15---	62	46	54	628
16---	62	46	54	641
17---	62	46	54	654
18---	62	46	54	667
19---	62	46	54	679
20---	62	46	54	691
21---	62	46	54	703
22---	63	46	55	715
23---	63	47	55	727
24---	63	47	55	739
25---	63	47	55	750
26---	63	47	55	761
27---	63	47	55	772
28---	63	47	55	783
29---	63	47	55	794
30---	63	47	55	805
31---	63	47	55	816
Month	62.6	46.6	54.6	363

Feb.	Temperature Max.	Min.	Avg.	* Degree Days
1---	63	47	55	827
2---	63	47	55	838
3---	63	47	55	849
4---	64	48	56	860
5---	64	48	56	870
6---	64	48	56	880
7---	64	48	56	890
8---	64	48	56	900
9---	64	48	56	910
10--	64	48	56	920
11--	64	48	56	930
12--	65	48	57	940
13--	65	49	57	949
14--	65	49	57	958
15--	65	49	57	967
16--	65	49	57	976
17--	66	49	58	985
18--	66	49	58	994
19--	66	50	58	1002
20--	66	50	58	1010
21--	66	50	58	1018
22--	66	50	58	1026
23--	67	50	59	1034
24--	67	50	59	1042
25--	67	51	59	1050
26--	67	51	59	1058
27--	67	51	59	1066
28--	68	51	60	1074
29--	68	51	60	
	65.2	49.0	57.1	258

Mar.	Temperature Max.	Min.	Avg.	* Degree Days
1---	68	51	60	1082
2---	68	51	60	1090
3---	68	52	60	1098
4---	69	52	61	1106
5---	69	52	61	1114
6---	69	52	61	1121
7---	69	52	61	1128
8---	69	52	61	1135
9---	70	52	61	1142
10--	70	53	62	1149
11--	70	53	62	1156
12--	70	53	62	1162
13--	70	53	62	1168
14--	71	53	62	1174
15--	71	53	62	1180
16--	71	54	63	1186
17--	71	54	63	1191
18--	71	54	63	1196
19--	72	54	63	1201
20--	72	55	64	1206
21--	72	55	64	1211
22--	72	55	64	1216
23--	72	55	64	1220
24--	72	55	64	1224
25--	73	56	65	1228
26--	73	56	65	1232
27--	73	56	65	1236
28--	73	56	65	1239
29--	73	56	65	1242
30--	74	57	66	1245
31--	74	57	66	1248
	70.9	53.8	62.4	174

Apr.	Temperature Max.	Min.	Avg.	* Degree Days
1---	74	57	66	1251
2---	74	57	66	1254
3---	74	57	66	1257
4---	74	58	66	1260
5---	75	58	67	1263
6---	75	58	67	1265
7---	75	59	67	1267
8---	76	59	68	1269
9---	76	59	68	1271
10--	76	59	68	1272
11--	76	60	68	1273
12--	77	60	69	1274
13--	77	60	69	1275
14--	77	61	69	1276
15--	77	61	69	1277
16--	78	61	70	1278
17--	78	62	70	1278
18--	78	62	70	1278
19--	78	62	70	1278
20--	79	62	71	1278
21--	79	63	71	1278
22--	79	63	71	1278
23--	80	63	72	1278
24--	80	63	72	1278
25--	80	64	72	1278
26--	80	64	72	1278
27--	81	64	73	1278
28--	81	64	73	1278
29--	81	65	73	1278
30--	81	65	73	1278
	77.5	61.0	69.3	30

May	Temperature Max.	Min.	Avg.	* Degree Days
1---	82	65	74	1278
2---	82	65	74	1278
3---	82	65	74	1278
4---	82	65	74	1278
5---	82	66	74	1278
6---	82	66	74	1278
7---	83	66	75	1278
8---	83	66	75	1278
9---	83	66	75	1278
10--	83	67	75	1278
11--	83	67	75	1278
12--	84	67	76	1278
13--	84	67	76	1278
14--	84	67	76	1278
15--	84	68	76	1278
16--	84	68	76	1278
17--	84	68	76	1278
18--	85	68	77	1278
19--	85	69	77	1278
20--	85	69	77	1278
21--	85	69	77	1278
22--	86	69	78	1278
23--	86	69	78	1278
24--	86	70	78	1278
25--	86	70	78	1278
26--	86	70	78	1278
27--	87	70	79	1278
28--	87	70	79	1278
29--	87	71	79	1278
30--	87	71	79	1278
31--	87	71	79	1278
	84.4	67.9	76.2	0

June	Temperature Max.	Min.	Avg.	* Degree Days
1---	88	71	80	1278
2---	88	72	80	1278
3---	88	72	80	1278
4---	88	72	80	1278
5---	89	72	81	1278
6---	89	73	81	1278
7---	89	73	81	1278
8---	89	73	81	1278
9---	89	73	81	1278
10--	90	73	82	1278
11--	90	74	82	1278
12--	90	74	82	1278
13--	90	74	82	1278
14--	90	74	82	1278
15--	91	74	83	1278
16--	91	74	83	1278
17--	91	75	83	1278
18--	91	75	83	1278
19--	91	75	83	1278
20--	91	75	83	1278
21--	91	75	83	1278
22--	92	75	84	1278
23--	92	75	84	1278
24--	92	75	84	1278
25--	92	75	84	1278
26--	92	75	84	1278
27--	92	75	84	1278
28--	92	75	84	1278
29--	92	75	84	1278
30--	92	75	84	1278
	90.4	73.9	82.2	0

July	Temperature Max.	Min.	Avg.	* Degree Days
1---	92	75	84	0
2---	92	75	84	0
3---	92	75	84	0
4---	92	75	84	0
5---	92	75	84	0
6---	92	75	84	0
7---	92	76	84	0
8---	92	76	84	0
9---	92	76	84	0
10--	92	76	84	0
11--	92	76	84	0
12--	92	76	84	0
13--	92	76	84	0
14--	92	76	84	0
15--	92	76	84	0
16--	92	76	84	0
17--	92	76	84	0
18--	92	76	84	0
19--	92	76	84	0
20--	92	76	84	0
21--	92	76	84	0
22--	92	76	84	0
23--	92	76	84	0
24--	92	76	84	0
25--	92	76	84	0
26--	92	76	84	0
27--	92	76	84	0
28--	92	76	84	0
29--	92	76	84	0
30--	92	76	84	0
31--	92	76	84	0
Month	92.0	75.8	83.9	0

Aug.	Temperature Max.	Min.	Avg.	* Degree Days
1---	92	76	84	0
2---	92	76	84	0
3---	92	76	84	0
4---	92	76	84	0
5---	93	76	85	0
6---	93	76	85	0
7---	93	76	85	0
8---	93	76	85	0
9---	93	76	85	0
10--	93	76	85	0
11--	93	76	85	0
12--	93	76	85	0
13--	93	76	85	0
14--	93	76	85	0
15--	93	76	85	0
16--	93	76	85	0
17--	93	76	85	0
18--	93	76	85	0
19--	93	76	85	0
20--	92	76	84	0
21--	92	76	84	0
22--	92	76	84	0
23--	92	76	84	0
24--	92	76	84	0
25--	92	75	84	0
26--	92	75	84	0
27--	92	75	84	0
28--	92	75	84	0
29--	92	75	84	0
30--	91	74	83	0
31--	91	74	83	0
	92.4	75.7	84.1	0

Sep.	Temperature Max.	Min.	Avg.	* Degree Days
1---	91	74	83	0
2---	91	74	83	0
3---	91	74	83	0
4---	90	74	82	0
5---	90	73	82	0
6---	90	73	82	0
7---	90	73	82	0
8---	90	73	82	0
9---	89	73	81	0
10--	89	73	81	0
11--	89	72	81	0
12--	89	72	81	0
13--	89	72	81	0
14--	89	72	81	0
15--	88	72	80	0
16--	88	71	80	0
17--	88	71	80	0
18--	88	71	80	0
19--	88	71	80	0
20--	87	70	79	0
21--	87	70	79	0
22--	87	70	79	0
23--	87	70	79	0
24--	87	69	78	0
25--	86	69	78	0
26--	86	69	78	0
27--	86	69	78	0
28--	86	68	77	0
29--	86	68	77	0
30--	86	68	77	0
	88.3	71.3	79.8	0

Oct.	Temperature Max.	Min.	Avg.	* Degree Days
1---	85	68	77	0
2---	85	67	76	0
3---	85	67	76	0
4---	85	67	76	0
5---	85	67	76	0
6---	85	66	76	0
7---	84	66	75	0
8---	84	66	75	0
9---	84	66	75	0
10--	84	65	75	0
11--	83	65	74	0
12--	83	65	74	0
13--	83	64	74	0
14--	83	64	74	0
15--	82	64	73	0
16--	82	63	73	0
17--	82	63	73	0
18--	81	63	72	0
19--	81	62	72	0
20--	81	62	72	0
21--	80	62	71	0
22--	80	61	71	0
23--	80	61	71	0
24--	79	61	70	0
25--	79	60	70	0
26--	78	60	69	0
27--	78	59	69	0
28--	77	59	68	0
29--	77	58	68	0
30--	77	58	68	0
31--	76	58	67	0
	81.6	63.1	72.4	0

Nov.	Temperature Max.	Min.	Avg.	* Degree Days
1---	76	57	67	1
2---	75	57	66	2
3---	75	56	66	3
4---	75	56	66	5
5---	74	56	65	7
6---	74	55	65	10
7---	73	55	64	13
8---	73	55	64	16
9---	72	54	63	20
10--	72	54	63	24
11--	71	54	63	29
12--	71	53	62	34
13--	71	53	62	39
14--	70	53	62	45
15--	70	52	61	51
16--	70	52	61	57
17--	70	52	61	64
18--	69	52	61	71
19--	69	51	60	78
20--	69	51	60	85
21--	68	51	60	93
22--	68	51	60	101
23--	68	51	60	109
24--	68	50	59	117
25--	67	50	59	125
26--	67	50	59	133
27--	67	50	59	141
28--	67	50	59	149
29--	67	50	59	157
30--	67	50	59	165
	70.4	52.7	61.6	165

Dec.	Temperature Max.	Min.	Avg.	* Degree Days
1---	67	50	59	173
2---	66	50	58	181
3---	66	49	58	189
4---	66	49	58	197
5---	66	49	58	205
6---	66	49	58	213
7---	66	49	58	221
8---	65	49	57	230
9---	65	49	57	239
10--	65	49	57	248
11--	65	49	57	257
12--	65	49	57	266
13--	65	49	57	275
14--	65	49	57	284
15--	65	48	57	293
16--	65	48	57	302
17--	64	48	56	311
18--	64	48	56	320
19--	64	48	56	330
20--	64	48	56	340
21--	64	48	56	350
22--	64	48	56	360
23--	64	48	56	370
24--	64	48	56	380
25--	64	48	56	390
26--	64	48	56	400
27--	64	48	56	410
28--	63	47	55	420
29--	63	47	55	431
30--	63	47	55	442
31--	63	47	55	453
	64.6	48.4	56.5	288

	Temperature Max.	Min.	Avg.	* Degree Days
Annual Normals	78.4	61.6	70.0	1278

Table 31. Daily Normal Temperatures and Accumulated Heating Degree Days with Monthly and Annual Normals, Houston, International Airport

Jan.	Temperature Max.	Min.	Avg.	* Degree Days
1----	65	45	55	483
2----	65	45	55	494
3----	65	45	55	505
4----	65	45	55	517
5----	65	45	55	529
6----	64	45	55	541
7----	64	44	54	553
8----	64	44	54	565
9----	64	44	54	577
10---	64	44	54	589
11---	64	44	54	601
12---	64	44	54	613
13---	64	44	54	625
14---	64	44	54	637
15---	64	44	54	649
16---	64	44	54	661
17---	64	44	54	673
18---	64	44	54	685
19---	64	45	55	697
20---	64	45	55	709
21---	65	45	55	721
22---	65	45	55	733
23---	65	45	55	745
24---	65	45	55	757
25---	65	45	55	769
26---	65	45	55	780
27---	65	45	55	791
28---	65	45	55	802
29---	65	45	55	813
30---	66	45	56	824
31---	66	45	56	835
Month	64.6	44.6	54.6	363

Feb.	Temperature Max.	Min.	Avg.	* Degree Days
1---	66	46	56	846
2---	66	46	56	857
3---	66	46	56	868
4---	66	46	56	878
5---	66	46	56	888
6---	66	46	56	898
7---	66	46	56	908
8---	66	46	56	918
9---	66	46	56	928
10--	67	46	57	938
11--	67	46	57	948
12--	67	47	57	957
13--	67	47	57	966
14--	67	47	57	975
15--	67	47	57	984
16--	68	47	58	993
17--	68	47	58	1002
18--	68	47	58	1010
19--	68	47	58	1018
20--	68	48	58	1026
21--	68	48	58	1034
22--	69	48	59	1042
23--	69	48	59	1050
24--	69	48	59	1058
25--	69	48	59	1066
26--	69	48	59	1073
27--	70	49	60	1080
28--	70	49	60	1087
29--	70	49	60	
	67.5	47.0	57.3	252

Mar.	Temperature Max.	Min.	Avg.	* Degree Days
1---	70	49	60	1094
2---	71	49	60	1101
3---	71	49	60	1108
4---	71	50	61	1115
5---	71	50	61	1122
6---	72	50	61	1129
7---	72	50	61	1136
8---	72	50	61	1143
9---	72	50	61	1150
10--	72	51	62	1157
11--	73	51	62	1164
12--	73	51	62	1170
13--	73	51	62	1176
14--	73	51	62	1182
15--	74	51	63	1188
16--	74	52	63	1194
17--	74	52	63	1199
18--	74	52	63	1204
19--	75	52	64	1209
20--	75	52	64	1214
21--	75	53	64	1219
22--	75	53	64	1223
23--	75	53	64	1227
24--	75	53	64	1231
25--	76	54	65	1235
26--	76	54	65	1239
27--	76	54	65	1242
28--	76	54	65	1245
29--	76	55	66	1248
30--	77	55	66	1251
31--	77	55	66	1254
	73.7	51.8	62.8	167

Apr.	Temperature Max.	Min.	Avg.	* Degree Days
1---	77	55	66	1257
2---	77	56	67	1260
3---	77	56	67	1263
4---	77	56	67	1266
5---	77	57	67	1268
6---	78	57	68	1270
7---	78	57	68	1272
8---	78	58	68	1274
9---	78	58	68	1275
10--	79	58	69	1276
11--	79	59	69	1277
12--	79	59	69	1278
13--	79	59	69	1278
14--	80	60	70	1278
15--	80	60	70	1278
16--	80	60	70	1278
17--	80	61	71	1278
18--	81	61	71	1278
19--	81	61	71	1278
20--	81	62	72	1278
21--	81	62	72	1278
22--	82	62	72	1278
23--	82	62	72	1278
24--	82	63	73	1278
25--	82	63	73	1278
26--	83	63	73	1278
27--	83	63	73	1278
28--	83	64	74	1278
29--	83	64	74	1278
30--	84	64	74	1278
	80.0	60.0	70.0	24

May	Temperature Max.	Min.	Avg.	* Degree Days
1---	84	64	74	1278
2---	84	65	75	1278
3---	84	65	75	1278
4---	85	65	75	1278
5---	85	65	75	1278
6---	85	65	75	1278
7---	85	65	75	1278
8---	85	66	76	1278
9---	85	66	76	1278
10--	86	66	76	1278
11--	86	66	76	1278
12--	86	66	76	1278
13--	86	67	77	1278
14--	86	67	77	1278
15--	87	67	77	1278
16--	87	67	77	1278
17--	87	67	77	1278
18--	87	67	77	1278
19--	87	68	78	1278
20--	87	68	78	1278
21--	88	68	78	1278
22--	88	68	78	1278
23--	88	69	79	1278
24--	88	69	79	1278
25--	88	69	79	1278
26--	89	69	79	1278
27--	89	69	79	1278
28--	89	70	80	1278
29--	89	70	80	1278
30--	89	70	80	1278
31--	90	70	80	1278
	86.7	67.2	77.0	0

June	Temperature Max.	Min.	Avg.	* Degree Days
1---	90	70	80	1278
2---	90	71	81	1278
3---	90	71	81	1278
4---	91	71	81	1278
5---	91	72	82	1278
6---	91	72	82	1278
7---	91	72	82	1278
8---	91	72	82	1278
9---	92	72	82	1278
10--	92	73	83	1278
11--	92	73	83	1278
12--	92	73	83	1278
13--	92	73	83	1278
14--	92	73	83	1278
15--	92	73	83	1278
16--	93	74	84	1278
17--	93	74	84	1278
18--	93	74	84	1278
19--	93	74	84	1278
20--	93	74	84	1278
21--	93	74	84	1278
22--	93	74	84	1278
23--	93	74	84	1278
24--	93	74	84	1278
25--	93	74	84	1278
26--	93	74	84	1278
27--	93	74	84	1278
28--	93	74	84	1278
29--	93	74	84	1278
30--	93	74	84	1278
	92.1	73.0	82.6	0

July	Temperature Max.	Min.	Avg.	* Degree Days
1---	93	74	84	0
2---	94	74	84	0
3---	94	74	84	0
4---	94	74	84	0
5---	93	74	84	0
6---	93	74	84	0
7---	93	75	84	0
8---	93	75	84	0
9---	93	75	84	0
10--	93	75	84	0
11--	93	75	84	0
12--	93	75	84	0
13--	93	75	84	0
14--	93	75	84	0
15--	93	75	84	0
16--	93	75	84	0
17--	93	75	84	0
18--	93	75	84	0
19--	93	75	84	0
20--	93	75	84	0
21--	93	75	84	0
22--	93	75	84	0
23--	93	75	84	0
24--	93	75	84	0
25--	93	75	84	0
26--	93	75	84	0
27--	93	75	84	0
28--	93	75	84	0
29--	93	75	84	0
30--	93	75	84	0
31--	93	75	84	0
Month	93.1	74.8	84.0	0

Aug.	Temperature Max.	Min.	Avg.	* Degree Days
1---	93	75	84	0
2---	93	75	84	0
3---	93	75	84	0
4---	93	75	84	0
5---	93	75	84	0
6---	93	75	84	0
7---	93	75	84	0
8---	93	75	84	0
9---	93	75	84	0
10--	93	75	84	0
11--	93	75	84	0
12--	93	75	84	0
13--	93	75	84	0
14--	93	75	84	0
15--	93	75	84	0
16--	93	75	84	0
17--	93	75	84	0
18--	93	75	84	0
19--	93	75	84	0
20--	93	75	84	0
21--	93	74	84	0
22--	93	74	84	0
23--	93	74	84	0
24--	93	74	84	0
25--	92	74	83	0
26--	92	74	83	0
27--	92	74	83	0
28--	92	74	83	0
29--	92	74	83	0
30--	92	73	83	0
31--	92	73	83	0
	92.8	74.6	83.7	0

Sep.	Temperature Max.	Min.	Avg.	* Degree Days
1---	91	73	82	0
2---	91	73	82	0
3---	91	73	82	0
4---	91	73	82	0
5---	91	72	82	0
6---	90	72	81	0
7---	90	72	81	0
8---	90	72	81	0
9---	90	72	81	0
10--	90	72	81	0
11--	90	71	81	0
12--	90	71	81	0
13--	89	71	80	0
14--	89	71	80	0
15--	89	71	80	0
16--	89	70	80	0
17--	89	70	80	0
18--	89	70	80	0
19--	89	70	80	0
20--	88	69	79	0
21--	88	69	79	0
22--	88	69	79	0
23--	88	69	79	0
24--	88	69	79	0
25--	88	68	78	0
26--	88	68	78	0
27--	87	68	78	0
28--	87	67	77	0
29--	87	67	77	0
30--	87	67	77	0
	89.1	70.3	79.7	0

Oct.	Temperature Max.	Min.	Avg.	* Degree Days
1---	87	67	77	0
2---	87	66	77	0
3---	87	66	77	0
4---	87	66	77	0
5---	86	65	76	0
6---	86	65	76	0
7---	86	65	76	0
8---	86	65	76	0
9---	85	64	75	0
10--	85	64	75	0
11--	85	63	74	0
12--	85	63	74	0
13--	85	63	74	0
14--	84	62	73	0
15--	84	62	73	0
16--	84	61	73	0
17--	83	61	72	0
18--	83	61	72	0
19--	83	61	72	0
20--	82	60	71	0
21--	82	60	71	0
22--	82	59	71	0
23--	81	59	70	0
24--	81	58	70	0
25--	81	58	70	0
26--	80	58	69	0
27--	80	57	69	0
28--	79	57	68	0
29--	79	56	68	0
30--	79	56	68	0
31--	78	56	67	0
	83.3	61.4	72.4	0

Nov.	Temperature Max.	Min.	Avg.	* Degree Days
1---	77	55	66	1
2---	77	54	66	2
3---	76	54	65	4
4---	76	54	65	6
5---	75	53	64	9
6---	75	53	64	12
7---	75	53	64	16
8---	74	52	63	20
9---	74	52	63	25
10--	74	52	63	30
11--	73	51	62	35
12--	73	51	62	41
13--	72	51	62	47
14--	72	51	62	53
15--	72	50	61	59
16--	72	50	61	66
17--	71	50	61	73
18--	71	50	61	80
19--	71	49	60	87
20--	70	49	60	94
21--	70	49	60	102
22--	70	48	59	110
23--	70	48	59	118
24--	69	48	59	126
25--	69	48	59	134
26--	69	48	59	142
27--	69	48	59	150
28--	69	48	59	158
29--	69	48	59	166
30--	68	47	58	174
	72.1	50.5	61.3	174

Dec.	Temperature Max.	Min.	Avg.	* Degree Days
1---	68	47	58	182
2---	68	47	58	190
3---	68	47	58	198
4---	68	47	58	206
5---	68	47	58	215
6---	68	47	58	224
7---	67	47	57	233
8---	67	46	57	242
9---	67	46	57	251
10--	67	46	57	260
11--	67	46	57	269
12--	67	46	57	278
13--	67	46	57	287
14--	67	46	57	296
15--	66	46	56	306
16--	66	46	56	316
17--	66	46	56	326
18--	66	46	56	336
19--	66	46	56	346
20--	66	46	56	356
21--	66	46	56	366
22--	66	45	56	376
23--	66	45	56	386
24--	66	45	56	396
25--	65	45	55	406
26--	65	45	55	417
27--	65	45	55	428
28--	65	45	55	439
29--	65	45	55	450
30--	65	45	55	461
31--	64	45	55	472
	66.4	45.9	56.2	298

Annual Normals 80.1 60.1 70.1 1278

NORMALS

Table 31. Daily Normal Temperatures and Accumulated Heating Degree Days with Monthly and Annual Normals, Galveston, Post Office Building

Jan.	Temperature Max.	Min.	Avg.	* Degree Days
1----	61	50	56	418
2----	61	50	56	428
3----	61	50	56	439
4----	61	50	56	450
5----	61	50	56	461
6----	61	50	56	472
7----	61	50	56	483
8----	61	50	56	494
9----	61	50	56	505
10---	61	50	56	516
11---	61	49	55	527
12---	61	49	55	538
13---	61	49	55	549
14---	60	49	55	561
15---	60	49	55	573
16---	60	49	55	585
17---	60	49	55	597
18---	60	49	55	609
19---	60	49	55	621
20---	60	49	55	633
21---	60	49	55	645
22---	60	49	55	657
23---	60	49	55	669
24---	60	49	55	681
25---	60	49	55	692
26---	60	49	55	703
27---	60	49	55	714
28---	60	49	55	725
29---	60	49	55	736
30---	61	49	55	747
31---	61	49	55	758
Month	60.5	49.3	54.9	350

Feb.	Temperature Max.	Min.	Avg.	* Degree Days
1---	61	49	55	769
2---	61	50	56	780
3---	61	50	56	791
4---	61	50	56	802
5---	61	50	56	812
6---	61	50	56	822
7---	61	50	56	832
8---	61	50	56	842
9---	62	50	56	852
10--	62	50	56	862
11--	62	51	57	872
12--	62	51	57	882
13--	62	51	57	891
14--	62	51	57	900
15--	62	51	57	909
16--	63	51	57	918
17--	63	51	57	927
18--	63	52	58	936
19--	63	52	58	944
20--	63	52	58	952
21--	63	52	58	960
22--	63	52	58	968
23--	64	53	59	976
24--	64	53	59	984
25--	64	53	59	992
26--	64	53	59	1000
27--	64	53	59	1008
28--	64	53	59	1016
29--	64	53	59	
	62.4	51.2	56.8	258

Mar.	Temperature Max.	Min.	Avg.	* Degree Days
1---	65	54	60	1024
2---	65	54	60	1032
3---	65	54	60	1040
4---	65	54	60	1048
5---	65	54	60	1056
6---	65	54	60	1064
7---	65	55	60	1071
8---	65	55	60	1078
9---	65	55	60	1085
10--	66	55	61	1092
11--	66	55	61	1099
12--	66	55	61	1106
13--	66	55	61	1113
14--	66	56	61	1119
15--	66	56	61	1125
16--	67	56	62	1131
17--	67	56	62	1137
18--	67	56	62	1143
19--	67	57	62	1149
20--	67	57	62	1155
21--	67	57	62	1160
22--	67	57	62	1165
23--	67	57	62	1170
24--	68	58	63	1175
25--	68	58	63	1180
26--	68	58	63	1185
27--	68	58	63	1189
28--	68	59	64	1193
29--	69	59	64	1197
30--	69	59	64	1201
31--	69	60	65	1205
	66.6	56.2	61.4	189

Apr.	Temperature Max.	Min.	Avg.	* Degree Days
1---	69	60	65	1209
2---	69	60	65	1213
3---	70	60	65	1216
4---	70	61	66	1219
5---	70	61	66	1222
6---	70	61	66	1225
7---	71	62	67	1227
8---	71	62	67	1229
9---	71	62	67	1231
10--	72	62	67	1232
11--	72	63	68	1233
12--	72	63	68	1234
13--	72	63	68	1235
14--	73	64	69	1235
15--	73	64	69	1235
16--	73	64	69	1235
17--	73	64	69	1235
18--	74	65	70	1235
19--	74	65	70	1235
20--	74	65	70	1235
21--	74	66	70	1235
22--	75	66	71	1235
23--	75	66	71	1235
24--	75	66	71	1235
25--	75	67	71	1235
26--	76	67	72	1235
27--	76	67	72	1235
28--	76	68	72	1235
29--	77	68	73	1235
30--	77	68	73	1235
	73.0	64.0	68.5	30

May	Temperature Max.	Min.	Avg.	* Degree Days
1---	77	68	73	1235
2---	77	68	73	1235
3---	77	69	73	1235
4---	78	69	74	1235
5---	78	69	74	1235
6---	78	69	74	1235
7---	78	69	74	1235
8---	79	70	75	1235
9---	79	70	75	1235
10--	79	70	75	1235
11--	79	70	75	1235
12--	79	71	75	1235
13--	79	71	75	1235
14--	80	71	76	1235
15--	80	71	76	1235
16--	80	71	76	1235
17--	80	72	76	1235
18--	81	72	77	1235
19--	81	72	77	1235
20--	81	72	77	1235
21--	81	73	77	1235
22--	81	73	77	1235
23--	81	73	77	1235
24--	82	73	78	1235
25--	82	73	78	1235
26--	82	74	78	1235
27--	82	74	78	1235
28--	83	74	79	1235
29--	83	75	79	1235
30--	83	75	79	1235
31--	83	75	79	1235
	80.1	71.5	75.8	0

June	Temperature Max.	Min.	Avg.	* Degree Days
1---	83	75	79	1235
2---	84	76	80	1235
3---	84	76	80	1235
4---	84	76	80	1235
5---	84	76	80	1235
6---	84	76	80	1235
7---	84	76	80	1235
8---	85	77	81	1235
9---	85	77	81	1235
10--	85	77	81	1235
11--	85	77	81	1235
12--	85	77	81	1235
13--	85	78	82	1235
14--	86	78	82	1235
15--	86	78	82	1235
16--	96	78	82	1235
17--	86	78	82	1235
18--	86	78	82	1235
19--	86	78	82	1235
20--	86	78	82	1235
21--	86	79	83	1235
22--	86	79	83	1235
23--	87	79	83	1235
24--	87	79	83	1235
25--	87	79	83	1235
26--	87	79	83	1235
27--	87	79	83	1235
28--	87	79	83	1235
29--	87	79	83	1235
30--	87	79	83	1235
	85.6	77.7	81.7	0

July	Temperature Max.	Min.	Avg.	* Degree Days
1---	87	79	83	0
2---	87	79	83	0
3---	87	79	83	0
4---	87	79	83	0
5---	87	79	83	0
6---	87	79	83	0
7---	87	79	83	0
8---	87	79	83	0
9---	87	79	83	0
10--	87	79	83	0
11--	87	79	83	0
12--	87	79	83	0
13--	87	79	83	0
14--	87	79	83	0
15--	87	79	83	0
16--	87	79	83	0
17--	87	79	83	0
18--	87	79	83	0
19--	87	79	83	0
20--	87	79	83	0
21--	87	79	83	0
22--	87	79	83	0
23--	87	79	83	0
24--	88	79	84	0
25--	88	79	84	0
26--	88	79	84	0
27--	88	79	84	0
28--	88	79	84	0
29--	88	79	84	0
30--	88	79	84	0
31--	88	79	84	0
Month	87.3	78.9	83.1	0

Aug.	Temperature Max.	Min.	Avg.	* Degree Days
1---	88	79	84	0
2---	88	79	84	0
3---	88	79	84	0
4---	88	79	84	0
5---	88	79	84	0
6---	88	80	84	0
7---	88	80	84	0
8---	88	80	84	0
9---	88	79	84	0
10--	88	79	84	0
11--	88	79	84	0
12--	88	79	84	0
13--	88	79	84	0
14--	88	79	84	0
15--	88	79	84	0
16--	88	79	84	0
17--	88	79	84	0
18--	87	79	83	0
19--	87	79	83	0
20--	87	79	83	0
21--	87	79	83	0
22--	87	79	83	0
23--	87	79	83	0
24--	87	79	83	0
25--	87	79	83	0
26--	87	79	83	0
27--	87	79	83	0
28--	87	78	83	0
29--	87	78	83	0
30--	87	78	83	0
31--	87	78	83	0
	87.5	79.0	83.3	0

Sep.	Temperature Max.	Min.	Avg.	* Degree Days
1---	86	78	82	0
2---	86	78	82	0
3---	86	78	82	0
4---	86	77	82	0
5---	86	77	82	0
6---	86	77	82	0
7---	86	77	82	0
8---	86	77	82	0
9---	86	77	82	0
10--	85	76	81	0
11--	85	76	81	0
12--	85	76	81	0
13--	85	76	81	0
14--	85	76	81	0
15--	85	76	81	0
16--	85	76	81	0
17--	85	75	80	0
18--	84	75	80	0
19--	84	75	80	0
20--	84	75	80	0
21--	84	74	79	0
22--	84	74	79	0
23--	84	74	79	0
24--	83	74	79	0
25--	83	74	79	0
26--	83	74	79	0
27--	83	74	79	0
28--	83	73	78	0
29--	82	73	78	0
30--	82	73	78	0
	84.6	75.5	80.1	0

Oct.	Temperature Max.	Min.	Avg.	* Degree Days
1---	82	73	78	0
2---	82	72	77	0
3---	82	72	77	0
4---	82	72	77	0
5---	81	72	77	0
6---	81	72	77	0
7---	81	71	76	0
8---	81	71	76	0
9---	81	71	76	0
10--	80	70	75	0
11--	80	70	75	0
12--	80	70	75	0
13--	80	70	75	0
14--	79	69	74	0
15--	79	69	74	0
16--	79	69	74	0
17--	78	68	73	0
18--	78	68	73	0
19--	78	68	73	0
20--	77	67	72	0
21--	77	67	72	0
22--	77	67	72	0
23--	77	66	72	0
24--	76	66	71	0
25--	76	66	71	0
26--	76	65	71	0
27--	75	65	70	0
28--	75	64	70	0
29--	75	64	70	0
30--	74	64	69	0
31--	74	63	69	0
	78.5	68.4	73.5	0

Nov.	Temperature Max.	Min.	Avg.	* Degree Days
1---	73	63	68	0
2---	73	62	68	0
3---	73	62	68	0
4---	72	61	67	1
5---	72	61	67	2
6---	71	60	66	4
7---	71	60	66	6
8---	71	60	66	9
9---	71	59	65	12
10--	70	59	65	15
11--	70	59	65	18
12--	69	58	64	22
13--	69	58	64	26
14--	69	57	63	31
15--	69	57	63	36
16--	68	57	63	41
17--	68	57	63	46
18--	68	56	62	52
19--	67	56	62	58
20--	67	56	62	64
21--	67	56	62	70
22--	67	55	61	77
23--	66	55	61	84
24--	66	55	61	91
25--	66	54	60	98
26--	65	54	60	106
27--	65	54	60	114
28--	65	54	60	122
29--	65	54	60	130
30--	65	53	59	138
	68.6	57.4	63.0	138

Dec.	Temperature Max.	Min.	Avg.	* Degree Days
1---	64	53	59	146
2---	64	53	59	154
3---	64	53	59	162
4---	64	53	59	170
5---	64	53	59	178
6---	64	53	59	186
7---	64	52	58	194
8---	63	52	58	202
9---	63	52	58	210
10--	63	52	58	218
11--	63	52	58	226
12--	63	52	58	234
13--	63	52	58	242
14--	63	52	58	250
15--	63	52	58	258
16--	63	52	58	267
17--	62	51	57	276
18--	62	51	57	285
19--	62	51	57	294
20--	62	51	57	303
21--	62	51	57	312
22--	62	51	57	321
23--	62	51	57	330
24--	62	51	57	339
25--	62	51	57	348
26--	62	51	57	358
27--	62	51	57	368
28--	62	51	57	378
29--	62	50	56	388
30--	61	50	56	398
31--	61	50	56	408
	62.7	51.6	57.2	270

Annual Normals 74.8 65.1 70.0 1235

Table 31. Daily Normal Temperatures and Accumulated Heating Degree Days with Monthly and Annual Normals, Galveston Municipal Airport

Jan.	Temperature Max.	Min.	Avg.	*Degree Days
1----	61	49	55	440
2----	61	49	55	451
3----	61	49	55	462
4----	61	49	55	473
5----	61	49	55	484
6----	61	49	55	495
7----	61	49	55	506
8----	61	49	55	517
9----	61	49	55	528
10---	61	49	55	539
11---	60	49	55	551
12---	60	48	54	563
13---	60	48	54	575
14---	60	48	54	587
15---	60	48	54	599
16---	60	48	54	611
17---	60	48	54	623
18---	60	48	54	635
19---	60	48	54	647
20---	60	48	54	659
21---	60	48	54	671
22---	60	48	54	683
23---	60	48	54	695
24---	60	48	54	707
25---	60	48	54	719
26---	60	48	54	731
27---	60	48	54	743
28---	60	48	54	755
29---	60	48	54	767
30---	61	49	55	778
31---	61	49	55	789
Month	60.4	48.4	54.4	360

Feb.	Temperature Max.	Min.	Avg.	*Degree Days
1---	61	49	55	800
2---	61	49	55	811
3---	61	49	55	822
4---	61	49	55	833
5---	61	49	55	844
6---	61	49	55	855
7---	61	49	55	866
8---	61	49	55	876
9---	62	50	56	886
10--	62	50	56	896
11--	62	50	56	906
12--	62	50	56	916
13--	62	50	56	926
14--	62	50	56	935
15--	62	50	56	944
16--	63	51	57	953
17--	63	51	57	962
18--	63	51	57	971
19--	63	51	57	980
20--	63	51	57	988
21--	64	51	58	996
22--	64	52	58	1004
23--	64	52	58	1012
24--	64	52	58	1020
25--	64	52	58	1028
26--	64	52	58	1036
27--	65	53	59	1044
28--	65	53	59	1052
29--	65	53	59	
	62.5	50.5	56.5	263

Mar.	Temperature Max.	Min.	Avg.	*Degree Days
1---	65	53	59	1060
2---	65	53	59	1068
3---	65	53	59	1076
4---	65	53	59	1084
5---	66	54	60	1091
6---	66	54	60	1098
7---	66	54	60	1105
8---	66	54	60	1112
9---	66	54	60	1119
10--	66	55	61	1126
11--	66	55	61	1133
12--	66	55	61	1140
13--	66	55	61	1147
14--	67	55	61	1153
15--	67	55	61	1159
16--	67	55	61	1165
17--	67	56	62	1171
18--	67	56	62	1177
19--	67	56	62	1183
20--	68	56	62	1189
21--	68	56	62	1195
22--	68	57	63	1200
23--	68	57	63	1205
24--	68	57	63	1210
25--	68	57	63	1215
26--	69	58	64	1220
27--	69	58	64	1225
28--	69	58	64	1229
29--	69	58	64	1233
30--	69	59	64	1237
31--	70	59	65	1241
	67.1	55.6	61.4	189

Apr.	Temperature Max.	Min.	Avg.	*Degree Days
1---	70	59	65	1245
2---	70	60	65	1249
3---	70	60	65	1253
4---	71	60	66	1256
5---	71	60	66	1259
6---	71	61	66	1262
7---	71	61	66	1264
8---	72	61	67	1266
9---	72	62	67	1268
10--	72	62	67	1270
11--	72	62	67	1271
12--	73	63	68	1272
13--	73	63	68	1273
14--	73	63	68	1274
15--	74	63	69	1274
16--	74	64	69	1274
17--	74	64	69	1274
18--	74	64	69	1274
19--	75	65	70	1274
20--	75	65	70	1274
21--	75	65	70	1274
22--	76	65	71	1274
23--	76	66	71	1274
24--	76	66	71	1274
25--	76	66	71	1274
26--	77	66	72	1274
27--	77	67	72	1274
28--	77	67	72	1274
29--	77	67	72	1274
30--	78	68	73	1274
	73.7	63.5	68.6	33

May	Temperature Max.	Min.	Avg.	*Degree Days
1---	78	68	73	1274
2---	78	68	73	1274
3---	78	68	73	1274
4---	79	68	74	1274
5---	79	68	74	1274
6---	79	69	74	1274
7---	79	69	74	1274
8---	79	69	74	1274
9---	80	69	75	1274
10--	80	70	75	1274
11--	80	70	75	1274
12--	80	70	75	1274
13--	81	70	76	1274
14--	81	70	76	1274
15--	81	71	76	1274
16--	81	71	76	1274
17--	81	71	76	1274
18--	82	71	77	1274
19--	82	72	77	1274
20--	82	72	77	1274
21--	82	72	77	1274
22--	82	72	77	1274
23--	83	72	78	1274
24--	83	72	78	1274
25--	83	73	78	1274
26--	83	73	78	1274
27--	83	73	78	1274
28--	84	74	79	1274
29--	84	74	79	1274
30--	84	74	79	1274
31--	84	74	79	1274
	81.1	70.9	76.0	0

June	Temperature Max.	Min.	Avg.	*Degree Days
1---	84	75	80	1274
2---	85	75	80	1274
3---	85	76	81	1274
4---	85	76	81	1274
5---	85	76	81	1274
6---	86	76	81	1274
7---	86	76	81	1274
8---	86	77	82	1274
9---	86	77	82	1274
10--	86	77	82	1274
11--	87	77	82	1274
12--	87	77	82	1274
13--	87	77	82	1274
14--	87	77	82	1274
15--	87	78	83	1274
16--	87	78	83	1274
17--	87	78	83	1274
18--	87	78	83	1274
19--	88	78	83	1274
20--	88	78	83	1274
21--	88	78	83	1274
22--	88	78	83	1274
23--	88	78	83	1274
24--	88	78	83	1274
25--	88	78	83	1274
26--	88	78	83	1274
27--	88	78	83	1274
28--	88	78	83	1274
29--	88	78	83	1274
30--	88	78	83	1274
	86.9	77.2	82.1	0

July	Temperature Max.	Min.	Avg.	*Degree Days
1---	88	78	83	0
2---	88	78	83	0
3---	88	78	83	0
4---	88	78	83	0
5---	88	78	83	0
6---	88	78	83	0
7---	88	78	83	0
8---	88	78	83	0
9---	88	78	83	0
10--	88	78	83	0
11--	88	78	83	0
12--	88	78	83	0
13--	88	79	84	0
14--	89	79	84	0
15--	89	79	84	0
16--	89	79	84	0
17--	89	79	84	0
18--	89	79	84	0
19--	89	79	84	0
20--	89	79	84	0
21--	89	79	84	0
22--	89	79	84	0
23--	89	79	84	0
24--	89	79	84	0
25--	89	79	84	0
26--	89	79	84	0
27--	89	79	84	0
28--	89	79	84	0
29--	89	79	84	0
30--	89	79	84	0
31--	89	79	84	0
Month	88.6	78.6	83.6	0

Aug.	Temperature Max.	Min.	Avg.	*Degree Days
1---	89	79	84	0
2---	89	79	84	0
3---	89	79	84	0
4---	89	79	84	0
5---	89	79	84	0
6---	89	79	84	0
7---	89	79	84	0
8---	89	79	84	0
9---	89	79	84	0
10--	89	79	84	0
11--	89	79	84	0
12--	89	79	84	0
13--	89	79	84	0
14--	89	79	84	0
15--	89	79	84	0
16--	89	79	84	0
17--	89	79	84	0
18--	88	79	84	0
19--	88	79	84	0
20--	88	79	84	0
21--	88	79	84	0
22--	88	78	83	0
23--	88	78	83	0
24--	88	78	83	0
25--	88	78	83	0
26--	88	78	83	0
27--	88	78	83	0
28--	88	78	83	0
29--	88	78	83	0
30--	88	78	83	0
31--	87	78	83	0
	88.5	78.7	83.6	0

Sep.	Temperature Max.	Min.	Avg.	*Degree Days
1---	87	77	82	0
2---	87	77	82	0
3---	87	77	82	0
4---	87	77	82	0
5---	87	77	82	0
6---	87	77	82	0
7---	87	77	82	0
8---	87	77	82	0
9---	86	76	81	0
10--	86	76	81	0
11--	86	76	81	0
12--	86	76	81	0
13--	86	76	81	0
14--	86	76	81	0
15--	86	75	81	0
16--	85	75	80	0
17--	85	75	80	0
18--	85	75	80	0
19--	85	75	80	0
20--	85	74	80	0
21--	85	74	80	0
22--	84	74	79	0
23--	84	74	79	0
24--	84	73	79	0
25--	84	73	79	0
26--	84	73	79	0
27--	83	73	78	0
28--	83	73	78	0
29--	83	72	78	0
30--	83	72	78	0
	85.3	75.1	80.2	0

Oct.	Temperature Max.	Min.	Avg.	*Degree Days
1---	83	72	78	0
2---	83	72	78	0
3---	82	72	77	0
4---	82	71	77	0
5---	82	71	77	0
6---	82	71	77	0
7---	82	71	77	0
8---	81	70	76	0
9---	81	70	76	0
10--	81	70	76	0
11--	81	70	76	0
12--	80	69	75	0
13--	80	69	75	0
14--	80	69	75	0
15--	80	68	74	0
16--	79	68	74	0
17--	79	68	74	0
18--	79	68	74	0
19--	78	67	73	0
20--	78	67	73	0
21--	78	66	72	0
22--	78	66	72	0
23--	77	66	72	0
24--	77	65	71	0
25--	76	65	71	0
26--	76	65	71	0
27--	76	64	70	1
28--	75	64	70	2
29--	75	63	69	3
30--	75	63	69	4
31--	74	62	68	6
	79.0	67.8	73.4	6

Nov.	Temperature Max.	Min.	Avg.	*Degree Days
1---	74	62	68	8
2---	73	61	67	10
3---	73	61	67	12
4---	73	60	67	14
5---	72	60	66	17
6---	72	60	66	20
7---	72	59	66	24
8---	71	59	65	28
9---	71	59	65	32
10--	71	58	65	36
11--	70	58	64	40
12--	70	57	64	44
13--	70	57	64	48
14--	69	57	63	53
15--	69	56	63	58
16--	69	56	63	63
17--	68	56	62	68
18--	68	55	62	74
19--	67	55	61	80
20--	67	55	61	86
21--	67	54	61	92
22--	67	54	61	98
23--	66	54	60	104
24--	66	54	60	111
25--	66	53	60	118
26--	66	53	60	125
27--	65	53	59	132
28--	65	53	59	139
29--	65	53	59	146
30--	65	53	59	153
	68.9	56.5	62.7	147

Dec.	Temperature Max.	Min.	Avg.	*Degree Days
1---	65	52	59	160
2---	65	52	59	167
3---	64	52	58	174
4---	64	52	58	182
5---	64	52	58	190
6---	64	52	58	198
7---	64	51	58	206
8---	64	51	58	214
9---	64	51	58	222
10--	63	51	57	230
11--	63	51	57	239
12--	63	51	57	248
13--	63	51	57	257
14--	63	51	57	266
15--	63	51	57	275
16--	63	51	57	284
17--	63	51	57	293
18--	62	50	56	302
19--	62	50	56	311
20--	62	50	56	320
21--	62	50	56	329
22--	62	50	56	339
23--	62	50	56	349
24--	62	50	56	359
25--	62	50	56	369
26--	62	50	56	379
27--	62	50	56	389
28--	62	50	56	399
29--	61	50	56	409
30--	61	49	55	419
31--	61	49	55	429
	62.8	50.7	56.8	276

Annual Normals 75.4 64.5 70.0 1274

Daily normals derived from corresponding 30-year normals (1931-1960)

*Normal accumulated heating degree days since July 1. February 29 not included in monthly or annual values. For Feb. 29 use values given for Feb. 28. Subsequent accumulations should be correspondingly increased for leap years.

SUNRISE AND SUNSET

Table 32. Time of Sunrise and Sunset

HOUSTON, Texas — CENTRAL STANDARD TIME

	January		February		March		April		May		June		July		August		September		October		November		December	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
1------	7:17	5:33	7:12	5:59	6:48	6:21	6:11	6:40	5:39	6:58	5:21	7:17	5:24	7:26	5:41	7:14	5:58	6:44	6:15	6:07	6:35	5:35	6:59	5:22
2------	7:17	5:34	7:11	6:00	6:47	6:21	6:10	6:41	5:38	6:59	5:21	7:18	5:25	7:26	5:41	7:14	5:59	6:43	6:15	6:06	6:36	5:34	7:00	5:22
3------	7:17	5:35	7:10	6:01	6:45	6:22	6:09	6:41	5:37	7:00	5:21	7:18	5:25	7:26	5:42	7:13	5:59	6:42	6:16	6:05	6:36	5:33	7:01	5:22
4------	7:18	5:36	7:10	6:01	6:44	6:23	6:08	6:42	5:37	7:00	5:21	7:19	5:25	7:26	5:42	7:12	6:00	6:41	6:16	6:04	6:37	5:33	7:01	5:22
5------	7:18	5:36	7:09	6:02	6:43	6:23	6:07	6:42	5:36	7:01	5:21	7:19	5:26	7:26	5:43	7:11	6:01	6:39	6:17	6:03	6:38	5:32	7:02	5:22
6------	7:18	5:37	7:08	6:03	6:42	6:24	6:05	6:43	5:35	7:01	5:20	7:20	5:26	7:26	5:44	7:11	6:01	6:38	6:17	6:01	6:39	5:31	7:03	5:22
7------	7:18	5:38	7:08	6:04	6:41	6:25	6:04	6:43	5:34	7:02	5:20	7:20	5:27	7:26	5:44	7:10	6:02	6:37	6:18	6:00	6:39	5:31	7:04	5:22
8------	7:18	5:39	7:07	6:05	6:40	6:25	6:03	6:44	5:33	7:03	5:20	7:21	5:27	7:25	5:45	7:09	6:02	6:36	6:19	5:59	6:40	5:30	7:04	5:22
9------	7:18	5:39	7:06	6:06	6:39	6:26	6:02	6:45	5:33	7:03	5:20	7:21	5:28	7:25	5:45	7:08	6:03	6:34	6:19	5:58	6:41	5:29	7:05	5:22
10-----	7:18	5:40	7:06	6:06	6:38	6:27	6:01	6:45	5:32	7:04	5:20	7:21	5:28	7:25	5:46	7:07	6:03	6:33	6:20	5:57	6:42	5:29	7:06	5:23
11-----	7:18	5:41	7:05	6:07	6:36	6:27	6:00	6:46	5:31	7:05	5:20	7:22	5:29	7:25	5:47	7:06	6:04	6:32	6:20	5:56	6:43	5:28	7:07	5:23
12-----	7:18	5:42	7:04	6:08	6:35	6:28	5:59	6:46	5:31	7:05	5:20	7:22	5:29	7:25	5:47	7:05	6:04	6:31	6:21	5:54	6:43	5:27	7:07	5:23
13-----	7:18	5:43	7:03	6:09	6:34	6:28	5:57	6:47	5:30	7:06	5:20	7:23	5:30	7:24	5:48	7:04	6:05	6:30	6:22	5:53	6:44	5:27	7:08	5:23
14-----	7:18	5:43	7:02	6:10	6:33	6:29	5:56	6:48	5:29	7:07	5:20	7:23	5:30	7:24	5:48	7:03	6:05	6:28	6:22	5:52	6:45	5:26	7:09	5:24
15-----	7:18	5:44	7:01	6:10	6:32	6:30	5:55	6:48	5:29	7:07	5:20	7:23	5:31	7:24	5:49	7:02	6:06	6:27	6:23	5:51	6:46	5:26	7:09	5:24
16-----	7:18	5:45	7:01	6:11	6:31	6:30	5:54	6:49	5:28	7:08	5:20	7:24	5:31	7:23	5:49	7:02	6:06	6:26	6:24	5:50	6:47	5:25	7:10	5:24
17-----	7:17	5:46	7:00	6:12	6:29	6:31	5:53	6:50	5:27	7:08	5:21	7:24	5:32	7:23	5:50	7:01	6:07	6:25	6:24	5:49	6:48	5:25	7:10	5:25
18-----	7:17	5:47	6:59	6:13	6:28	6:32	5:52	6:50	5:27	7:09	5:21	7:24	5:32	7:22	5:51	7:00	6:07	6:23	6:25	5:48	6:48	5:25	7:11	5:25
19-----	7:17	5:48	6:58	6:13	6:27	6:32	5:51	6:51	5:26	7:10	5:21	7:24	5:33	7:22	5:51	6:58	6:08	6:22	6:26	5:47	6:49	5:24	7:12	5:26
20-----	7:17	5:49	6:57	6:14	6:26	6:33	5:50	6:51	5:26	7:10	5:21	7:25	5:34	7:22	5:52	6:57	6:09	6:21	6:26	5:46	6:50	5:24	7:12	5:26
21-----	7:16	5:49	6:56	6:15	6:25	6:33	5:49	6:52	5:25	7:11	5:21	7:25	5:34	7:21	5:52	6:56	6:09	6:20	6:27	5:45	6:51	5:24	7:13	5:27
22-----	7:16	5:50	6:55	6:16	6:23	6:34	5:48	6:53	5:25	7:12	5:21	7:25	5:35	7:21	5:53	6:55	6:10	6:18	6:28	5:44	6:52	5:23	7:13	5:27
23-----	7:16	5:51	6:54	6:16	6:22	6:35	5:47	6:53	5:24	7:12	5:22	7:25	5:35	7:20	5:53	6:54	6:10	6:17	6:28	5:43	6:53	5:23	7:14	5:28
24-----	7:15	5:52	6:53	6:17	6:21	6:35	5:46	6:54	5:24	7:13	5:22	7:25	5:36	7:20	5:54	6:53	6:11	6:16	6:29	5:42	6:53	5:23	7:14	5:28
25-----	7:15	5:53	6:52	6:18	6:20	6:36	5:45	6:54	5:24	7:13	5:22	7:26	5:36	7:19	5:55	6:52	6:11	6:15	6:30	5:41	6:54	5:23	7:14	5:29
26-----	7:15	5:54	6:51	6:18	6:19	6:36	5:44	6:55	5:23	7:14	5:23	7:26	5:37	7:18	5:55	6:51	6:12	6:13	6:30	5:40	6:55	5:22	7:15	5:29
27-----	7:14	5:55	6:50	6:19	6:17	6:37	5:43	6:56	5:23	7:14	5:23	7:26	5:38	7:18	5:56	6:50	6:12	6:12	6:31	5:39	5:56	5:22	7:15	5:30
28-----	7:14	5:56	6:49	6:20	6:16	6:38	5:42	6:56	5:22	7:15	5:23	7:26	5:38	7:17	5:56	6:49	6:13	6:11	6:32	5:38	6:57	5:22	7:16	5:30
29-----	7:13	5:56	6:49	6:21	6:15	6:38	5:41	6:57	5:22	7:16	5:24	7:26	5:39	7:17	5:57	6:48	6:13	6:10	6:33	5:37	6:57	5:22	7:16	5:31
30-----	7:13	5:57			6:14	6:39	5:40	6:58	5:22	7:16	5:24	7:26	5:39	7:16	5:57	6:46	6:14	6:09	6:33	5:37	6:58	5:22	7:16	5:32
31-----	7:12	5:58			6:13	6:39			5:22	7:17			5:40	7:15	5:58	6:45			6:34	5:36			7:17	5:32
	Duration (in minutes) of Civil Twilight, Houston, Texas, Latitude 29° 46' N., Longitude 95° 22' W.																							
	27-26-26		25-25-24		24-24-24		24-24-25		25-26-27		27-28-28		28-27-27		26-25-25		24-24-24		24-24-24		25-25-26		26-27-27	

GALVESTON, Texas

	January		February		March		April		May		June		July		August		September		October		November		December	
Day	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
1------	7:14	5:32	7:09	5:58	6:45	6:19	6:09	6:38	5:38	6:55	5:20	7:14	5:23	7:23	5:39	7:11	5:57	6:42	6:12	6:05	6:32	5:33	6:56	5:21
2------	7:14	5:33	7:08	5:58	6:44	6:19	6:08	6:38	5:37	6:56	5:20	7:15	5:24	7:23	5:40	7:11	5:57	6:40	6:13	6:04	6:33	5:33	6:57	5:21
3------	7:14	5:34	7:08	5:59	6:43	6:20	6:07	6:39	5:36	6:57	5:20	7:15	5:24	7:23	5:40	7:10	5:58	6:39	6:13	6:03	6:34	5:32	6:57	5:21
4------	7:14	5:34	7:07	6:00	6:42	6:21	6:06	6:39	5:35	6:57	5:20	7:16	5:24	7:23	5:41	7:09	5:58	6:38	6:14	6:02	6:34	5:31	6:58	5:21
5------	7:15	5:35	7:06	6:01	6:41	6:21	6:05	6:40	5:34	6:58	5:20	7:16	5:25	7:23	5:42	7:08	5:59	6:37	6:15	6:01	6:35	5:30	6:59	5:21
6------	7:15	5:36	7:06	6:02	6:40	6:22	6:04	6:40	5:34	6:59	5:19	7:16	5:25	7:22	5:42	7:08	5:59	6:36	6:15	5:59	6:36	5:30	7:00	5:21
7------	7:15	5:37	7:05	6:02	6:39	6:23	6:02	6:41	5:33	6:59	5:19	7:17	5:26	7:22	5:43	7:07	6:00	6:35	6:16	5:58	6:37	5:29	7:00	5:21
8------	7:15	5:37	7:04	6:03	6:38	6:23	6:01	6:42	5:32	7:00	5:19	7:17	5:26	7:22	5:43	7:06	6:00	6:33	6:16	5:57	6:37	5:28	7:01	5:21
9------	7:15	5:38	7:04	6:04	6:36	6:24	6:00	6:42	5:31	7:00	5:19	7:18	5:27	7:22	5:44	7:05	6:01	6:32	6:17	5:56	6:38	5:28	7:02	5:21
10-----	7:15	5:39	7:03	6:05	6:35	6:25	5:59	6:43	5:31	7:01	5:19	7:18	5:27	7:22	5:45	7:04	6:01	6:31	6:17	5:55	6:39	5:27	7:03	5:22
11-----	7:15	5:40	7:02	6:06	6:34	6:25	5:58	6:43	5:30	7:02	5:19	7:19	5:28	7:22	5:45	7:03	6:02	6:30	6:18	5:54	6:40	5:27	7:03	5:22
12-----	7:15	5:41	7:01	6:06	6:33	6:26	5:57	6:44	5:29	7:02	5:19	7:19	5:28	7:21	5:46	7:03	6:02	6:28	6:19	5:53	6:41	5:26	7:04	5:22
13-----	7:15	5:41	7:00	6:07	6:32	6:26	5:56	6:45	5:29	7:03	5:19	7:19	5:29	7:21	5:46	7:02	6:03	6:27	6:19	5:52	6:41	5:26	7:05	5:22
14-----	7:15	5:42	7:00	6:08	6:31	6:27	5:55	6:45	5:28	7:04	5:19	7:20	5:29	7:21	5:47	7:01	6:03	6:26	6:20	5:50	6:42	5:25	7:05	5:23
15-----	7:15	5:43	6:59	6:09	6:30	6:28	5:54	6:46	5:27	7:04	5:19	7:20	5:30	7:20	5:47	7:00	6:04	6:25	6:20	5:49	6:43	5:25	7:06	5:23
16-----	7:15	5:44	6:58	6:10	6:28	6:28	5:52	6:46	5:27	7:05	5:19	7:20	5:30	7:20	5:48	6:59	6:04	6:24	6:21	5:48	6:44	5:24	7:07	5:23
17-----	7:14	5:45	6:57	6:10	6:27	6:29	5:51	6:47	5:26	7:05	5:20	7:21	5:31	7:20	5:49	6:58	6:05	6:22	6:22	5:47	6:45	5:24	7:07	5:24
18-----	7:14	5:46	6:56	6:11	6:26	6:29	5:50	6:47	5:26	7:06	5:20	7:21	5:31	7:19	5:49	6:57	6:05	6:21	6:22	5:46	6:45	5:23	7:08	5:24
19-----	7:14	5:47	6:55	6:12	6:25	6:30	5:49	6:48	5:25	7:07	5:20	7:21	5:32	7:19	5:50	6:56	6:06	6:20	6:23	5:45	6:46	5:23	7:08	5:25
20-----	7:14	5:47	6:54	6:12	6:24	6:31	5:48	6:49	5:25	7:07	5:20	7:21	5:32	7:18	5:50	6:55	6:06	6:19	6:24	5:44	6:47	5:23	7:09	5:25
21-----	7:13	5:48	6:53	6:13	6:22	6:31	5:47	6:49	5:24	7:08	5:20	7:22	5:33	7:18	5:51	6:54	6:07	6:17	6:24	5:43	6:48	5:22	7:09	5:25
22-----	7:13	5:49	6:52	6:14	6:21	6:32	5:46	6:50	5:24	7:08	5:20	7:22	5:34	7:18	5:51	6:53	6:07	6:16	6:25	5:42	6:49	5:22	7:10	5:26
23-----	7:13	5:50	6:51	6:15	6:20	6:32	5:45	6:51	5:23	7:09	5:21	7:22	5:34	7:17	5:52	6:52	6:08	6:15	6:26	5:41	6:50	5:22	7:10	5:27
24-----	7:12	5:51	6:50	6:15	6:19	6:33	5:44	6:51	5:23	7:10	5:21	7:22	5:35	7:17	5:52	6:51	6:09	6:14	6:26	5:40	6:50	5:22	7:11	5:27
25-----	7:12	5:52	6:49	6:16	6:18	6:34	5:43	6:52	5:22	7:10	5:21	7:22	5:35	7:16	5:53	6:49	6:09	6:13	6:27	5:39	6:51	5:21	7:11	5:28
26-----	7:12	5:52	6:48	6:17	6:17	6:34	5:42	6:52	5:22	7:11	5:22	7:22	5:36	7:15	5:53	6:48	6:10	6:11	6:28	5:39	6:52	5:21	7:12	5:28
27-----	7:11	5:53	6:47	6:17	6:15	6:35	5:41	6:53	5:22	7:11	5:22	7:23	5:36	7:15	5:54	6:47	6:10	6:10	6:28	5:38	6:53	5:21	7:12	5:29
28-----	7:11	5:54	6:46	6:18	6:14	6:35	5:40	6:54	5:21	7:12	5:22	7:23	5:37	7:14	5:55	6:46	6:11	6:09	6:29	5:37	6:54	5:21	7:12	5:29
29-----	7:10	5:55	6:46	6:19	6:13	6:36	5:40	6:54	5:21	7:12	5:23	7:23	5:38	7:14	5:55	6:45	6:11	6:08	6:30	5:36	6:54	5:21	7:13	5:30
30-----	7:10	5:56			6:12	6:36	5:39	6:55	5:21	7:13	5:23	7:23	5:38	7:13	5:56	6:44	6:12	6:07	6:31	5:35	6:55	5:21	7:13	5:31
31-----	7:09	5:57			6:11	6:37			5:20	7:14			5:39	7:12	5:56	6:43			6:31	5:34			7:13	5:31
	Duration (in minutes) of Civil Twilight, Galveston, Texas, Latitude 29°18'N, Longitude 94°48'W																							
	26-26-26		25-24-24		24-24-24		24-24-25		25-26-26		27-27-28		27-27-27		26-25-25		24-24-24		24-24-24		25-25-25		26-26-26	

Twilight lengths are given in minutes for the 1st, 11th and 21st of each month, in that order. Morning civil twilight is the interval between the time when the center of the sun is 6° below the horizon and sunrise. Evening civil twilight is an equal interval between sunset and the time when the center of the sun is 6° below the horizon. Sunrise and sunset are the times when the upper edge of the sun is on the horizon. Out-of-door reading, work, and many sports may start at beginning of morning twilight and continue until end of evening twilight, if the sky is free from clouds, smoke and haze.

These times, computed for a sea level horizon, vary a little from year to year but not exceeding 2 minutes and generally less than 1 minute. Should greater accuracy be required data may be derived from "Tables of Sunrise, Sunset and twilight", Supplement to the American Ephemeris, 1946, U. S. Naval Observatory, Washington, D. C.

Source: U. S. Naval Observatory, Washington, D. C.

COMPARATIVE DATA

Table 33.

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1931-1960) January Daily maximum	January Daily minimum	July Daily maximum	July Daily minimum	Annual	Extremes Length, yrs.	Record highest	Record lowest	Normal Heating degree days (1931-1960) January	Seasonal	Precipitation (inches) Normal (1931-1960) Wettest month	Driest month	Annual	Extremes Wettest month	Driest month	Maximum in 24 hours	Snow, sleet Mean total January	Seasonal	Extreme Maximum in 24 hours
Atlanta, Georgia AP	975	54.0	35.5	88.4	69.2	61.6	1	92	10	636	2961	5.37	2.44	47.14	15.72	0.07	5.67	0.7	1.6	8.3
Boston, Mass., Logan	15	36.8	23.0	81.9	65.4	51.4	10	100	-12	1088	5634	4.22	2.88	42.77	17.09	.35	8.40	12.9	40.2	19.4
Buffalo, N. Y. AP	693	29.8	17.2	80.1	59.4	46.3	1	90	-20	1287	7213	3.24	2.54	35.65	9.13	.11	3.11	26.3	106.8	19.9
Chicago, Ill., Midway	610	33.2	18.9	85.6	65.7	50.9	19	104	-15	1206	6113	4.07	1.60	33.18	14.17	.26	6.24	7.4	36.1	12.5
Cincinnati Obs., Ohio	761	41.3	26.1	87.5	66.3	55.2	46	109	-17	970	4806	4.18	2.24	39.51	13.68	.17	4.77	5.1	18.7	11.0
Cleveland, Ohio AP	787	34.8	20.3	81.8	60.2	48.8	1	92	-7	1159	6432	3.52	2.33	35.35	9.50	.36	3.73	9.8	50.1	15.0
Dallas, Texas AP	481	55.8	36.0	94.5	75.3	65.8	19	111	2	601	2363	4.83	1.93	34.55	13.85	T	9.18	1.1	1.9	3.3
Denver, Colorado AP	5283	43.1	16.8	87.4	59.4	50.4	1	99	-16	1085	5982	2.70	.47	14.81	14.20	T	3.43	8.6	60.3	19.4
Detroit, Mich. City AP	619	32.9	19.1	83.7	62.1	49.1	28	105	-16	1209	6469	3.54	1.92	30.80	8.05	.23	3.72	8.1	31.6	9.8
GALVESTON, Texas AP	7	60.4	48.4	88.6	78.6	70.0	11	97	18	362	1233	5.76	2.49	45.21	25.06	T	11.34	.2	.2	2.0
Great Falls, Mont. AP	3662	31.6	13.5	83.7	56.1	45.3	23	105	-35	1333	7531	2.90	.60	14.70	8.13	T	3.20	8.1	54.0	11.0
HOUSTON, Texas (U)	41	62.6	46.6	92.0	75.8	70.0	23	105	10	363	1278	5.15	2.40	45.26	17.64	.01	10.83	.2	.3	3.0
Kansas City, Mo. AP	742	38.9	22.4	90.9	71.0	56.1	28	113	-13	1063	4868	4.57	1.24	34.07	11.94	.04	5.96	5.1	19.7	12.8
Los Angeles, Calif. (U)	312	65.0	46.6	83.3	62.6	64.4	21	110	28	310	1349	3.33	T	14.68	12.42	.00	6.11	T	T	.3
Memphis, Tenn. AP	263	50.6	33.4	92.1	71.5	62.1	20	106	-11	713	3116	6.07	2.72	49.73	12.29	.04	4.94	1.9	4.3	6.5
Miami Beach, Fla. (U)	9	74.2	63.9	87.0	77.6	76.2	20	98	35	56	141	7.36	1.65	46.26	18.02	.01	8.35	.0	.0	.0
Minneapolis-St. Paul, Minnesota	822	22.2	2.5	84.7	61.2	43.8	21	104	-31	1631	8392	4.00	.70	24.78	7.80	T	4.12	6.2	40.8	16.2
New Orleans, La. (U)	9	63.8	48.2	90.6	76.2	70.4	--	---	--	338	1182	7.92	3.22	63.25	25.11	T	14.01	T	.1	1.3
New York, N.Y. Cent. Pk.	132	39.5	26.9	85.3	68.2	54.5	93	106	-15	986	4862	4.44	2.84	42.37	16.85	.02	11.17	7.7	30.0	26.4
Omaha, Nebr., Eppley	978	31.7	12.9	89.7	67.3	51.5	8	107	-15	1324	6218	4.53	.80	27.56	10.81	T	3.62	8.4	32.2	13.7
Philadelphia, Pa., Int.	5	40.3	24.3	85.9	65.2	53.5	2	93	-4	1016	5144	4.63	2.78	42.48	9.70	.11	5.45	5.4	19.6	14.6
Phoenix, Arizona, Sky Harbor AP	1117	64.0	37.3	104.6	78.0	70.5	23	118	17	443	1598	1.12	.09	7.20	5.56	.00	3.07	T	T	0.6
Pittsburgh, Pa., Greater AP	1151	36.5	21.2	83.3	60.9	50.3	2	95	-10	1119	5987	3.91	2.19	36.14	8.20	.40	3.56	9.6	41.5	12.5
Portland, Oregon (U)	30	44.9	35.5	79.2	57.9	54.6	59	107	3	769	4109	7.42	.39	42.37	17.45	.00	5.01	5.2	8.9	16.0
St. Louis, Missouri, Lambert Field AP	535	40.2	23.5	90.2	68.9	56.0	4	99	-5	1026	4809	4.29	1.97	35.31	7.97	.32	3.29	3.9	17.3	11.2
Salt Lake City, Utah AP	4220	36.8	19.5	92.1	60.6	51.3	2	107	-10	1141	5890	1.76	.53	13.90	4.90	.00	2.41	13.2	51.6	15.4
San Francisco, Cal. (U)	52	55.8	45.5	64.3	53.3	56.8	25	101	30	443	3001	4.55	.01	20.78	11.47	.00	3.65	T	T	T
Seattle, Wash. (U)	14	45.6	36.8	75.1	56.1	53.2	28	100	11	738	4424	5.42	.63	34.10	10.93	T	3.31	4.7	8.4	11.5
Spokane, Wash. AP	2357	31.4	19.2	83.6	55.4	47.3	2	108	-6	1231	6762	2.44	.38	17.19	5.71	T	1.67	20.2	58.0	13.0
Washington, D.C. Nat'l.	14	44.3	29.5	87.0	69.3	57.0	20	103	1	871	4224	4.90	2.47	40.78	14.31	.22	6.39	4.7	15.9	14.4

State and Station	Relative humidity (percent) January 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	July 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	July	Fastest mile	Sunshine (percent of possible) January	July	Annual mean number of days Sunrise to sunset Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet, hail 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max. 90 and above	Min. 32 and below	Zero and below
Atlanta, Georgia AP	72	50	53	87	62	69	11.4	7.8	70	47	62	110	111	144	115	*	50	27	7	49	0
Boston, Mass., Logan	70	59	63	73	54	66	14.6	10.2	65	47	66	99	107	159	132	10	20	24	14	94	1
Buffalo, N. Y. AP	79	72	77	87	67	71	14.9	11.1	91	34	70	59	113	193	168	30	29	22	0	139	5
Chicago, Ill., Midway	81	70	75	78	51	55	11.1	7.8	60	43	69	96	103	166	121	10	38	15	26	123	7
Cincinnati Obs., Ohio	81	69	73	84	54	61	8.3	5.3	49	41	71	83	95	187	134	7	51	22	29	98	2
Cleveland, Ohio AP	76	67	70	85	59	66	12.6	9.0	74	27	68	73	104	188	154	18	38	14	5	130	6
Dallas, Texas AP	81	62	63	79	49	46	10.2	10.0	65	48	78	143	93	129	81	1	43	7	105	31	0
Denver, Colorado AP	59	43	50	73	32	36	9.8	9.0	56	71	71	113	137	115	87	18	42	10	31	168	7
Detroit, Mich. City AP	81	70	76	75	51	55	11.4	8.2	77	31	70	80	105	180	134	12	34	12	14	125	2
GALVESTON, Texas AP	84	73	78	82	69	71	13.0	11.3	--	--	--	111	118	136	90	*	52	32	32	2	0
Great Falls, Mont. AP	66	62	61	63	36	30	16.8	10.9	82	54	80	89	109	167	98	19	28	13	16	146	22
HOUSTON, Texas (U)	86	65	72	92	58	65	10.7	8.3	73	46	69	95	123	147	106	*	57	16	89	7	0
Kansas City, Mo. AP	78	64	67	76	49	48	10.1	9.0	72	51	76	120	106	139	100	4	50	12	56	100	2
Los Angeles, Calif. (U)	64	a45	51	84	a49	53	6.8	5.4	49	71	81	185	106	74	36	0	6	17	18	*	0
Memphis, Tenn. AP	81	65	71	85	56	59	11.4	7.7	54	44	73	116	103	146	105	1	51	10	71	57	*
Miami Beach, Fla. (U)	--	--	--	--	--	--	7.6	7.7	122	70	62	155	115	95	125	0	--	--	12	0	0
Minneapolis-St. Paul, Minnesota	81	71	74	82	53	54	10.5	9.4	92	51	69	105	101	159	112	12	36	10	17	154	29
New Orleans, La. (U)	85	67	73	84	63	71	7.5	5.6	98	49	61	110	135	120	119	*	74	15	68	4	0
New York, N.Y. Cent. Pk.	68	61	61	76	57	64	11.1	7.8	--	85	66	102	128	135	121	8	--	--	16	81	*
Omaha, Nebr., Eppley	78	66	68	85	54	52	11.4	9.4	109	54	76	117	107	141	96	10	49	15	37	140	13
Philadelphia, Pa., Int.	76	60	69	81	57	64	10.3	9.6	73	48	63	89	117	159	119	5	28	30	10	114	1
Phoenix, Arizona, Sky Harbor AP	74	47	39	52	31	23	4.4	6.3	75	77	84	210	85	70	34	0	22	2	163	17	0
Pittsburgh, Pa., Greater AP	76	66	68	87	58	66	10.9	7.7	--	39	65	60	107	198	152	12	37	16	2	131	5
Portland, Oregon (U)	86	81	77	84	62	46	10.4	7.2	61	22	69	67	69	229	152	3	7	29	8	22	0
St. Louis, Missouri, Lambert Field AP	80	67	69	85	61	57	10.0	7.3	45	49	69	103	104	158	107	8	43	11	42	98	2
Salt Lake City, Utah AP	80	69	67	46	22	16	7.4	9.4	71	48	82	134	106	125	86	17	35	10	76	137	3
San Francisco, Cal. (U)	--	a69	--	--	a74	--	6.8	11.2	47	54	65	---	---	---	67	0	2	--	1	*	0
Seattle, Wash. (U)	85	80	73	84	62	46	7.8	7.2	65	28	63	71	93	201	151	3	6	--	2	15	0
Spokane, Wash. AP	88	87	80	54	34	20	7.9	7.7	56	26	82	89	89	187	118	19	11	46	30	145	5
Washington, D.C. Nat'l.	73	57	62	77	53	63	10.7	8.5	78	47	64	102	106	157	115	5	31	15	30	73	0

U indicates urban site.
* less than one-half.

T Trace, an amount too small to measure.
\- No record

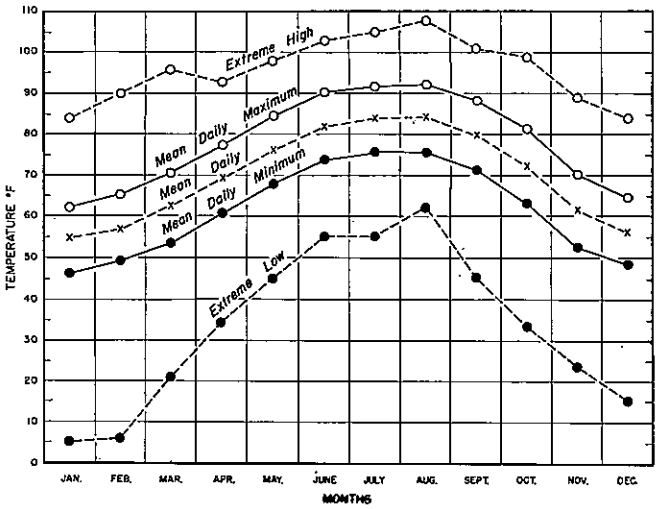
a Relative Humidity computed at NOON(LST).

Fastest mile is the speed of the wind recorded in the shortest time on an automatic recording wind instrument.
Clear day averages 0-3 tenths sky cover, partly cloudy 4-7 tenths, and cloudy 8-10 tenths.

Source: Local Climatological Data, 1961 Annuals.
Normals 1931-1960.

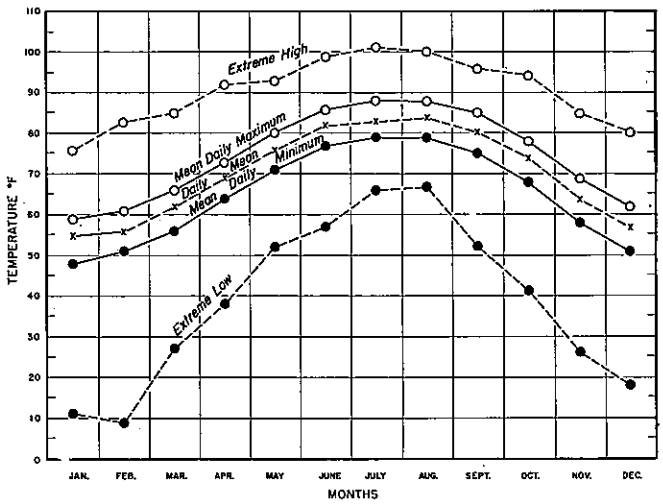
Degree days are based on a daily average of 65°F.
Heavy Fog: Includes data referred to at various times in the past as "dense" or "thick". The upper visibility limit for heavy fog is 1/4 mile.

GRAPH E - MONTHLY TEMPERATURES
Houston, Federal Office Building



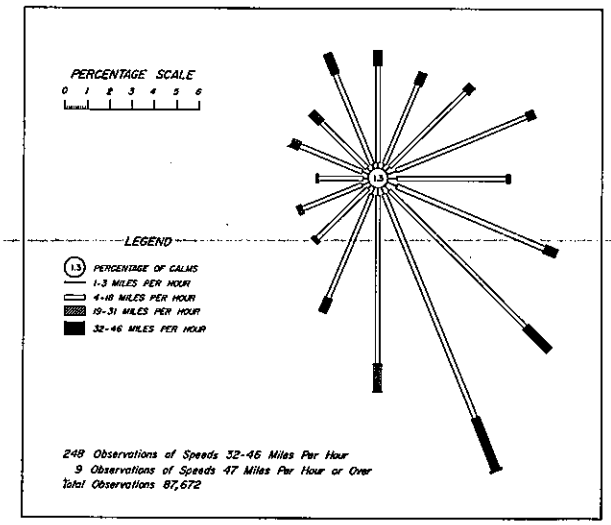
Graph E - Period of Record - Maximum, Minimum, and Mean Temperatures 1931-1960 (Normals). Extreme High and Low values 1881-1960.

GRAPH F - MONTHLY TEMPERATURES
Galveston, Post Office Building



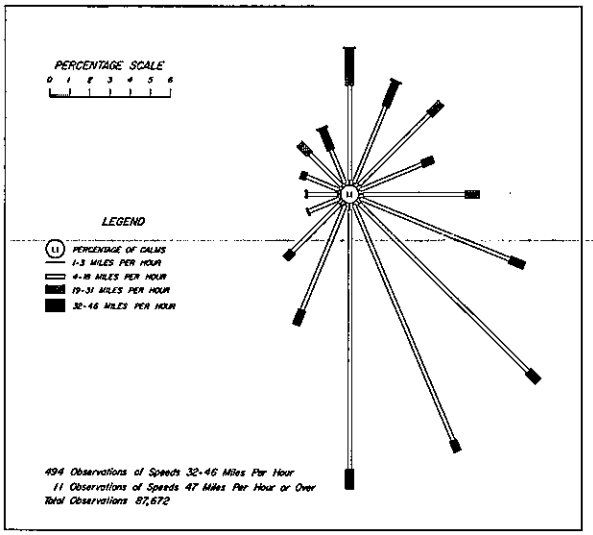
Graph F - Period of Record - Maximum and Minimum, 1874-1960; Mean, 1931-1960 (Normals). Extreme High and Low, 1871-1960.

GRAPH G - ANNUAL SURFACE WIND ROSE
Houston, International Airport



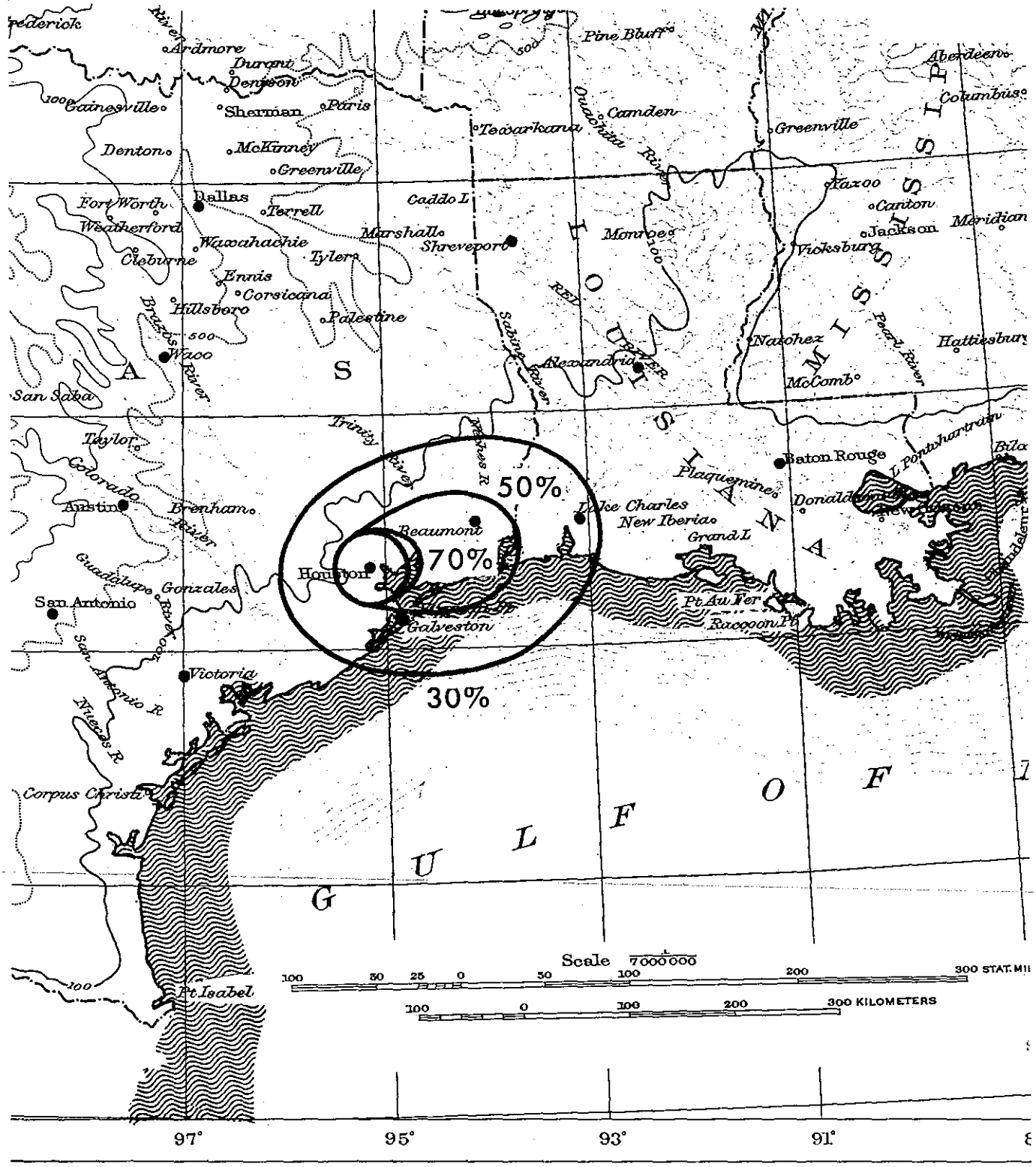
Graph G - Period of Record - January 1951 - December 1960. Annual values from Table 20.

GRAPH H - ANNUAL SURFACE WIND ROSE
Galveston, Municipal Airport



Graph H - Period of Record - January 1951 - December 1960. Annual values from Table 20.

Probability of Fallout Debris Deposition, Houston-Galveston Area



This chart shows the percentage probability of fallout during the first 12 hours following the detonation of a nuclear weapon, at various distances and directions from the point of detonation. The fallout probability pattern is shown with Houston Weather Bureau City Office as "ground zero", but the pattern can be applied to any assumed target in the Houston-Galveston Area.

Each chart is based on annual averages, and the probability curves are identified by percentages. The 50 percent curve means that, along the curve, there is a 50 percent probability the area will receive atleast some fallout within 12 hours of detonation of a nuclear weapon. The other percentage curves are read in the same manner. The circle in the center of the pattern represents a probability of fallout deposition that is greater than 95 percent.

Source: GRAPHS A & B - "Probability of Fallout Debris Deposition", prepared by the Office of Civil Defense Mobilization, June 1957 (Reprinted in 1961).

SMOKE SOURCES:

A heavy industrial area lies along the upper extremity of the Houston Ship Channel in the northeastern quadrant from the Houston International Airport. This area contains numerous refineries, chemical plants, a paper mill and a cement plant. Surface visibility at the Airport is almost always restricted to some extent when surface winds blow from the northeastern quadrant. The visibility is restricted frequently to less than 3 miles when light winds are from the north-northeast to east-northeast and under the same conditions reach much lower values if a shallow temperature inversion is present. Occasionally visibilities are restricted slightly by smoke from the industrial area of Texas City, 30 miles to the southeast; however, values below 4 miles rarely occur from this source alone. Smoke pollution from downtown and residential sections of the city is of little consequence since natural gas is used almost exclusively for heating purposes.

FOG AND LOW CEILING:

Fogs and low ceilings occur frequently from about October 15th to May 1st, January being the month of most frequent occurrence. Ground fog alone occurs most often during October and November, but during the winter and spring months low stratus is very commonly associated with fog formation. The ideal condition for the formation of fog results when gradient winds are gentle and oriented from 160 to 200 degrees. Warm pre-frontal fogs, resulting in near zero conditions occur during the winter and spring when warm fronts advancing northward over the Gulf of Mexico move within 100 to 150 miles of the station.

Galveston Municipal Airport does not have a smoke restriction problem, and the only smoke-source in the area (Texas City) is included in the Houston map.

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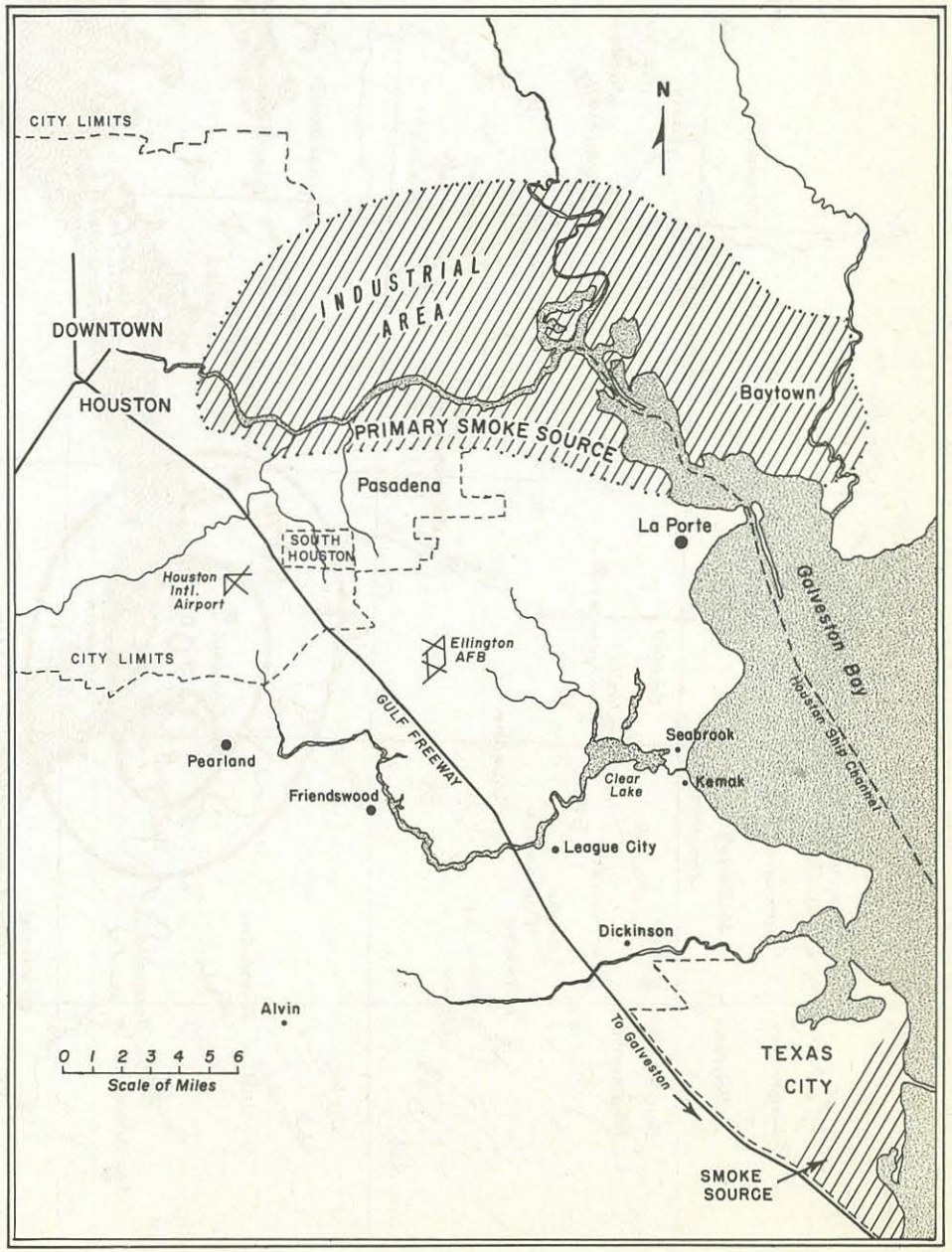
SMOKE SOURCES

HOUSTON INTERNATIONAL AIRPORT