

OCTOBER 1981

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NUMBER 10

STORM DATA



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NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

ENVIRONMENTAL DATA AND
INFORMATION SERVICE

NATIONAL CLIMATIC CENTER
ASHEVILLE, N.C.

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REFERENCE NOTES

† Storm damage categories are from	*	Miles instead of yards
1 to 9 as follows:	**	Yards instead of miles
1 Less than \$50	°	Includes crop damage
2 \$50 to \$500	@	Includes heavy sleet storm
3 \$500 to \$5,000	#	Freezing drizzle and freezing rain, commonly known as glaze
4 \$5,000 to \$50,000	#	Not received or incomplete
5 \$50,000 to \$500,000		
6 \$500,000 to \$5 Million		
7 \$5 Million to \$50 Million		
8 \$50 Million to \$500 Million		
9 \$500 Million to \$5 Billion		

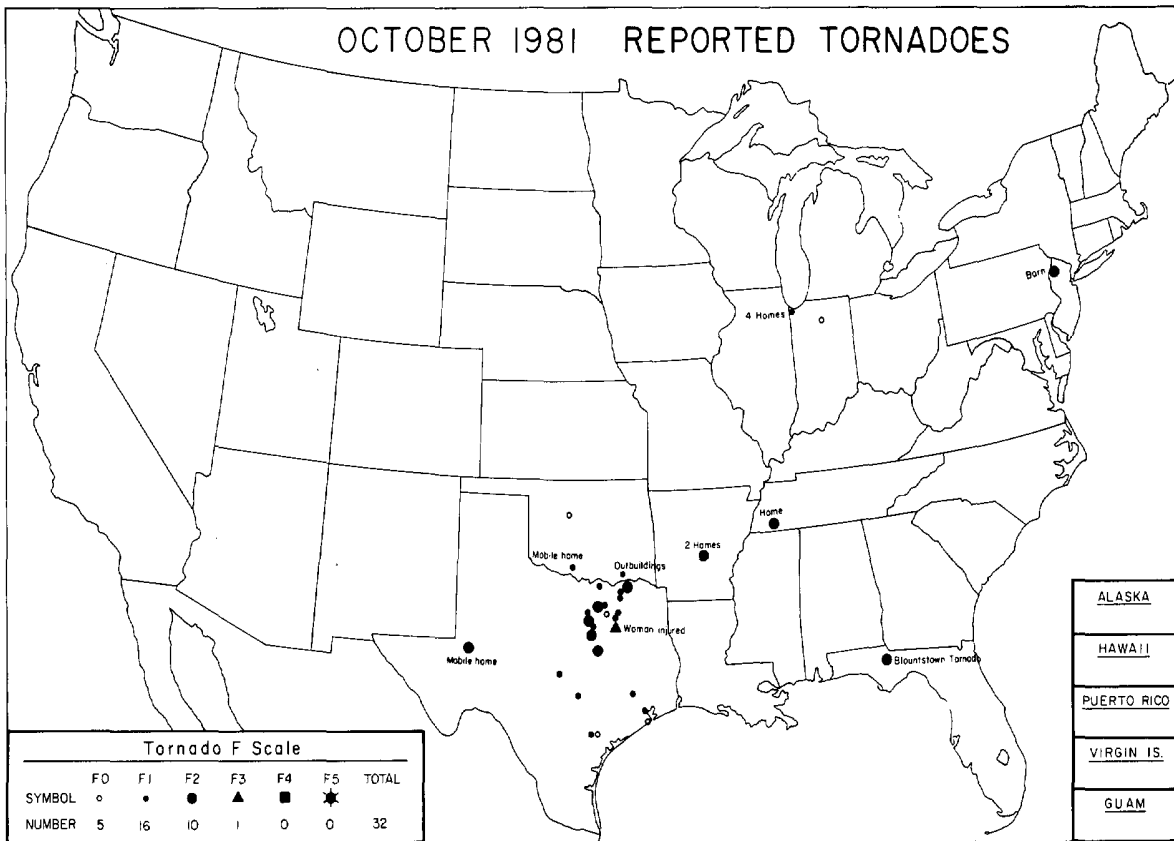
"F" SCALE DEFINITIONS

0 =	40-72	MPH	Breaks branches off trees; signboards damaged.
1 =	73-112	MPH	Peels surface off roofs; trailer houses pushed or damaged.
2 =	113-157	MPH	Tears roofs off frame houses and outbuildings; cars blown off highway.
3 =	158-206	MPH	Windows of skyscrapers smashed; frame houses destroyed; cars lifted off ground.
4 =	207-260	MPH	Skyscrapers twisted; frame houses leveled; cars blown some distance.
5 =	261-	MPH	or greater.

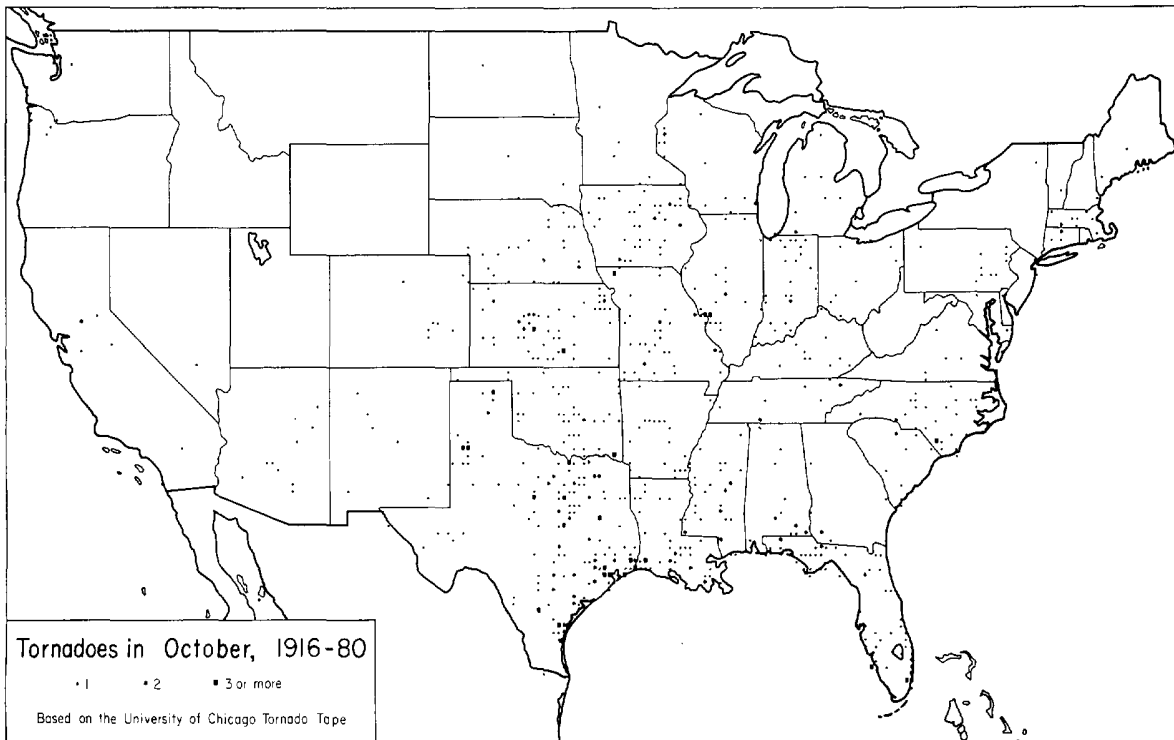
NOTE: This publication contains our best information on storms but, due to the difficulties inherent in collection of this type of data, it is not all-inclusive. Late Reports and Corrections will be carried quarterly.

STORM DATA - (USPS 363-010) is published monthly. Subscription, pricing, and ordering information is available from: Publications Section, The National Climatic Center, Environmental Data and Information Service, NOAA, Federal Building, Asheville, NC 28801.

OUTSTANDING STORMS OF THE MONTH



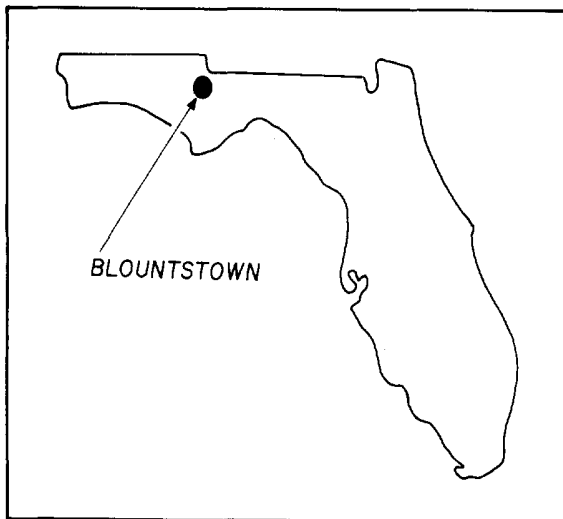
● TYPED REPORT RECEIVED			◐ PRELIMINARY REPORT RECEIVED			○ NO REPORT RECEIVED			(N) northern	(E) eastern	(C) central
									(S) southern	(W) western	(O) coastal
● 1AL	● 5CO	● 10ID	● 15KY	● 20MI	● 25NE	● 30NY(O)	● 33OH	● 37RI	● 41TX(S)	● 45WA	● 50HI
● 2AZ	● 6CT	● 11IL	● 16LA	● 21MN	● 26NV	● 30NY(C)	● 34OK	● 38SC	● 41TX(W)	● 46WV	● 51PR
● 3AR	● 7DE	● 12IN	● 17ME	● 22MS	● 27NH	● 30NY(W)	● 35OR	● 39SD	● 42UT	● 47WI	● 52VI
● 4CA(N)	● 8FL	● 13IA	● 18MO	● 23MO	● 28NJ	● 31NC	● 36PA(E)	● 40TN	● 43VT	● 48WY	● 53GU
● 4CA(S)	● 9GA	● 14KS	● 19MA	● 24MT	● 29NM	● 32ND	● 36PA(W)	● 41TX(N)	● 44VA	● 49AK	



1. BLOUNTSTOWN TORNADO (F2) in Florida on October 25

A thunderstorm with 37,000' top spawned a tornado in Blountstown, Fla., causing \$2,000,000 damage to the town of 2,500 population. The tornado was on the ground for less than 5 minutes and the Apalachicola radar had no indications of a tornado or severe weather. Eleven persons were injured and 75 houses were damaged.

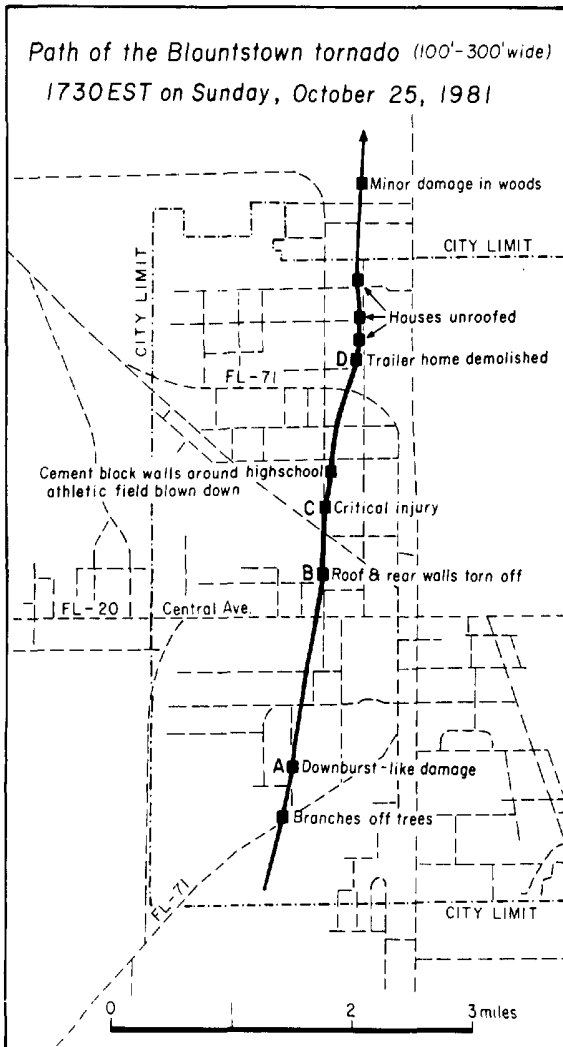
---- Tornado map and photos by Fred Cramer, National Weather Service Office at Tallahassee; Data supplied by Glenn Taylor, Nat. Hurricane Center, Coral Gables.



D. Trailer home demolished



C. Critical injury in this house

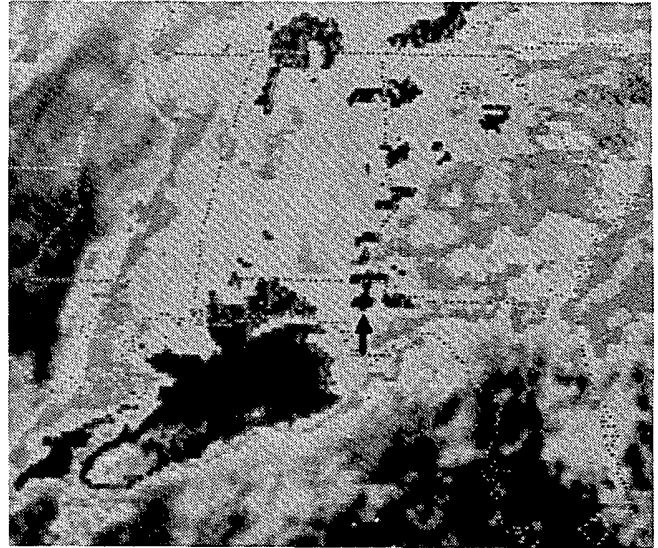
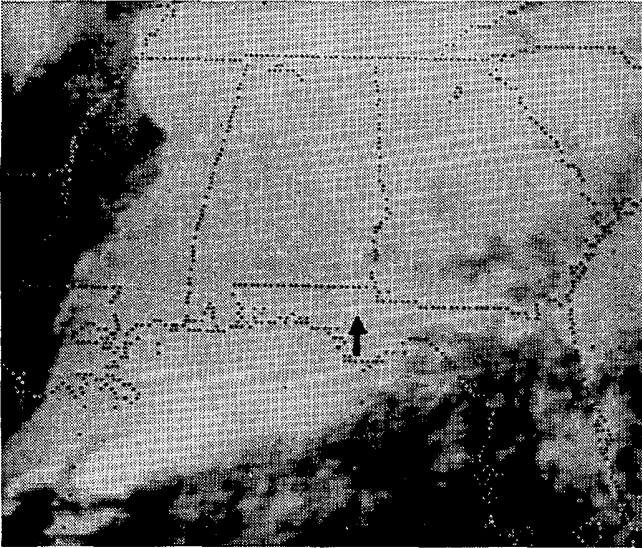


B. Roof and rear walls torn off



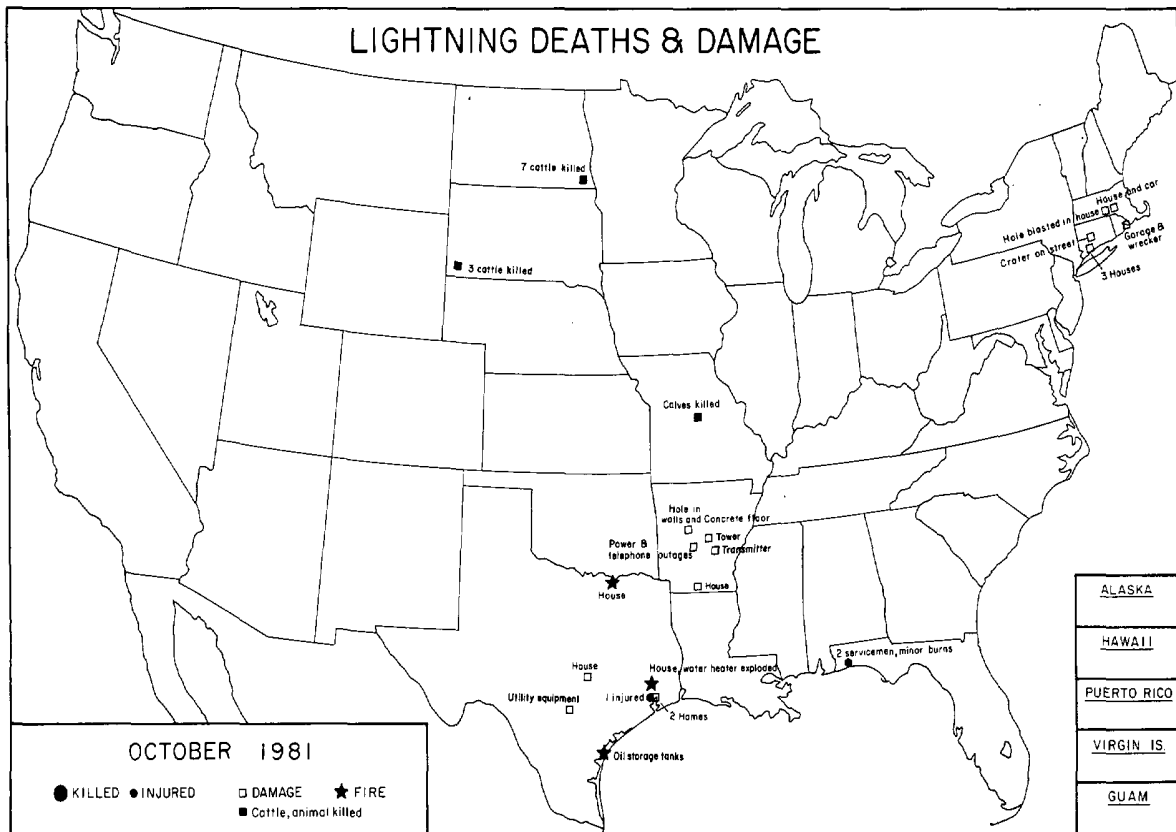
A. Downburst-like tree damage

BLOUNTSTOWN TORNADO --- Continued



The satellite picture (above left) is a regular infrared image taken at 1730 EST on October 25 when the Blountstown tornado was in progress. The arrow in the Florida Panhandle points toward the tornado-bearing cloud which is very small. The picture at right was made by enhancing the same image shown on the left. The -60°C anvil area is printed black. Cold overshooting tops inside the anvil area are shown with grey to white (very cold) tones. The temperature of the tornado-bearing cloud is about -60°C. ---Photos supplied by NESS.

LIGHTNING DEATHS AND DAMAGE IN OCTOBER

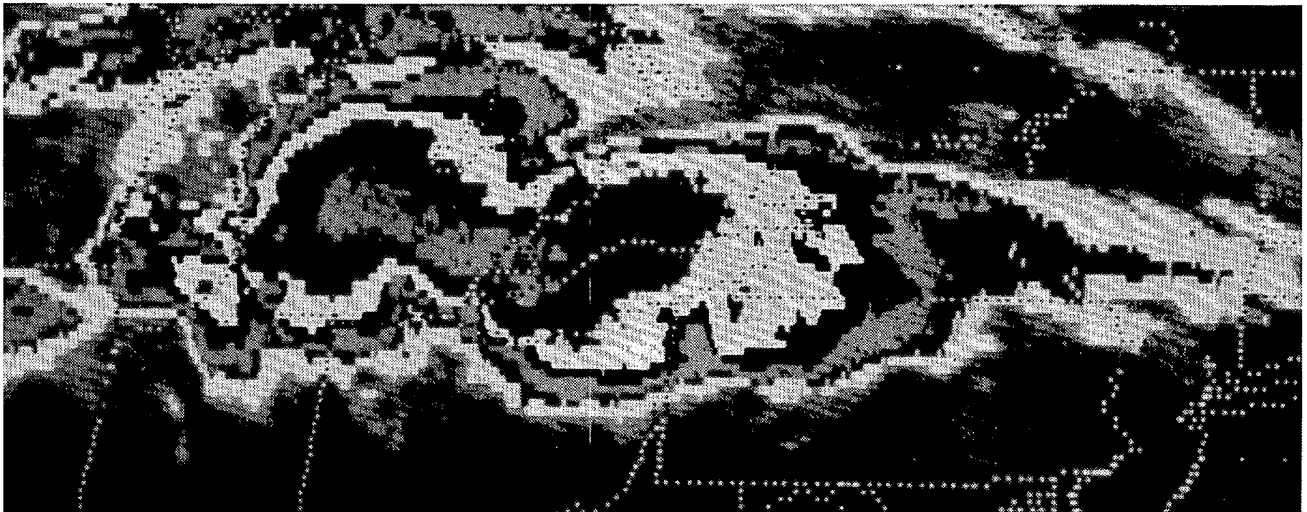
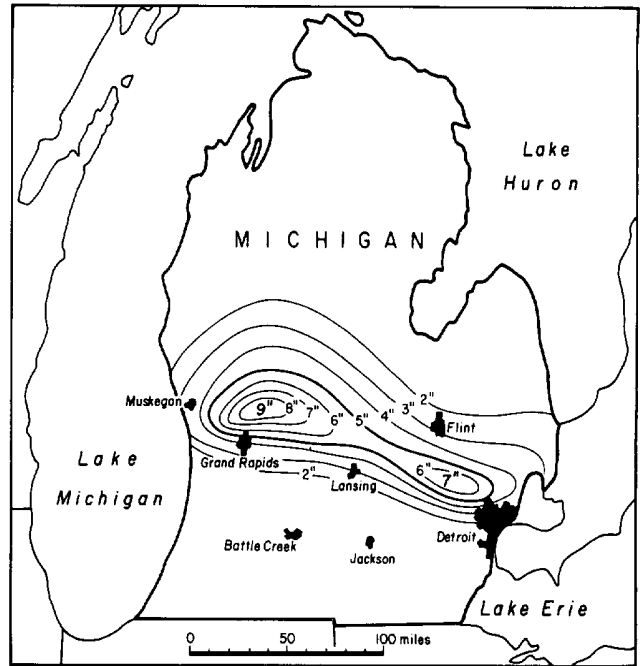


As the map above shows, there were no lightning related deaths in October although numerous livestock perished. Injuries, only 3, were also at a minimum.

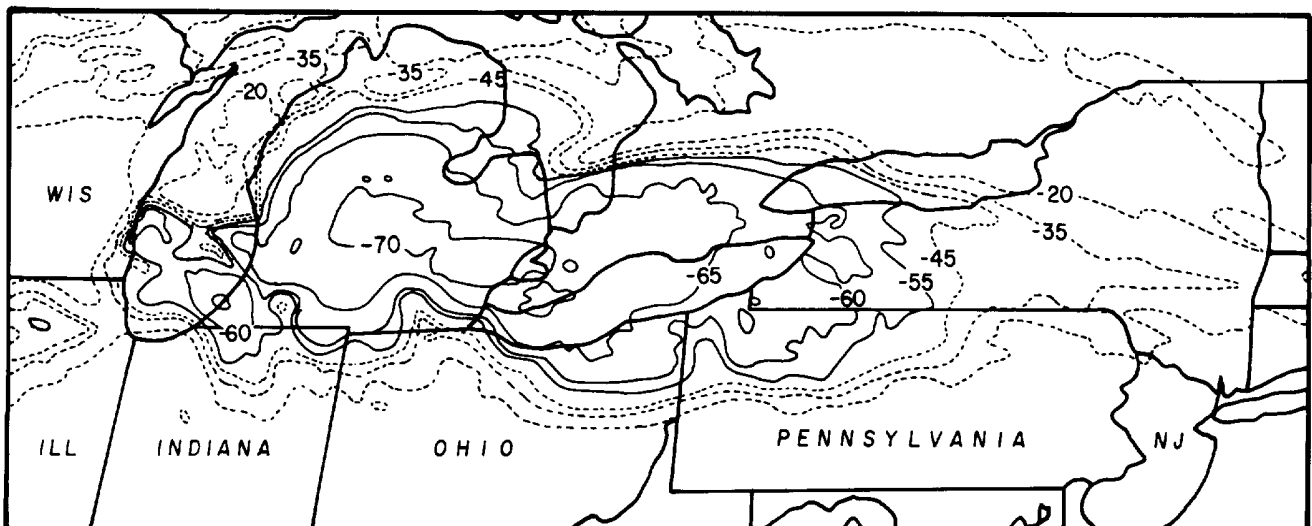
2. MICHIGAN FLASH FLOOD of October 1

Flooding caused by pre-dawn heavy rains over central Michigan on October 1, resulted in one man being drowned and a driver injured. 500 persons were evacuated from homes and 60 were rescued from a flooded motel. The rainfall map (right) shows the heavy rain area extending over 100 miles. ---Rainfall map by NWS, Ann Arbor, Michigan.

An enhanced satellite picture (below) was taken at 2200 EST on September 30 when the heavy rains were in progress. The cloud-top temperature, colder than -70°C over the rain area, is depicted by isotherms on a corresponding map (bottom). ---Photo and map by Linwood Whitney, NESS.



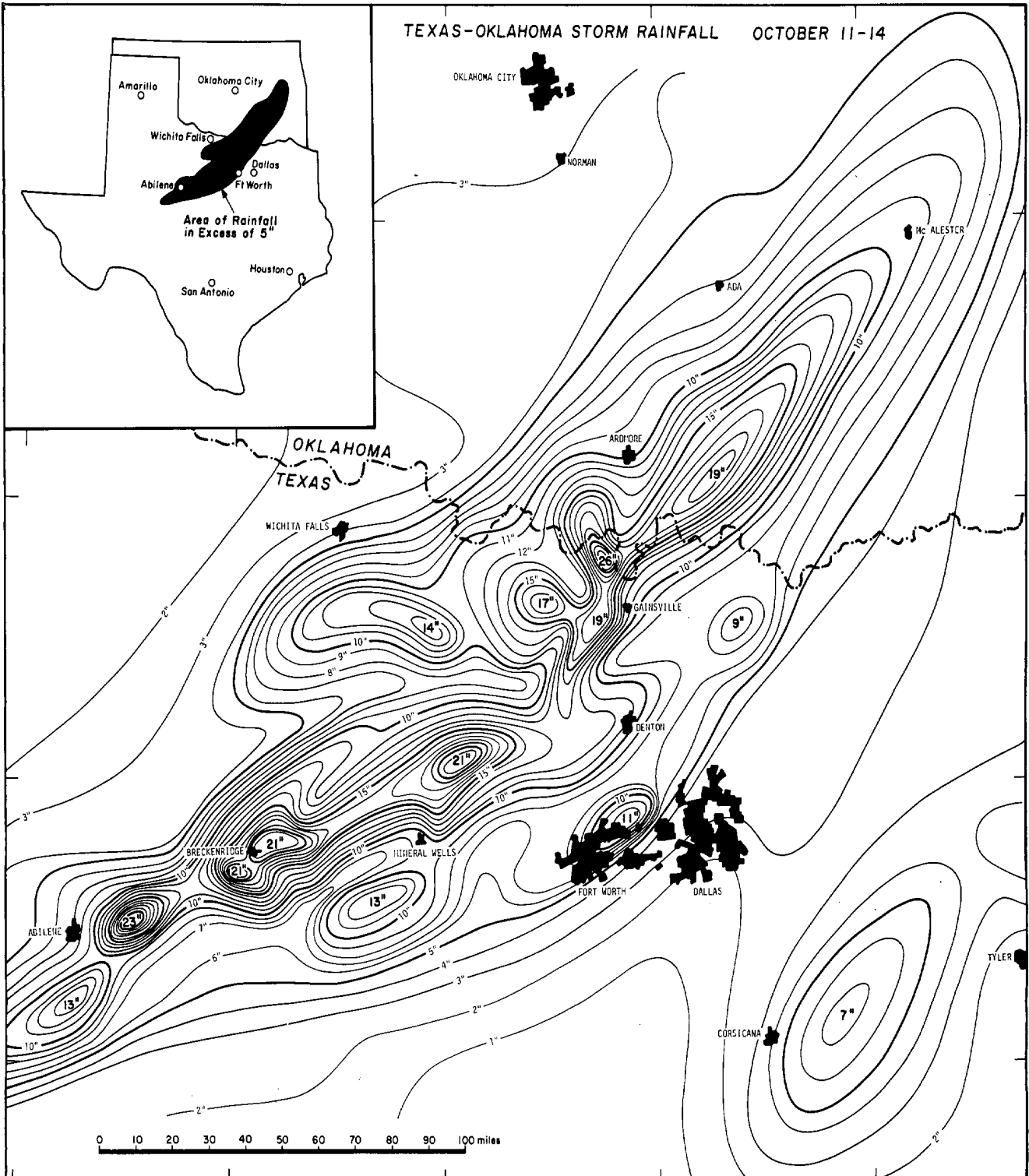
-20°C -35 -45 -55 -60 -65 -70 -75°C



3. TEXAS-OKLAHOMA FLOOD on October 11-14

Heavy rains in Texas started late at night on the 11th while Hurricane Norma was heading toward the Pacific coast of Mexico. The rain and subsequent flash floods continued as decaying Norma moved northeastward over the Mexican plateau. On the 13th yet more rain fell as the remnants of Norma entered Texas. 13 tornadoes also occurred in the area on this date. There were 7 flood related deaths from the storm, 5 in Texas and 2 in Oklahoma.

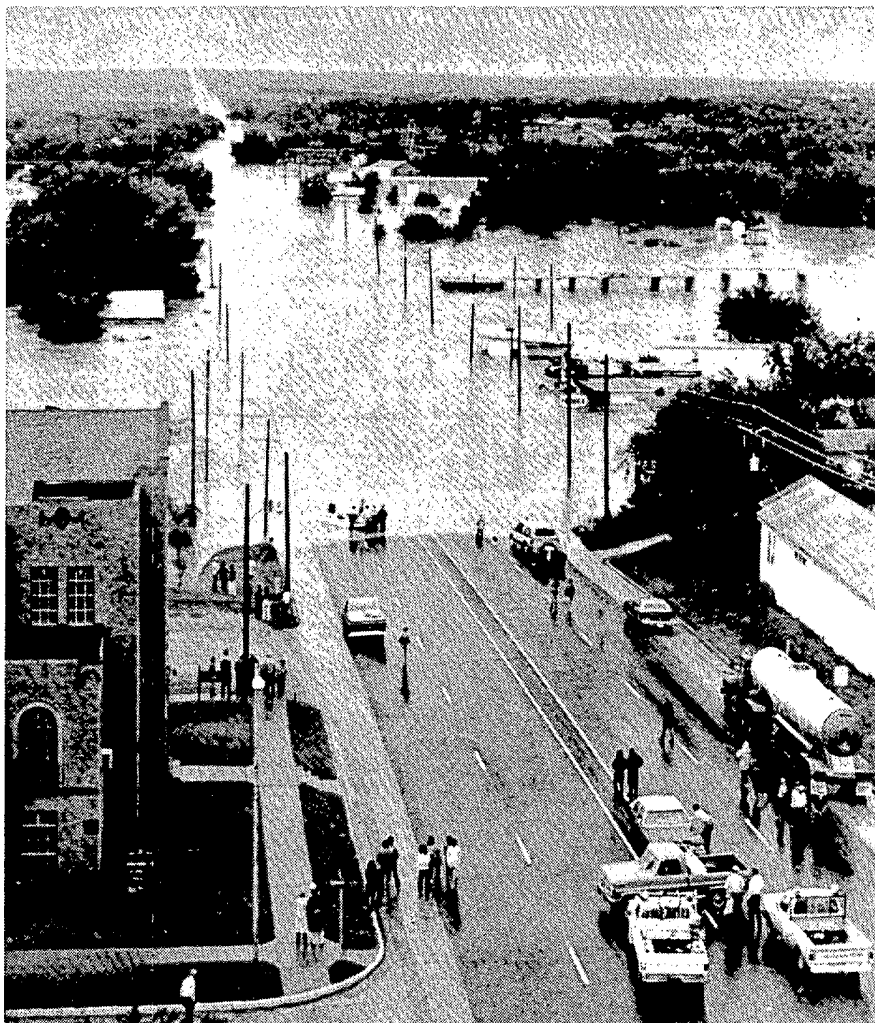
The map below shows the rainfall pattern of the three day deluge. The heaviest precipitation fell in a band from just southwest of Abilene, TX. to McAlester, OK. The largest amounts fell in isolated pockets of up to 26". ---Rainfall data supplied by NWS offices at Oklahoma City, OK. and Ft. Worth, TX. Data includes a special bucket survey conducted by the NWS Southern Region. Data from Harold McCrabb.



TEXAS-OKLAHOMA FLOOD --- Continued

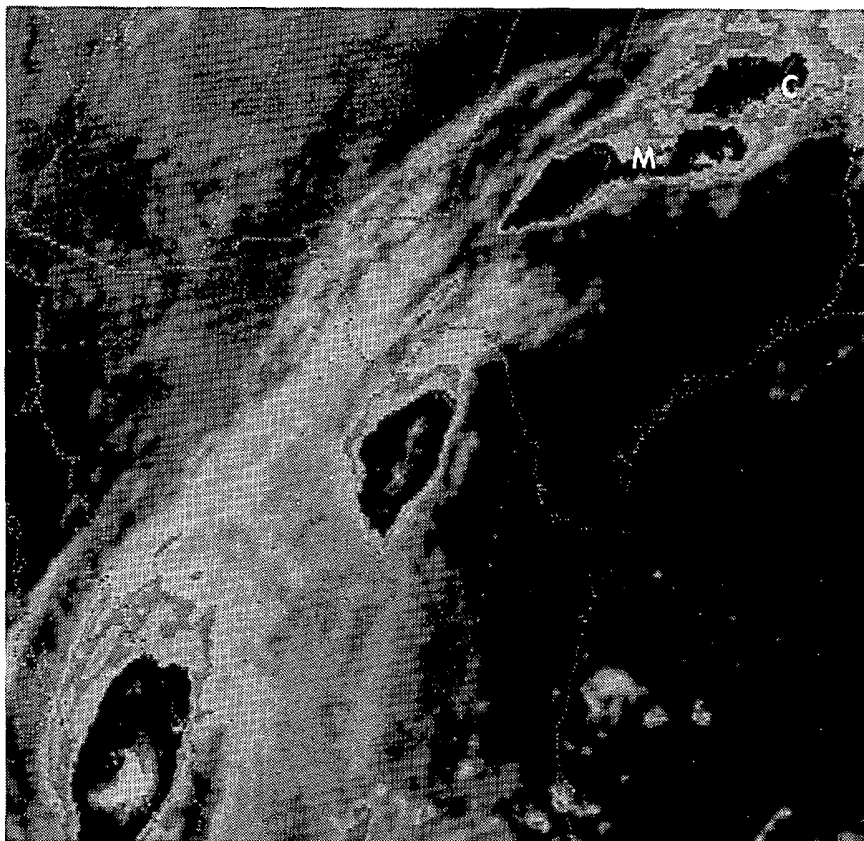
The photos on this page show the floodwaters which engulfed the town of Breckenridge, TX. on October 13. As much as 21 inches of rain had fallen in the immediate area (see map on previous page) causing the Gunsoles Creek, which cuts through the town, to produce its worst flood in history.

The picture at right was taken from a bank building looking east along Highway 180, the main road through town. Flood victims and other onlookers are shown watching rescue operations conducted by motorboat. Here, waters had crested at 9 feet above the bridge which crosses the creek.

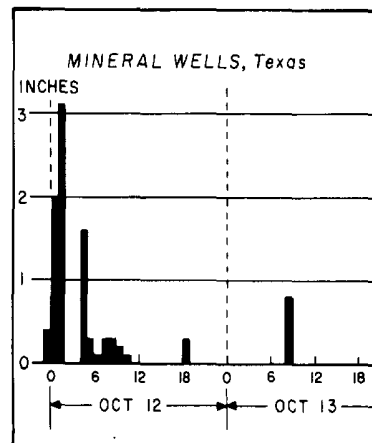
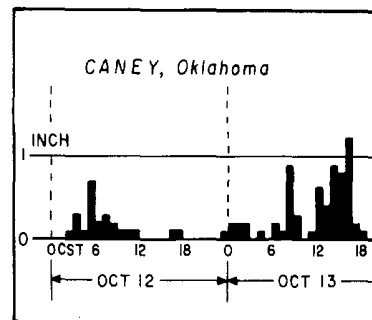


At left, a driver is rescued from his car after it was washed off the road by the floodwaters of Gunsoles Creek. The man escaped uninjured thanks to quick action on the part of rescue personnel whose efforts were rewarded by only 2 injuries and no fatalities having occurred in the area. ---Both photos courtesy of The Bridgeport American.

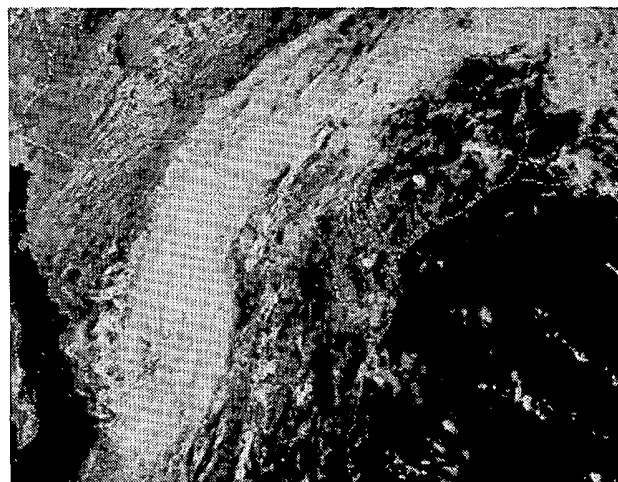
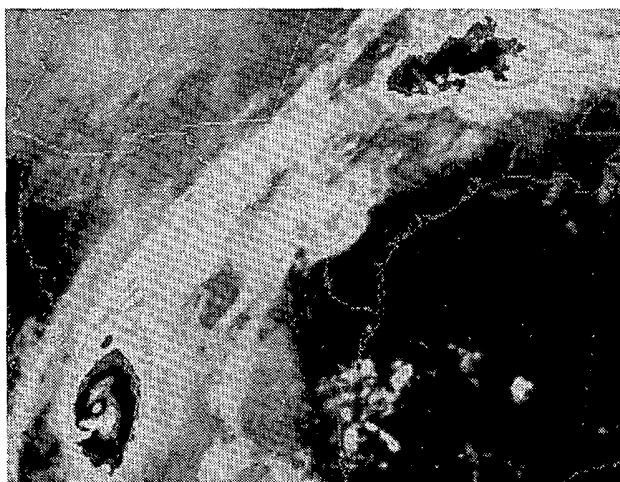
TEXAS - OKLAHOMA FLOODS --- Continued



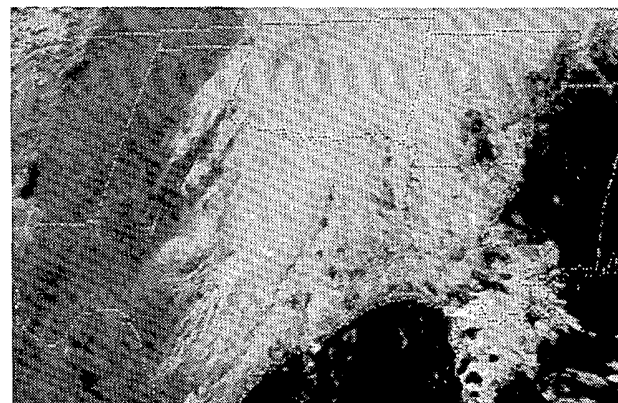
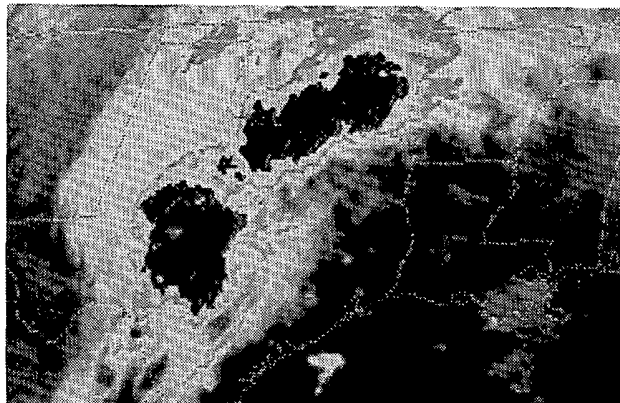
HOURLY PRECIPITATION



Infrared photo (left) at 0000CST Oct.12 when Hurricane Norma was approaching the Pacific coast of Mexico. Heavy rain at Mineral Wells (right) started.

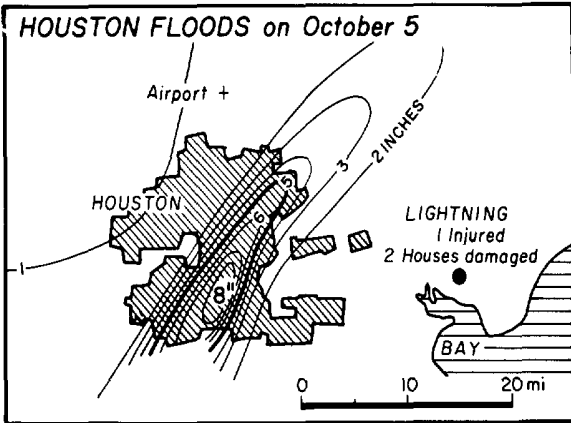


IR photo at 0600CST Oct.12 (left) and visible photo at 1530CST Oct.12 (right)



IR photo at 0300CST Oct.13 (left) and visible photo at 1130CST Oct.13 (right). Satellite photographs were supplied by NESS, World Weather Building.

4. HOUSTON FLOODS on October 5



Heaviest rainfall of 8.2 inches was measured a few miles southeast of downtown Houston, Texas. Widespread urban flooding occurred in the metropolitan area.

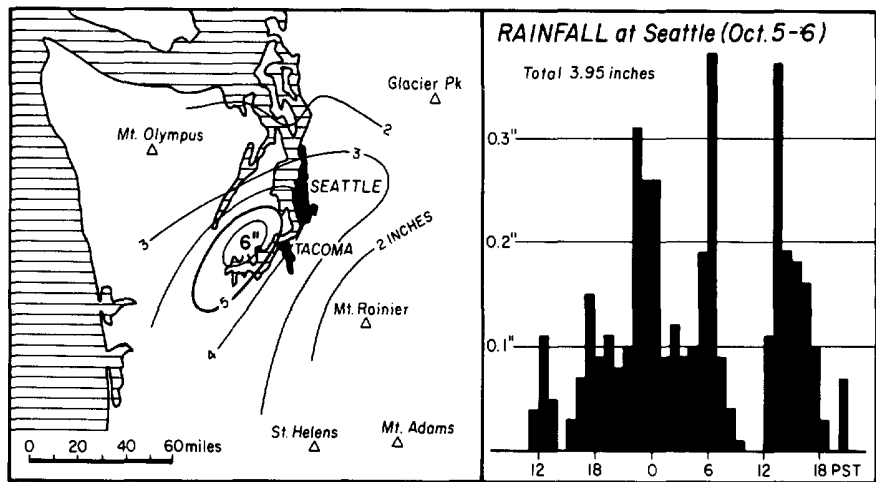
Lightning damaged interior of 2 houses at Baytown east of Houston. A person standing by his car was thrown several feet into the air by the discharge impact.

Data supplied by NWS San Antonio, Texas.

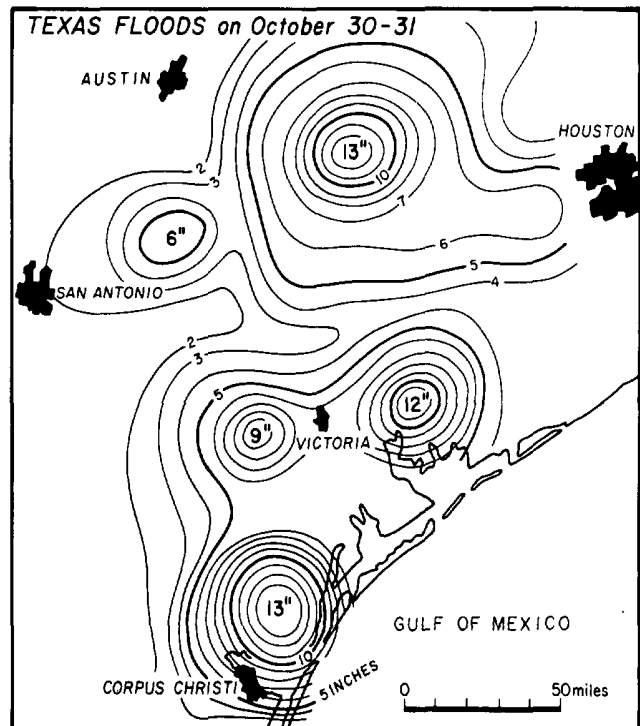
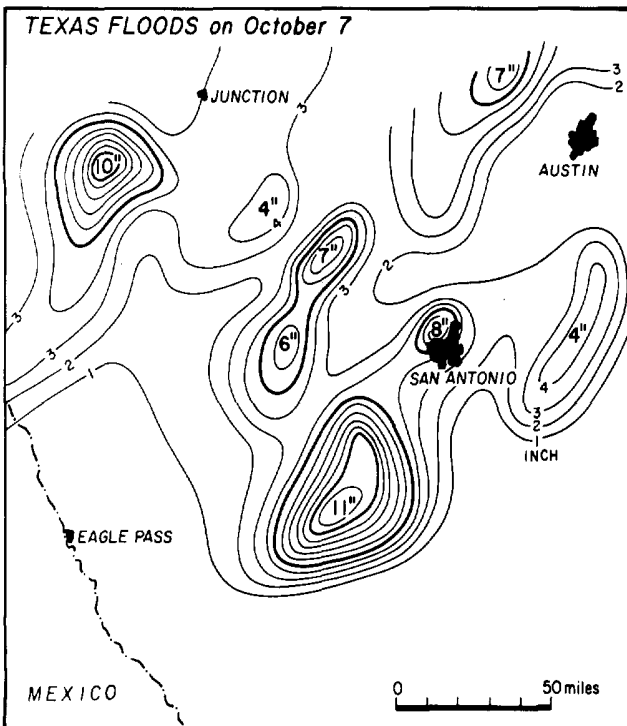
5. SEATTLE-TACOMA RAINFALL on October 5-6

Seattle-Tacoma area received 4 inches of rain on October 5 to 6. No damage was reported from the affected area. The rainfall, however, was rather unusual in the area.

Data supplied by NWS Seattle, Washington

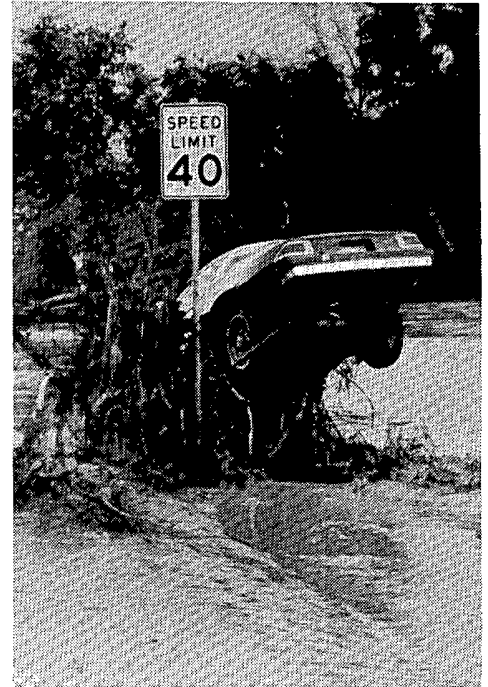
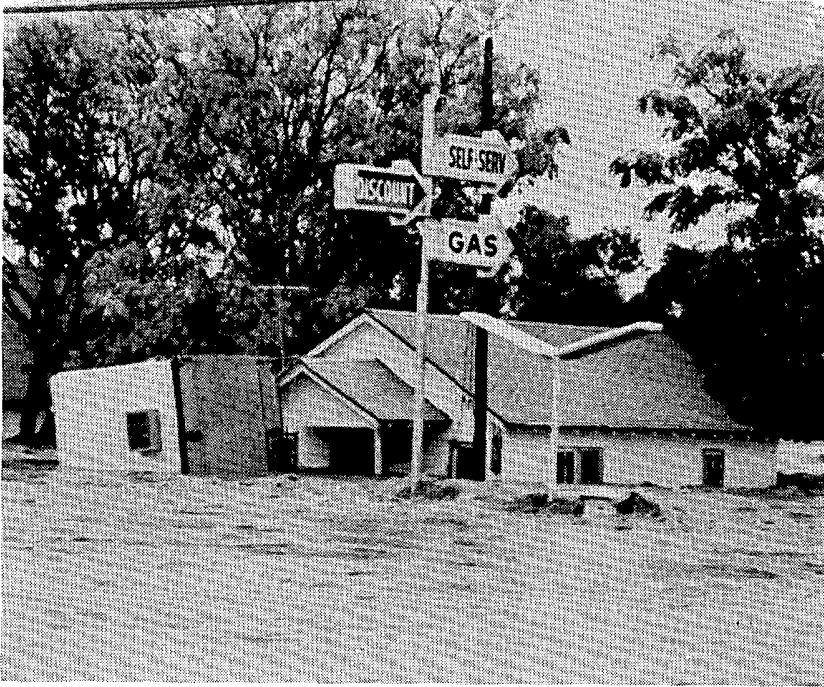


6. FLASH FLOODS IN TEXAS on October 7 and 30-31



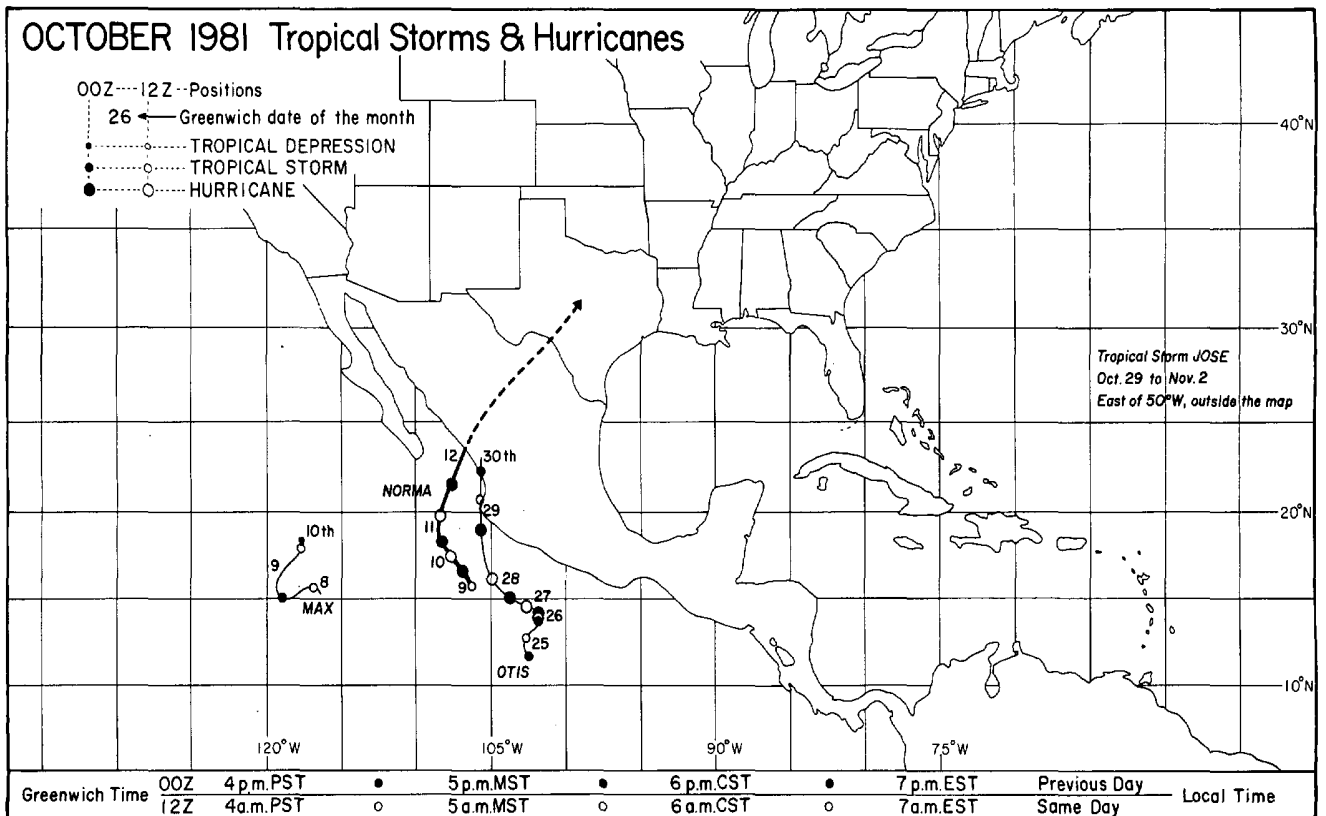
Flash floods on October 7 flooded the streets north and west sides of San Antonio (left). On October 30-31, three centers of 12"-13" rainfall occurred in southern Texas (right), causing floods. Data supplied by NWS San Antonio.

7. SPRINGTOWN, TEXAS FLOOD of October 31



Heavy rains of up to 10 inches caused severe flash flooding in Springtown, Texas on October 31. The picture (above left) shows a Springtown gas station with its pump nearly submerged by the fast-flowing floodwaters of Walnut Creek. A car (above right) that was lifted by the flood, was left suspended on power lines as the waters receded. ---Photos courtesy of the Springtown Epigraph.

TROPICAL STORMS AND HURRICANES



STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
1 ALABAMA ————— NONE REPORTED									
2 ARIZONA									
Phoenix Maricopa County	1	1430-1530MST			0	2	5	4	Thunderstorm Wind, Hail, Heavy Rain
A very severe thunderstorm with winds 60 to 65 MPH, extremely heavy rain and hail up to 3/4 inch diameter moved through the greater Phoenix area. There was extensive damage to roofs, power lines, mobile homes, trailers and trees. Two women were injured when their trailer was demolished. Nine airplanes were damaged at Scottsdale Airport. Lawns in some sections had a coating of hail. There was widespread flooding of streets and roads. The .68 inch of moisture in 5 minutes equalled the all time record for Phoenix.									
Phoenix Maricopa County	2	0230-0330MST			0	0	5	4	Thunderstorm Wind, Hail, Heavy Rain
The second severe thunderstorm within 12 hours hit the greater Phoenix area with heavy rain, strong winds and hail up to 1-1/2 inches diameter. There was considerable wind damage, street flooding and localized hail damage.									
Sedona Coconino County	2	Evening			0	0	5	4	Thunderstorm Hail, Heavy Rain
A severe thunderstorm with golf ball size hail damage or destroyed most of the apple crop in the area and damaged numerous automobiles. Heavy rain of over 2 inches caused flooding in the area. There were several rock and mud slides on the Oak Creek Canyon highway.									
3 ARKANSAS									
El Dorado - Union County	14	1030CST			0	0	2	0	Lightning
Lightning which struck residence, hit the roof, went through the ceiling and out the wall of the house.									
Little Rock - Pulaski County	17	1430CST			0	0	2	0	Lightning
Lightning struck tower on Ozark Point knocking out primary police radio channel until 2230CST.									
Brinkley - Monroe County	17	1610CST			0	0	0	?	Hail
Golf ball size hail.									
Hoc Springs - Garland County	17	1700CST			0	0	3	0	Lightning/Wind
Several electrical power and telephone outages caused by lightning and winds. Pea-size hail also was reported.									
2 Miles South of East End - Saline County	17	1805CST	1/2	100	0	0	4	0	Tornado (F2)
Tornado on ground about 75 percent of path demolished a mobile home, caused extensive damage to two homes and a gasoline station, and caused light damage to 15 homes.									
England Area - Lonoke County	17	1900CST			0	0	4	0	Thunderstorm/ High Winds
Winds from thunderstorm demolished two tool sheds and a tractor shed and damaged cotton pickers and trailers at two implement shops, downed a 90 foot radio tower and broke windows in two trucks.									
Danville - Yell County	25	1420CST			0	0	4	0	Lightning
Lightning attracted by two radio antennas entered a U.S. Forest Service building burning a hole in exterior wall, burning out wall electrical outlets, knocking light fixtures from ceiling and leaving hole in concrete floor with an estimated \$6,000 in damages to building and equipment.									
Redfield - Jefferson County	25	0737CST			0	0	3	0	Lightning
Television Station (KATV) was off the air for 90 minutes after lightning struck transmitter.									
4 CALIFORNIA, Northern									
Entire Area	27- 28				0	0	5	0	Winter Storm
Major winter storm affected a large part of Northern and central California. High winds blew down fences, trees and some power lines. Heavy snows fell in the Sierra Nevada with some locations reporting 2 to 4 feet at higher elevations.									
Northern coast and Central coast to Santa Cruz	29	unknown			0	0	?	0	Heavy surf
Swellis up to 20 feet moved onshore along the Northern and Central California coast.									
4 CALIFORNIA, Southern									
Kern County	1	1700PST			0	0	0	0	Heavy Rain
Kern County Fire Dept. reported Interstate 58 closed due to flooding.									
	1	1730PST			0	0	0	0	Heavy Rain
Death Valley reported flooding south portion of the Park.									
Orange County	30	unknown			1	0	0	0	High Winds
Strong Santa Ana Winds caused a freak accident on the San Diego Freeway in Fountain Valley. Wind gust caused an off duty police officer to lose control of his motorcycle, crash and was killed.									
San Diego County	31	In forenoon			0	0	0	0	High Winds
Cleveland National Forest dispatcher reported 60 to 70 mph winds. 61 mph winds reported at Warm Springs.									
	31	1015PST			0	0	0	0	High Winds
San Diego Highway Patrol reported Interstate 8 closed due to winds up to 70 mph.									
5 COLORADO									
Mesa, Delta Counties	4-5				0	0	0	0	Heavy Snow
A storm dumped 6 to 15 inches of snow on Grand Mesa. At lower elevations, heavy rain caused some street flooding.									
Mountains	12-13				0	0	0	0	Heavy Snow
18 inches of snow fell in the San Juan Mountains near Rio Grande Reservoir in Hinsdale County. 5 to 10 inches of the white stuff blanketed many mountain areas, causing problems for thousands of hunters.									
Central and Southwestern Colorado	15-16				0	0	3	0	Heavy Snow
Heavy wet snow snapped power lines in Chaffee County, causing numerous power outages. 5 inches of snow piled up in Buena Vista, with 4 inches at Salida. Many tree limbs were broken by the weight of the snow. 6 to 10 inches of snow fell in the San Juan Mountains; farther north, 9 inches were measured at Breckenridge.									
Boulder County	23	2230			0	0	0	0	High winds
Wind gusts of up to 70 mph were recorded at Wondervu, in the foothills southwest of Boulder.									
Larimer, Boulder Counties	29	evening			0	0	0	0	High winds
Strong winds buffeted the northern Front Range foothills, with gusts of 50 mph west of Fort Collins and 55 mph in south Boulder.									
Mountains and Foothills	29-30				0	0	0	0	Heavy snow
A storm dumped 12 to 14 inches of new snow on Grand Mesa, west of Grand Junction, on the 29th; the storm moved east, and by late evening of the 30th, 4 to 8 inches had buried the eastern foothills near Denver and Colorado Springs.									
6 CONNECTICUT									
Stratford	1	1700 EST			0	0	3	0	Lightning
Three houses were hit and sustained minor damage.									
Prospect	2	1300 EST			0	0	3	0	Lightning
Lightning punched out a crater on a city street and was apparently conducted through a water main and into several buildings causing vibration and leaks. Another hit blew up a well pump, damaged a house roof, tore off a television antenna and struck a house furnace next door.									
7 DELAWARE ————— NONE REPORTED									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
8 FLORIDA									
Broward County	4	0705EST			0	0	0	0	Waterspout
	A waterspout was observed by the Coast Guard east of Atlantic Boulevard in Pompano Beach. The waterspout was about stationary.								
Calhoun County	25	1630CST	6	50	0	12	6	0	Tornado (F2)
	A tornado touched down on the southwest side of Blountstown near Highway 71 and moved along a nearly straight south-co-north line for about 6 miles. The path ended on the north side of town just west of Highway 69. The width of damage along the path varied between 100 and 300 feet, mostly toward the lower end of that range. A total of 75 houses were damaged. Of this total, 50 houses sustained minor damage, 22 had moderate to heavy damage, and 3 houses were totally destroyed. Also, the highschool football stadium was destroyed, including the press box, bleachers and a cement-block fence around the stadium. Numerous trees were blown down along with power and telephone lines. The tornado funnel was observed by numerous persons, and the typical roaring sound similar to a freight train was reported.								
	Twelve persons were injured, and the most serious injury was a broken leg. Total damage was estimated at around \$2,000,000. The tornado reportedly did all of this damage in less than five minutes								
	A cold front, which had become stationary across central Florida the day before, moved back northward with associated thunderstorm activity and was in the Blountstown area when the tornado occurred.								
Santa Rosa County	25	Afternoon			0	2	0	0	Lightning, severe thunderstorms
	A bolt of lightning struck near an Army Medical Corps tent at Choctaw Field off State Road 87 near the Santa Rosa-Okealoosa County line injuring two servicemen. The men, who suffered minor burns, were participating in joint Army-Air Force-Marine Corps-Navy war games on the Eglin AFB Reservation at the time. This incident was associated with widespread severe thunderstorm activity in the Florida Panhandle.								
9 GEORGIA ————— NONE REPORTED									
10 IDAHO ————— NONE REPORTED									
11 ILLINOIS									
Central and Eastern Illinois	05	1700 to 1930 CST			0	0	4	3	Wind
	Strong winds as high as 82 knots caused scattered damage to several homes, out buildings, and trees in central and eastern Illinois. At 1715 CST a wind gust of 82 knots was recorded at the Bloomington Airport in McLean County. A 70 knot wind was reported in Petersburg, Menard County, damaging several homes in the area. The Champaign-Urbana Airport reported a 55 knot gust at 1900 CST. The Farmersville area in Montgomery County reported high winds which damaged sheds, ripped doors off a machine shed, bent the top of a grain auger, and flattened several acres of corn. Several tree limbs were blown against power lines in Nashville, Washington County, causing power failures.								
Northern and Southern Illinois	17	1630 to 2000 CST			0	0	4	1	Wind
	Powerful winds accompanied by thunderstorms moved southeast across the state during the afternoon and evening hours. Scattered wind damage occurred mainly in the north and southern areas. East of Paw Paw, Lee County, the wind collapsed a garage wall and ripped off a section of a house roof. At 1955 CST the strong winds damaged trees at the SIJ-Carbondale Airport, Jackson County, and caused power failures.								
12 INDIANA									
East Chicago, Lake City, Indiana	17	2040CST	--	--	0	0	4	0	Tornado (F1)
	Witnesses indicated a loud roaring noise was heard at time of storm and visibility near zero in heavy rainfall. Approximately a five-block square area was affected. Power outage, power lines down, numerous and various size tree limbs and other debris. One garage destroyed a car. Four homes had their roofs removed. A car was damaged. Franklin High School had extensive roof damage.								
Plymouth Marshall County	17	2200EST	--	--	0	0	3	0	Wind Damage
	Mobile home damaged.								
INDIANA									
3E Burket Kosciusko County	17	2330EST	--	--	0	0	3	0	Wind damage
	Two mobile homes damaged, trees down.								
Mentone Kosciusko County	17	2330EST	--	--	0	0	3	0	Wind damage
	Mobile home damaged.								
Bourbon Marshall County	17	2350EST	2	150	0	0	--	--	Tornado (F0)
	Tree and power lines down.								
13 IOWA ————— NONE REPORTED									
14 KANSAS ————— NONE REPORTED									
15 KENTUCKY ————— NONE REPORTED									
16 LOUISIANA									
Rossier City, Bossier Parish and Shreveport, Caddo Parish	15	1500 CST to 1600 CST			0	0	4	0	Heavy Rain
	A band of heavy thunderstorms from southern Arkansas across northwest Louisiana moved through Caddo and Bossier Parishes dumping up to 4 inches of rain on parts of Shreveport and Bossier City causing extensive urban flooding with damage to businesses and homes caused by high water.								
17 MAINE ————— NONE REPORTED									
18 MARYLAND and D.C. ————— NONE REPORTED									
19 MASSACHUSETTS									
Uxbridge	2	0800 EST			0	0	4	0	Lightning
	Lightning struck a house causing complete destruction of it and an automobile parked nearby.								
Southbridge	2	1606 EST			0	0	2	0	Lightning
	A strike blasted a hole in the corner of a house and destroyed some kitchen cabinets.								
Dartmouth	2	2400 EST			0	0	4	0	Lightning
	Lightning struck a large garage destroying it and the automobile wrecker parked inside.								
20 MICHIGAN									
South of Hart-Clare-Port Huron and North of Detroit-Mason-Holland	01	Before Sunrise			1	1	9	C	Flash Flood
	Man drowned near Fowler trying to walk along flooded road from stalled vehicle. Driver injured when car fell into water-covered road washout near Ionia. Over 8" of rain in a few hours in Sparta-Greenville area, over 6" in Milford-Farmington area. All freeways closed for several hours in northern part of Detroit metropolitan area. About 300 washed out sections and about 30 bridges damaged on rural roads; 10 basements collapsed. Two buildings blew up due to flooded furnaces. 500 persons evacuated from homes. 60 persons rescued from flooded motel in Farmington. 300 new cars on dealers lots damaged. Water damages to 20,000 buildings and/or contents. Severe damage to crops, with harvest made impossible in many cases. River flooding followed during the next several days on the Rogue, Maple, Red Cedar, Grand, Saginaw, Rouge and Clinton Rivers.								
21 MINNESOTA ————— NONE REPORTED									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
22 MISSISSIPPI	NONE REPORTED										
23 MISSOURI	NONE REPORTED										
..East.. St. Louis County	5	1714 CST			0	1	6	0			Damaging Wind
<p>A severe thunderstorm produced extensive damage to the northern portion of St. Louis County. The greatest amount of damage was around the airport. Aircraft were flipped over and motel roofs were blown off adjacent to the airport. The wind gusted to 68 knots at the official observation site located on Lambert Field. The wind reached 83 knots at the control tower. There were meteorologically trained people in the vicinity of the wind damage but no one saw any sign of a tornado. The damage was attributed to straight line winds and possibly a "micro down burst". A barograph at the airport showed a pressure jump but no tornadic type pressure trace.</p>											
St. Louis County	5	1728 CST			0	0	4	0			Damaging Wind
<p>Severe thunderstorms moved through portions of west St. Louis County and produced winds to 60 mph and downed trees and lines. Cars were stopped on the Interstate due to very heavy rain and wind. These storms were part of the same line of thunderstorms which produced the severe damage around the airport.</p>											
..Central.. Cole	5	1515- 1551 CST			0	0	4	0			Damaging Wind and Lightning
<p>A thunderstorm started 15 miles west of Jefferson City and produced the following: Several calves were killed, a small barn was blown over and a camper trailer was blown into a house. At 1551 or before winds gusted to 50 knots at the Jefferson City Airport.</p>											
24 MONTANA	NONE REPORTED										
North Central, Central Montana	11, 12	Evening of 11th to eve- 12th			1	3	5	0			Wet, Heavy snow
<p>Wet heavy snow began Sunday evening, Oct 11 and continued until Monday evening, the 12th. Hardest hit counties were: Phillips, Fergus, Petroleum, Judith Basin, Blaine, Chouteau, and Hill. Eight to sixteen inches of snow fell in some areas with blizzard conditions in some rural areas. Mountain passes from Lewis and Clark County north to Glacier county also received heavy snow. One person was killed on Rogers Pass in Lewis and Clark County and one injured. Two injuries were reported near Malta---all in motor vehicles.</p>											
25 NEBRASKA	NONE REPORTED										
Lincoln County	16	2130CST			0	0	4	0			Damaging Winds
<p>Strong gusty thunderstorm winds caused a wall to bow outward shedding bricks at a railroad dispatch tower in North Platte. Bricks fell on autos causing damage.</p>											
Northern Panhandle	20 -21	Late Nite to Morning			0	0	0	0			Heavy Snow
<p>Heavy snow fell around Chadron with accumulation to around 6 inches.</p>											
26 NEVADA	NONE REPORTED										
27 NEW HAMPSHIRE	NONE REPORTED										
Monroe and Lyman, Grafton County	27- 28	0800-1200EST			0	0	5	0			Heavy Rain
<p>Heavy rain fell across the state Tuesday causing minor street and small stream flooding. However, 4 inches of rain fell in 4 hours from 8 to noon on the 27th in Monroe. This deluge washed out most of the town's 20 culverts and also broke up roads in Monroe and Lyman. Streams were within bankful Wednesday morning</p>											
28 NEW JERSEY	NONE REPORTED										
Near Vienna, N.J. (Warren County)	26	During evening hours	SE to NW	300	0	0	?	?			Tornado (F2)
<p>Hundreds of trees and many utility poles were blown down. One barn and silo plus two cars were destroyed.</p>											
29 NEW MEXICO	NONE REPORTED										
30 NEW YORK, Coastal	NONE REPORTED										
30 NEW YORK, Central	27- 28	0800- 0800EST			0	0	6			°C	FLOODING
<p>Heavy rain, mainly in Central New York, caused many rivers and streams to overrun their banks. It to about 3 inches of rain in the twenty-four hour period backed up sewers, flooded streets, homes and businesses and broke up pavement in some areas. Flood waters swept cars down streets, washed out roads and caused several structures to collapse. Heat and electric were turned off in the flooded areas causing more hardship on the residents.</p> <p>Slippery roads in other areas created many traffic accidents. The areas hardest hit were the Counties of Cortland, Tompkins, Steuben, Schuyler, Allegany, Montgomery, Herkimer, Fulton, and Washington.</p>											
30 NEW YORK, Western	NONE REPORTED										
Watertown, Jefferson County and parts of Cattaraugus and Cattaraugus Counties	06 Evening						4				Winds
<p>Strong winds gusting more than 50 mph downed power lines and left more than 2000 homes without electricity for many hours. Many boats that docked along eastern shores of Lakes Erie and Ontario were overturned and damaged.</p>											
Counties of Tompkins, Cortland, Tioga, Onondaga, Allegany and Steuben	27 & 28	Evening Morning			0	0	7	0			Heavy Rain
<p>A low pressure area passed across NY and produced 3 to 6 inches of rain. The big flood that followed ravaged Central New York State. Many steel bridges were washed out, streets suffered heavy erosion. Many cars were carried away in 6-foot deep water. Many businesses were inundated and were forced to close for as long as a week for clean up. Hundreds of homes had their basements flooded. Residents of Dryden, Tompkins County claim this flood to be the worst since the flood of 1935.</p>											
31 NORTH CAROLINA	NONE REPORTED										
32 NORTH DAKOTA	NONE REPORTED										
Milnor (Sargent County)	11	2215CST			0	0	3	0			Lightning
<p>Lightning killed seven head of cattle.</p>											
33 OHIO	NONE REPORTED										
34 OKLAHOMA	NONE REPORTED										
SW of Kingfisher, Kingfisher County	05	1845CST	?	?	0	0	0	0	0	0	Tornado (F0)
<p>A small tornado was reported by the police 10 miles south and 10 miles west of Kingfisher. No damage was reported.</p>											

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

OKLAHOMA

Southcentral	10-17									2 ? 7 7 Flood
<p>Heavy rain fell over much of Southcentral Oklahoma and parts of Texas during an eight day period. A maximum storm total for Oklahoma was 26.2 inches in northwestern Marshall County, sixteen inches of which fell in sixteen hours. Two men drown, numerous people were evacuated and/or received flood related injuries. President Reagan declared six counties (Atoka, Bryan, Coal, Johnston, Marshall, and Love) as disaster areas. Although the exact amount of damage will not be known until repairs are completed, estimates run from a conservative \$23 million up to \$60 million.</p>										
Unger, Choctaw County	13 1800CST	?	?	?	?	0	0	?	?	Tornado (F1)
<p>A tornado damaged several outbuildings on a farm in the Unger Community. No estimate was given on the damages.</p>										
Hastings, Jefferson County	17 0345CST	?	?	?	?	0	2	?	?	Tornado (F1) and Hail
<p>A tornado damaged a trailer house injuring two people, also damaged were some outbuildings. No estimate was given on the damages.</p>										

35 OREGON — NONE REPORTED

36 PENNSYLVANIA, Eastern

Franklin, Cumberland, Lancaster and Chester Counties	1700 to 2000 EST	0	0	5	0	Wind, Hail
<p>High wind gusts accompanied thunderstorms across South Central and Southeastern Pennsylvania causing considerable damage in some locations. Near Fannettsburg, Franklin County, the roof and end of a barn were blown away; outhouses, a corn-crib and a farm wagon were blown over; many power lines were downed; trees were uprooted or twisted off and picnic tables were blown around. In Shippensburg, Cumberland County, the roof was blown off a mobile home and golfball size hail pelted the area. In Clay Township, Lancaster County, one mobile home was rolled over and four others were knocked off their foundations. On a nearby farm the barn was completely destroyed and blown into a field as the roof of the farmhouse was damaged. Just down the road a string of about 6 telephone poles was knocked down. Near Wagontown, Chester County, power was interrupted by downed trees and limbs and also four poles were sheared off. In all of these areas, residents expressed the belief that the damage was caused by a tornado, but this could not be verified. There were no eyewitness reports of funnel clouds.</p>						

36 PENNSYLVANIA, Western— NONE REPORTED

37 RHODE ISLAND

East Providence	18 2230 EST	0	0	3	0	High Wind
<p>Estimated wind gust of 60 TO 70 M.P.H. blew over small storage buildings, blew out windows and screens and damaged trees in a very localized area.</p>						

38 SOUTH CAROLINA — NONE REPORTED

39 SOUTH DAKOTA

Hot Springs, Fall River County	11 Evening	0	0	3	0	Lightning
<p>Three cattle were killed by lightning.</p>						
Edgemont, Fall River County	11 1830CST 2200CST	0	0	?	0	Heavy Rain
<p>Heavy rains associated with a thunderstorm caused several flooded basements and businesses. An undetermined amount of road damage occurred as numerous culverts and roads crossing streams were washed out. One motor vehicle accident was attributed to poor visibility in heavy rain.</p>						

40 TENNESSEE

4 miles west of Bolivar, Hardeman County	17 1900CST	1.5	35	0	0	4 ?	Tornado (F2)
<p>A tornado touched down about 4 miles west of Bolivar moving on an east-northeast track. The tornado completely deroofed one house and moving primarily across farmland. A number of trees were also downed or damaged severely. In addition to the tornado, high winds caused damage to several other buildings and to trees in the area immediately south of the tornado track.</p>							

41 TEXAS, Northern

Central and North-western North Texas	11-12-13						Heavy Rains, Flash Flooding and Tornadoes
<p>Flash Flooding and River Flooding of record magnitude occurred within portions of an area bounded roughly by Wichita Falls, Abilene, Dallas, and Bonham. Very heavy thunderstorms developed late on the 11th and early on the 12th along a warm front that extended from Abilene to Breckenridge, Mineral Wells, and just south of Gainesville. Thunderstorms moved east-northeast along the front, repeatedly crossing the same areas. Flooding was particularly severe on the 12th in Breckenridge and Gainesville, where intense morning rains were followed by evening deluges. On the 13th, the remnants of tropical storm Norma moved northeastward into North Texas, causing additional torrential rains. The hardest hit areas on the 13th were Tarrant, Wise, Denton, Cooke, and Grayson Counties</p>							
<p>Within the large area described above, 2 day totals of ten inches were common. Fifteen inch centers, varying from 5 to 15 miles in diameter, were centered (1) over eastern Montague and northwestern Cooke Counties, (2) over southeastern Jack, southwestern Wise, northwestern Parker, and northeastern Palo Pinto Counties, (3) over Stephens County, where over 20 inches fell at Breckenridge, and (4) over northwestern Callahan County. Damage was extreme in several areas, although only 5 lives were lost in the flooding. A series of relatively small and short-lived tornadoes accompanied the thunderstorms on the 13th. The following descriptions give a county-by-county summary of rainfall, flooding, and tornadoes. Most of the report concentrates on flash flooding with only some information regarding major river flooding. For a more in-depth report on river flooding consult</p>							
Stephens County	12-13	Midnight on the 12th - Day of the 13th	0	2	7	5	Flash Flooding
<p>The first burst of heavy rain in the Breckenridge area occurred when about 5 inches fell from midnight to about 0600 on the 12th. Moderate street flooding and some damage resulted along the creeks in Breckenridge. Heavy thunderstorms moved into the Breckenridge area again, late in the afternoon of the 13th. About 3.5 inches fell in one hour up to 1600, with sporadic but torrential downpours occurring until well after midnight on the 13th. Four inches of rain fell in the period from 0030 to 0130. Extremely severe flash flooding began about 2300 on the 12th, continuing past midnight. Gunsoles Creek, which cuts Breckenridge in half from north to south, produced its worst flood in history. The creek rose 9 feet over the U.S. Highway 180 bridge, which is 3 blocks east of the county courthouse. The creek swelled to 400 yards wide in the same area. Approximately \$7,000,000 damage occurred to about 500 homes, their contents, and automobiles. Over \$6,000,000 damage occurred to businesses with the Tuesday flooding and over \$2,000,000 damage occurred to local, state, and federal property. Additional property damage brought the total to over \$20 million with almost a half million dollars damage to agricultural and ranching interests in Stephens County. Residential damage also occurred around the southwest, east, and north shores of Hubbard Creek Lake, when the lake rose faster than water could be released from the flood gates. Miraculously, only two injuries and no fatalities occurred. A number of daring rescues probably saved a score or more lives in the Breckenridge area. In all, almost 21 inches of rain fell in little more than a 24 hour period. Civil Defense Director Ted Kimes and Mayor Lloyd Maberry said that flood warnings probably saved lives and prevented about \$1,250,000 in damages.</p>							
Palo Pinto County	11-14	2300 CST- Evening of 14th	0	0	6	5	Flash Flooding and River Flooding
<p>Heavy thunderstorms moved into Palo Pinto County just before midnight on the 11th. The heaviest rains fell early on the 12th, with 5 inches falling between 2330 and 0230 in Mineral Wells. By 0900 on the 12th, 8 inches had been recorded in Mineral Wells. The heaviest rainfall was in northeast Palo Pinto County where almost 15 inches fell in the same time frame. Several more inches of rain fell on the evening of the 12th and the 13th, but the major flash flooding occurred early on the 12th. In Mineral Wells, flood damage occurred along Pollard Creek, in the western part of town, Crystal Canal, in southern Mineral Wells, and numerous drainage ditches. Other heavy damage occurred in rural areas along Rock Creek in northern Palo Pinto County and to homes along</p>							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

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					KILLED	INURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INURED	PROPERTY	CROPS	

TEXAS, Northern

Palo Pinto County (cont)	the shores of Possum Kingdom Lake. Well over \$1 million damage occurred to the structures and contents of 184 homes and mobile homes in Mineral Wells and the rest of the county. Civil Defense Director Art Weaver reported that in all, flash flooding, lake flooding, and Brazos River flooding produced over \$2 million in damage. Several hundred thousand dollars of this damage occurred to agricultural crops. Again, local safety agencies successfully rescued scores of people who were trapped by flood waters.								
Parker County	12- Midnight- 13 Afternoon			0	0	7	?	Flash Flooding and River Flooding	
	Two-day rainfall totals varied from about 5 inches in southeast Parker County to over 15 inches in northwest sections of the county. Most of the rain and flash flooding occurred in the early morning of the 12th. In Springtown, Walnut Creek went out of its banks before sunrise on the 12th, resulting in up to 3 feet of water in a number of homes north of Highway 51. Damage to businesses, roads, and bridges was also heavy in the Springtown area. Flash flood damage also occurred in the Weatherford, Cool, and Bennett areas in central and western Parker County. Later on the 12th and 13th, heavy river flooding occurred along the Brazos in southwest Parker County, particularly to homes and mobile homes in the Horseshoe Bend and Rio Brazos areas. Civil Defense Director T.R. Tanner reported that 346 county homes received damage and that in all, over \$7 million damage occurred within Parker County.								
Wise County	12- 13			0	1	6	6	Flash Flooding	
	Rainfall totals from about midnight on the 12th until about 1100 on the 13th were over 10 inches over all except a small portion of northern Wise County. Amounts of over 15 inches were recorded in southwest Wise County. Damage was especially heavy to agricultural and ranch interests, and rural roads and bridges in Wise County. In addition to crop and grass damage, heavy erosion damage occurred in many sections of the county. Some flash flooding occurred in the Bridgeport area, which was virtually isolated by high water on surrounding roads on the night of the 12th and the 13th. Only about 10 county homes received much flash flood damage, although several expensive homes received heavy damage when flooded by rapidly rising waters of Eagle Mountain Lake in the Newark area. Dozens of cars were swept into swirling flood waters but no fatalities and only one minor injury resulted. Lake Bridgeport, which was about 30 feet below normal before the rains, rose 30 feet to normal levels within several days.								
Eastland County	12- Midnight- 13 Afternoon			0	0	?	?	Flash Flooding and River Flooding	
	Rainfall varied from under 5 inches in southeastern Eastland County to over 7 inches in northwest Eastland County for a two day total. Urban and flash flooding damaged 19 residences and 4 businesses in the town of Eastland, where considerable street damage also occurred. Several homes and businesses were also flooded in Cisco. Rural flood damage resulted from the flooding along the Leon River and its tributaries north and south of Eastland.								
Erath County	12			0	0	?	?	Flash Flooding	
	Heavy rains of 7 to 10 inches were limited to extreme northern Erath County. Most of the rainfall fell early on the 12th, causing an unknown amount of rural flood damage.								
Callahan County	12- 2300- 13 0500 CST			0	0	6	5	Flash Flooding	
	Rainfall varied from under 5 inches in southern Callahan County to over 15 inches in northern portions of the county north of Clyde. A 2-day total of slightly over 20 inches of rain fell about 8 miles north of Clyde. Approximately 10 inches fell from 2300 CST on the 12th to 0500 CST on the 13th in Clyde. Heavy damage occurred the morning of the 13th to buildings on North First Street and on Oak Street with a number of homes also receiving water damage. Most of the damage occurred in northern portions of the city. Officials said the flood waters exceeded those of the 1978 flood by about one foot. Clyde Lake gained 22 feet during the rainfall seige.								
Shackelford County	12- 2200- 13 0600 CST			0	0	5	6	Flash Flooding	
	Rainfall was heavy in eastern and southern Shackelford County, with over 10 inches in both areas. Most of the rain fell during the evening of the 12th and the morning of the 13th. Flash flooding was considerable in rural areas close to Deep, Hubbard, Post Oak, Battle, Dry Branch, and Cord Wood Creeks. The flood waters on Deep Creek reached the highest crest in the last 100 years. Over \$500,000 in damages resulted to agricultural interests with other heavy damage to rural roads and bridges. Several homes received severe flood damage in the Moran area and at Lake Delafosse. Total damage was estimated to be over \$1.7 million.								

TEXAS, Northern

Taylor County	12- Afternoon- 13- 14 Morning			0	2	7	5	Flash Flooding and River Flooding	
	Very heavy rains fell on the afternoon and evening of the 12th and again during the morning hours of the 13th. Two day rainfall totals of over 10 inches were observed south and east of Abilene with 6 to 8 inches falling in Abilene. Most of the damage occurred in Abilene and in rural areas south and east of town. Twenty-nine homes and one mobile home were destroyed and 175 homes, 14 mobile homes, and 52 apartment units were heavily damaged in Taylor County. In all, 453 dwellings and an unknown number of businesses were affected by flood waters. Some of the worst damage in Abilene occurred in the Carver and Radford areas of northeast Abilene and the Goodlow neighborhood in southeast Abilene. Lytle and Cedar Creeks flooded these areas. Some flooding occurred along Elm Creek, but it did not go as high as it did in a 1974 flood event. At least \$6 million in damages occurred in Abilene alone. Two people were hurt when their cars were washed off of roads in Abilene. At Potosi, a number of residents were rescued from flooded homes. Road and bridge damage was heavy in Abilene and in rural areas of southern Taylor County. High water did not fully subside until the morning of the 14th.								
Jones and Throckmorton Counties	12- Afternoon- 13 Morning			0	0	?	?	Flash Flooding	
	Only minor flash flooding occurred in southeastern sections of both counties.								
Clay County	12- Morning 13 Afternoon			0	0	6	5	Flash Flooding	
	Heavy rains caused some flooding in the Henrietta area on the morning of the 12th. Even heavier precipitation, however, fell across the county late on the 12th and early on the 13th. Two day rainfall totals ranged from below 5 inches in northern Clay County to over 15 inches in the Buffalo Springs area of southeastern Clay County. About 7 inches fell in the Henrietta area. Heavy flooding in Henrietta early on the 13th was predominately in the Country Club Estates and along Highway 148 just south of town, along the Dry Fork of the Wichita River. Approximately 30 businesses and homes were flooded in these areas. Those who lived in the area compared the magnitude of the flash flood to a similar flood of May 12, 1972. Total damage in Clay County was estimated by City Defense officials to exceed \$2.5 million.								
Archer County	12- Evening- 13 Afternoon			0	0	6	4	Flash Flooding	
	Most of the heavy rainfall fell late on the 12th through the morning of the 13th. Over 7 inches of rain fell over the southeastern 1/2 of the county with between 12 and 15 inches falling in the Windthorst area east of Archer City. Only minor damage occurred to homes, businesses, and agricultural interests. However, almost \$1.5 million damage occurred to roads, bridges and other local government properties.								
Young County	12- Evening- 14 Evening			0	0	?	?	Flash Flooding and River Flooding	
	The heaviest rains fell from the Eliasville area northward to Graham. Over ten inches fell at Graham with over 12 inches at Eliasville. Some minor flash flooding occurred early on the 13th, with backwater flooding along Salt Creek causing additional light damage in Graham on the 14th even though rainfall ended early on the 13th.								
Jack County	12- Evening- 13 Afternoon			0	0	6	6	Flash Flooding	
	Rainfall amounts for the two day period ranged from near 7 inches in extreme northwestern Jack County to over 15 inches across the southeast portions. Damage was particularly heavy to county farms, crops, and rural roads and bridges. Wheat and oat crops were hard hit by the excessive water. Total damages approached \$2.2 million.								
Montague County	11- Late Even. 13 of the 11 --morning of the 13			0	0	6	7	Flash Flooding	
	Extremely heavy rains began late on the 11th, broke during the morning and afternoon of the 12th, then resumed again on the evening of the 12th and early on the 13th. At least 10 inches fell over most of the county, with a 15 inch center extending from the Montague City and Saint Jo areas eastward into Cooke County. At least a dozen homes were flooded along Kean Carter Lake and Lake Nocona and several homes received flood damage in Nocona. Almost one million dollars damage occurred due to home flooding. Damage was worse to rural roads and bridges, with even large concrete bridges being washed out. Damage to roads and other local government properties exceeded \$2.1 million. Agricultural losses were especially severe, with 75% of the 1981-82 wheat crop destroyed. In all, over \$6.7 million in agricultural damages was reported. Most all creeks and rivers flooded, with some of the worst flooding on Salt and Farmer's Creek north and south of Nocona, Belknap Creek west of Nocona, Farmer's Creek east of Nocona, and the main creek into Lake Nocona.								

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					KILLED	INJURED	PROPERTY	CROPS	
TEXAS, Northern									
Cooke County	12- 13	Late Even. Afternoon			0	0	7	7	Flash Flooding and River Flooding
<p>After rainfall soaked the ground on the 11th and 12th, extremely heavy rains late on the 12th and 13th caused severe flash flooding in Cooke County. Storm totals ranged from less than 10 inches in southeast Cooke County to over 15 inches in west and northwest portions of the county. Almost 20 inches fell just north of Lindsey. The town of Lindsey was hard hit by flash flooding with a dozen homes damaged or destroyed. Much of the town was evacuated for a time when it was feared that Sycamore Lake dam would breach to the north of the town. Dam failure never occurred, but as it was, it was the worst flooding that Lindsey residents could recall. Heavy flood damage also occurred to homes around Lake Moss. In Gainesville, at least 100 homes and businesses were flooded when Elm Creek went out of its banks in southwest Gainesville and Pecan Creek left its banks in Central Gainesville. Flooding was especially bad on Elm Creek. The Gainesville Zoo was flooded by Elm Creek waters. Waters rose so fast that some animals were drowned. Possibly the most miraculous escape from the flood was made by Gerry the elephant. Gerry was seen being swept downstream by flood waters, but was later found lodged in a tree. Apparently Gerry held his trunk above water for 36 hours while stuck in the tree. A number of rescues were made of the human species by area firemen and law enforcement officers. Heavy road, bridge, and agricultural damage occurred over much of the county, particularly in west and central portions.</p>									
Denton County	12- 13	Morning- Afternoon			0	0	5	5	Flash Flooding
<p>Up to 5 inches of rain caused minor road and street flooding in Denton County on the 12th. Heavy rains began again the evening of the 12th, with rain continuing into the afternoon of the 13th. Two day totals ranged from about 5 inches in the extreme southeast to over 10 inches throughout the western 1/3 of Denton County. Most of the damage was to agricultural crops, roads, and bridges, with minor damage to several mobile homes on Highway 380 west of Denton. Several homes and mobile homes received minor water damage in Denton.</p>									
Runnels County	13	Afternoon			0	0	?	?	Flash Flooding
<p>Flash flood damage was apparently minor, after heavy rains sent creeks out of their banks in the Ballinger area.</p>									
Tarrant County	13- 14	Morning- Afternoon			5	34	7	6	Flash Flooding and River Flooding
<p>Heavy rains on the 12th were followed by flash flood producing rains on the morning and early afternoon of the 13th. An apparent spiral band of thunderstorms from tropical system Norma remained almost stationary for several hours, while thunderstorms moved repeatedly from south-southwest to north-northeast over Tarrant County. Total rainfall varied from 5 to 10 inches over the county with the heaviest rains in northeast Tarrant County. Flash flood damage was heaviest in this area, especially in the areas surrounding Little Fossil, Big Fossil, Little Bear, Big Bear, Walker, and Calloway Branch Creeks. Thirty homes and 6 businesses were flooded by Little Fossil Creek. Urban flooding caused damage to other homes and many automobiles, particularly in east and northeast Fort Worth and the Hurst-Euless-Bedford area. Five fatalities resulted from the flooding on Tuesday. Two women were killed in Richland Hills when their car was swept up into the flood waters of Calloway Creek. A man was drowned when he drove his car around barricades into a flooded dry-water crossing near Newark, in extreme northwest Tarrant County. Two young men died in separate accidents as a result of riding inner tubes on flooded creeks in north Fort Worth and Keller. As the flash flooding was diminishing, heavy lake and river flooding occurred on the 13th and 14th in the Lake Worth, Eagle Mountain Lake, and Trinity River areas. Extremely rapid rises on the lakes produced considerable home and boat dock damage on the 2 lakes. Further damage occurred below Lake Worth on the Trinity River. Civil Defense officials estimated that over \$12 million damage occurred to two destroyed and 893 damaged homes and 13 destroyed and 20 damaged mobile homes. One business was destroyed and 50 were damaged. Additional damages brought the total to over \$50 million from the combined effects of urban, flash, lake, and river flooding.</p>									
Collin and Dallas Counties	13	Afternoon			0	0	?	?	Flash Flooding
<p>Several creeks overflowed their banks in both counties, causing minor damage. Heavier flooding, not detailed in this report, occurred in sections of Dallas County along the Trinity River on the 13th and 14th.</p>									
Grayson County	13	Afternoon			0	0	6	6	Flash Flooding
<p>Rainfall amounts of 5 to 10 inches caused widespread flash flooding. Many county and city roads and bridges were heavily damaged. Agricultural crops received heavy damage, as did a number of homes along creeks in the Sherman area. Officials termed the flooding the worst since 1957, however even more severe flooding was to occur 3 days later in the Sherman area on October 16th. Several dramatic rescues were made of people who had their cars washed into flooded creeks in the Sherman area.</p>									
TEXAS, Northern									
Fannin County	13	Afternoon			0	0	4	5	Flash Flooding
<p>Flash flooding resulted in minor property damage and over \$50,000 damage to Fannin County crops.</p>									
10 S Kerens, Navarro County	13	0800-0810 CST	5	100	0	1	4	0	Tornado (F3)
<p>The tornado touched down near the Navarro-Freestone County line about 10 miles south-southeast of Kerens and moved about 5 miles to the north-northeast before dissipating. Powerlines were downed and trees uprooted along Highway 287. Continuing north-northeast, the tornado destroyed an oil rig, a frame home, and a mobile home along Highway 309 in the Round Prairie community. A woman who occupied the mobile home received moderate injuries when the trailer home was destroyed. About 100 pecan trees in a nearby orchard were uprooted. The tornado finally dissipated after slightly damaging a home in the Rural Shade community, about 6 miles southeast of Kerens.</p>									
Northwestern Henderson County	13	0900 CST	6	50	0	0	4	0	Tornado (F1)
<p>The same storm that produced the Navarro County tornado dropped a second tornado near Tool, on the southwest side of Cedar Creek Reservoir. The tornado hop-skotched along a 7 mile track north-northeastward, producing minor damage. Several outbuildings were destroyed, trees uprooted, and home and building roofs damaged by the rope-like tornado before it lifted just south of the Highway 85 and 90 intersection on the east side of Gun Barrel City.</p>									
Mabank, southern Kaufman County and southwestern Van Zandt County	13	0920 CST	4	25	0	0	3	0	Tornado (F1)
<p>A third tornado from the same parent storm first touched down on Highway 175 in Mabank, causing minor damage to a rodeo arena. After lifting over the rest of Mabank, the tornado continued north-northeast, lowering several times and causing tree damage in extreme southwestern Van Zandt County.</p>									
5 N Temple, Bell County	13	1120 CST			0	0	?	?	Windstorm
<p>Television station KCEN recorded thunderstorm wind gusts to 75 MPH</p>									
Waco, McLennan County	13	1127-1135 CST	2	150	0	4	7	0	Tornado (F2)
<p>The small but damaging tornado was first observed over west Waco as a developing funnel cloud at 1127. The first damage was at Highway 6 and Sanger Street where trees were uprooted. Moving north-northeast, the tornado caused its first building damage at the First Assembly of God church on Bosque Blvd. The building's roof and two walls were destroyed. The twister then hopscotched to Lake Christian Church on Bosque and a large supermarket on North Valley Mills, damaging the roofs of both buildings. Three people were injured by flying glass at the supermarket and over 150 cars had their windshields blown out on the parking lot. Elsewhere, over 40 homes had roof damage in the same area. First damage estimates from the tornado, described as looking "dark and skinny" were \$2.8 million. However, later insurance estimates exceeded \$7 million.</p>									
Johnson County	13	1145 CST	3	50	0	0	4	0	Tornado (F2)
<p>The first of three small tornadoes touched down near Joshua Middle School, destroying a mobile home and an outbuilding east of the school. The tornado moved north-northeast, destroying a home on Lowe Street and causing minor damage to a number of homes in the same area. The last reported damage was several miles south of Burleson. The same parent thunderstorm produced a second tornado, witnessed by several people, which uprooted trees and destroyed a barn between Happy Hill and Burleson at 1150. The third tornado reportedly produced scattered minor damage on a northward, skipping path from near Parker to the Liberty Chapel area, which is 5 miles east-southeast of Cleburne. This tornado occurred at about 1200. Over 2 inches of rain within a short period of time produced minor flash flooding along the creeks in Cleburne.</p>									
6W Osceola, Hill County	13	1200 CST	3	100	0	0	4	0	Tornado (F2)
<p>The northeastward-moving tornado destroyed 3 graineries, an implement shed, a grain truck, 4 barns, and 3 combines on a farm 6 miles west of Osceola, on Farm Road 934. No other damage was reported.</p>									
Dallas/Fort Worth Airport, Tarrant County	13	1330 CST	1	100	0	2	4	0	Tornado (F2)
<p>A weak tornado knocked down the wall of an air freight warehouse at the airport, injuring two men. One of the injuries was serious. The tornado, described as looking like a large whirlwind, also spun several aircrafts around on a nearby runway before dissipating.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

— TEXAS, Northern

Arlington, Tarrant County	13 1330 CST					0	0	3	0	Windstorm
An isolated downburst of straight winds produced minor damage to several buildings in Arlington.										
Northwest Dallas County	13 1340 CST	1	50	0	0	0	0	0	0	Tornado (F1)
Amateur radio storm spotters reported that a tornado touched down briefly, uprooting trees, in a rural area between Coppell and Carrollton.										
Bethel, Anderson County	13 1400 CST			0	0	3	0			Windstorm
Strong thunderstorm winds destroyed a barn and uprooted trees in the Bethel area of northwest Anderson County.										
Northern Hunt and Southeastern Fannin Counties	13 1415 CST	6	75	0	0	4	?			Tornado (F1)
The tornado first struck a farm 5 miles north of Commerce, destroying two barns and causing slight structural damage to the farm house. Continuing on a northeastward course, the tornado uprooted trees before destroying several more barns in extreme southeastern Fannin County southeast of Ladonia.										
Western Lamar County	13 1500 CST	Short Narrow	0	0	0	0	0	0	0	Tornado (F1)
	1530 CST	6	50	0	0	4	0	0	0	Tornado (F2)
	1540 CST			0	0	0	0	0	0	Funnel Clouds
The first tornado touched down briefly near Forest Hill at 1500, producing no known damage. Several witnesses observed the tornado. Forest Hill is about 14 miles west of Paris.										
A second tornado, from the same parent storm, moved northeastward from about 8 miles west of Paris to just northeast of Lake Gibbons about 30 minutes later. The tornado destroyed a mobile home and two barns and uprooted trees along its path. It occurred only a few miles south of Emberson, which was devastated by a large tornado on May 13, 1981. A school bus driver was forced to evacuate the bus and take the kids beneath a bridge in the Lake Gibbons area. The driver spotted two other funnel clouds in the same area. It is not known if they touched down.										
Falls County	14 0700 CST			0	0	3	0			Flash Flooding
Flash flooding on Brushy Creek washed a car off of Farm Road 147. The car became snagged on a fence and the occupant, a 76 year-old woman, was rescued by several men from a nearby gas station.										
Cass and Bowie Counties	14 0700 CST			0	0	?	?			Flash Flooding
Over 3 inches of rain caused minor flash flooding in the Texarkana areas of Bowie County, and in low-lying areas near Atlanta, in Cass County.										
Sherman area, Grayson County	16 0100 CST			0	5	7	?			Flash Flooding
				0	0	5	0			Lightning
For the second time in 4 days a "hundred-year-flood" struck Sherman. Heavy rains moved into the area about 2100 on the 15th. Rainfall continued on a sporadic basis through the night, finally ending the morning of the 16th and totalling 7.28 inches in Sherman. Major flash flooding began about 0100, with civil defense sirens being blown at 0315 because of the high water threat. The worst flooding occurred in southern and western Sherman, particularly on Post Oak Creek. A nursing home, two apartment complexes, numerous homes, and a shopping center were damaged. About 600 people were forced to evacuate homes. Many streets and bridges across the county were damaged. Flood crests on the 16th in Sherman actually exceeded those of October 13. In addition to the flooding, lightning struck and burned a \$90,000 home in Sherman.										
Cooke County	16 0100 CST			0	1	?	?			Flash Flooding
Fortunately, the heaviest rains fell in eastern Cooke County, east of Gainesville, precluding another major flood in that stricken town. However, rural flood damage to roads, bridges, and agricultural interests occurred in several portions of eastern Cooke County. One man was admitted to a hospital after he and two companions were stranded in an automobile for three hours. The car had been swept off of Highway 902 in eastern Cooke County by flood waters.										
Bonham area, Fannin County	16 0200 CST			0	0	?	?			Flash Flooding
Heavy rainfall began about 0000, with flash flooding along Powder Creek beginning from 0200 to 0300. At least 10 people had to be rescued by boat on several streets close to the creek. A number of cars were damaged by high water and several homes received minor damage.										
Paris, Lamar County	16 0400 CST			0	0	?	?			Flash Flooding
Minor flash flooding occurred in the wake of several inches of rain within several hours.										

— TEXAS, Northern

1 N Southmayd, Grayson County	16 1455 CST	Short Narrow	0	0	?	?	?	?	Tornado (F1)	
The Grayson County Sheriff reported that a tornado touched down briefly 1 mile north of Southmayd, which is midway between Sherman and Whitesboro.										
4 NE Midlothian, Ellis County	1715 CST	Short Narrow	0	0	0	0	0	0	0	Tornado (F0)
A small tornado touched down briefly in open fields, causing no damage.										
Smith Hill, Bowie County	17 1730 CST			0	0	?	?			Windstorm
Thunderstorm winds caused minor damage in Smith Hill area, 17 miles west-northwest of Texarkana.										
Athens, Henderson County	17 1815 CST			0	0	4	0			Windstorm
Strong thunderstorm winds damaged several mobile homes in Athens.										
Tyler, Smith County	17 1820 CST			0	0	?	?			Windstorm
Powerlines and tree limbs were blown down by strong thunderstorm winds.										
Kempner, Lampasas County	17 1900 CST			0	0	?	?			Windstorm
Thunderstorm winds of 60 to 65 MPH caused minor damage.										
Longview, Gregg County	17 1915 CST			0	0	?	?			Windstorm
Minor wind damage occurred as heavy thunderstorms moved across Longview.										
Parker County	31 0600-1700 CST			0	0	6	6			Flash Flooding
Heavy rainfall began about 0200 in western Parker County, gradually spreading northeastward. By 0500 over 3 inches of rain had fallen at Authon, northwest of Weatherford. Minor flash flooding was occurring throughout western and northern Parker County at this time. Rains subsided briefly, then began again with renewed fury about mid-morning. By 10 AM, Walnut and Browder Creeks in the Springtown area turned into raging torrents some 500 yards wide. Dozens of homes were severely flooded in Springtown, with a shoe store and two homes carried away off of their foundations. Other heavy damage occurred to automobiles, bridges, and roads in northern and western portions of the county. Rains of up to 10 inches ended shortly after noon and flood waters finally receded in the late afternoon. Many old-timers in Springtown said that the late morning flood was the worst in Springtown's history.										
Wise County	31 0600-2100 CST			0	0	?	?			Flash Flooding
Up to 11 inches of rain fell in the Newark and Boyd areas of southern Wise County, from about 0300 until 1200. Heavy flash flooding occurred on most of the creeks in mostly rural areas of southern Wise County. A car was swept off of Farm Road 730 south of Boyd by flood waters, however the driver was rescued without injury. Several homes were flooded by Walker Creek near Boyd. However, most of the damage was to rural roads, bridges, farm land, and ranch land.										
Denton, Collin, and Grayson Counties	31 Afternoon			0	0	?	?			Flash Flooding
Rains of 3 to 5 inches caused minor flash flooding in all three counties.										
41 TEXAS, Southern										
Jefferson Co.	1 0600CST									Waterspout
A waterspout moved over Gulf of Mexico waters a few miles offshore from Sea Rim State Park.										
Harris Co.	5 1200CST			0	1	4	0			Lightning
Frequent, intense lightning struck the Baytown area during a midday thunderstorm. Lightning charge entered two Baytown houses, damaged interiors, but started no fires. A 17-year old Baytown resident was injured by a lightning bolt while he stood beside his car rolling up windows. Although thrown several feet into the air by the discharge impact, the young man received only minor burns.										
Harris Co.	5 Afternoon			0	0	?	?			Heavy Rain
Slow moving afternoon thunderstorms dropped heavy rains over the Houston area. Center of heaviest rain was a few miles southeast of downtown where 8.2 inches fell. Other amounts were 5.0 east of Westbury, 5.0 Jacinto City, 3.40 San Jacinto Dam, 2.88 downtown Houston. Widespread urban flooding hit east and south parts of the metropolitan area from 3 to after 7 pm CST.										
South Central Texas	6-7									Heavy Rain
A slow moving cold front, a strong moisture flow from the Gulf of Mexico ahead of the front and later overrunning the front, and an upper atmospheric disturbance combined to give a series of heavy rain events across south central Texas during a two day period.										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
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TEXAS, Southern

Val Verde Co.	6 All day	0 0 5 0	Heavy Rain	Heavy thunderstorm rains began during the morning and persisted on-and-off all day creating flash flooding of creeks and canyons throughout the county. Heavy rains first hit Del Rio about 7 am CST with rainfall of 1 inch by 8 am; over 2 inches by 8:30 am; 3 inches by 8:45 am; 3½ inches by 10 am; and 4½ inches by mid afternoon. At 9 am flash flooding had begun in the Del Rio area and continued into the night as sporadic hard showers recurred. San Felipe Creek overflowed, street damage was reported, and some vehicles were flooded. There were no known injuries. Just west of Del Rio in Mexico, Ciudad Acuna received 6½ inches by noon. Flow from creeks in Mexico generated a local rise on the Rio Grande below Amistad Dam to Del Rio. The Devil's River and Dry Devils River and other canyons in north part of the county experienced flash flooding which washed over highways including 277, 377, and 163. Rains tapered off by 5 pm, but flooding continued well into the night.					
Edwards Co.	6 Morning-afternoon	0 0 5 0	Heavy Rain	Heavy thunderstorm rains with rainfall rates exceeding 3 inches per hour moved slowly into the county around 9 am CST and by 10:30 am flash flooding was beginning on creeks and canyons. At 11:30 am Highway 377 west of Rocksprings was closed by washovers. By 1 pm Hwy 277 northwest of Rocksprings was flooded by water coming down the upper Dry Devil's River. A sharp rise on the West Nueces River closed FM Road 624. Flooding on the upper Nueces River, Pulliam Creek, and South Llano River overwashed sections of highways and damaged some rural properties and fence. Rainfall responsible for the flooding occurred mainly 9 am to 2 pm. However, brief heavy rains occurred again the night of Oct. 6 over north parts of the county and aggravated flooding. Rainfall totals included 10.54 inches on the upper West Nueces River, 2.85 at Rocksprings, and 2.75 at Carta Valley.					
Hays Co.	6 Morning	0 1 4 0	Heavy Rain	Thunderstorms from before dawn to mid-morning put heavy rains over central and west Hays Co. Rainfall totals included Wimberley 6.17, Henly 6.50, and elsewhere west of Wimberley 6.0 inches. By 7 am CST flash floods had developed on most creeks in the headwater areas including Barton, Onion South Onion, and Cypress Creeks. A sharp rise on the Blanco River developed and moved down to the San Marcos area by late afternoon. It caused no property damaged, but washed over roads and swept several automobiles off low water-crossings. One woman narrowly escaped as her small car was swept into the river near San Marcos.					
Blanco Co.	6 Morning	0 0 ? 0	Heavy Rain	Early morning thunderstorms dropped 3.9 inches of rain on the city of Blanco with amounts close to 6 inches along the Blanco-Hays countyline. Flash flooding set in on small creeks by 7:30 am. A sharp rise developed on the Blanco River, moved downstream below Blanco, and overwashed low water-crossing through the afternoon.					
Travis Co.	6 Morning	0 0 ? 0	Heavy Rain	Morning thunderstorms dropped rainfall totals of 4.0 inches at Lake Travis, 3.44 at Austin Municipal Airport, 3.29 at Anderson Mill. The short duration heavy rains caused flash flooding on creeks in west Travis Co. by 7:30 am. Swift water was reported over Bee Creek crossings. Highway 183 northwest of Austin and many streets in Austin were blocked.					
Williamson Co.	6 Morning	0 0 ? 0	Heavy Rain	Rainfall of 2 to 3 inches during early morning caused flash flooding of small creeks in southwest parts of the county. Water flowed swiftly over U.S Highway 183 in several spots from Cedar Park toward Austin. There was no known injury or major damage.					
Williamson Co.	6 0645CST	0 0 3 0	Lightning	Lightning struck a house in Round Rock knocking holes in both exterior and interior walls but starting no fire					
Harris Co.	6 1545CST	0 0 4 0	Lightning	A lightning strike caused a water heater to explode on the porch of a house in Crosby. A fire resulted which damaged the house.					
Real Co.	6- Late night- 7 Early morning	0 0 ? ?	Heavy Rain	Heavy rains fell between 7 pm CST and midnight Oct. 6 with amounts up to 3.6 at Leakey and 2.50 at Rio Frio. Rains fell on ground already very wet with streams flowing above normal. Flash floods closed low water-crossings on creeks and along the Frio River by 10 pm.					
Uvalde Co.	6- Late night- 7 Early morning	0 0 ? ?	Heavy Rain	Rains during the day Oct. 6 wetted ground throughout the county. Intense rainstorms hit the area during the night of Oct. 6 giving rainfall totals to 6 am Oct. 7 of 4.94 inches at Sabinal and over 5 inches north of Sabinal. Flash floods moved down streams in eastern Uvalde Co. in response to overhead rains. A sharp rise also moved down the Frio River due to upstream rains in Real Co. and flooded low areas through Garner State Park and Concan later in the morning. No serious damage was reported.					

TEXAS, Southern

Frio Co.	6- Late night- 7 Next morning	0 0 0 0	C Heavy Rain	A large area of intense rains became situated over Frio Co. by 9 pm CST Oct. 6, intensified, and dumped torrential rains up until 2 am Oct 7. Flash flooding developed on nearly all creeks by 10:30 pm and continued through the morning of Oct. 7. Widespread low area flooding hit the east half of Frio Co. by midnight as rain water ponded deeply. Throughout the next few days flooding moved down the Frio River in Frio Co. as local and upstream rains of this period continued to drain. Rainfall: Spotty downpours hit the area during the day Oct. 6, but the main deluge was from 9 pm to 1 am, Oct. 6-7. Rainfall exceeding 7 inches fell over the eastern half of the county and measured 10.70 inches at Derby, 10.20 at Dilley, and 9.50 at Big Foot.					
Atascosa Co.	6- Late night- 7 Early morning	0 0 ? ?	Heavy Rain	From late night on Oct. 6 through pre-dawn hours Oct. 7 an estimated 4½ to 7 inches of rain fell over northwest parts of the county between Lytle, Jourdan, and Charlotte. At Lytle 4.31 inches were measured. Heavier rains of 10 inches fell just across the county lines in Medina and Frio Counties also. Flooding from the rains in Atascosa and adjacent counties moved down streams through Atascosa Co. during the day including the Atascosa River, Slededero Creek, Clear Creek, and San Miguel Creek. Damages to creeks, fencing, crops, and other rural properties was reported. Road closures due to high water included FM Roads 1549 and 140 west of Charlotte.					
Medina Co.	6- Late night- 7 Early morning	0 0 0 0	C Heavy Rain	Separate bands of heavy rain hit the southern and northwest parts of Medina Co. during the late night Oct 6 and early morning of Oct. 7. Heaviest rainfall was over farm and prairie lands of south Medina Co. from 8 pm to 2 am. Totals included 10.0 inches at Devine, 7.05 5 miles northwest of Moore, 4.60 at LaCoste, 4.00 10 miles south of D'Hanis. Another area of flash flood-producing rains simultaneously hit northwest Medina Co. hill country where Seco Farms registered 5.85 inches. Widespread flash flooding of creeks across the south third of the county as well as deep ponding of water in low spots was in progress around 10 pm CST. Swift flash flooding of creeks in northwest areas started by midnight. Creeks affected by flooding included Squirrel, Seco, Hondo, and San Miguel. In the city of Devine considerable flooding along creeks and in low areas produced some damages. Most rural roads were washed over between Devine, Yancey, LaCoste, and southward.					
Bandera Co.	6- Late night- 7 Early morning	0 0 5 0	Heavy Rain	After wetting showers fell during the previous 24 hours, a band of very intense slow-moving rains developed over the area between 7 and 8 pm CST. Rains intensified and by 10 pm flash flooding had begun on creeks. To midnight rainfall totalled 7.0 inches at Medina city, ½ inches 4 miles northwest of Bandera, 4.0 at Bandera, 3.36 some 10 miles north of Vanderpool, 2.64 inches at Tarpley. A sharp rise developed on the Medina River from upper reaches of both the north and west prongs downstream to Lake Medina. The rise overwashed Ranger Crossing above Bandera at 10:45 pm CST and receded around 6 am. Hwy 16 low water-crossings were blocked below Bandera til late morning Oct. 7. No injury or serious damages resulted.					
Kerr Co.	6- Late night- 7 Early morning	0 0 4 0	Heavy Rain	Heavy rain spread slowly eastward through the county after 8 pm CST setting off flash flooding of creeks. Around midnight a band of very hard rain became stationary over eastern Kerr Co. causing more serious flash flooding along Cypress Creek, Verde Creek, and other small streams. Rainfall totals for the storm included 6.30 Center Point, 5.5 northwest of Center Point, 4.08 Hunt, 3.27 Camp Verde, 1.62 at Kerrville. Apart from road washovers and fence losses, the only reported damage was at Center Point where a house close to Verde Creek was inundated by swift waters. Members of the family fled in darkness and were later rescued unharmed.					
Kendall Co.	6- Late night- 7 Early morning	0 0 ? ?	Heavy Rain	Intense rain which fell between 8 pm and 1 am produced flash floods on area creeks. Flooding started around 10 pm CST, continued through morning hours of Oct. 7, and generated a local rise on the Guadalupe River. Rainfall total					

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1961

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					KILLED	INJURED	PROPERTY	CROPS	

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TEXAS, Southern

		<p>amounts for the storm were 6.25 Bankersmith, 4.04 Kendalia, 2.87 Sisterdale, 2.79 at Comfort. Many creekside roads as well as low areas near the Guadalupe River were washed over for several hours during the night.</p>							
Bexar Co.	6- Late night-				0	1	5	0	Heavy Rain
	7 Early morning								
Bexar Co.	7 Early morning				0	0	4	0	Lightning
Bexar Co.	7 0045CST				0	0	4	0	Wind
	<p>A band of heavy rain oriented NNE to SSW progressed eastward into Bexar Co. around 9 pm CST. At midnight after becoming positioned from the north side of San Antonio south-southwestward through west sides of the city into southwest Bexar Co., the band of heavy rains became stationary and intensified. Torrential downpours caused flash flooding of most creeks (including Salado, Olmos, Leon, Helotes, Medio, and Elm Creeks), drainage canals, and urban streets over north and west sectors of San Antonio. Recurring showers the previous few days had wetted the ground and enhanced this flood-producing runoff.</p> <p>Rainfall: Most rain fell from 9 pm to 1 am CST and totaled 7.5 inches in northwest San Antonio (Lockhill-Selma at Military Hwy), 7.05 Shavano Park, 5.32 International Airport, 3.36 Valley Hi, 4-5 inches near Von Ormy, and 2.90 at Kelly Air Force Base. Less than 3 inches fell in east Bexar Co.</p> <p>Main losses were reported to streets and vehicles. Scores of cars were flood damaged and some swept from streets by swift currents between 1030 pm and midnight CST. The Fire Dept. recorded 40 rescues of persons trapped in stranded vehicles. Despite the many frantic rescues and narrow escapes, only one injury occurred. Around 2 am a 20-year old man was swept away from his car at the West Ave. - Loop 410 crossing at Olmos Creek, carried downstream 3 miles by the current, and was rescued after clinging to the San Pedro Ave. bridge pillars.</p> <p>Intense lightning with the rainstorm damaged utility equipment and caused widespread power outages.</p> <p>Over southwest Bexar Co. around Von Ormy, Macdona, and southwest San Antonio, a severe thunderstorm cell caused scattered wind gust damages. A small tornado also was generated by this storm cell (see separate entry, Bexar Co. tornado)</p>								
Comal Co.	6- Late night-				0	0	?	0	Heavy Rain
	7 Early morning								
	<p>Minor flash flooding occurred on small creeks around around the county due to sudden rains about midnight. Rainfall accumulations in a 3 to 4 hour period were 3 1/2 inches north of Canyon Lake, 2.90 at New Braunfels, and 1.58 at Bulverde.</p>								
LaSalle Co.	7 Early morning-afternoon				0	0	?	?	Heavy Rain
	<p>Intense rains hit the extreme north edge of the county from late night Oct. 6 to about 4 am Oct. 7. Flooding of low areas took place suddenly after midnight. Large flood crests moved into LaSalle Co. later on during the morning on creeks draining southeastward from Frio Co. Cibolo Creek experienced severe flooding and washed over the Interstate Hwy 35 bridge at Millett. A flood crest moving down the Frio River inundated countryside in northeast La Salle Co. for several days afterward. Livestock, fencing, and some crop losses were expected in north LaSalle Co. but extent was not reported.</p>								
Bexar Co. (SW San Antonio)	7 0100CST	3/10	30		0	0	5	0	Tornado (F1)
	<p>A short-lived tornado, small in size but of damaging intensity, skipped northward for several blocks in extreme southwest San Antonio in the Lackland City-Valley Hi subdivisions. The twister occurred near the southern end of a band of heavy rainstorms which were occurring over northwest San Antonio. The tornado's bouncing path took it northward across Indian Creek and over adjacent residential streets where it damaged roofs, windows, outbuildings, fences, and uprooted trees of about a dozen homes. Cars on streets were also damaged. There were no injuries during the seconds-duration storm.</p>								
Galveston Co. (near Hitchcock)	7 0952CST	Short Narrow			0	0	0	0	Tornado (F0)
	<p>A rapidly developing thunderstorm moving inland from the coast generated a funnel which dropped to earth momentarily. Police officers observing the funnel reported it touched down in an open area just east of Hitchcock at 952 am. The small rope-like tail hit no structures before lifting and moving north-northeast aloft.</p>								
Jefferson Co.	7 Afternoon				0	0	?	0	Heavy Rain
	<p>Afternoon thunderstorms caused flooding of urban areas in Port Arthur and Beaumont. In Port Arthur the downtown area received 3.8 inches of rain; 2.5 of that fell in 90 minutes from 130 to 3 pm overwhelming drainage systems. In Beaumont downtown gauges measured 2.28 inches. Travel was disrupted and power outages occurred.</p>								
Harris Co.	7 1830CST								Funnel Cloud
	<p>A funnel cloud formed on the south edge of a large thunderstorm cluster and passed over the LaPorte area.</p>								

TEXAS, Southern

South Central Texas	11-13								Heavy Rain
	<p>A series of heavy rain episodes Oct. 11-13 hit the hill country and adjacent Edwards Plateau region of south central Texas. Heaviest cumulative rainfall in this region for the 3-day period was 17 to 20 inches in spots of north Val Verde Co. and over 15 inches in northwest Edwards Co. Flash floods happened across the area from Del Rio to San Antonio. Several factors caused the rain and flood conditions. Early on Oct. 11 moist, unstable tropical air overrode a front and set off storms from Del Rio eastward over the hills. On Oct. 12 middle and high level moisture associated with eastern Pacific Hurricane Norma became caught up in strong upper air flow and raced north-eastward across Mexico into Texas. Meanwhile deep low-level tropical air had intruded northward to the interior of Texas. As the mid-level circulation of Norma (still identifiable but embedded in a strong jet stream) approached Texas the night of Oct. 12 and morning of Oct. 13, the final period of heavy rainstorms developed.</p>								
Val Verde Co.	11 All day- night				0	0	6	C	Heavy Rain
	<p>Thunderstorms bearing intense rains began over north Val Verde Co. during early morning. Flash flooding developed on all streams by 830 am CST and became severe by afternoon as heavy overhead rains continued. Rainfall for the day from 6 am to about 6 pm CST totalled 15.0 inches 5 miles north of Juno (north Ball Ranch), 8.0 inches on Buckley Creek, 6.8 on upper Devil's River Canyon, 6.25 at Baker's Crossing, 5.0 at Loma Alta. Heavy rains of over 6 inches in adjacent southeast Crockett Co. sent prolonged flash flooding down Johnson's Draw into Val Verde Co. The Devil's River at Baker's Crossing created at 1 pm CST at 21.6 feet (Floodstage 12 feet) and remained in flood through the next day. Severe flooding of ranch lands in north Val verde Co. produced considerable damage. High losses were reported to livestock, fences and roads. Several major bridges on the Devil's River sustained damage while one bridge between Juno and Baker's Crossing was washed away. Roads that were badly overwashed by swift floods during the day included Hays 163, 189, 377, and FM Roads 1024 and 2523. There were no injuries reported.</p>								
Edwards Co.	11 All day				0	0	5	C	Heavy Rain
	<p>A thunderstorm cluster erupted over the county after midnight dropping rainfall at rates of over 4 inches per hour in spots. Rapid runoff occurred because of wet ground, above normal flow in streams, and the high rainfall rate. By 4 am CST renewed flash floods were occurring along many small streams and canyons of Edwards Co. less than a week after other floods had occurred. The early morning storm was centered over eastern Edwards Co. and generated floods on Pulliam Creek and the upper Nueces River, and generated floods on Pulliam west in the county and sent floods down creeks and the West Nueces River. Rainstorms persisted throughout the day over west and central parts of the county. Highest reported amount was 4.0 inches at Rocksprings, but unofficial amounts as high as 8 inches were said to have fallen on remote ranches northwest of Rocksprings. By noon CST Hwy 55 west of Rocksprings was washed while most canyon bottom roads were also closed. During the afternoon a rise developed on the South Llano River and its branches in north Edwards Co. and progressed downstream into Kimble Co. Considerable losses in Edwards Co. were reported to roads, bridges, fencing, and livestock.</p>								
Kimble Co.	11 Afternoon				0	0	?	?	Heavy Rain
	<p>A sharp rise on the South Llano River, generated mainly by rains upstream in Edwards Co., moved through the river bottom above Junction during the afternoon. Damages, apart from road closures, were not known for this flood. Much more serious flooding hit this area from another storm two days later. (See entry Kimble Co. Oct. 13)</p>								
Harris Co. (Clear Lake City)	11 1845CST	**60	25		0	1	4	0	Tornado (F1)
	<p>A thunderstorm moving northward along the west shore of Galveston Bay produced a funnel cloud which dipped to ground very briefly. Observed as a funnel aloft as it passed over Clear Lake City, the mini-twister dragged ground level for a moment as it passed over the 1200 block of Bay Area Blvd. in Clear Lake City. The tornado moved directly over a small restaurant at 645 pm CST pulling off part of the restaurant roof and shattering the interior with broken plate glass windows. A woman employee received cuts during the blast which lasted just a few seconds. Point of touchdown must have been very small since no damage was reported to neighboring structures.</p>								
Val Verde Co.	12- Late night-				0	0	?	?	Heavy Rain
	13 Next morning								
	<p>Late night thunderstorms moved northeast over the county causing flash flooding of urban creeks to start around 10 pm CST. Periods of sudden rainfall until 6 am produced accumulations near 6 inches on the Val Verde-Crockett county line, 2.65 at Pandale, 1.31 at Baker's Crossing, and 1.00 at Del Rio. Streams flowing already high from floods Oct 11 reacted to the latest rain. Flash floods closed canyon bottom roads again through the next day. New flood damages generally were masked by the flood damages of Oct. 11.</p>								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	
					KILLED	INJURED	PROPERTY	CROPS		
TEXAS, Southern										
Edwards Co.	12-	Late night- 13 Next day			2	0	0	6	C	Heavy Rain
	A series of thunderstorms moved northward over the county after 9 pm CST Oct. 12 and caused flash flooding on streams from midnight through the next day. Ground was already super wet and streams flowing higher than normal from prior floods on Oct. 11. Heaviest rainfall of this storm was situated over the divide area northwest of Rocksprings where some ranches reported well over 5 inches. Official rainfall at Rocksprings was 5.77 inches. By 7 am CST swift water had closed Hwy 55 both west and east of Rocksprings, Hwy 377 along the South Llano River and also in canyons near Carta Valley, FM Road 674 along the West Nueces River.									
	Two drowning deaths were documented in the county. A car carrying 6 citizens of Mexico washed off Hwy 377 near the South Llano River in north Edwards County during darkness. Two occupants were reported to have drowned and the others escaped to high ground. In Rocksprings (normally immune to flooding due to high elevation) water ponded briefly during the heaviest downpours and flooded several businesses, apartments, and a church. Several other incidents of cars washing off roads were reported. Countywide there were severe losses of fencing. Loss of cattle and goats also occurred.									
Kinney Co.	13	Morning-afternoon			0	0	?	?		Heavy Rain
	During early morning through afternoon, flash floods moved down streams of north Kinney Co. Rises on creeks as well as on the West Nueces River were due to heavy upstream rains in Edwards Co. in addition to overhead rains. Brackettville only received 1.52 inch while an estimated 3 inches fell onto already wet ground north of Brackettville. Flooding affected only rural areas and closed Ranch Roads 334 and 3199.									
Real Co.	13	Morning-afternoon			0	0	?	?		Heavy Rain
	Flash flooding of creeks set in around 2 am CST and by 6 am a sharp rise was developing on the upper Frio and upper Nueces Rivers. Heavy rain which fell from 1 am to 8 am totalled 4.0 inches at Leakey. Most rainfall fed into streams as saturated ground could hold little of the moisture. The flood crest on the Frio passed Leakey 7 to 9 am. The main impact of flooding was closure and some damage to roads including Hwys. 377, 441, and FM Roads 336, 1120, and 1050.									
Uvalde Co.	13	Morning-afternoon			0	0	?	?		Heavy Rain
	Heavy rain-bearing thunderstorms began over the county around 1 am CST and continued until mid-morning. Rainfall totals were 3 1/2 inches over the northern third of the county. Flash flooding started on creeks in north parts of the county by 2 am and continued through the day. Flooding was due in part to heavier rains draining downstream from adjacent counties to the north. Flooding on the West Nueces, Nueces, Frio, and Sabinal progressed through the county all day behind very steep flood waves. Many roads were washed over including FM Roads 481 and 2690. Campers at Garner State Park safely evacuated the riverside in advance of the Frio River rise.									
Bandera Co.	13	Morning-afternoon			0	0	5	?		Heavy Rain
	Heavy rains hit west Bandera Co. at 2 am CST, then tapered off around 5 am. Minor rises were generated on creeks and both prongs of the Medina River from these initial rains which fell onto ground still very wet from flooding two days prior. At 7:30 am another round of storms bearing even more intense rains entered the county and progressed eastward. Water cascaded down hillsides from 7:30 to 9:30 am, created sharp rises and rather steep advancing flash flood waves on both prongs of the Medina River, and sent small creeks out of banks. Rainfall totals for the two bursts of rain were 6.0 inches on the upper West Prong, 5.14 on the upper North Prong, 4.5 at Vanderpool, and 3.65 at Bandera. Most rain fell in two hours 8 to 10 am. The flood waves of the two prongs consolidated at Medina city and gave a 20 ft. rise downstream to Lake Medina. The sudden rise reached Camp Bandina about 11 am to noon and crested in Bandera in mid-afternoon. Although not as severe as the record August 1978 flood, this rise was the highest since that time. A few houses rebuilt near Camp Bandina were said to have flooded. Severe log jams and debris movement were reported on the leading edge of the flood. Safe evacuation took place during this daylight flood, and there were no injuries. Hwy 16 remained closed near the river into the night.									
Kerr Co.	13	Morning-afternoon			0	0	0	5	C	Heavy Rain
	Rains fell after midnight over the county sending slight rises down already high flowing creeks. Between 8 and 10 am CST intense downpours hit eastern Kerr Co. giving sudden totals of 4.5 inches on upper Turtle Creek, 4.3 at Mountain Home, 4.05 at Kerrville, 3.30 at Center Point. Some 3 to 4 inches fell upstream from Hunt on the North Fork of the Guadalupe River producing a sudden overbank rise. By 10 am several roads had been quickly overwashed including FM Roads 1340 along the North Fork, Texas 39 Ingram to Hunt, FM 1273 on upper Turtle Creek, and Texas 16 Kerrville to Bandera. Out of Kerrville FM Roads 2771 flooded at Turtle Creek, 394 at several spots, 1338 at Goat Creek, and 1341 at Cypress Creek. In Kerrville the sudden deluge flooded many cars, caused water buildup which seeped into some houses and businesses. There were no known injuries.									
TEXAS, Southern										
Gillespie Co.	13	Morning-afternoon			0	0	?	?		Heavy Rain
	Heavy thunderstorms moved across the county during the morning causing a period of brief but intense rains. Greatest reported totals were 4.7 inches about 8 miles south of Fredericksburg, 2.8 inches in Fredericksburg. Flash flooding of streams in south Gillespie Co. was reported through the afternoon. Extent of any damage was not known.									
Kimble Co.	13	All day			0	0	0	7	C	Heavy Rain
	Heavy rains after midnight produced flash flooding on streams in western Kimble Co. throughout the morning. Rainfall over the area totalled 4.9 inches at Cleo, 4.0 at Roosevelt, 3.6 at Telegraph, 6.0 west of Junction, and 6.0 at Segovia. Overhead rains generated a rise estimated at 20 feet on the North Llano River which reached Junction in late morning. Most significant was a 30 to 35 feet rise on the South Llano River (said by some residents to have been the highest rise on that branch of the river since the 1930's). That rise moved quickly from Edwards Co. downstream into Kimble Co. and reached Junction in the afternoon. Eventual crest at Junction on the main Llano River was just over 31 feet (floodstage 14 ft). Most property damage occurred in and near Junction where severe flood damage was reported to about 20 to 30 houses. Mobile home parks were inundated next to the rivers. Flood waters rose to within 3 blocks of the courthouse. Along the South Llano River through rural Kimble Co. there were significant losses of fences, crops, pastures, cattle, sheep, and goats. In places the South Llano was 2 miles wide during crest and water levels reached roof height of some rural houses on Hwy 377. Property losses and road closures were also experienced along Bear Creek and Johnson Fork. Despite property losses of several million dollars, there was no loss of life or injury during this daylight flood.									
Menard Co.	13	Morning-afternoon			0	0	?	?		Heavy Rain
	Rainfall of 3 to 5 inches over the county produced flash floods through rural sections of the county, mainly from late morning through afternoon hours. Damages were probably limited to roadways and ranch property.									
Mason Co.	13	Morning-night			0	0	?	?		Heavy Rain
	Spotty flash flooding of creeks occurred in the county as heavy rains moved over the area. More significant flash flooding, however, moved down the Llano River from heavy upstream rains. Extent of damages was not reported.									
Llano Co. (11 NW Llano)	13	0910CST	1	40	0	0	4	0		Tornado (F1)
	Very heavy thunderstorms moving northeastward through Llano Co. produced a short-lived tornado 11 miles northwest of the city of Llano. The twister also moved northeast for about a mile through a remote area. A power line was severed, a ranch outbuilding destroyed, and trees uprooted. Heavy rain preceded the tornado, but no hail was reported with it.									
Kendall Co.	13	Late morning-afternoon			0	0	5	0		Heavy Rain
	Sudden rainfall of 2 1/2 to 3 1/2 inches from 10 am to noon CST generated rises on area creeks which flooded low water crossings. The only significant property damage reported was on Cypress Creek at Comfort. Heavier rains of 4 to 5 inches in adjacent Kerr Co. that morning generated the flash flood on Cypress Creek which moved downstream into Kendall Co. and to Comfort. Some 17 houses were reported flooded near the creek in Comfort during the afternoon. Evacuations took place without injury.									
Llano Co.	13-14	Afternoon-next day			0	0	0	5	C	Flooding
	Flood waters moving down the Llano River began entering Llano Co. around midday Oct. 13. Early rises were attributed to flash flooding on feeder creeks in Mason Co. Late night of Oct. 13 a sharp rise moved swiftly down the river and crested at the city of Llano between midnight and 2 am Oct. 14. This main rise was attributed to South Llano River waters which had flooded Junction some 12 hours earlier. The crest at Llano was just over 26 feet (floodstage 12 feet). Reported losses in Llano Co. included fencing, several head of livestock, and some pleasure boats. There were no known house or vehicle losses.									
Williamson Co.	13	Afternoon			0	0	?	?		Heavy Rain
Burnet Co.	13	Afternoon			0	0	?	?		Heavy Rain
	Thunderstorm rains totalled 2.2 inches near Andice, 2.25 at Briggs, 2.04 at Bertram, and 2 to 3 inches over west parts of Williamson Co. and east Burnet Co. Rain fell in only a couple of hours at midday and caused flash flooding of creeks. Rural roads closed at creek crossings, but no significant damage was reported. Suddenness of the rain and wet state of the ground prior to the rains contributed to the runoff problem.									
Robertson Co.	13	1400CST			0	0	?	?		Wind
	A severe thunderstorm cell moved east or northeast through Robertson Co. Major wind damage was reported to property in Hearne, but specifics were not available. Areas affected by high wind gusts may have extended over central and north parts of the county too as the large storm moved quickly over those areas after departing Hearne.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Robertson Co.	14	Early morning	0	0	?	?	?	?	Heavy Rain
Brazos Co.	14	Early morning-afternoon	1	0	6	?	?	?	Heavy Rain
Madison Co.	14	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Around 1 am CST a band of heavy thunderstorms extended from these three counties northeastward into northeast Texas. The band moved very slowly eastward, wetted the ground, and caused local flood problems up to 6 am. Rainfall in Robertson Co. amounted to 7.24 inches at Bremond and 2.55 at Wheelock from this initial storm line. Around 6 am CST a large thunderstorm cell on the south extension of the band became nearly stationary over Brazos and Madison Counties where it deluged parts of the area for four hours.</p> <p>Rainfall in downtown Bryan up to 6 am CST was 2.2 inches with the deluge after 6 am putting storm rainfall up to 4.95 inches. Parts of Bryan received 6 inches. In Madison Co. Midway got 4.58 and Madisonville 2.40. The most serious flooding hit Bryan. One drowning occurred about 930 am CST when a 15-month old child was swept from his yard and into a drainage channel by the swift runoff waters. A man and his daughter narrowly escaped from flood waters when their car was swept into a Bryan drainage ditch. Morning commuters heading to work in the storm blocked Bryan streets with flooded-out vehicles. Severe street and bridge damage occurred in Bryan and surrounding area. Several residential neighborhoods on the north and east sides of Bryan sustained serious flooding as waters entered homes and apartments in what was said to be the worst rain flooding in Bryan in years. Rate of rainfall and prior wetness of the ground were blamed for the unusual degree of flooding. Scattered low spots and areas along Carter Creek were identifiable trouble spots. Flood damage was also reported to several businesses, one school, and the Bryan Police Station. Much less rain fell on south Bryan and College Station. In rural areas of Brazos Co. and over Madison Co. flooding affected mainly farm lands and roads.</p>									
Montgomery Co. (1W Magnolia)	14	0650CST	3/4	40	0	0	0	0	Tornado (F1)
<p>Just before 7 am CST twin funnel clouds near a thunderstorm were observed 1 mile west of Magnolia passing over FM Road 1774. Railroad and county workers in the area watched the twin funnels as they traveled together northward. A check by law officers shortly afterward revealed a well-defined path of scattered debris and uprooted trees through a forested area, but the twister had hit no man-made structures.</p>									
Montgomery Co.	14	1830CST							Funnel Cloud
<p>A late afternoon thunderstorm over east Montgomery Co. produced a funnel cloud which was seen passing near New Caney. There was no evidence that it touched ground.</p>									
Orange Co.	14	Evening	0	0	?	?	?	?	Heavy Rain
Orange Co.	14	1900CST	0	0	?	?	?	?	Lightning
<p>A thunderstorm over Orange Co. dropped 6.75 inches of rain at Mauriceville and caused frequent lightning strikes over Bridge City.</p>									
Burnet Co.	17	2030CST	0	0	?	?	?	?	Wind
<p>Severe thunderstorm cells (along a southeastward moving front) which affected southeast Lampasas Co. with damaging wind gusts also tracked across extreme north Burnet Co. with further strong gusts. Extent of damages in the rural area was not known.</p>									
Victoria Co. (near Victoria)	18	0215CST	Short Narrow	0	0	3	0	0	Tornado (F0)
<p>A small, short-lived tornado was reported just northwest of the city of Victoria. The weak twister was associated with a thunderstorm along the leading edge of a fast moving cold front. Apparently damage was minor as the wind swirl quickly lifted and headed eastward over countryside.</p>									
Val Verde Co.	22	Early morning	0	0	?	?	?	?	Heavy Rain
<p>From 2 am CST until 6 am thunderstorms were in progress over various parts of Val Verde Co. Rainfall from the storms totalled 1/2 to 1-1/4 inches. Brief localized flooding of creeks and canyons took place because ground had remained very wet from the past week's rains. No serious damage was reported.</p>									
Atascosa Co.	22	Late morning	0	0	?	?	?	?	Heavy Rain
<p>Between 10 and 11 am CST a thunderstorm dropped 2 inches of rain across eastern Atascosa Co. Previous rainfall that morning plus the sudden deluge brought accumulations to 2.6 inches at McCoy and 2.5 near Pleasanton. Brief flooding of low areas and roads occurred.</p>									
Goliad Co.	22	1130CST	0	0	?	?	?	?	Wind
Goliad Co.	22	1140CST	0	0	?	?	5	?	Hail
Victoria Co.	22	1205CST	0	0	?	?	?	?	Wind
Calhoun Co.	22	1225CST	0	0	4	?	?	?	Wind
<p>A severe thunderstorm cell preceding a cold front moved on a path from central Goliad Co., east-southeastward through southern Victoria Co., across Calhoun Co., and into the Gulf of Mexico. The severe storm was accompanied by a damaging gust front which passed near the cities and communities of Goliad, Fannin, Bloomington, Long Mott, and Port Lavaca. Superficial damage to buildings was reported along the storm track. In Calhoun Co. the wind gust was measured at 90 MPH with a 5-second duration as it passed over an industrial plant.</p>									

TEXAS, Southern

<p>Heavy rains of 1 inch in 20 minutes accompanied the wind blast. Widespread power outages occurred throughout Calhoun and south Victoria Counties. The high winds fanned out over Calhoun Co. bays.</p>									
<p>In Goliad a damaging fall of hailstones hit north parts of the county after the initial wind blast. Stones piled up several inches deep destroying gardens and crops and breaking windows. The hail swath was very close to the track of a tornado which was associated with the severe thunderstorm cell. (See Tornado entry Goliad Co.)</p>									
Goliad Co. (near Weesatche)	22	1140CST	5	50	0	0	5	?	Tornado (F1)
<p>A tornado (and associated swath of hail) took a path east-northeast through Goliad Co. beginning southeast of the Weesatche community and extending to near the Weser community. Passing over a rural area, the twister uprooted trees, tore away fences, stripped roofing and broke windows of nearby houses, took roofs off barns, and toppled windmills. The path of tornadic damage ended before reaching Victoria Co.</p>									
Hardin Co.	25	1840CST	0	0	?	?	?	?	Hail & Wind
Tyler Co.	25	1850CST	0	0	?	?	?	?	Hail & Wind
Jasper Co.	25	1910CST	0	0	?	?	?	?	Hail & Wind
Newton Co.	25	1930CST	0	0	?	?	?	?	Hail & Wind
<p>A single severe thunderstorm cell dropped a 1-1/2 mile wide strip of hail stones (1/2 to 3/4 inch diameter) which extended eastward from near Votaw, along the Hardin-Tyler county line, over the community of Village Mills, and through southern Jasper and Newton counties. Most areas affected were woodlands, but some loss to crops and gardens occurred. Intermittent strong wind gusts accompanied the storm.</p>									
Harris Co.	25	2130CST	0	0	0	?	?	?	Wind & Hail
<p>Scattered damage from blown-down trees and some hail (size of stones not specified) occurred in northeast Houston as a line of thunderstorms blew through. Area of reported high wind was near Hwy 59 and North Loop.</p>									
South Central and Southeast Texas	31								Heavy Rain
<p>The combination of a slow moving front, its associated upper level trough, and a steady trajectory of very humid tropical air from the Gulf of Mexico led to intense rainfall over parts of south central and southeast Texas on Oct. 31. Most storm rainfall at affected locations fell in 12 hours or less. The area of flood-producing rains extended along the coastline from Corpus Christi to Port Oconor and straight northward from these two points for about 120 miles inland. Within the broad rainband area, about 6 centers of exceptionally intense rains occurred. Rainfall maxima were at LaGrange (Fayette Co.) 13.20 inches, near Vanderbilt (Jackson Co.) 12.5, near Woodsboro (Refugio Co.) 12.0, near Aransas Pass (San Patricio Co.) 12.0, at Schroeder (Goliad Co.) over 9.0, near Kingsbury (Gonzales and Guadalupe Cos.) over 6 inches. Much of this area had received more severe flooding exactly two months earlier on Aug. 31. The floods of Oct. 31 developed in daylight hours which facilitated citizen awareness and kept human casualty figures low.</p>									
Nueces Co.	31	0200CST	0	0	?	?	?	?	Wind
San Patricio Co.	31	0215CST	0	0	5	0	0	0	Wind
Aransas Co.	31	0215CST	0	0	4	0	0	0	Wind
<p>A large severe thunderstorm developed over Mustang Island and caused brief, strong gusts on Mustang Is., over Corpus Christi and Aransas Bays, and on immediate mainland shores of San Patricio and Aransas Counties. At the city of Aransas Pass a wind gust over 70 mph was measured around 230 am CST. Scattered wind damages were reported in Aransas Pass. The roof was lifted off a motor company building and contents damaged. Many plate glass windows were broken.</p>									
Bastrop Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
Lee Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Storm rainfall accumulations from 2 am to about 7 pm CST over these counties included 6.62 at Smithville, 6.37 at Giddings, 5.74 at Fedor, 3.18 at Dime Box, and 3.58 at Lexington. The east half of Bastrop Co. and south half of Lee Co. were affected by flooding of creeks from 5 am through afternoon hours. Worst flooding occurred over parts of these counties adjacent to Fayette Co. which received the storm maximum rainfall. A rise was generated on the Colorado River below Bastrop.</p>									
Caldwell Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Heavy flood-producing rains affected the southern half of the county by 2 am with flooding in progress by 5 am CST. Rainfall totals in flooded areas ranged from 3.01 inches near Tilton upwards to 5.62 at Luling. Rainfall was enough to fill creeks over the already wet prairie lands, but extent of damages to rural areas was not known.</p>									

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					KILLED	INJURED	PROPERTY	CROPS	
TEXAS, Southern									
Guadalupe Co. Gonzales Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Heavy rain cells moved slowly eastward in a recurring pattern over Guadalupe and north Gonzales Counties. Period of heavy rain was generally 2 am to 2 pm CST. Rainfall totals included 6 to 8 inches on the Guadalupe-Gonzales county line, 5.99 at Kingsbury, 4.64 at Geronimo, 3.90 at Seguin, 4.48 at Waelder, and 5 to 6 inches in an east-west band over north Gonzales Co. Creeks saturated by rains the previous week reacted quickly to these latest downpours, and by 7 am CST had begun flooding rural roads in the area. FM Road 532 east of Gonzales was closed early. As heavy rains continued north and east of Seguin at midday, a sharp rise to 9.1 feet occurred on the headwaters of Geronimo Creek. Downstream at Seguin the creek did not produce as damaging a flood as those of June and August 1981. Rains in these two counties also generated rises on the San Marcos and Guadalupe Rivers.</p>									
Lavaca Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>The whole county was covered by periodic heavy rains from early morning to midday. Storm rainfall amounts included 5 to 6 inches from Moulton to Shiner, 4.16 at Hallettsville, 4.15 Yoakum, 4.12 at Speaks. By 6 am CST rural roads in the northwest part of the county were flooded. Through the day several creeks spilled out of banks while flooding developed on the upper Lavaca River and moved downstream through Hallettsville. Damage was believed limited to rural and road properties and did not approach the seriousness of floods that hit the same area Aug. 31, 1981.</p>									
Fayette Co.	31	Early morning-night	0	0	6	6	6	6	Heavy Rain
<p>One center of heaviest rain with this storm system occurred around LaGrange and gave rise to damaging flash floods throughout most of the county. Flooding had begun around LaGrange by 4 am CST and worsened during the day as rains persisted. Rainfall pattern at LaGrange showed 6.5 inches overnight to 4 am CST, 7.7 by 9 am, 11.2 by 7 pm, and 13.2 by 9 pm when rains finally stopped. Other nearby amounts included Warren 11.0 inches, Schulenburg 6.70, and Platonía 6.67. A series of rain cells seemed to progress eastward along a west-east line over Fayette Co. thus giving such high rainfall amounts.</p> <p>Serious flooding and damages occurred on most creeks, especially Buckner's Creek through LaGrange. Countywide many farm roads and small bridges washed out. There were at least two motorists swept off roads, but no injuries. Significant crop damage occurred, mainly to corn. This same area was heavily damaged also in the Aug. 31, 1981 flood. A rise on the Colorado River moved downstream from LaGrange due to the local rains.</p>									
Austin Co. Washington Co.	31	Morning-night	0	0	?	?	?	?	Heavy Rain
	31	Morning-night	0	0	?	?	?	?	Heavy Rain
<p>Heavy rains hit all of Austin Co. during the day, but maximum rainfall was reported at Shelby where 10.0 inches had accumulated from 3 am to 3 pm CST. In the same period Bellville received 6.34. All creeks in these counties were in flood by afternoon causing many road closures, destroying some crops and pastures, and damaging some farms, mainly over west Austin and southwest Washington counties. Road closures included FM 389 north of Shelby, FM 109 on West Hill Creek, FM 2429 at West Hill Creek, in Washington Co. rainfall was estimated 7 to 9 inches in the southwest corner.</p>									
DeWitt Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>From early morning through afternoon hours recurring thunderstorm rains produced storm accumulations of 6 to 7 inches over the southeast part of the county from Thomaston to Meyerville, 4.28 at Yorktown, and 3.26 at Cuero. Impact of flooding was not reported.</p>									
Goliad Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Widespread flooding of prairies, farm lands, and communities occurred in Goliad Co. as morning thunderstorms dumped rainfall ranging from 5 inches on the west side of the county to 6.5 inches at Goliad to 9.0 at Schroeder. Flooding had commenced by 8 am CST and worsened through the day. Most rural roads were awash at creek crossings and in dips. Major Hwy 59 east of Goliad was flooded. In Goliad serious bridge and street damages were reported. Full impact of property and crop losses from this flood episode were not known by report time.</p>									
Victoria Co.	31	Early morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Widespread flooding of countryside and significant flood crests on creeks was generated by 8-10 inches storm rainfall over south part of the county, 8 to 9 inches west of Victoria to Coleto Creek, and a measured amount of 6.27 inches at Victoria Airport. High water levels covered flatlands and blocked highways from Bloomington to Placedo and southeastward. West of Victoria Upper Mission Valley Road was badly flooded. Water covered FM 447 plus most streets and low areas in Victoria. Extent of property damage from flooding, if any, was not known.</p>									
Calhoun Co.	31	Early morning-evening	0	0	?	?	?	?	Heavy Rain
<p>Rains started after midnight, deluged the area during morning hours, and persisted on-and-off through the afternoon. Most of the county suffered from accumulation of rain waters on the flatlands. Storm rainfall exceeded 7 inches over all the county and ranged up to about 10 inches at Point Comfort. Hwy 87 from Port Lavaca to Kamey was deeply flooded before 10 am CST. During the day Hwy 35 and FM Road 1090 were also closed. Exact property losses were not known by report time.</p>									
TEXAS, Southern									
Aranas Co. Aranas Co.	31	Early morning-night	0	0	?	?	?	?	Heavy Rain
	31	Early morning	0	0	4	0	0	0	Lightning
<p>Deluges hit during pre-dawn hours, persisted intermittently through midday, and deluged the area again in the evening. Storm rainfall totals reached an unofficial 12 inches in the vicinity of Aransas Pass and exceeded 7 inches over all the county. Houses were reported flooded in low areas around Aransas Pass as water ponded deeply. Hwy 35 was blocked in low spots. Lightning struck an oil storage tank on Hwy 35 between Aransas Pass and Rockport causing it to rupture and burning its contents.</p>									
San Patricio Co.	31	Early morning-night	0	0	6	6	6	6	Heavy Rain
<p>Serious flooding and considerable damage to property occurred over San Patricio Co. due to torrential rains. Early morning thunderstorms on the coast began to flood low areas around Aransas Pass, Ingleside, and Portland by 4:30 am CST. Recurring storms through the morning, intermittent showers in the afternoon, followed by more downpours late afternoon and evening pushed storm rainfall totals to 12 inches near Aransas Pass, 10.02 inches at Ingleside, 11.5 at the Reynolds Aluminum Plant, 9.95 inches at Portland. From Sinton westward the county received 3 to 6 inches rain. Worst flooding hit the Portland, Gregory, Ingleside, Aransas Pass areas during the afternoon and night as waters ponded deeply during heaviest rain periods. As late as 9 pm serious flooding was still in progress and continued into Nov 1. Houses and businesses were flood damaged in low areas of Gregory, Portland, Ingleside, and Aransas Pass in addition to damages incurred by surrounding rural area. Severe road surface damage was reported in the county and cities. Major highway closures were US 181 and Texas 35. At Ingleside the municipal sewer plant was damaged. Many vehicles sustained water damage.</p>									
Refugio Co.	31	Morning-night	0	0	6	6	6	6	Heavy Rain
<p>Deluges of 12 inches were centered around Woodsboro while at Refugio storm rainfall during the day totalled 7.14 inches. Rainfall exceeded 7 inches over north half of the county and was 8 to 10 inches over most of the south part. Flooding at Refugio and over the countryside had set in by 10 am CST and worsened during the afternoon. At Refugio water ponded deeply in low areas during heaviest rain periods and seeped into homes, apartments, and businesses. All roads out of Refugio were flooded at times during the day. A rise developed on the Mission River, spilling out of banks and flooding some buildings close to the river in Refugio. A few houses in rural areas and at Tivoli were reported flooded also. Numerous rural and city roads were damaged by washovers.</p>									
Bee Co.	31	Morning-night	0	0	?	?	?	?	Heavy Rain
<p>Heavy rains started during the morning, persisted on-and-off in the afternoon, and continued heavier in the southeast corner of the county in the evening until 8 pm CST. Flooding of roads and rural lands had begun by 11 am over southeast Bee Co. where rainfall eventually totalled 5 to 7 inches. Rainfall was less over central and west parts of the county. Exact degree of flood damages was not known by this report time.</p>									
Colorado Co.	31	Morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Flash floods developed on small streams by 6 am CST as heavy rains fell over all the county. By late afternoon rainfall totals reached 7.20 inches at Columbus, 6.30 at Eagle Lake, 5.40 at Sheridan, and an estimated 8 to 9 inches along the Colorado-Fayette county line. Flooding affected mainly rural areas. As creeks drained into the Colorado River, a rise that had originated near La Grange was enhanced through Colorado Co.</p>									
Wharton Co.	31	Morning-afternoon	0	0	?	?	?	?	Heavy Rain
<p>Rainfall totals by afternoon ranged from 3.54 inches at Wharton to 4.53 near Pierce to about 6 inches on the Wharton-Colorado county line. Small creeks reacted to the rain and flooded farm lands and rural roads. A rise later moved down the Colorado River from upstream rains that same day.</p>									
Nueces Co.	31	Afternoon-night	0	0	6	6	6	6	Heavy Rain
<p>Heavy rainstorms developed over the eastern half of the county at midday and by 2 pm CST serious urban flooding of low areas was beginning in Corpus Christi. Continuing hard rains in the afternoon and evening worsened the flooding. Eventually rainfall totals for the storm reached 8.70 inches at downtown Corpus Christi, 7.44 at Flour Bluff, 4.81 at International Airport, and 1½ to 3 inches over western Nueces Co. In Corpus Christi many houses and some businesses suffered flood damage as water ponded deeply and seeped into the buildings. Some reportedly had standing water 2-3 feet deep inside. Scores of cars were damaged too. The new Convention Center sustained 5 feet of flooding in the low level parking areas. Evacuations of worst hit areas during the day took place without injury.</p>									
Fort Bend Co.	31	Afternoon	0	0	?	?	?	?	Heavy Rain
<p>Downpours during the day gave rainfall totals by afternoon of 6.80 inches in the Richmond-Rosenberg area, 4.29 at Sugar Land, and 3.91 at Clodine. Water ponded over the largely flat county causing some problems.</p>									
Waller Co.	31	Afternoon	0	0	?	?	?	?	Heavy Rain
<p>Rainfall of 4 to 5 inches during the day along the Brazos River (including a measured 4.87 inches some 3 miles northeast of S.F. Austin State Park) put flooding on creeks in western Waller County.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

OCTOBER 1961

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

41 TEXAS, Western

Crockett, Schleicher, Sutton Counties	11 Morning				0	0	4	0	Flash Flood
Rain amounting to 3 to 5 inches caused flash flooding and damage to automobiles and houses. No casualties.									
Crockett, Sutton, Irion, Tom Green Counties	13 Morning				0	0	4	0	Flash Flood
The remains of a hurricane dropped considerable rain with amounts in excess of 5 inches (up to 6 inches in San Angelo) in the past two days. There was considerable disruption of activities, many flooded homes, and damaged automobiles. No injuries or casualties.									
Gray, Armstrong, Randall Counties	15 Morning				0	0	3	0	Flash Flood
2 to 4 inch rains caused considerable flash flooding. Persons had to be evacuated from buildings in low-lying areas. There were some damaged buildings and a few damaged automobiles. No injuries.									
Perwell, Ector County	15 2030CST				0	0	0	0	Funnel Cloud
Funnel cloud believed to be the tornado described below.									
Ector County	15 2130CST	1.5	30		0	2	4	0	Tornado (F2)
A small tornado (about 30 yards wide) touched down briefly 3 times along a path about 1 1/2 miles long at the Pleasant Farms Community, located about 12 miles southwest of Odessa. Two injured persons hospitalized. Trailer house demolished, frame house suffered extensive damage, storage shed destroyed, one car turned over and another spun around. Several power poles downed.									

42 UTAH ————— NONE REPORTED

43 VERMONT ————— NONE REPORTED

44 VIRGINIA

Amelia County	6 1815EST				0	0	4	0	Wind
Localized, but fairly severe thunderstorm caused roof, siding and glass damage to several homes and businesses in and near the town of Amelia. In addition, a large number of trees were blown over or snapped as winds reached an estimated 80-90 mph during the brief storm.									
Rockingham County	27 Afternoon				0	0	0	0	Hail
Hail between 1/2-inch and 3/4-inch diameter covered the ground just west of Port Republic. One resident said it was like no other hailstorm he had ever seen. No damage was reported.									

45 WASHINGTON ————— NONE REPORTED

46 WEST VIRGINIA ————— NONE REPORTED

47 WISCONSIN ————— NONE REPORTED

48 WYOMING ————— NONE REPORTED

49 ALASKA

Cook Inlet	20-21	-	-	-	0	0	3	0	High Winds
Chinook winds of 40 mph with gusts to 65 mph blew over the higher elevations of East Anchorage over the 2 day period.									
Southwest Islands	29	-	-	-	1	0	4	0	High Wind & Seas
A large wave broke across the f/v Vest Fjord near St Paul Island. The wave smashed the pilot house killing the skipper.									

50 HAWAII

Statewide	27-28				0	0	5	3	Flooding
Heavy rains over the entire state was caused by an upper low pressure system just west of the Islands. Extensive flash flooding of the Waialua Stream in Pearl City during the morning hours of the 28th. Forty people evacuated as stream rose rapidly in a matter of minutes. Several houses destroyed or moved off their foundations. Also some livestock and crop losses. On Kauai, minor overflow of Wainiha, Hanalei and Waialua rivers. Huge rockslide in remote Olokele canyon on the Waimea river as an entire mountainside crashes into canyon. On Maui, minor rockslides along road to Hana closes road in several spots for a few hours. Also minor rockslides and flooding in Hilo area on the island of Hawaii.									

51 PUERTO RICO ————— NONE REPORTED

52 VIRGIN ISLANDS ————— NONE REPORTED

53 PACIFIC ————— NONE REPORTED

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

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					KILLED	INJURED	PROPERTY	CROPS	

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					KILLED	INJURED	PROPERTY	CROPS	

6 CONNECTICUT

MAY 1981

New London | 15 1415EST | 0 0 4 0 | Lightning
A navy housing complex was struck and burned.

JUNE 1981

Manchester Meriden | 22 1500EST | 0 0 3 0 | Lightning
Two houses were struck in Manchester and one in Meriden resulting in fires at all three locations.

JULY 1981

Bolton | 5 2000EST | 0 0 4 0 | Lightning
Lightning caused a fire in a commercial building.

AUGUST 1981

Meriden | 5 0853EST | 0 1 0 0 | Lightning
As a man was walking to his automobile he was struck. Police found him incoherent and bleeding.

Enfield | 5 Afternoon | 0 0 0 6 | Hail
Two hundred and twenty acres of broad leaf tobacco and 300 acres of vegetables were "ripped up" by ice cube size hail.

18 MARYLAND and D.C.

JULY 1981

La Plata | 28 1045EST | 0 2 0 0 | Lightning
Two workers received injuries, due to falls, when lightning struck a house that was under construction. One fell off a ladder and the other was knocked off the roof of the structure.

19 MASSACHUSETTS

MAY 1981

Dudley | 12 1915EST | 0 0 4 0 | Lightning
Lightning struck and burned the corner of a house.

Ayer | 15 Afternoon | 0 8 0 0 | Lightning
Eight people were stunned but not seriously injured.

Charlemont | 15 Afternoon | 0 0 4 0 | Lightning
Nine cows were electrocuted as lightning passed down the tree under which they stood.

Needham | 15 1900EST | 0 0 3 0 | Lightning
Lightning blew a large hole in a house roof but not fire resulted.

Newton | 15 1900-2000EST | 0 0 4 0 | Lightning
Two houses were struck and damaged.

Westford | 15 1630EST | 0 0 4 0 | Lightning
Lightning struck and burned an historic fire house.

Weston | 15 1830EST | 0 0 4 0 | Lightning
A large barn was struck and burned.

MASSACHUSETTS

JUNE 1981

Hubbardston Westminster West Brookfield Winchedon | 22 1500EST | 3 160 0 3 6 0 | Tornado (F3)
A tornado officially verified by National Weather inspection flattened two houses in Hubbardston. Fifteen houses were damaged. In Westminster a house trailer was obliterated as a 76 year old woman sat inside on a couch which was the only item unscathed. She was only shaken up. In Winchedon an entire wall of a high school was removed. In West Brookfield several barns and outbuildings were demolished.

Central Massachusetts | 22 Afternoon | 0 0 5 0 | High wind
Thousands of trees were blown down onto houses Lightning and autos. Many windows were broken and several lightning spawned fires resulted.

JULY 1981

Natick Reading | 5 1400-1600EST | 0 0 3 0 | Lightning
Lightning struck and burned two houses.

Greenfield Harwich Reading | 13 Afternoon | 0 0 4 ? | Hail, Wind
Golf ball size hail was observed. Winds to 60 MPH struck Reading. Lightning struck and burned a barn in Harwich.

Braintree Milton Newton Waltham | 18 Late pm | 0 0 5 0 | Lightning
In Braintree six buildings were hit. In Milton a 3 X 4 foot hole was blown in a roof. In Waltham extensive fire damage occurred at a house as lightning struck and in Newton three houses were hit.

Southeast areas | 20 Late pm | 0 1 4 0 | Lightning
In Hingham a house roof was blown off while a family slept. A woman was slightly injured as lightning struck her while sitting in her house.

AUGUST 1981

Statewide | 5 All Day | 0 5 5 0 | Lightning
An exceptionally large number of lightning strikes occurred throughout the state. It began in the west near 6:00 a.m. and ended in the east around 8:00 p.m. Many towns reported ten strikes or more. Most notable strikes were: man shocked in Westford while plugging in television; boy knocked out inside Braintree home; Brockton gasoline pump struck-shocking attendant; two men knocked out on lobster boat as lightning struck. There were eight house fires in Lexington and in Nantucket seven strikes resulted.

Hyannis | 24 ? | 0 0 4 0 | Lightning
A house antenna was hit and the resulting fire was extensive.

30 NEW YORK, Central

JULY 1981

Saratoga County | 19 1630-1830EST | 0 27 5 C | Severe
In the Saratoga Springs area strong winds, heavy rain, and one inch hail flipped over many house trailers, downed trees and power lines, and knocked over the big tent of a circus. A man was injured near the trailer homes when a tree fell on top of him. Twenty-six other people were injured at the circus, many of them children, when the winds blew down the main tent and sent many objects flying through the air. One inch hail also pelted the circus area as well as very heavy rain. Many areas reported power losses in the county.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

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					KILLED	INJURED	PROPERTY	CROPS	

31 NORTH CAROLINA

JULY 1981

14W Kinston Lenoir Co.	4	0319EST	Short Narrow	0	0	4	0	Tornado (F1) Thunderstorm moved through area with a brief touchdown of a tornado. Several trees were uprooted with damage to pack houses, tobacco barns and shelters. Siding was ripped off the house.
Dare County	4	Afternoon		1	0			Lightning Surfer was struck by lightning while on the beach at Nags Head.
Onslow Beach Onslow County	11	Afternoon		1	0			Lightning Fisherman was killed by lightning off Onslow Beach.
Grandfather Mountain, Watauga Co.	11			0	1			Lightning A man was hit by lightning while leaving the Highland Games.
Mt. Holly, Gaston County	11	Afternoon		0	8			Lightning Eight people were injured at a baseball game when lightning struck the backstop.
Laurinburg, Scotland County	11	Afternoon		0	4			Lightning Four people were injured when struck by lightning while sitting under a tree.
Raleigh, Wake Co.	14	Afternoon		1	0			Lightning A boy was killed by lightning while standing under a tree.
Lake Norman	16	1610EST	Short Narrow					Waterspout A waterspout was reported by police dept. in Davidson, N.C. as well as a pilot. Waterspout dissipated before reaching land.
Locust, Stanly Co.	16	1615EST		0	0	5	0	Wind, Hail A severe thunderstorm moved east across Stanly County, demolishing a mobile home and damaging several others in Locust. Hail size of hen eggs were reported. Damage was between \$100,000 and \$250,000.
Marshville, Union Co.	16	1700EST		0	0	5	0	Wind A severe thunderstorm moved east through Union Co. High winds destroyed 2 poultry houses and damaged a third with most of 98,000 chickens lost. Damage estimated at \$300,000.
Core Sound, Cataret County	17	1029EST	Short Narrow	0	0	0	0	Waterspout Waterspout touched down briefly on core sound between Cedar Island and Atlantic, N.C.
Lake Gaston	20	Evening		1	0			Lightning A woman was struck and killed by lightning while boating.
Person County	24	1700EST		0	0	0	6	Hail A severe thunderstorm moved through Person County accompanied by large hail. 2000 acres of tobacco was damaged with 500 to 800 acres destroyed. Damage estimates up to \$3 million. Size of hail could not be determined as accompanying rains were so heavy.
Ocean Isle Brunswick County	25	1240EST	Short Narrow	0	0	0	0	Waterspout
Granite Falls, Caldwell County	25	Afternoon		0	1			Lightning A man was injured when struck by lightning while standing in a carport.
Marion, McDowell Co.	27	Afternoon		0	2			Lightning Two men were injured when struck by lightning while trimming a tree.
Freezland and Big Pine, Madison Co.	27	1700EST		0	0	0	4	Hail Hail from a thunderstorm destroyed tobacco and vegetable crops with estimated value of \$45,000.
Newton Grove Sampson County	27	2000EST		0	0	0	5	Hail Hail from a thunderstorm destroyed tobacco and corn with estimated value of \$170,000.
Hickory, Catawba Co.	28	1518EST		0	0	0	0	Wind Winds of 65 knots in a thunderstorm recorded at Hickory Airport.
Greensboro, Guilford County	28	1630EST		0	0	5	0	Wind A line of thunderstorms moved east through Greensboro accompanied by damaging winds. \$100,000 damage was sustained by the Ramada Inn with \$45,000 damage to nearby buildings. Location near intersections of I-85 and Rte. 220.

NORTH CAROLINA

Ramseur, Randolph Co.	28	1630EST	0	0	4	0	Wind A severe thunderstorm moved east through Randolph County blowing over a mobile home and damaging other buildings in Ramseur. Also there was some tree damage.
Henderson, Vance Co.	28	1700EST		0	0	4	? Wind, Hail A severe thunderstorm moved east through Vance County and was accompanied by golf ball size hail and damaging winds. A mobile home was destroyed with another sustaining damage. Some power lines were also downed.
Burgaw, Pender Co.	29	1818EST		0	0	3	0 Wind An off duty weather service employee reported a severe thunderstorm four miles south of Burgaw. Winds estimated about 60 MPH. Trees topped in area and some minor structural damage.

37 RHODE ISLAND

MAY 1981

NONE REPORTED

JUNE 1981

NONE REPORTED

JULY 1981

NONE REPORTED

AUGUST 1981

East Greenwich	4	1330EST	0	1	1	0	Lightning A woman was struck and seriously injured in an automobile parking lot.
Statewide	5	Evening		0	0	5	0 Lightning Many strikes occurred and several attic fires resulted.
East Providence	16	Evening		0	0	4	0 High Wind A very high wind "whistled off the water" and ripped up several trees, a few of which landed upon a porch and house. One tree broke into a bedroom and bathroom.

39 SOUTH DAKOTA

JUNE 1981

Pickstown, Charles Mix County	1	2230CST	0	0	0	0	Hail Hail one inch in diameter fell in association with numerous heavy thunderstorms over south central and southeastern South Dakota.
Volin, Yankton Co.	2	0400CST		0	0	4	0 Lightning Lightning struck a farmhouse twice causing fire damage. All family members escaped without injury.
Potter, Sully, Hyde and Hughes Counties	6	1830 to 2030CST		0	0	3	6 Hail, Wind, Rain A huge barn, an old building and trees were destroyed by strong winds. Crops on many farms sustained severe damage from hail, wind and rain. More than 5,000 acres of crops were damaged, much of it totally.
Harrold, Hughes Co.	6	2000CST		0	0	3	0 Wind Airport hanger was destroyed by strong winds.
Miller, Hand County	6	2030CST		0	0	0	0 Funnel Thunderstorms produced short-lived funnels just west of Miller.
Alcester, Union Co.	6	2230CST		0	0	0	0 Funnel
Brandon, Minnehaha County	12	1600CST		0	0	0	0 Funnel Funnel cloud reported - unconfirmed.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

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					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

SOUTH DAKOTA

Butte, Lawrence and Meade Counties	12	1745 to 2130CST			0	0	3	?	Hail, Wind, Funnel
Marble sized hail, winds near 70 MPH and two funnel clouds were reported. One shed was destroyed.									
Belle Fourche, Butte County	12	1756CST			0	0	0	0	Funnel
Citizens reported a funnel cloud twelve miles west of Belle Fourche. No injuries or damage.									
St. Onge, Lawrence County	12	1815CST			0	0	?	?	Hail
Marble and golf ball sized hail was reported at St. Onge.									
Lawrence & Butte Co.	12	1835CST			0	0	0	0	Funnel
Funnel clouds reported six miles northwest of Sturgis.									
Galena, Lawrence Co.	12	2115CST			0	0	?	?	Hail
Hail, one-half to one inch in diameter, was reported at Galena.									
Creighton, Meade Co.	12	2330CST			?	?	?	?	Tornado (FO)
Tornado reported by public ten miles northwest of Creighton.									
Mobridge, Walworth County	13	0000 to 0100CST			0	0	4	0	Lightning
Boat damaged by lightning.									
Milbank, Grant Co. Aberdeen, Brown Co.	13	0330 to 0400CST			0	0	?	0	Lightning
Lightning struck main substation near Big Stone City causing power outage.									
Bon Homme, Yankton and Clay Counties	13	1600 to 1900CST			0	0	?	?	Hail, Wind
Winds up to 60 MPH and hail damage were reported.									
Wakonda, Clay Co.	13	1820CST			0	0	?	?	Hail
Golfball to softball sized hail reported three miles south of Wakonda.									
Parker, Turner Co.	13	1910CST			0	0	4	?	Hail
Baseball sized hail reported five miles west-southwest of Parker.									
Sioux Falls, Minnehaha	13	1950 to 2000CST			?	?	?	?	Hail, Lightning
Three-quarters to two inch hail reported in Sioux Falls. Radio Station, KAUR struck by lightning.									
Day & Roberts Co.	21	1300 to 1330CST	10	*3	0	0	?	5	Hail
Hail swath three miles wide and ten miles long. Hail up to 2 and 1/2 inches in diameter.									
Claremont, Brown Co.	21	1445CST	?	?	0	0	0	0	Tornado (FO)
Tornado between Barnard and Claremont occasionally touching down. No damage or injuries reported.									
Marshall County	23	1000CST	4	50	0	0	4	?	Tornado (F1)
Tornado reported touching down occasionally from two miles south of Eden to six miles ESE of Eden. No injuries.									
Todd County	23	1513CST			?	?	?	?	Wind
60-70 MPH winds at St. Francis.									
Mellette County	23	1545CST			?	?	?	?	Wind
50-60 MPH winds were reported eight miles southeast of White River.									
Brule County	23	1700CST			?	?	?	?	Wind
68 MPH winds were reported at Chamberlain.									
Aurora County	23	1742CST	1/2		?	0	0	?	Tornado (FO)
A tornado touched down briefly in a cornfield thirteen miles west of Stickney. No injuries reported.									
Brule County	23	1750CST	?	?	0	0	4	?	Wind
Roof blown off barn.									
Tripp County	23	1752CST			0	0	?	5	Hail
Two and one-half inch hail reported.									
Davison County	23	1800CST					4	?	Wind
Some property damage as a result of winds.									
Hutchinson & Turner Counties	23	1848CST			0	0	?	?	Wind
60-70 MPH winds were reported.									

SOUTH DAKOTA

Minnehaha County	23	1923CST			0	7	?	?	Wind
Seven people were treated at hospitals for storm related injuries. Wind was recorded at 72 MPH at the NWSFO.									
A thunderstorm complex developed over Mellette and Todd Counties at about 1500 CST and moved eastward through Sioux Falls by 1930 CST. 50-80 MPH winds over a large area.									
Total estimated damage for entire area: 6 7									
McCook County	23	2010CST	1/2	?	0	0	0	0	Tornado (FO)
Tornado reported on ground briefly four miles southeast of Bridgewater. No injuries reported.									
Turner County	23	2015CST			0	?	?	?	Hail
Golfball sized hail reported.									
Vermillion, Clay Co.	23	2035CST			0	0	0	0	Funnel
Funnel cloud reported just northwest of Vermillion.									
Meckling, Clay Co.	23	2059CST			0	0	?	?	Hail
Three-quarter inch hail reported.									
Meckling, Clay Co.	23	2059CST							Tornado (FO)
Thunderstorms developed and moved eastward 35-45 MPH. There were reports of funnel clouds, a small tornado and considerable hail.									
Jackson County	27	1915CST							Funnel
A funnel cloud was reported by the Philip Cooperative Observer 15-20 miles WSW of Philip.									
Union County	28	1555CST					4	?	Winds
55-60 MPH winds were reported at Jefferson, Elk Point and North Sioux City.									
<u>AUGUST 1981</u>									
Murdo, Jones County	1	0300-0500 CST			?	?	4	?	Wind, Hail
Wind speeds near 100 MPH overturned trailers; tore a roof off a house, half of a garage and a trailer and blew down trees. Pea size hail fell.									
Mitchell, Davison Co.	1	0600 CST			0	0	1	0	Wind, Lightning
67 MPH winds were reported. Lightning struck a tree which knocked down a power line.									
Hayes, Stanley Co.	3	0200-0300 CST			?	?	?	?	Wind
60 MPH winds were reported.									
Bowdle, Edmunds Co.	3	0200-0300 CST	?	?	0	0	5	?	Wind
Electric tower toppled by violent thunderstorms and winds. A barn and other farm buildings and some crops and gardens destroyed.									
Lebanon, Potter Co. Hoven, Walworth Co.	3	0230-0400	?	?	0	0	4	?	Tornado (F1) Wind, Hail
Trees uprooted. A steel bin building was raised, twisted by the wind and moved about thirty feet where it was stopped by a large tree. Old elevator demolished, badly damaged corn crops. Just south of Lebanon, a chicken coop was twisted around a tree and a small barn destroyed.									
Gettysburg, Potter Co.	3	0300 CST	?	?	0	0	4	?	Tornado (F1) Wind, Hail
Barn destroyed. Fences pulled out. Granaries bent. Auger knocked over. 50-60 MPH winds recorded. Extensive crop damage and other farm property damaged north of Gettysburg.									
Seneca, Faulk	3	0300 CST			0	0	4	0	Wind
Wind destroyed a barn five miles northeast of Seneca killing 150 hogs.									
Faulkton, Faulk Co.	3	0330-0500 CST			0	0	4	?	Wind
Winds peaked at 97 MPH at Faulkton Airport. Hangar was destroyed. Grain elevator was damaged. Many trees damaged. Top half of concrete silo torn off. Numerous acres of corn flattened. Power outage occurred. Twelve miles east of Faulkton, a large barn was destroyed. Three other barns were destroyed and a row of crops damaged.									
Miranda, Faulk Co.	3	0400 CST			0	0	4	?	Wind
Large barn southeast of Miranda destroyed. Extensive wind damage to other farm buildings.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

SOUTH DAKOTA

Rockham, Faulk Co. and Hand Co.	3	0400 CST			0	0	4	?	Wind
Main barn at one farm severely damaged and four other buildings destroyed. Grain elevator blown over. Several vehicles and a wind power damaged.									
Orient, Rockham and Zell, Hand County Miranda, Faulk Co.	3	0410			0	0	3	?	Wind
Windows blown out by high winds.									
Redfield, Spink Co.	3	0400-0600 CST			0	0	6	?	Wind
70 MPH wind gusts were reported. Outdoor movie screen destroyed. Trees downed. Several business display signs damaged. Civil Air patrol plane at Redfield Airport flipped over. Power outage at Redfield, Miranda and Iulare. Seven miles southwest of Redfield, a large barn and landmark were destroyed. Serious property damage in Redfield area. Crop losses minimal.									
Reville and Albee, Grant County	3	0710 CST	?	?	0	0	5	?	Tornado (F1)
Buildings damaged. Corn flattened. Trees downed.									
Sioux Falls, Minnehaha County	3	1630 CST			0	0	?	?	Hail
Marble to golf ball sized hail over south and east sections of Sioux Falls.									
Hurley and Viborg, Turner County	3	1635 CST	15	440	0	0	5	?	Tornado (F3)
Tornado moved southeast from four miles west of Hurley to four miles south of Viborg. Estimated at F3. Severe damage to farms. Several buildings destroyed. Several head of livestock killed. Trees downed.									
Viborg, Turner Co.	3	1712-2200 CST			0	0	?	?	Hail
Marble to baseball sized hail fell at Viborg.									
Centerville, Turner Co.	3	1725 CST			0	0	?	?	Hail
Softball sized hail hit Centerville.									
Beresford, Lincoln Co.	3	1730 CST			0	0	?	?	Hail
Golfball sized hail pelted Beresford.									
Chamberlain, Brule Co.	3	2440 CST			0	0	?	?	Wind, Hail
60 MPH winds reported. Marble sized hail and 1.80 inches of rain hit Chamberlain.									
Hartford, Minnehaha County	4	0445 CST			0	0	?	?	Hail
Golfball sized hail pelted Hartford.									
St. Francis, Todd Co.	4	1609 CST			0	0	3	?	Wind, Hail
Radio Station in St. Francis recorded a wind gust of 86 MPH following a twenty minute period of 50-70 MPH winds. Trailer blown off foundation. Trees and limbs down. Hail wiped out corn and alfalfa crops southeast of St. Francis.									
Baltic, Minnehaha Co.	14	0300-0400 CST			0	0	4	?	Lightning
Lightning struck a large cottonwood tree during a thunderstorm and killed nine cows, two calves and one bull.									
Aberdeen, Brown Co.	21	2030-2130 CST			0	0	2	?	Hail
Egg to baseball sized hail, in a narrow path, destroyed crops and broke windows five miles north of Aberdeen.									
Edgemont, Fall River County	22	1720 CST			0	0	2	?	Hail
Pea to golfball sized hail covered the ground, two inches deep, just northeast of Edgemont. Three windows shattered in a home and several gardens destroyed.									

41 TEXAS, Southern

MAY 1981

Colorado Co.	1	1345CST			0	0	6	5	Wind
Colorado Co.	1	1345CST			0	0	5	6	Hail
Wharton Co.	1	1410CST			0	0	4	4	Wind
Wharton Co.	1	1410CST			0	0	4	5	Hail
A southwestward moving line of thunderstorms contained one storm cell which began intensifying west of Eagle Lake in Colorado Co. around 1:15 pm CST. It tracked southeastward with the line, became severe, and around 1:45 pm CST began producing damaging wind gusts over a wide path with smaller swaths of more intense wind damage and severe hail damage. Track of the storm took damaging weather over cities and communities of Altair, Rock Island, Garwood, and Nada in Colorado Co.; and near New Taiton, El Campo, and Danevang in Wharton Co.									
Colorado Co. damage: High winds damaged many farm buildings and homes along the storm track. In Nada severe damages were caused by a gust from the northwest. Plate glass windows, signs, roofs, and contents of buildings were damaged badly. Another more intense swath of damage occurred 2 miles southwest of Nada and was caused by a wind gust from the northeast. A large grain dryer toppled, a large farm equipment warehouse was destroyed, debris was scattered several miles to the southwest. Numerous overturned trees were noted, several farm house roofs damaged, a large power transmission tower was bent. This second path of severe wind damage was accompanied by large hail stones which pounded 15 square miles of farmland southwest of Nada. Some fields of maize, cotton, corn, and rice were 100% losses.									
Wharton Co. damage: The severe storm crossed into Wharton Co. affecting mostly rural areas with wind and hail damage toward El Campo. At El Campo numerous trees were downed as winds hit at 2:30 pm CST. Vehicles, utilities, roofs were damaged by wind and wind-blown debris. The damaging winds continued toward Danevang before weakening.									
Uvalde Co.	1	1845CST			0	0	4	4	Hail
Uvalde Co.	1	1845CST			0	0	4	?	Wind
Frio Co.	1	1930CST			0	0	4	4	Hail
Frio Co.	1	1930CST			0	0	4	?	Wind
Zavala Co.	1	1945CST			0	0	4	5	Hail
Zavala Co.	1	1945CST			0	0	4	?	Wind
A severe thunderstorm developed in southeast Uvalde Co. and moved southward across farmlands into Zavala Co. between Sabinal and Batesville. Strong wind gusts and hail stones 1/2 to 1 inch in diameter were reported.									
A second severe storm cell developed 30 miles to the east near Moore in Frio Co. It too moved southward. The Frio County Sheriff office reported 1/2 to 1 inch diameter hail and some wind damage in Pearsall around 8:15 pm CST.									
Val Verde Co.	2	0730CST			0	0	?	?	Heavy Rain
Thunderstorms during the early morning dropped nearly 4 inches of rain in northern Val Verde Co. resulting in flash flooding. At Juno 3.8 inches was officially measured up to 7 am CST. State Highway 163 was closed in the Devils River canyon bottom due to flash flooding which lasted through the afternoon. At Bakers Crossing the Devils River peaked 11.6 feet around noon (floodstage 4 feet). Flash flooding was observed also on Johnsons Draw. Several unnamed normally dry streams washed over Ranch to Market Road 1024.									
Bee Co.	2	1500CST			0	0	4	?	Heavy Rain
Clusters of thunderstorms moved southeast dropping heavy rain over Bee and surrounding counties. Rains were largely beneficial. However, at Beeville 4.3 inches of sudden rain with an estimated 5 to 7 inches west and northwest of town caused significant flash flooding. Medio Creek overflowed and blocked U.S. Highway 181, and along Poesta Creek rural areas and low lying spots within Beeville were flooded. Through the Orangedale community some flooding also created minor damages.									
Cameron Co.	2	1730CST			0	0	5	5	Heavy Rain
Thunderstorms moving toward the east-northeast dropped 4-1/2 inches of rain on San Benito during a couple of hours. Water ponded quickly within the city and afterwards water draining from surrounding farmlands maintained the flooding. Water entered some houses near downtown San Benito and also a few houses in surrounding suburbs. Considerable street erosion occurred. Dozens of autos were stalled and flood damaged on streets. Some crops were damaged where standing water persisted for several days.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

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					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
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TEXAS, Southern

Southeast Texas 3 Heavy Rain & Severe Weather

A slow moving upper low pressure system centered over northern Mexico created a stream of moisture into the upper Texas coastal area which resulted in heavy rains and sudden flooding in several counties and urban areas. Several small but injurious tornadoes were generated in the squally weather.

Ground was actually rather dry in the area of most rain before this round of storms, thus helping to mitigate some effects of the torrential downpours. The following May 3 entries refer to this episode:

Harris Co. 3 1230&1700CST 1 0 6 0 Heavy Rain

Widely scattered pockets of flooding occurred throughout Harris Co., but the most concentrated and serious flooding was the sudden onset of flood conditions (flash flooding) in flood prone locations of south and northeast Harris Co. including parts of the city of Houston.

Two period of heavy rains produced sudden flooding of low areas as water quickly ponded. Bayous also rose out of banks' flooding urban areas.

Rainfall totals included these: Westbury 6.0 inches to noon and 7.76 by night; Houston Hobby Airport 5.2 til 4 pm CST and 8.7 by night; Pasadena 7.9; Alief 5.2; Spring Branch 5.2; Lake Houston 8.25 afternoon til midnight; Humble 7.6.

One drowning occurred in southeast Houston about 3:30 pm CST when an 18-month old boy reportedly slipped into a swollen drainage canal off Brays Bayou.

Intense rain in southwest Harris County and southwest Houston had caused flooding after midday. Elsewhere early daytime rains were enough to saturate the ground and prime it for easy flooding when later rains hit. Most major intersections were impassable in southwest Houston during the afternoon, and numerous cars stalled creating massive traffic jams. The Westbury area reported flooding first with Sims Bayou spilling out of banks and damaging some buildings near the Gulf Freeway. The Sagemont area suffered from ponding of water in lowest areas during the early afternoon with a second round of heavy rains during the late afternoon aggravating the flooding. About 100 persons were evacuated from rising water in Sagemont. Some homes in this area flooded for the third time in two years (previously July 79 and September 79). The Scarsdale, Kirkwood, and Alameda areas also had spots of flooding due to early day rains. The first floor of a southwest Houston hospital flooded prompting evacuation of patients to higher floors.

The second round of heavy rains occurred between 5 and 8 p.m. cst as the band of storms shifted several miles farther to the east as they reintensified. These later rains produced resurging flood conditions in south Houston while leading to onset of flooding in northeast, east, and southeast Harris Co. In Pasadena nearly 8 inches of rain accrued by evening. Some Pasadena homes flooded in lowest areas, major roads were blocked, underpasses were filled, and Vines Bayou overflowed banks. Meanwhile in northeast Harris Co., Greens Bayou put water into some adjacent buildings; Lake Houston rose during the late night to nearly 2-1/2 feet over spillway level causing flooding along immediate banks of the San Jacinto River below the lake.

Worst rains missed the major agricultural areas of the county.

Flood conditions continued throughout the night of the 3rd and the morning of the 4th.

Galveston Co. 3 1300CST Funnel Cloud

A funnel cloud formed over extreme northern Galveston Co. near the south end of a band of heavy thunderstorms. The funnel moved northeast and was spotted as it passed aloft 1-1/2 miles southeast of Friendswood. It crossed into Harris Co. and touched ground. (See next tornado entry)

Harris Co. (near Webster) 3 1315CST 1/2 35 0 0 5 0 Tornado (F1)

A funnel moved aloft into extreme southeast Harris Co. after having formed over the area near Friendswood (Galveston Co.). It dipped to ground level for about a half mile path just west of the Webster community. Point of touchdown was in the Heritage Park subdivision near Bay Area Blvd. and Farm-to-Market Road 528.

No injuries occurred as most residents saw the twister approaching and took cover in the neighborhood of well built brick houses. However, 3 houses hit directly by the tornado sustained loss of roofs and major window breakage. Seven other adjacent houses had lesser damages before the twister lifted.

TEXAS, Southern

Burleson Co. (Mount Zion community) 3 1415CST 4/10 25 0 0 5 0 Tornado (F1)

A thunderstorm passing into extreme western Burleson Co. produced a funnel which touched ground briefly directly in the Mount Zion community, 11 miles southwest of Caldwell. The twister was of the small rope-like variety and the associated thunderstorm did not produce large hail. However, the twister did cause substantial damage since by mere fate it directly hit several buildings in the community. Old St. John's Church, a wood frame building, took full brunt of the small tornado and was heavily damaged. Windows, parts of walls, and most of the roof were removed. The tornado crossed a road and passed just beside Mt. Zion Church also damaging it. Several nearby barns and mobile homes were damaged by peripheral winds and flying debris from the vortex. The tornado spun into a pasture area east of town and dissipated. The churches reportedly were temporarily unoccupied on this Sunday afternoon, and no injuries occurred.

Galveston Co. 3 1430CST Funnel Clouds

A band of heavy thunderstorms produced at least two funnel clouds over northern Galveston Co. between 2:30 and 3:30 p.m. cst. One was spotted near Friendswood not far from where a tornado-producing funnel started earlier. Another funnel passed over Farm to Market Road 2351. These funnels apparently remained aloft.

Brazoria Co. 3 1530CST Funnel Clouds

Funnel clouds spotted near the mouth of the Brazos River and also over Key Largo subdivision on Highway 257 north of Surfside apparently did not touch ground as they moved north-northeastward.

Brazoria Co. 3 1700CST 0 0 5 ? Heavy Rain

Morning and early afternoon rains saturated ground over northern Brazoria Co. Renewed downpours hit the extreme northeast corner of the county during late afternoon causing sudden flooding of low areas and bayous. Up to 6 p.m. cst rainfall amounted to 7 inches at Pearland, 3.6 inches at Alvin.

County Roads 48 and 196 near Alvin were washed over by floodwaters. By 9 p.m. Farm to Market Road 129 was awash. In Alvin a bridge was damaged when topped by flood water. In several suburbs around Alvin and Pearland, water rose from streets and seeped into some houses. Mustang Bayou and Clear Creek rose out of banks and washed away considerable amount of rural fencing. Flooding continued through the night of the 3rd and morning of the 4th.

Galveston Co. 3 1730CST 0 0 5 ? Heavy Rain

The southern end of a band of heavy rainstorms extended over extreme northern Galveston Co. during the afternoon. Early morning rains had prewetted the ground allowing quick ponding and runoff of flood waters with the afternoon rains.

At Friendswood a combination of ponding and drainage flooding led to water damage in parts of nine subdivisions. As estimated 20 to 30 homes were damaged with most concentrated flooding along Clear Creek where floodwaters were 4 to 5 feet deep in some creekside houses. Along Cowart Bayou flooding also occurred with bridges overtopped by 7:30 p.m. cst. Along Marys Creek several houses were reported flooded. In the city of Clear Lake Shores, streets next to the lake flooded, possibly due to tidal as well as rainfall action. Many roads in the north part of the county were impassable including part of Farm to Market Road 518 which was badly eroded. No significant flooding was reported in south Galveston Co. where rainfall was much lighter.

Brazoria Co. (4NW Alvin to 3S Pearland) 3 1840CST 6-1/2 75 0 10 5 0 Tornado (F2)

The tornado formed near the southern end of a band of thunderstorms and moved toward the north-northeast. All injuries were to occupants of mobile homes hit by the twister as it moved over the rural-suburban area of north Brazoria Co.

The tornado damage path was well defined since there were no obscuring incidents of high wind gusts in the area. First touchdown of the tornado occurred about 6:40 p.m. cst in a field south of Texas Highway 6 between Alvin and Marvel. The tornado passed very close to two mobile homes on County Road 941 at Highway 6. One home was destroyed and two children inside were injured; the other home was badly damaged.

It then moved across Highway 6 and crossed County Road 99 where it directly hit another mobile home. Four occupants of that home were injured including one woman who sustained very serious injuries when she was carried many yards away into a wooded area. Adjacent mobile homes were damaged too causing 4 other persons to receive less serious injuries. Witnesses watching the twister cross County Road 99 said it created a shower of sparks as it severed power lines.

Observers stated that pouring rain preceding the incident quit suddenly with approach of the tornado. Rain did not start again after the tornado, and there was no hail.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

										Debris from the wrecked mobile homes was carried a mile across fields north of County Road 99. The twister then passed near a wood frame house knocking it off its block foundation and destroying the garage. After a continuous path of 2-1/2 miles, the tornado made a skipping intermittent path for another 4 miles. Its last known point of touchdown was just south of Pearland near County Roads 110 and 143 where two more mobile homes were damaged. One witness at the last location said, "The rain and wind stopped suddenly and all that could be heard was a tremendous roaring." The funnel remained aloft after this as it passed near Pearland.
Harris Co.	3	1900CST			0	0	4	0		Tidal Flooding
Galveston Co.	3	1900CST			0	0	4	0		Tidal Flooding
										Persistent southeast wind pushed tides to above normal levels along west and north shores of upper Galveston Bay. Tides peaked between 8 and 9 p.m. cst at 3.7 feet MSL at Seabrook and 3.8 feet MSL at Baytown.
										In Harris Co. 8 houses of the Brownwood section of Baytown were flooded. Tricity Beach Road was covered by tidal waters. In Seabrook some bayside businesses received minor salt water flooding. In Taylor Lake Village bayside roads were overtopped by tides.
										In Galveston Co. the main damage was in Kemah where several bayside businesses sustained slight flooding at highest tide period.
Montgomery Co.	3	1930CST			0	0	5	?		Heavy Rain
										Thunderstorms bearing intense rains moved into the extreme southeast corner of the county during the late afternoon. By 7:30 p.m. cst flooding was in progress. Heaviest rainfall was at New Caney where 6.0 inches fell by 7 p.m. and 8.6 inches had fallen by midnight. Elsewhere 12 miles northeast of Conroe there was 4.0 inches, and Conroe only had 2.8 inches.
										Low land flooding was widespread as Caney Creek, Spring Creek, Peach Creek, the East and West Forks of the San Jacinto River all spilled out of banks during the night. Water entered some houses in low areas near Caney Creek close to the town of New Caney. In Patton Village a house close to the creek was reported flooded. Although there was a sudden onset of flooding, waters were not quick to recede and flood conditions continued through the next day.
Austin Co.	4	1600CST								Funnel Clouds
										Residents of southern Austin Co. observed 3 funnel clouds near the southwest edge of an intensifying thunderstorm. One funnel passed over the Wallis community. None apparently touched ground.
Fort Bend Co. (6 SE Sugar Land)	4	1645CST	6/10	30	0	0	0	0	0	Tornado (FO)
										A tornado formed on the southern flank of an intensifying thunderstorm cell. Citizens observed the funnel as it dipped to earth southeast of Sugar Land near Highway 6 and Farm Road 1092.
										The twister swept northward at 20mph for a short distance over pasture lands. It hit no structures before lifting. The funnel continued northward aloft and was spotted by residents north of Sugar Land in western Harris Co. a while later.
Harris Co.	4	1700CST								Funnel Clouds
										Between 5 and 6 p.m. cst several funnel clouds were spotted over Harris Co. from near Katy eastward to the Huffman-Crosby area. Funnels apparently remained aloft as they moved northward with associated thunderstorms. One funnel spotted north of Baytown in the McNair area was described as unusually large, but it too must have remained aloft.
Brazoria Co.	4	1715CST								Funnel Cloud
										For the second day in a row, a funnel cloud was reported in the county. On this date a funnel was spotted just south of the Retrieve Prison Unit (Texas Dept. of Corrections). Unlike the funnel the previous day which touched down and injured 10, this one remained aloft.
Harris Co.	4	1730CST			0	0	?	?		Heavy Rain
										Flooding rains the previous day had left soil saturated and drainage systems full. (See May 3 entry)
										Between 4:30 p.m. and 6:00 p.m. cst, an intense thunderstorm moved northeastward over Harris Co. creating sudden flooding of low areas, underpasses, streets, drainage canals, and bayous. By 5:30 p.m. major routes were blocked by water including the Katy Freeway and west Houston arteries. A substantial rise developed on Buffalo Bayou.
										As the storm moved through eastern Harris Co., it dumped torrents between Lake Houston and the Highlands area. The San Jacinto River, already swollen due to overflow from Lake Houston, reacted to the overhead rainstorm. A sudden 2-3 ft. rise threatened homes about 9 p.m.

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TEXAS, Southern

Liberty Co.	4	1845CST								Funnel Cloud
										A funnel, moving northeastward on the trailing edge of a large thunderstorm, was reported by sheriff's personnel as it passed over woodlands 6 miles west of Dayton. No damage was found and apparently it never touched ground.
Willacy Co.	5	1230CST								Funnel Cloud
										A funnel was spotted by citizens 10 miles west of Port Mansfield near building showers.
South Central and Southeast Texas	9									Severe Weather Outbreak
										A line of increasingly severe thunderstorms moved southeastward into central and southeast Texas during the afternoon and evening hours May 9. Storms produced damaging hail, wind, and tornadoes along certain individual storm paths. Following entries are grouped by individual storm path occurrences:
Liberty Co.	9	1250CST			0	0	4	?		Wind
Hardin Co.	9	1340CST			0	0	4	?		Wind
										A single thunderstorm cell embedded in humid air well ahead of an approaching squall line became severe in southern Liberty Co. and moved northeastward at 35 mph producing damaging wind gusts near Raywood and Devers. The storm continued into Hardin Co. causing high winds near Sour Lake before weakening.
Williamson Co.	9	1300CST			0	0	?	?		Hail
Travis Co.	9	1330CST			0	0	4	C		Hail
										Severe thunderstorm cells moved rapidly east-southeastward through these counties dropping hail stones 1/2 to 1 inch diameter. These storms were the second round for this date but were more intense than those 2-3 hours earlier.
Austin Co.	9	1330CST			0	0	4	?		Hail
										A severe thunderstorm developed in northwest Austin Co. at 1330CST ahead of an approaching line of other severe storms. This storm moved over the Bellville area with scattered large hail stones. Just over an hour later other hail storms hit the area.
Robertson Co.	9	1330CST			0	0	?	?		Hail
Brazos Co.	9	1420CST			0	0	?	?		Hail
Madison Co.	9	1445CST			0	0	?	?		Hail
Madison Co.	9	1510CST								Funnel Cloud
										One thunderstorm cell, part of a southeastward moving line of heavy storms, intensified into a severe thunderstorm over central Robertson Co. where it began dropping 1-inch diameter hail stones over Hearne. The hail swath continued southeastward over northern Brazos Co. and southern Madison Co. where it created some property and crop damages. Amounts were not known.
										As the storm passed through southeast Madison Co., a funnel cloud was generated and observed by area residents. There was no known evidence that it touched ground as it headed over thick woodlands.
Milam Co.	9	1330CST			0	0	5	6		Hail
Burleson Co.	9	1425CST			0	0	5	6		Hail
Burleson Co.	9	1425CST			0	0	?	?		Wind
Bastrop Co.	9	1425CST			0	0	5	C		Hail
Caldwell Co.	9	1425CST			0	0	5	C		Hail
Lee Co.	9	1430CST			0	0	5	C		Hail
Fayette Co.	9	1510CST			0	0	?	?		Hail
Washington Co.	9	1515CST			0	0	?	?		Hail
										Concentrated swaths of hail damage and some wind damage were reported on southeastward paths through these counties as a line of thunderstorms moved through.
										Milam Co.- Scattered large hail fell throughout the county with most damaging swath of stones extending southeastward through the center of the county. Largest reported stones were 1-3/4 inch diameter about 3 to 4 miles south of Cameron. (This storm cell also produced a tornado. See separate entry, Milam Co.)
										Burleson Co.- The hail storm entered from Milam Co. producing extensive crop and property damage. Golfball sized hail stones stripped a path through the center of the county from Chriesman across Caldwell to Deanyville and Lyons. Wind damage was reported in Caldwell where some mobile homes were affected, and also in the Cooks Point area. Cotton, sorghum, and other crops were virtually pounded into the ground along the hail swath.
										Bastrop Co. & Caldwell Co.- The severe thunderstorm cell which moved through Travis Co. progressed southeastward along the Bastrop-Caldwell county line dropping 1/2 to 1-inch diameter hail stones. Damage was mainly confined to rural areas including property and crops.
										Lee Co.- Scattered large hailstones fell in northeast Lee Co. near the Lee-Burleson county line. Some crop damage was noted as well as rural property.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

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TEXAS, Southern

Fayette Co. & Washington Co.- Scattered hailstones up to 1-inch diameter fell in these counties. Fayette Co. had hail in both the north and south portions, while the storm cell exiting Lee Co. continued a short distance into western Washington Co. Extent of damages were not determined.

Milan Co. & Burleson Co. (5s Cameron to 4NW Caldwell) 9 1400CST 17 60 0 0 5 ? Tornado (F2)
9 1445CST
The tornado first touched ground around 2 pm cst in central Milan Co. and moved southeastward about 25 mph paralleling closely a swath of large hail stones. (See hail entry these counties). The tornado began just east of the Minerva community and crossed rural countryside and oil fields. The twister moved over Highway 79 just west of Milano soon after 2 pm damaging a few farm houses as it passed nearby. After crossing more undeveloped countryside, the tornado hit the small community of Elevation at 2:20pm CST on Highway 36 one mile northwest of the Milan-Burleson County line. Although no injuries were reported, the twister destroyed 3 mobile homes, heavily damaged 2 frame houses, and unroofed 3 others. A number of barns and outbuildings were demolished and vehicles rolled.

Continuing southeastward, it crossed into Burleson Co. about 2:45 pm cst and hit the community of Chriesman. No one was hurt here either, but property damage included several houses damaged on Newton Ranch Road, 2 mobile homes destroyed, lots of roof damage, numerous trees torn out of ground. Although aimed directly at the city of Caldwell, the tornado weakened before reaching there. But, some strong winds were noted with minor damages in Caldwell a few minutes later, although no tornadic action was seen.

Colorado Co. 9 1415CST 0 0 0 5 C Hail
Austin Co. 9 1440CST 0 0 4 ? Hail
Harris Co. 9 1615CST 0 0 5 ? Hail
Harris Co. 9 1630CST Funnel Clouds
Fort Bend Co. 9 1630CST 0 0 0 5 C Hail
Fort Bend Co. 9 1640CST 0 0 ? ? Wind
Fort Bend Co. 9 1645CST Funnel Cloud
Wharton Co. 9 1730CST 0 0 0 5 C Hail
Brazoria Co. 9 1740CST 0 0 0 4 C Hail
Brazoria Co. 9 1810CST Funnel Cloud

As a line of severe thunderstorms moved southeastward into these counties, it began accelerating its forward speed. Simultaneously a few severe cells developed in the humid air just ahead of the actual line of storms.

Colorado Co.- An initial thunderstorm dropped damaging hail stones from east of Columbus to Eagle Lake. This storm was soon followed by the main line of storms which produced additional scattered large hail over parts of the county.

Austin Co.- At 2:40 pm cst severe thunderstorms moved rapidly southeastward into the county dropping more hail over the area where another hail storm had passed about an hour earlier.

Harris Co.- Many locations reported 1/2 inch diameter hail with a few places receiving stones up to 1-inch. Storms began in northwest Harris Co. at 4:15 pm and continued southeastward over the county until 5:30 pm cst. At least two funnel clouds were spotted by citizens. Funnels moved eastward over the north side of Houston between 4:15 pm and 4:40 pm cst. Heavy rain fell on north Houston also where Cypress had 4.2 inches and Satsuma 3.2 inches. This caused brief urban flooding but there was no known damage.

Fort Bend Co.- Storms bearing large hail moved into the county from the northwest at 4:30 pm cst. One of the largest storm cells produced strong wind gusts and hail up to 1-3/4 inch diameter as it passed over the Richmond-Rosenberg area. Hail swath continued southeast paralleling Farm Road 762 through agricultural lands. A funnel cloud was seen passing near Needville but apparently did not touch ground. There was one tornado, however. (See tornado entry Ft. Bend Co. this date). Heavy rains set off brief urban flooding in Richmond-Rosenberg.

Wharton Co.- The main line of severe storms entered the county at 5:30 pm cst. Hail was reported throughout the area with state police at Pierce reporting stones up to 1-3/4 inch diameter. Exact damages were not determined but were probably mostly to crops in this highly agricultural county.

Brazoria Co.- Hail stones of 1/2 to 3/4 inch diameter entered the county from the northwest at 5:40 pm cst. A funnel cloud passed near Alvin around 6:10 pm cst but apparently did not touch down.

TEXAS, Southern

Bexar Co. 9 1425CST 0 0 4 0 Hail
One thunderstorm cell dropped 1/2 inch diameter hail over the county and the city of San Antonio, mainly on the north and west sides. However, a few isolated spots registered hail stones up to 1-inch diameter in north-west San Antonio.

Lavaca Co. 9 1610CST 0 0 0 5 C Hail
DeWitt Co. 9 1624CST 0 0 0 5 C Hail
A series of heavy thunderstorms moved northeastward over these counties in the afternoon, but apparently the main damaging weather was brought by severe storm cells along a southeastward moving squall line. One storm moved from Moulton across Hallettsville while a second cell passed from Shiner and Hochheim toward Yoakum along the Lavaca-DeWitt county line. Hail stones up to 1-3/4 inch diameter pelted towns and farm lands on these storm paths.

Montgomery Co. (SW to W of Montgomery) 9 1630CST 4-1/2 40 0 2 4 0 Tornado (F2)
A tornado moved southeastward through forest and pasture lands just northwest of the Montgomery community leaving a well defined path of uprooted trees and scattered debris near Farm-to-Market Road 1097. Witnesses described the tornado as a funnel shaped cloud of debris. The twister passed near a mobile home on Watson Ranch Road, lifting and carrying the home away, and injuring the man and woman inside. Residents of the home said that a preceding storm had just quieted down when there was an onset of a sudden roaring "train-like sound." Hailstones also caused some damage.

High winds hit the town of Montgomery a few minutes later, uprooting trees and doing roof damage, but no tornado was observed.

Fort Bend Co. (SS Rosenberg) 9 1650CST 3 40 0 0 4 4 Tornado (F2)
A tornado formed in the western section of a severe thunderstorm and moved southeastward through farm land 5 miles south of Rosenberg. The tornado path was on the southwest edge of the hail swath produced by the same storm. (See Fort Bend Co. hail entry this date). The twister crossed Texas Highway 36 damaging several barns. It then passed just outside the Pleak community coming close to only one structure, a frame house on Farm-Market Road 2218 which was unroofed by the tornadic winds. The funnel lifted over agricultural lands southeast of Pleak soon after.

Victoria Co. 9 1730CST 0 0 0 5 C Hail
Jackson Co. 9 1730CST 0 0 4 ? Hail
Calhoun Co. 9 1810CST 0 0 4 ? Hail
Hail-bearing severe thunderstorms entered Victoria Co. at 5:30 pm cst and reached the city of Victoria around 6:10pm cst. This same storm cell continued into Calhoun Co. before moving offshore into the Gulf of Mexico. Most hail was 1/2-inch diameter, but larger stones up to 1-3/4 inch diameter fell over the area including parts of the city of Victoria. Both property and crop damages were noted. Another hail storm which had earlier passed through Lavaca Co. continued into Jackson Co. near Edna and La Ward with large damaging hail.

Hardin Co. 9 1745CST 0 0 4 ? Wind
Tyler Co. 9 1755CST 0 0 4 ? Wind
Jefferson Co. 9 1825CST 0 0 5 ? Wind
Jefferson Co. 9 1855CST 0 0 4 ? Hail
Orange Co. 9 1900CST 0 0 4 ? Hail
The second severe thunderstorm for this afternoon moved into Hardin Co. passing eastward near Sour Lake to Lumberton. Strong gusts estimated at 60 mph caused scattered damage to buildings and trees. Another storm cell along the same line produced wind damages eastward through Tyler Co.

In Jefferson Co. as the line of storms moved through, scattered hail stones of 1/2-to 3/4 inch diameter were reported around Groves and Port Arthur. The hail swath continued eastward over Bridge City in Orange Co. Scattered wind damages occurred also in Beaumont and Port Arthur and Port Acres. Heavy rains created brief urban flooding in both Jefferson and Orange Counties.

Galveston Co. 9 1810CST 0 0 4 0 Hail
Galveston Co. 9 1810CST 0 0 4 0 Wind
Severe thunderstorms moved southeastward through the northern part of Galveston Co. dropping scattered hail stones 1/2 to 1 inch in diameter. Pockets of superficial wind damage were noted in the county. In the city of Galveston considerable damage was done to utility wires. On the shores of Dickinson Bay near San Leon high winds swept two men out into the bay waters, but both were rescued.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Galveston Co. (Dickinson) 9 1815CST 1-1/2 50 0 1 5 0 Tornado (F2)
 As a severe thunderstorm moved through the area (see previous entry), a brief tornado was spawned over the city of Dickinson. Initially spotted as a funnel cloud near the city, the tornado first hit ground near a lumber yard where it did extensive damage. The twister moved southeastward about 20 mph carrying large debris from the lumber yard onto neighboring residences. It hit a house on the 4000 block of Easy Street cracking its brick walls on the northwest side, tearing off part of the roof, and collapsing its chimney into the house. One occupant was hurt by blowing debris and two other narrowly escaped injury. Width of the tornado was such that three adjacent houses suffered some, but less intense, damages. Heavy 2 by 12 boards were carried high aloft then dropped by the twister after it had passed over the lumber yard. Those boards passed through roof and ceiling as they fell onto the neighboring houses. The episode lasted less than 5 seconds by estimate of residents. The twister downed trees, severed power lines, but hit no more houses in a field before lifting.

Refugio Co. Aransas Co. 9 1845CST 0 0 ? ? Hail
 9 1910CST 0 0 ? ? Hail
 A hail storm, part of a long line of severe weather, moved southeast through agricultural areas of these counties. Some crop damages were noted in eastern Refugio Co. It passed over Aransas Wildlife Refuge before moving out to sea. Extent of damages was not determined.

Willacy Co. Cameron Co. 9 1925CST 0 0 5 6 Hail
 9 1945CST 0 0 5 5 Hail
 The southern end of a line containing many severe storms intensified as it passed into Western Willacy Co. There it began dropping large hail stones from northwest of Sebastian southeastward into Cameron Co. The 1-3/4 inch diameter stones caused 100% crop loss along a strip 5 miles long and 2 miles wide paralleling Highway 77. Partial crop losses were noted another 2 miles each side of this strip plus also farther west in Willacy Co. Some 9000 acres of cotton and grain were affected with over \$500,000 cash value of crops lost. Standing water from heavy rains added to crop losses weeks later. The large size of the hail, the copious amounts that fell and the lengthy 30-to 40-minute duration contributed to crop destruction. Damage to houses, farm equipment, and vehicles occurred in the storm path also.

South Central and Southeast Texas 13- Late night- Severe Weather
 14 early morning Outbreak
 A severe weather outbreak moved into south central Texas before midnight on the 13th and continued on into southeast Texas during early morning hours of the 14th. A southward moving cold front produced a line of thunderstorms containing several severe cells which produced combinations of large hail and damaging wind gusts.

Roberston Co. 13 2230CST 0 0 4 ? Hail
Brazos Co. 13 2350CST 0 0 5 5 Hail
Burleson Co. 14 0015CST 0 0 4 4 Hail
Washington Co. 14 0045CST 0 0 4 ? Hail
Waller Co. 14 0115CST 0 0 ? ? Hail
Austin Co. 14 0120CST 0 0 5 C Hail
Fort Bend Co. 14 0240CST 0 0 4 ? Hail
Brazoria Co. 14 0350CST 0 0 5 C Hail
Brazoria Co. 14 0350CST 0 0 ? ? Wind
Matagorda Co. 14 0350CST 0 0 ? ? Hail
Matagorda Co. 14 0350CST 0 0 ? ? Wind

Robertson Co.- Hail damage was reported from unspecified hail stone sizes as a severe thunderstorm developed and moved southeastward in the county. Areas around Franklin, Calvert, and Hearne observed damaging hail.

Brazos Co.- The hail storm moved from Robertson Co. into northern Brazos Co. passing directly over the city of Bryan and southeastward over farmlands. Copious hail stones of 1 to 1-3/4 inch diameter damaged roofs, windows, and vehicles in Bryan and surrounding areas. Some loss of emerging crops was reported.

Burleson Co.- Large hail left a swath of most concentrated damage over eastern part of the county near the Brazos River while other storms dropped more scattered hail elsewhere. Some gusty winds were reported but no damage was known due to wind.

Washington Co., Waller Co., & Austin Co.- The severe thunderstorm which earlier passed over the city of Bryan continued southeastward along the eastern edge of Washington and Austin Counties and the west side of Waller Co. Still dropping large hail, the storm caused mainly crop damages with property damage also registered around Brenham, Bellville, and especially Sealy.

Fort Bend Co.- The storm cell continued southeastward into and through Fort Bend Co. with scattered large hail. Damage was mainly over farm areas beside the San Bernard River and over west side of the county.

Brazoria Co. and Matagorda Co.- The severe storm cell passed southeastward between Angleton and Bay City still producing damage from 1-inch diameter hail stones. Strong wind gusts also created some problems with trees and power lines.

TEXAS, Southern

Burleson Co. 14 0015CST 0 0 5 0 Lightning
 Around midnight cst lightning struck the copper roof of Caldwell City Hall. Apparently the electrical charge caused a circuit breaker box to explode which in turn started a fire. Much of the building and its contents were damaged.

Tyler Co. 14 0030CST 0 0 ? ? Wind
Hardin Co. 14 0140CST 0 0 5 ? Wind
Orange Co. 14 0215CST 0 0 4 ? Wind
Jefferson Co. 14 0220CST 0 0 5 ? Wind

As a line of thunderstorms moved southeastward through the areas, one storm cell became severe in Tyler Co. and moved through Hardin Co. west side of Orange Co., and eastern Jefferson Co. Reported hail stones were small, but strong wind gusts produced scattered damages. Through Tyler Co. and Hardin Co. many trees were blown down on a path from Woodville to Kountze. At 1:45 am cst winds reportedly pushed cars off roads, but no injuries resulted. At Beaumont high winds damaged roofs, windows, signs, trees and utility lines, especially in the downtown area.

Harris Co. Chambers Co. 14 0215CST 0 0 ? 0 Wind
 14 0300CST 0 0 ? 0 Wind

One storm cell passing southeastward in northeast Harris Co. became severe and produced damaging wind gusts beginning near Humble and stretching to Mont Belvieu in Chambers Co. The storm moved into northern Galveston Bay with high winds thereafter. Roof and tree damages were reported.

Calhoun Co. 14 0515CST 0 0 ? ? Wind
 A southeast moving thunderstorm intensified as it neared the coastline. Strong winds gusting along the storm front affected mainly bay and offshore waters.

Tyler Co. 15 1830CST 0 0 4 0 Wind
Jasper Co. 15 1855CST 0 0 5 ? Wind
Jasper Co. 15 1900CST 0 0 ? ? Hail
Newton Co. 15 1930CST 0 0 ? ? Wind
Newton Co. 15 1930CST 0 0 ? ? Hail

A single thunderstorm intensified and became severe with damaging wind gusts and some hail as it passed through these counties. The storm track took it east-southeastward through northern Tyler Co. near Rockland; through Jasper Co. north of Jasper and near Lake Sam Rayburn; through northern Newton Co. between Toledo Bend and Burkeville. Wind damages were reported to outbuildings, roofs, windows, utility lines, and many trees. Around 7:15 pm cst the high winds high Lakeland community in extreme northeast Jasper Co. doing much damage to mobile homes. Hail was reported on the same storm track through Jasper and Newton Counties. There were no known injuries.

South Central and Southeast Texas 15- Late night- Severe Weather
 16 Next morning Outbreak

Coming about 24-hours after another spell of severe weather, this outbreak started before midnight on the 15th over south central Texas Hill country and spread east-southeastward along a 50 to 100 mile wide corridor reaching the Texas-Louisiana state line near the upper coast the morning of the 16th. Severe weather was a combination of high wind gusts, hail, and tornadoes. Cause was a warm frontogenesis zone just to the south of the bad weather which was over-run by a negatively tilted upper trough.

Val Verde Co. 15 2130CST 0 0 ? 0 Wind

A thunderstorm moving rapidly toward the east (about 40mph) caused severe wind gusts over extreme northern Val Verde Co. The storm also had marble sized hail. Areas affected by the storm were largely unpopulated except for the community of Juno.

Mason Co. 15 2230CST 0 0 ? ? Hail
Llano Co. 15 2305CST 0 0 4 ? Hail
Llano Co. 15 2305CST 0 0 ? ? Wind
Burnet Co. 15 2350CST 0 0 5 C Hail
Burnet Co. 15 2350CST 0 0 ? ? Wind

A large severe thunderstorm intensified in Mason Co., moved east-southeast at 30 to 40 mph, persisted for over 2-1/2 hours, and created a path of hail and wind gust damage some 120 miles long. This storm also generated several short-lived tornadoes (See separate tornado entries May 15 and 16).

Mason Co. - Large hail was reported with most severe damage in the northeast corner of the county where hail stones of 1-3/4 inch diameter fell around Fredonia. Also about 2 inches of rain fell in a very short time creating brief small stream flooding.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Llano Co.- The hail storm entered the county just after 11 pm cst from Mason Co. and progressed east-southeast to Lake Buchanan. Damaging wind gusts were nearly continuous with the large hail stone swath over north and central parts of the county. At the city of Llano scattered wind damages occurred. Hail passed mostly north of the city hitting rural areas near communities of Valley Spring, Lone Grove and Greenwood Acres. At Greenwood Acres much property damage was reported as hail beat roofs, windows and vehicles. Commercial and private fruit orchards were destroyed as well as gardens. Numerous wild birds were reported killed.

Burnet Co.- The storm crossed Lake Buchanan just before midnight cst and continued east-southeast through the center of Burnet Co. Large hail and damaging wind gusts passed directly over the city of Burnet. Hail stones up to 1-3/4 inch covered the ground in places. Combined hail and wind did much damage to roofs, windows, and vehicles. Gardens and crops were severely beaten. The storm continued on into Travis and Williamson Counties after midnight.

Llano Co. (2NW Llano) 15 2325CST 3/10 30 0 0 0 0 0 Tornado (F0)
The tornado was seen by spotters about 2 miles northwest of the city of Llano off Highway 71. Lightning illuminated the funnel indicating it touched ground for a short distance as a severe hail storm was also passing by. The twister was on a southeastward path over brushland and hit no structures before lifting.

Burnet Co. (SW Burnet) 16 0010CST 3 45 0 0 0 0 0 Tornado (F1)
A funnel was spotted aloft several times as it passed from near Lake Buchanan to the city of Burnet. The public reported that the funnel dipped intermittently to earth from 8 to 5 miles west of the city of Burnet. The location of tornado touchdowns was off Texas Highway 29 in brushy rangeland and hills where it caused no damage. It was ground based an estimated 1/3 of the time.

Burnet Co. to Travis Co. to Williamson Co. (10E Marble Falls-Leander) 16 0025CST 11 60 0 4 5 0 0 Tornado (F1)
(16 0030CST)
(16 0050CST)
The severe thunderstorm passing through Burnet Co. produced a second tornado in the county which began about 10 miles east of Marble Falls very near the Burnet-Travis county line. The twister made a skipping path over hilly terrain for almost a mile in Burnet Co. and 8 miles over extreme north Travis Co. north of Lake Travis. Residents near the lake observed the funnel as it passed lightning-illuminated to their north. There was no known damage caused in Burnet and Travis Counties. The tornado was on ground level an estimated 1/4 of the time on this segment.

As the tornado moved into Williamson Co. it was on the ground for a final known segment of about 2 miles. Its path took it on the edge of the city of Leander where it damaged houses in the County Glen subdivision. Witnesses close to the tornado described it as "tail-like". The twister severed one large high voltage power line then raked through residential streets. Homes suffered smashed windows, chunks of roofing removed and heavy tree loss. Several persons were showered by breaking glass and debris as they slept, but no serious injuries were reported. Cars in the area were damaged also. The twister lifted just east of Leander.

Travis Co. 16 0030CST 0 0 ? ? Hail
Large hail stones 1-2 inches in diameter pounded extreme northwest Travis County generally north of Lake Travis. The east-southeast moving thunderstorm caused scattered property damage, but apparently the worst of the hail passed over undeveloped areas.

Williamson Co. 16 0045CST 0 0 6 6 Hail
Williamson Co. 16 0045CST 0 0 5 ? Wind
Williamson Co. 16 0100CST Funnel Cloud
One storm entered west part of the county from Burnet Co., at 12:45 am cst and moved over central Williamson Co. producing significant hail and wind gust damages. Apparently a second storm cell that moved through northwest Travis County entered Williamson Co. about the same time near Leander leaving hail damage and a tornado in its path. (See above tornado entry.)

Wind damages: Apart from the more intense tornado damage, other scattered wind gusts produced property damage at Cedar Park, Round Rock, Leander, Liberty Hill, Georgetown and rural areas to the east.

Hail damages: In the county there was an estimated \$400,000 property loss/\$200,000 crop loss due to hail. Stones 1-3/4 inch diameter fell at Liberty Hill, 2 inch at Georgetown, 1-1/2 inch at Leander and Round Rock, 3/4 inch farther east around Taylor. Hail damages were severe in many areas, but Georgetown had especially concentrated damage. Hundreds of windows were broken, several hundred automobiles badly damaged (vehicle losses over \$100,000), and roofs beaten. Hail drifts several feet deep blocked city streets. Severe crop losses occurred over blacklands in the eastern part of the county where 7000 acres of grain were lost. In western Williamson Co. many fruit orchards were damaged especially around Seward Junction.

TEXAS, Southern

A funnel passed aloft over Georgetown around 1 am but did not touch ground. Some residents reported a loud roar and popping ears at the time, but no damages were noted.

Milam Co. 16 0145CST 0 0 5 C Hail
Burleson Co. 16 0215CST 0 0 6 5 Hail
Burleson Co. 16 0215CST 0 0 ? ? Wind
Washington Co. 16 0230CST 0 0 5 C Hail
Washington Co. 16 0240CST 0 0 ? ? Wind

Milam Co.- Large hail began falling from a severe thunderstorm south of Rockdale and continued southeastward. Property and crop damages were concentrated near southern Milam-Burleson county line. Combined property and crop losses were set at \$75,000.

Burleson Co.- The storm began turning rightward (more toward the southeast) as it entered Burleson Co. from Milam Co. A swath of hail stones 2 to 3 inches in diameter produced severe damage from extreme western Burleson Co. to Deanville, Frenstat, Lyons, and Somerville, then into northern Washington Co. Other swaths of hail fell from Tunis to Snook in the north of the county. Much property and crop losses were registered from Deanville to Lyons due to hail, and this was close to a tornado path (see separate tornado entry). Property losses due to hail were close to \$1 million and crop losses were estimated at \$300,000.

Several mobile homes, roofs, signs, and utility lines were damaged by strong wind gusts around the city of Caldwell.

Washington Co.- The swath of damaging hail continued from Burleson Co. into Washington Co. passing near the towns of Independence and Washington. Crop damages over the northern part of the county as well as farm property damage were reported. At least one mobile home was damaged by strong wind gusts east of Brenham.

Milam Co. (SSE Rockdale) 16 0150CST 2/10 35 0 0 0 0 0 Tornado (F0)
A tornado was observed dipping to ground level 5 miles southeast of Rockdale near the Milam-Burleson Co. line at the same time a severe hail storm was passing nearby. No damage was known from this tornado incident since it occurred in open rural land. A short time later farther along the same path extension, another stronger tornado formed (see Burleson Co. tornado entry).

Lee Co. 16 0200CST 0 0 5 5 Hail
The severe thunderstorm which earlier moved through Williamson Co. reintensified in central Lee Co. Huge hail with stones ranging up to 2 inches in diameter hit from Lexington to near Giddings. The wide hail path extended east-southeast over Dime Box community and surround farm lands. Telephone and power lines were knocked down by hail. Extensive damage occurred at Dime Box and Old Dime Box. Severe crop loss was reported. In some areas pasture grass was even killed by hail. Property damage was in excess of \$100,000 and crop losses were estimated \$100,000 to \$200,000.

Burleson Co. (8SW Caldwell to near Frenstat) 16 0210CST 9 75 0 1 5 ? Tornado (F2)
The tornado took a southeastward path beginning 8 miles southwest of the city of Caldwell. This path was along the southern edge of a damaging hail swath and occurred very near areas which experienced 3-inch diameter hail stones. The twister crossed Texas Highway 21 near the San Antonio Prairie area and passed on the edge of the Deanville community. Just outside Deanville the tornado moved beside a mobile home park where it destroyed a reported 3 mobile homes and damaged others nearby. One man was injured in a demolished mobile home. Three residents of another destroyed home took refuge in the bathroom, the only section of the trailer house which was not totally disintegrated after being toppled and rolled. A dozen other homes were damaged by peripheral winds and blowing debris.

The tornado path continued southeast of Deanville over prairie lands where some farm houses, barns, silos, and farm equipment were damaged as the funnel passed nearby. Tornado damage to crops was obscured by hail damage. The tornado ended near the Frenstat community.

Grimes Co. 16 0300CST 0 0 ? ? Wind
Walker Co. 16 0315CST 0 0 5 ? Wind
Montgomery Co. 16 0345CST 0 0 5 ? Wind
San Jacinto Co. 16 0345CST 0 0 ? ? Wind
Liberty Co. 16 0430CST 0 0 ? ? Wind

Several thunderstorm cells became severe along a segment of a squall line extending from Navasota in Grimes Co. to Huntsville in Walker Co. Storms moved southeast at 40 mph producing strong wind gusts along the leading edge. Damages were reported over rural areas and towns in these five counties. Marble hail also fell with the storms.

Several areas of most concentrated damage to buildings, utilities, trees, and signs occurred in Grimes and Montgomery Counties from east of Navasota to Highway 1488 southwest of Conroe; in Walker Co. around the city of Huntsville and near Lake Livingston; and in San Jacinto and Liberty Counties near Lake Livingston and along the Trinity River.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Hardin Co.	16	0510CST			0	0	5	?	Wind
Tyler Co.	16	0445CST			0	0	4	?	Wind
Jasper Co.	16	0540CST			0	0	?	?	Wind
Newton Co.	16	0620CST			0	0	?	?	Wind
<p>Severe thunderstorms along an east-southeastward moving line accelerated to nearly 50 mph as they moved through these counties. Localized wind gusts occurred over rural woodlands from northwest Hardin Co. across Kountze and Silsbee, into southern Jasper and Newton Counties. Other streaks of wind damage were observed in Tyler County around Woodville east-southeastward into northern Jasper and Newton Counties. Marble hail accompanied the storms. Numerous trees were downed, considerable dollar loss in utility lines and poles was reported, scattered roofing and outbuilding damages occurred in the towns affected.</p>									
Galveston Co.	16	1000CST			0	20	5	C	Wind
Chambers Co.	16	1010CST			0	0	?	?	Wind
Jefferson Co.	16	1020CST			0	0	5	C	Wind
<p>Rapidly fluctuating surface pressure to the rear of a squall line which earlier had passed southeastward over the area caused strong gusting winds over these counties. High winds persisted from 8 am to noon cst but most troublesome gusts occurred 10 to 11 am cst.</p> <p>In Galveston Co. high winds peaked around 10 am cst. Apart from scattered wind damages, the only major incident reported occurred at San Leon. A gust caused a large tent to collapse at a local festival there, producing mainly minor injuries to some 20 persons inside the tent. Most of the 100 people inside were not hurt, but news accounts did say that 7 of those injured were taken to hospitals.</p> <p>The pulse of increasing winds rapidly moved into Chambers Co. where minor damages were noted, and then into Jefferson Co. At the Jefferson Co. Airport peak winds were measured at 55 mph at 1020 am cst with higher gusts likely having occurred south of there over Port Arthur and the coast. Property damage included many awnings, sheds, roofing, trees and some windows from Port Arthur to Beaumont. Moving vehicles were blown to sides of roads in several areas.</p>									
Llano Co.	17	1845CST			0	0	?	?	Hail
Burnet Co.	17	1930CST			0	0	?	?	Hail
<p>A severe thunderstorm erupted along an eastward moving Pacific front as it entered Llano Co. Hail stones of 1/2 to 3/4 inch diameter were reported from southwest of the city of Llano eastward into Burnet Co. near Lake Buchanan. This storm was not as severe as the hail storm the night of May 15 and damage was largely masked by the earlier storm effects.</p>									
Bastrop Co.	18	1540CST			0	0	?	?	Hail
Lee Co.	18	1600CST			0	0	5	C	Hail
Fayette Co.	18	1630CST			0	0	5	C	Hail
Washington Co.	18	1645CST			0	0	?	?	Hail
<p>A severe thunderstorm cluster intensified during mid-afternoon over eastern Bastrop Co. and dropped a path of large hail eastward through southern Lee, northern Fayette, and western Washington counties. Stones of 1/2 to 1 inch in diameter fell east of the city of Bastrop and reached Giddings in Lee Co. about 4:15 pm cst. where considerable property damage was reported. Just before 5 pm cst 1-3/4 inch diameter hail arrived over the Fayette County communities of Round Top and Waldeck doing considerable property and crop damages. Scattered large hail continued on the same path into Washington Co. near Lake Somerville.</p>									
Polk Co.	18	1915CST			0	0	?	?	Hail
Polk Co.	18	1930CST			0	0	?	?	Wind
<p>At least two severe thunderstorm cells moved over northern and central Polk Co. creating localized severe wind gusts and large hail stones. Areas from Lake Livingston east-southeastward near Leggett, Camden, and Corrigan reported damages to property, gardens, and forest areas.</p>									
Tyler Co.	18	2020CST			0	0	?	?	Hail
<p>Severe thunderstorms moved from Polk Co. into Tyler Co. around 6:30 pm cst and again about 8:20 pm cst. Apparently it was the second storm which dropped hail stones up to 1 inch diameter around Woodville and 1-1/2 inch diameter 5 miles west of Woodville. Gardens, roofs, and cars were damaged.</p>									
Menard Co.	23	1915CST			0	0	?	?	Hail
Mason Co.	23	1945CST			0	0	?	?	Hail
<p>A severe thunderstorm moved through southern Menard Co. and into Mason Co. dropping hail stones as large as baseballs (2-1/2 inch diameter). Damages were great over rural properties but dollar figures for losses were not known. The hail swath was embedded within a larger rain producing cluster of storms which caused flash flooding in the area.</p>									

TEXAS, Southern

Menard Co.	23	1945CST			0	0	?	?	Heavy Rain
Kimble Co.	23	1945CST			0	0	?	?	Heavy Rain
Mason Co.	23	2000CST			0	0	?	?	Heavy Rain
Llano Co.	23	2030CST			0	0	?	?	Heavy Rain
<p>A slow moving line of thunderstorms dropped intense rain over these four counties causing flash floods on many creeks. Rainfall in 3 to 4 hours during the evening amounted to 4 inches in western Mason, southeast Menard, and northeast Kimble counties. Most small creeks surged out of banks and washed over rural roads. Major highways closed by flash flooding including Texas 29 between Menard and Mason, and Ranch-to-Market Road 1221 between Hext and London. Brief flash flooding took place from 8:30 pm cst to midnight in western Llano Co. where the slow moving storms left 3 to 5 inches of rain.</p>									
Bandera Co.	23	2140CST			0	0	4	?	Hail
Bandera Co.	24	0030CST			0	0	?	?	Heavy Rain
Bexar Co.	23	2240CST			0	0	?	?	Hail
Bexar Co.	23	2315CST			0	0	5	0	Lightning
Comal Co.	23	2255CST			0	0	4	?	Hail
<p>A severe thunderstorm accompanied by large hail and intense rain moved eastward from central Bandera Co., across extreme north Bexar Co. near Leon Springs, and into Comal Co. near Bulverde and New Braunfels. Hail was scattered along this route with some light damages from 3/4 to 1 inch diameter hail stones.</p> <p>Initial storms in Bandera Co. followed by lingering rains caused flash flooding of small streams after midnight into early morning. From the city of Bandera to Lake Medina nearly 3 inches fell in one hour around midnight and by 6 am cst on the 24th totals were 4.95 inches at Pipe Creek. Numerous roads were closed at water crossings.</p> <p>Frequent lightning persisted over Bexar Co. causing several fires. One house in northeast San Antonio was a total loss after lightning ignited an explosion in the unoccupied home. Major damage was done to utility equipment in the city.</p>									
Maverick Co.	24	1850CST & 2000CST			0	0	4	4	Hail
Dimmit Co.	24	2015CST			0	0	?	4	Hail
<p>A severe thunderstorm developed in Mexico and moved east into Texas crossing the Rio Grande near Eagle Pass. The sheriff's office reported 3/4 inch diameter hail over parts of central and north Maverick Co. The storm veered toward the east-southeast and entered Dimmit Co. where it dropped more hail near Carrizo Springs. A second severe storm crossed into Maverick Co. about an hour later putting large damaging hail across the El Indio area. A tornado was generated by the storm near El Indio (see separate entry).</p>									
Williamson Co.	24	1950CST			0	0	5	5	Hail
Williamson Co.	24	2000CST			0	0	?	?	Wind
<p>A severe thunderstorm dropped 1-3/4 inch diameter hail stones from Leander to Liberty Hill and eastward through Williamson Co. doing about \$75,000 damage to property and \$50,000 to crops. Damage from wind gusts was reported in central Williamson Co. also.</p> <p>This storm was on the leading edge of a cluster of severe rainstorms which caused serious flash flooding soon afterward.</p>									
Maverick Co. (85 El Indio)	24	2000CST	2	50	0	0	5	0	Tornado (F2)
<p>As a severe thunderstorm dropped large hail near El Indio, the same storm generated a tornado 8 miles south of El Indio. The twister moved east over two ranches in the remote area. Numerous ranch buildings were unroofed, smaller buildings collapsed, and one frame house was partially unroofed. The 3 occupants took safe cover inside the house. The tornado passed directly through one ranch headquarters but luckily was just out of range of a group of mobile homes which housed many people. Debris from ranch buildings was carried over a mile away through rangelands. The tornado destroyed considerable irrigation equipment and one large cargo trailer before ending.</p>									
Real Co.	24	2015CST			0	0	?	?	Hail
Bandera Co.	24	2030CST			0	0	?	?	Hail
Medina Co.	24	2040CST			0	0	?	?	Hail
Kendall Co.	24	2045CST			0	0	?	?	Hail
<p>An eastward moving line of thunderstorms produced several short paths of 1/2 to 1 inch diameter hail stones over these counties.</p> <p>Individual hail storms were short-lived and did not cause extensive damage as they passed near the towns of Leakey, Vanderpool, north of Hondo, and north of Boerne.</p> <p>Brief flooding of small streams occurred in Bandera Co. where ground was saturated due other rains 24-hours earlier.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Burnet Co.	24	2030CST			1	1	5	?	Heavy Rain
<p>Flash flooding occurred on creeks of central and eastern Burnet Co. after brief but torrential rains fell.</p> <p>One fatality was a 66-year old man whose pickup truck washed off a bridge on Shady Grove Road at a small branch 5 miles east of Burnet.</p> <p>Rainfall totals were 5 inches in the area around Burnet and eastward. Some 3.5 inches fell in one hour about 8 to 9 pm cst. Rains fell on ground wet from storms 24 hours earlier.</p> <p>Hamilton Creek swelled out of banks north of the city of Burnet sending a fast moving flood crest into the city before midnight. Several houses were reported flooded beside the creek on the west side of Burnet prompting a number of rescue efforts to evacuate the residents. About 5 to 10 vehicles were washed off city streets at low water crossings causing slight injury to a least one driver who narrowly escaped. Considerable damage occurred to roads and streets. At the U.S. Highway 281 bridge on Hamilton Creek water crested near bridge road level.</p> <p>High winds and hail preceded the rainstorms, but damages were unknown.</p>									
Travis Co.	24	2130CST			0	0	4	0	Wind
Travis Co.	24	2130CST			0	0	5	0	Hail
Travis Co.	24	2145CST			0	0	5	0	Lightning
<p>A severe thunderstorm cell with high winds and large hail developed briefly on the eastern edge of a cluster of intense rainstorms. The storm dropped 1-1/2 inch diameter hail over parts of Austin and east Travis Co. doing about \$50,000 damage to property. Wind gusts also caused scattered damages through the area. Bergstrom Air Force Base registered wind gusts to nearly 60 mph while gusts of 55 mph occurred at Austin Municipal Airport. As the cluster of storms became stationary over Austin, it dumped torrential rain while producing frequent lightning strikes while damaging city utilities.</p>									
Travis Co.	24-25	2130CST-0200CST			13	100	7	4	Heavy Rain
<p>Short-lived but devastating flash floods surged down creeks of north and west Austin and adjacent suburbs killing 13 persons, injuring about 100 others, and doing some \$35 to 40 million damage.</p> <p>This was the worst flash flood in terms of human loss since flash floods of April 1915 when 13 died along Waller Creek. It was the worst flood for Austin in terms of property damage since the Colorado River flood of 1935.</p> <p>Weather factors: Exactly 24 hours before this flood event, other storms had wetted Austin with 1 to 2 inches of rain thus priming watersheds for efficient and quick runoff of downpours which hit the evening of May 24. Around 5 pm cst a line of thunderstorms intensified as it moved across the Texas Hill country and approached Austin from the west. Storms were in advance of a slow-moving cold front and aided in development by favorable upper air and smaller scale air patterns. At 8 pm clusters of storm cells became nearly stationary over northwest Austin. From then until 10 pm cst torrential rains fell onto a relatively small area which was hilly and urbanized.</p> <p>Rainfall patterns: Falling over an urban area of the state capital, this particular storm was well documented by denser than normal network of private, state, and federally owned raingauges and recording devices. Peak rainfall was just over 10 inches in an area of northwest Austin. Rainfall accrued within a 4-hour period up to midnight cst, but most of it was concentrated within just a 2-hour period 8 to 10 pm cst. Rainfall measurements included these:</p> <p>a) Upper Walnut Creek-10.12 inches total, 5.41 inches one hour 9 to 10 pm CST, 6.72 inches in 90 minutes.</p> <p>b) Bee Creek-8.82 inches maximum total, 5.50 inches in one hour, 8.07 inches in two hours 8 to 10 pm CST.</p> <p>c) Shoal Creek-7.55 inches at Balcones Research Center, 4.44 inches in one hour, 5.59 inches in 90 minutes.</p> <p>Areas affected: Storm waters congregated quickly into creek basins causing well defined flood waves which moved downstream at rapid speeds and which left behind them corridors of death and extreme destruction. Although sheets of water rushed down hillside streets during the height of the downpours, flash flooding was generally survivable in all areas except near the creeks.</p> <p>Creeks affected by major flash flooding were Shoal..Bee..Waller..Walnut..Little Walnut..Bull..Dry..Barton.. and Boggy. Drainage canals overflowed in many areas also. Of these, Shoal Creek caused the greatest loss of life and property damage. This was in part due to streambed configuration which led to a very steep flood wave, overall volume of rainfall in the basin, urbanization of watershed areas, and proximity of residences and streets to the floodplain.</p>									

TEXAS, Southern

<p>Human impact: Of the 13 persons drowned, 11 were drivers or passengers of automobiles which encountered swift water, and 2 were pedestrians swept from their front yard as they fled their just-flooded house. Fatalities were distributed on creeks as follows: Shoal Creek- 6 including the two persons fleeing their home on Jefferson Street; Bull Creek- 2; Bee Creek- 2; Waller Creek- 1; Boggy Creek- 1 which was a pickup truck washed into a tributary drainage canal; Dry Creek- 1 at a low water crossing in city of Rollingwood near Zilker Park. Automobile deaths were reported to have occurred several ways. Some motorists, unaware of water depth or velocity or blinded by rain, drove into already flooded crossings; some motorists sat in stalled cars anticipating water to recede when, in fact, the flood wave then arrived pushing them into the streambed; some motorists were said to have been swept off their feet after evacuating their flooded cars.</p> <p>The 100 injuries was a rough estimate by city officials. Injuries were combinations of bruises and cuts from battering by debris, exposure, water ingestion, and shock suffered by those caught in the floodwaters. Fire Department, Police, and Sheriff personnel reported over 200 rescue attempts, some 50 of which were said to have been dire, near-death predicaments.</p> <p>The flood, occurring on Sunday evening before a Monday holiday, possibly caught more persons on city streets than normally would have been out after 0930 pm CST. On banks of Shoal Creek where water rose incredibly fast, some homeowners said they could not escape their houses due to water pressure against outward-opening doors. Some broke windows to escape, some exited to attics, onto rooftops, and into trees where they were rescued. Some residents along upper Shoal Creek and some business persons on lower Shoal Creek had to make last minute scrambles to safety after spending time at futile attempts to shore up doors and windows and to move furniture upstairs.</p> <p>Property impact: Property losses were estimated at \$35.5 million in the city of Austin and \$2.5 million for the rest of Travis County. Only minor crop losses were noted.</p> <p>Austin losses were estimated at \$17.3 million to residences and contents, \$10.7 to businesses, and \$7.5 to public facilities, mainly roads and bridges. Red Cross survey results showed these losses to have been 20-25 houses destroyed, 150-200 houses major damage, almost 300 houses lesser damage, 45 to 50 apartment or condominium units damaged, 5-10 businesses destroyed, 45 businesses damaged. Police estimated 5000 automobiles stranded on streets with 2000-3000 suffering damage or destroyed. Some 700 cars in retail dealer lots were destroyed on Shoal Creek near west downtown.</p> <p>The city of Rollingwood registered \$1.3 million damages, most to a shopping center and to automobiles. The city of West Lake Hills reported damaged houses and roads adjacent to parts of Bee Creek.</p> <p>Flooding was swiftest and most damaging on Shoal Creek. It was estimated that almost every house adjacent to the creek from 17th Street to 45th Street was flooded. Damage was especially great at bends in Shoal Creek where momentum of the water current carried it straight across the bends and into homes. Those houses taking full brunt of the water force suffered collapsed walls and total loss of contents. Houses flooded generally later in the night after most persons had gone to bed along Little Walnut, Walnut, and Boggy Creeks prompting several late night rescues.</p>									
Williamson Co.	24-25	2200CST-0300CST			0	1	6	?	Heavy Rains
<p>Serious flash flooding occurred over extreme southern Williamson Co. including the city of Round Rock after torrential rainstorms hit the area.</p> <p>A relatively small area was covered by the intense rains which were centered over Travis Co. and which created killer flash flooding in city of Austin. The heavy rain core, however, extended a short distance into the southwest edge of Williamson Co. This resulted in serious flash flooding for rural areas and part of Round Rock.</p> <p>Most significant flash flooding was along Lake Creek. Rainfall of just over 9 inches in a 4 hour period, with most of that rain falling in the one hour period 9 to 10 pm cst, hit the McNeil area on the Travis-Williamson county line. About 7 inches of rain fell in the Cimarron subdivision of Round Rock. Flash flooding occurred on streets and in low areas due to overhead rains, but the worst flood crest gathered on Rattan Creek and Davis Spring Branch which in turn fed into Lake Creek at Round Rock.</p> <p>Railroad tracks between McNeil and Round Rock were flooded and undermined. Flood waters reached Round Rock residential areas about 11 pm cst to midnight. Some 40 homes were reported flood damaged close to Lake Creek. Some subdivisions were surrounded by water and residents stranded.</p> <p>One motorists was injured and narrowly escaped drowning when his car was washed off IH 35 access road near Lake Creek. The young man escaped from the car but was washed into a drainage culvert, and luckily emerged where he was saved by a tree. Several other cars were also washed off roads with drivers escaping unhurt.</p> <p>In Georgetown the South Fork of the San Gabriel River rose out of banks washing away some roads.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
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— TEXAS, Southern

			<p>Damages were greatest in Round Rock. Property losses were estimated at \$500,000 for residences and \$230,000 for roads and bridges. No significant business losses were known.</p> <p>Flood waters eventually filled downstream reservoirs to above flood levels including Lake Georgetown and Granger Lake.</p>							
Webb Co.	24	2210CST	0	0	?	?			Hail	
Jim Hogg Co.	25	0040CST	0	0	?	?			Hail	
			<p>A severe thunderstorm developed in Mexico 50 miles northwest of Laredo and moved southeastward into Webb Co. soon after 10 pm cst. Large hail fell on remote range land northwest through north and east of Laredo.</p> <p>The storm continued southeastward into northern Jim Hogg Co. with large hail before weakening. The storm passed near Hebbronville causing scattered property damage.</p>							
Burnet Co.	24	2230CST	0	0	5	0			Lightning	
			<p>Intense rainstorms unleashed nearly continuous strikes. One 2-story house was hit and burned. Utilities suffered much damage.</p>							
Lavaca Co.	25	0030CST	0	0	?	?			Wind	
			<p>An eastward moving thunderstorm produced local damaging wind gusts from Shiner to Hallettville. Trees were uprooted, small buildings toppled, awnings and windows damaged. Heavy rains followed causing minor brief flooding also.</p>							
Matagorda Co.	25	0215CST	0	0	4	0			Wind	
Matagorda Co.	25	0230CST	0	0	5	0			Lightning	
			<p>Thunderstorm gusts caused scattered damages over the county including the Bay City area. At Bay City Airport small planes on the ground were moved and damaged by the gusts. Lightning hit a business in the community of Blessing and started a fire which destroyed it. Trees and power lines were downed by both wind and lightning strikes.</p>							
Bexar Co.	29	1130CST	0	0	4	0			Heavy Rain	
Bexar Co.	29	1200CST	0	0	5	0			Lightning	
			<p>Early morning storms left ground wet in the area. Then before noon a series of two rainstorms moved in. Heaviest rainfall was 3.7 inches in northeast San Antonio by 1230 pm cst. Most of the north side of the city had over 3 inches of rain causing area creeks to surge slightly out of banks flooding roadways. The fire department reported 8 rescues of motorists who had driven into deep swift waters. Omos Creek topped the bridge at Dressen Drive but stopped before threatening homes.</p> <p>Frequent lightning damaged utility transformers and cables. At least 3 lightning-set fires were reported. One large house in northeast San Antonio was destroyed by fire after being hit by lightning. (Two firemen were slightly injured battling the blaze).</p>							
McMullen Co.	29	1400CST	0	0	4	0			Hail	
McMullen Co.	29	1430CST	0	0	?	?			Heavy Rain	
			<p>A large severe thunderstorm, part of a long line of storms over south Texas, dropped large hail and intense rain between Fowlerston and Tilden. Crops and farm property received some damage in this mostly rural area. Small streams began overflowing and continued running high through the evening over northwest McMullen Co.</p>							
Edwards Co.	29	0215CST	0	0	?	?			Hail	
Real Co.	29	0230CST	0	0	?	?			Hail	
			<p>An isolated thunderstorm dropped 3/4 inch hail stones over the Nueces River canyon from south of Rocksprings to west of Leakey.</p>							
Bee Co.	29	1615CST	0	0	5	5			Hail	
Bee Co.	29	1630CST	0	0	?	?			Wind	
Bee Co.	29	1700CST	0	0	?	?			Heavy Rain	
San Patricio Co.	29	1700CST	0	0	4	5			Hail	
San Patricio Co.	29	1700CST	0	0	?	?			Wind	
			<p>A severe thunderstorm cell began dropping large hail in Bee Co. causing property and crop losses from Beeville southward. Most concentrated damage swath was 1 mile wide extending southeastward from Skidmore to Papatote. In this area severe losses to corn and sorghum were reported. A small tornado also was generated by the storm in this area (see separate entry). Considerable property damage occurred in Papatote. In Beeville high winds also caused minor damage.</p> <p>Some 2 to 3 inches of rain during the storm flooded low areas and closed roads a short time. Some rural roads around Papatote and Skidmore remained impassable for 2 to 3 days longer due to recurring rains.</p> <p>The hail swath continued southeastward into San Patricio Co. Stones were 3/4 inch diameter but fell in such copious amounts that crops were badly stripped. Not much property damage was reported. A continuous corridor of hail over west central parts of the county left moderate to almost total loss of cotton, sorghum, and corn around Odem, east of Mathis, and south of Sinton. Winds flattened some corn also. The severe storm cell moved into the Gulf of Mexico.</p>							

— TEXAS, Southern

Jim Wells Co.	29	1630CST	0	0	?	?			Hail	
Nueces Co.	29	1645CST	0	0	?	?			Hail	
Nueces Co.	29	1730CST	0	0	?	?			Heavy Rain	
Kleberg Co.	29	1645CST	0	0	?	?			Hail	
Kleberg Co.	29	1645CST	0	0	?	?			Wind	
Kleberg Co.	29	1730CST	0	0	5	0			Heavy Rain	
			<p>Scattered large hail fell on a severe thunderstorm track from northeast of Alice southeastward into Nueces Co. near Agua Dulce and Bishop. Hail stones of 3/4 inch diameter were reported at Bishop. Continuing rains at Bishop amounted to 6 inches by late that night and caused flooding of low areas.</p> <p>The severe storm moved southeast over the Kingsville area with hail and high wind gusts. Peak winds of 47 mph were measured at the Naval Air Station but gusts were estimated much higher north of there. More than 2 inches of rain fell 5 to 6 pm cst during the first hour of the storm with 5.2 inches accumulating by 9 pm. Major urban flooding occurred with much street damage in Kingsville. Water seeped into a few homes in low areas. Some evacuations of stranded residents took place. A second brief hail and rain storm around 8:30 pm aggravated flooding and damages.</p>							
Bee Co.	29	1715CST	4/10	25	0	0	4	0	Tornado (F0)	
(45 Skidmore)			<p>A funnel cloud was observed as it passed aloft west of Skidmore on the northwest edge of a severe thunderstorm. The funnel dipped to ground about 4 miles south of Skidmore in an area called The Roundup. The weak twister moved southeast destroying several small barns, overturning a number of horse trailers, slightly damaging a few mobile homes and one large stable. Debris hit one person at the stable but apparently did not cause injury.</p>							
Duval Co.	29	1915CST	0	0	?	?			Hail	
Jim Wells Co.	29	2015CST	0	0	?	?			Hail	
Kleberg Co.	29	2030CST	0	0	?	?			Hail	
			<p>A severe thunderstorm cell moved east-southeast between Benavides and Realitos, south of Alice, and over Kingsville. Hail of 3/4 inch diameter created some minor problems in this mostly rangeland area. In Kingsville storm rains aggravated flooding in progress from an earlier storm.</p>							
Willacy Co.	30	0500CST	0	0	?	?			Wind	
			<p>Severe thunderstorm wind gusts were measured at 60 mph at the port Mansfield harbor as a line of storms moved eastward into the gulf.</p>							
Travis Co.	30	1445CST	0	0	?	0			Heavy Rain	
			<p>A mid afternoon thunderstorm dropped 2 inches of rain over Austin causing brief urban flooding. No serious damages were reported although Little Walnut Creek overflowed and rose near a mobile home park. Pea sized hail fell over downtown. A number of persons scrambled in the storm to evacuate creek side residences flooded 6 days earlier in severe floods.</p>							
Matagorda Co.	31	1145CST	2/10	25	0	0	?	0	Tornado (F1)	
(15SW Bay City)			<p>A tornado made a brief path near the Hales Acres community about 15 miles southwest of Bay City. The twister drifted a short distance northeastward possibly tearing up fences but hitting no buildings. The long rope-like tornado was well photographed by staff of the Bay City <u>Tribune</u> as it moved over open flatlands.</p> <p>The cluster of thunderstorms which generated the tornado also created many similar funnel clouds which did not touch ground. Funnels were spotted between 10 am and 3 pm cst north of Bay City, over Buckeye, around Wadsworth, and near Palacios.</p>							
Brazoria Co.	31	0215CST	0	0	4	0			Heavy Rain	
			<p>Clusters of thunderstorms paralleling the coastline 10 to 20 miles inland dropped 6.1 inches rain at Lake Jackson in a 3 1/2 hour period with 5 inches recorded at Richwood. Much urban flooding resulted. Water rose into a few houses in the city of Brazoria. Flooding continued through evening.</p>							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

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					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

JUNE 1981

Dimmit Co.	1	1230CST	0	0	?	?	?	?	Heavy Rain
Late morning thunderstorms, nearly stationary over the county dropped heavy rains on already saturated ground. Low water-crossings on farm roads as well as low spots in US 83 flooded between Carrizo Springs and Catarina.									
San Patricio Co.	1	1545CST							Funnel Cloud
An airplane pilot reported a small funnel cloud 2 miles southwest of Sinton near a line of coastal showers.									
Fort Bend Co.	2	1015CST	0	0	3	0			Lightning
Lightning struck a house in Richmond. The electrical charge ignited the home's fuse box causing a fire which damaged the house.									
Harris Co.	2	1230CST	0	0	?	?			Wind
A large thunderstorm intensified in northern Harris Co. and moved northward causing strong wind gusts around Tomball. Hooks Airport measured peak winds of 58 MPH during the storm.									
Harris Co.	2	1330CST	0	0	3	0			Lightning
Lightning struck a home in the north Harris Co. city of Kingwood. The charge, hitting a tall pine tree and partially traveling through the house, shattered a window, knocked a hole in the roof, stung objects next to interior outlets, and destroyed appliances.									
Walker Co.	2	1410CST	0	0	?	?			Wind
Walker Co.	2	1430CST	0	0	?	?			Lightning
A thunderstorm caused strong local gusts around Huntsville downing utility lines and poles and doing other superficial damage to buildings. Frequent lightning damaged utility equipment in the city.									
Calhoun Co.	2	2000CST	0	0	?	0			Wind
Aransas Co.	2	2000CST	0	0	?	0			Wind
A band of thunderstorms straddling the immediate coastline and barrier islands off these two counties produced strong outflow gusts. High winds were directed mainly seaward. The Port Oconor Coast Guard station measured peak gusts to 70 mph.									
Aransas Co.	2	2010CST							Funnel Cloud
A funnel cloud was observed near Rockport in the vicinity of severe thunderstorms.									
Brazoria Co. (near West Columbia)	3	0015CST	Short Narrow	0	0	3	0		Tornado (F0)
Heavy thunderstorms moving northeastward through the area generated a small short-lived funnel which touched ground near West Columbia. Point of touchdown was on a farm near County Roads 487 and 23. The twister damaged four barns and tore up fencing. Heavy rain was falling nearby, but the storm produced no hail.									
Liberty Co.	3	Early morning	0	0	?	?			Heavy Rain
Intense thunderstorm rains during late night of the 2nd and early morning of the 3rd flooded parts of Liberty Co. In 3 to 4 hours Liberty measured 5.19 inches rain. By 1 am CST deep water had accumulated on Highway 321 between Dayton and Cleveland with serious street flooding in Dayton and Liberty.									
Jim Wells Co.	3	0710CST							Funnel Cloud
A pilot flying near Alice reported seeing a funnel near developing thundershowers. There was no evidence that it touched ground.									
Refugio Co.	3	0730CST							Funnel Clouds
Rapidly developing thundershowers generated several funnel clouds in the area including two just west of the Refugio Airport and one near FM Road 2441 west of Woodsboro. None touched ground.									
Jim Wells Co.	3	1230CST	0	0	4	5			Heavy Rain
Nueces Co.	3	1330CST	0	0	4	5			Heavy Rain
Nueces Co.	3	1345CST	0	0	4	0			Lightning
Kleberg Co.	3	1400CST	0	0	4	?			Heavy Rain
Very slow moving thunderstorms were centered around Alice and extended northward through Jim Wells Co., eastward into part of Nueces Co., and southward to Kleberg Co. Storms persisted from late morning through mid afternoon dumping 5.5 inches at Ben Bolt, 4.96 at Alice, 3.0 at Kingsville, and 3 to 4 inches elsewhere in the area. Rain fell on ground soaked from previous day's rain. Serious street flooding set in around Alice while water ponded deeply in low areas of Alice, Orange Grove, Agua Dulce, Banquete, Bishop, and Kingsville. Farm areas were extensively flooded causing damage to cotton in west Nueces and in Jim Wells Counties. Frequent lightning east of the area of heaviest rains caused damage to utility equipment in Corpus Christi.									

TEXAS, Southern

Brooks Co.	3-4	Afternoon-next day	0	0	?	?	C	C	Heavy Rain
Nearly stationary thunderstorms drenched flatlands of north and west Brooks Co. throughout the afternoon and evening of June 3rd. Some 5 inches of rain flooded streets and low areas of Falfurrias the afternoon of the 3rd while even heavier rains of 8 inches fell over extreme northwest Brooks Co. Highway 285 west of Falfurrias was closed by high water during the early evening and remained impassable several days afterward. A large flood crest gathered on Palo Blanco and Cibolo Creeks and moved slowly downstream eventually reaching Falfurrias about 4 pm CST on the 4th. Both creeks overflowed and flooded the northwest sector of the city damaging several dozen houses and some businesses. Water levels crested the night of June 4 (about 24 hours after rains fell) and receded on the 5th. Field crops around Falfurrias were damaged.									
Brazos Co.	4	0645CST	0	0	5	?			Heavy Rain
Easterwood Airport at College Station measured 3.5 inches of rain in a few hours up to 7 am CST while areas north of Bryan received over 4 inches. Widespread urban flooding hit the area from 645 am to 10 am CST stalling and flooding scores of automobiles. Minor damage was reported at Texas A&M University where basements flooded. Considerable damage was sustained by 50 apartment units on Redmond Drive in College Station when Wolf Pen Creek surged out of banks.									
Val Verde Co.	4	0900CST	0	0	?	?			Heavy Rain
Flash flooding began on streams and canyons in north Val Verde Co. by 9 am CST after early morning rains dropped 2 to 3 inches. Heavy rains continued until noon with accumulations reaching 6 inches in a few spots. Some highways remained closed north of Del Rio and Comstock through the afternoon.									
Edwards Co.	4	0900CST	0	0	?	?			Heavy Rain
Kinney Co.	4	1000CST	0	0	?	?			Heavy Rain
Slow moving thunderstorms drifted eastward from Val Verde Co. dropping a sudden 2 1/2 to 3 1/2 inches of rain onto already wet ground of these counties. Flash flooding was reported down small canyons and arroyos from mid morning through afternoon.									
Travis Co.	4	Afternoon	0	0	5	0			Heavy Rain
Travis Co.	4	1330CST							Funnel Cloud
Mid day thunderstorms dropped 1.8 inches of rain over Austin and 2.6 inches around Lake Travis in about one hour. Falling onto extremely wet ground, the rains put sudden rises on area creeks. Walnut Creek threatened mobile homes in northeast Austin. Williamson Creek overwashed streets and bridges of south Austin. Shoal Creek washed over low water-crossings but apparently crested short of flooding homes. Over rural north and west Travis Co. many roads were closed by swift water around 1:30 pm CST.									
A unit of the Austin Fire Department reported a funnel cloud over southwest Austin, but it did not touch ground.									
Burnet Co.	4	Afternoon	0	0	?	?			Heavy Rain
Rains over 3 inches in a few hours sent flash floods down small streams of eastern Burnet Co. closing many roads east of Burnet.									
Williamson Co.	4	Afternoon	0	1	6	?			Heavy Rain
Serious flash flooding developed over western Williamson Co. by noon CST and persisted through the evening. By noon CST 3 inches of rain had fallen west of Georgetown. Rains continuing to at least 5 pm totalled 7 inches south of Florence, 4.8 at Florence, about 5 at Cedar Park. One burst of rain added 1.25 inches in 25 minutes at Oak Hill.									
By 1:30 pm CST low water crossings on FM Road 1431 were inundated by 8 feet of water west of Cedar Park. US 183 at Cedar Park and Texas 29 west of Georgetown were closed by early afternoon. Eventually most roads were covered by swift water between Florence, Cedar Park, and Georgetown. Near Round Rock on Brushy Creek one man was injured when he narrowly escaped from his pickup truck after being washed off a flooded crossing.									
Around Cedar Park water entered low lying houses mainly along US 183 and near creeks. In Georgetown the San Gabriel River, fed by large rises on upstream tributaries, overflowed and damaged city park areas. Several mobile homes were flooded damaged along the North Fork of the river. The Middle Fork cut off several hundred residents of suburbs west of Georgetown. In rural areas severe flooding was reported on Bear, Lackey, and Berry's Creeks from 1 pm to 5 pm.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS			

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS			

TEXAS, Southern

Bandera Co.	4	Afternoon	0	0	4	?	?	?	?	Heavy Rain
Kendall Co.	4	Afternoon	0	0	4	?	?	?	?	Heavy Rain
Gillespie Co.	4	Afternoon	0	0	4	?	?	?	?	Heavy Rain

A large cluster of thunderstorms dropped intense rain onto already wet ground and caused flash flooding over eastern Bandera, Kendall, and eastern Gillespie Counties.

Around 1230 pm CST heavy rain stretched over these counties. At Fredericksburg 5.45 inches had accumulated by 7 pm. Many roads had been closed by 430 pm in south and east Gillespie Co. Hwy 16 south of Fredericksburg was washed over. Sharp rises developed on the Pedernales River and Grape Creek. In Bandera and Kendall Counties afternoon rainfall measured 3.5 at Pipe Creek, 3.5 at Comfort, and nearly 7 inches over a small area in extreme southwest Kendall Co. Sheriff's office reported nearly all roads washed over by flash flooding in those areas.

Medina Co.	4	Afternoon	0	0	?	?	?	?	?	Heavy Rain
Frio Co.	4	Afternoon	0	0	?	?	?	?	?	Heavy Rain

Afternoon thunderstorms which hit Bandera Co. also dropped 3.5 inches of rain on north Medina Co. The highway between Castroville, Quilhi, and LaCoste was overwashed by flash flooding around 3 pm CST.

A second severe rainstorm was straddled across south Medina and north Frio Counties during the afternoon. Areas around Yancey got 6.6 inches and Frio Town reported 6.0 inches in several hours. Hondo Creek, San Miguel Creek, and smaller streams experienced flash flooding. Roads, bridges, and farm lands were affected.

Bexar Co.	4	1630CST	0	0	?	?	?	?	?	Heavy Rain
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In 3 hours some parts of Bexar Co. received 3 1/2 inches of rain, mainly on the northeast part. Bad flash flooding of urban streets hit the north and west parts of San Antonio at rush hour stranding many motorists, damaging streets, and flooding cars. Several rescues of motorists were reported with no known injuries.

Southeast Texas	5									Tropical Depression
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A tropical depression (number 2 for the Atlantic & Gulf of Mexico season 1981) formed about 75 miles east of Brownsville on the morning of June 4. The low pressure center moved north and came inland about 6 am CST June 5 some 30 miles southwest of Galveston. Heavy weather, concentrated in a band 25 to 75 miles east of the center, hit the Galveston Bay area with torrential rains and several damaging tornadoes. (See following June 5 entries)

Galveston Co. (City of Galveston)	5	0140CST	2.7	100	0	2	6	0	0	Waterspout-Tornado (F2)
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A damaging tornado cut a swath from southeast to northwest across Galveston Island passing over the west side of the city of Galveston. Embedded within an area of turbulent weather on the east side of a northward moving tropical depression (the center of which was approaching the coastline some 50 miles southwest of Galveston at the time), the twister apparently had already formed over Gulf of Mexico waters as a strong waterspout before hitting land. The tornado alternately traveled over four bodies of water and land parts of the island.

Injuries and damages: Two persons were known to have minor injuries from flying glass and debris, while dozens of persons escaped without harm even though their homes were badly damaged as they slept. Many, awakening moments before the tornado hit, said they recognized the deafening roar as that of a tornado and ducked under pillows and bed covers for protection.

Damages were estimated at \$3.5 million, mainly to private property. Surveys indicated that damage included 8 houses destroyed, 14 with major damage, 27 with lesser damage, 2 large apartment complexes damaged with 5 upper units destroyed and 35 other units with significant damage, 1 business with major damage. Dozens of private cars on streets were rolled or debris-battered plus many were damaged on a retail car lot.

Tornado Path: The waterspout-tornado crossed from Gulf waters onto the beach at 1:40 am CST near FM Road 3005 (New Seawall Extension) and 75th Street; moved northwest about 20 mph along 75th damaging windows and roofs; then crossed the eastern side of Lake Madeline (a resident near the lake observed the large vapor-filled funnel at this point). It emerged from the lake and moved through the Havre LaPette subdivision at 1:43 am CST where it reached maximum strength and size and did major damage. Center of the tornado passed on the west side of Gerol Drive where second stories of several houses were removed, other houses were deroofed, brick walls collapsed inward. Apartment complexes beside the Lake Madeline canal were deroofed. The tornado was at least 200 yards wide at this point doing lesser damages on its periphery several blocks over to Pine Street. No damages were reported to airport property to the immediate left of the twister track. It then crossed Offat Bayou for 3/4 mile; hit island land mass again and crossed Interstate Highway 45 without incident; then moved over an industrial area where it deroofed and collapsed walls of a business. The funnel then moved out over Galveston Bay waters.

TEXAS, Southern

Galveston Co. (Bolivar Peninsula)	5	0300CST	1 1/2	60	0	0	3	0	0	Tornado (F1)
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A tornado made a skipping path northwestward across Bolivar Peninsula. The funnel probably made a discernible path on ground about 75 percent of its swath. It passed near only one house on Johnson Rd. where the debris-laden funnel partially deroofed the house and drove boards through the walls and roof. The tornado may have existed as a waterspout before crossing onto the peninsula. It passed into East Galveston Bay afterwards.

Galveston Co.	5	Early morning	0	0	6	?	?	?	?	Heavy Rain
Galveston Co.	5	Early morning	0	0	3	0	0	0	0	Tidal Flooding

Intense rains associated with the tropical depression spread onshore over Galveston Island and mainland parts of Galveston Co. By 2:30 am CST low area flooding had begun. By 3:30 am CST serious flooding was in progress in Texas City, LaMarque, and northward.

Up to 6 am CST rainfall totals included 9.0 inches west Galveston Island; 2.5 downtown Galveston; 7.0 Dickinson; 5.65 Alta Loma; Hitchcock 7.38; Texas City 8.0; Clear Lake Shores 10.0 inches. Most rain fell in less than 6 hours (between midnight and 6 am CST)

Galveston Co. (Smith Point)	5	0330CST	1 1/2	60	0	1	5	0	0	Tornado (F2)
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A tornado moved northwest through Smith Point, but may have emerged from and reentered waters of Galveston Bay as a strong waterspout. Track of the tornado was across the end of the peninsula. Damage surveys showed 4 houses with major damage, 12 minor damage, many windows broken and trees downed. The tornado moved directly over one house removing its roof and moving it 3 feet. Another house was pushed 12 feet from its foundation. The one injury was a woman who received severe cuts as she attempted to close a window just as the tornado hit and shattered the window on her.

Chambers Co.	5	Early morning-all day	0	0	6	5	5	5	5	Heavy Rain
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Torrential rains swept ashore east of the tropical depression and caused extensive flooding in Chambers Co. Heaviest rains were concentrated around the north side of Galveston Bay and Trinity Bay and inland for 30 miles. In Chambers Co. greatest 24-hour rainfalls to 6 am CST were 13.20 inches at Anahuac and 15.0 at Lake Anahuac.

Damages: In Anahuac 97 houses were flooded to some extent plus several businesses. In Smith Point several dozen houses flooded; rain water stood 2 feet deep in some; the courthouse annex and few Smith Point businesses also flooded. Flooding of low areas affected scattered spots also around Mont Belvieu, Wallisville, Barbers Hill. Scores of cars countywide were damaged. Waters were slow to drain in the flat area and remained high through the day. Crop losses in the county were 6000 acres of soybeans which remained submerged up to 3 days. Rice levees suffered some damages but the crop was not adversely affected.

Chambers Co.	5	Early morning	0	0	5	0	0	0	0	Lightning
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During pre-dawn hours intense lightning hit areas on the east side of Galveston Bay while torrential rains were in progress. Two houses, one at Oak Island and one at Smith Point, were struck and destroyed in the resulting fires.

Harris Co.	5	Early morning-all day	1	0	6	?	?	?	?	Heavy Rain
Harris Co.	5	Early morning	0	0	3	0	0	0	0	Tidal Flooding

Torrential tropical depression rains fell from midnight to 6 am CST over southeast Harris Co. creating extensive flooding. Rainfall totals for 24-hours up to 6 am, most falling after midnight: Highlands 13.0 (to 9 am); Baytown 10.9 (to 8 am) and 7.5 (to 6 am); Deer Park 6.47; San Jacinto Dam 6.27; Clear Lake City 6.4; downtown Houston 3.26; Port of Houston 7.0; Jacinto City 5.2 inches.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Widespread flooding of houses in low areas was beginning by 5 am and major roads were impassable. Conditions worsened up to 10 am and gradually receded later in the afternoon. Steady southeast winds pushed tides to 4.2 feet MSL in upper Galveston Bay adding to the rain flooding in Baytown and Seabrook and inhibiting drainage in other areas. Over 100 cars were damaged in the county. In Houston: An out-of-town man drowned in southeast Houston at 6:45 am when his car ran into deep water in an underpass. Electric car windows supposedly were inoperable and prevented his escape from the submerged car. Greens Bayou overflowed in east Houston heavily damaging one motel and destroying dozens of cars. In Baytown: Rain and tidal flooding affected 50 homes, mainly in the Brownwood area. Rain ponding seeped into downtown businesses and about 20 houses elsewhere in the city received fresh water flooding. Rains draining from the north caused extensive flooding along Spring Gully, Goose Creek, and Cedar Bayou. Streams rose through June 5, crested on June 6, and caused major flooding along the banks. More than a dozen houses were flooded deeply near FM Road 1942 north of Baytown on Cedar Bayou. Pasadena: Little Vince Bayou flooded northeast parts while other deep water ponded in streets and low areas over the rest of the city. Estimates showed perhaps 200 houses with varying degrees of flood damage. Highlands: Overflow of the San Jacinto River stranded residents north of the city. Overhead rains caused the worst general flooding ever known in Highlands in many years. Many cars were driven into unseen ditches as water covered the flat landscape. Many homes flooded for the first time; high spots never before flooded were covered by water in the early morning. Three schools were flooded as well as some downtown businesses. Crosby: Some houses and businesses on FM Road 1942 were flooded. McHair: Homes in at least one suburb suffered water damage. Channelview: A trailer park flooded due to rains and tides up the Houston Ship Channel. Other houses in low spots reported some water seepage. LaPorte: Residents were evacuated from low parts of Brookglen. Little Cedar Bayou overflowed into adjacent houses, and other scattered pockets of pooled water caused flood problems. Clear Lake City: There were no known houses flooded but major roads were impassable during early morning. NASA Road 1 was closed due to deep waters.

Liberty Co. 5 Morning-Afternoon 0 0 4 5 Heavy Rain
Tropical depression rainstorms pushed as far inland as southern Liberty Co. during the morning. Heaviest fell midnight to 6 am CST but the storms lingered through the morning and caused extensive flooding. Some 24-hour rainfall amounts included these: Moss Bluff 12.0 inches; Unofficial 14.0 south of Raywood; Liberty 5.10 to 6 am and 6.20 to noon.

Widespread flooding hit marshlands, farms, and cattle grazing areas south of Liberty. Ponding water seeped into low lying homes around Dayton and Liberty. Hwy 146 from Liberty to Baytown was covered by deep water by 6 am. FM Road 1960 and US 90 were closed too. Soybean losses were significant as some 18,000 acres remained submerged for 3 days. Recurring rains 6 days later (June 11) added to crop losses.

Chambers Co. (Anahuac) 5 0830CST 3/4 30 0 0 4 0 Tornado (F0)
A weak tornado moved northwest over Anahuac peeling roofing from about a dozen houses and tearing tops out of trees. Roof-damaged homes were subsequently water damaged as intense rains followed and were able to enter the houses.

Jefferson Co. 5 Morning-Afternoon 0 0 5 5 Heavy Rain
Hardin Co. 5 Morning-Afternoon 0 0 ? ? Heavy Rain
Tropical rainstorms extended into northwest Jefferson Co. and across Hardin Co. during early and mid-morning. Widespread flooding of flat lands resulted in mainly crop damages. Water drained into creeks sending most on rises above flood stage for several weeks afterward. In western Jefferson Co. property damage was reported at Nome by 9 am CST. City water pumps there also were damaged by flood waters. Some \$500,000 losses to soybeans occurred. In Hardin Co. 4 inches of rain had fallen to 6 am and continuing rains that morning sent Fine Island Bayou and Village Creek out of banks. By 9 am CST Hwys 105 and 326 around Sour Lake were covered by water.

Jasper Co. 5 Afternoon 0 0 5 4 Heavy Rain
Some of the worst flash floods in several years hit creeks of northern Jasper Co. by noontime. Tropical rains amounted to 2 inches by 6 am, but heavy downpours hit from 7 to 10 am. Sam Rayburn Dam registered an additional 4 inches in 2 1/2 hours with 6 inches up to noon.

Six bridges were washed out in northeast parts of the county and heavy damage occurred to roads. In rural areas damage was heavy to property along Mill Creek (some said water there was highest in many years), Indian Creek, and Sandy Creek. In the city of Jasper, Sandy Creek overflowed by afternoon exceeding the flood of June 1973. Some businesses beside the creek suffered severe damage. City water lines were severed across the creek. Flood waters crested in the city about 4 pm CST.

Burleson Co. 7 0400CST 0 0 ? ? Heavy Rain
Post-midnight rains flooded low areas of Burleson Co. and closed FM Road 50 north of Snook. Damage extent was not known.

TEXAS, Southern

Polk Co. 7 Early morning-Afternoon 0 0 6 C Heavy Rain
Intense rains associated with a cluster of slow moving thunderstorms caused serious flooding over north and west Polk Co. Deluges began just after midnight and were over by 9 am CST. Some areas received 10 inches of rain during the night. Rain fell on ground extremely wet from previous days' rain. All small creeks in the area flooded badly through rural areas. Flooding persisted into the night.

Near Onalaska, Kickapoo Creek had surged out of banks by 4:30 am causing evacuations. Water rose through the morning completely submerging some creekside houses in the worst flooding remembered there in years. Near Corrigan, Piney Creek overflowed damaging rural property. From north of Livingston to Goodrich, Long King Creek suffered severe flooding. Major flooding in Livingston caused 80 homes to be evacuated with about 25 houses in Goodrich threatened. Eight downtown Livingston businesses were flooded. Two small earthen dams on Choates Creek near Livingston gave way. Several sections of railroad through the area were washed out. Waters threatened Livingston around 9 am and came into Goodrich in the afternoon. Around the county many roads overwashed including US 59, Texas 46, US 190, FM Roads 146, 1988, 2457, 3126. Creeks emptying into the Trinity River below Lake Livingston caused a large rise on the Trinity River which threatened some downstream riverside subdivisions.

Tyler Co. 7 Early morning-Afternoon 0 0 5 ? Heavy Rain
Rains that hit Polk Co. also extended into north Tyler Co. dropping 8 inches of rain in the area from midnight to 8 am CST. Colmesnell measured 6.63 inches up to 6 am. High water closed FM Roads 1746, 246, and washed away pavement on some stretches of county roads. Several mobile homes were damaged near creek bottoms. Wolf Creek surged well out of banks by 7 am doing damage to one rural store and washing out fencing.

Galveston Co. 7 0845CST Funnel Clouds
A line of coastal showers and thunderstorms generated a family of funnel clouds over the Bolivar Peninsula.

Travis Co. 10 Late night 0 0 5 0 Lightning
Late night thunderstorms created frequent lightning strikes over Austin. Several homes and at least one business were reported damaged. The Stephen F. Austin State Office Building was also struck. A large slab of granite on the building cracked. No injuries were reported with the incidents.

Tyler Co. 10-11 Late night-morning 0 0 ? ? Heavy Rain
Hardin Co. 10-11 Late night-morning 0 0 ? ? Heavy Rain
Rainstorms during the 10th dumped 2 inches over these counties. Around 6 pm CST new thunderstorms became situated over north Hardin and south Tyler Counties and dropped flood-producing rains. By 8 pm CST Village Mills had measured 5 inches. Post-midnight rains pushed the 24-hour totals for Warren to 7.24 inches, Thicket to 6.5 inches, and Seratoga 5.0 inches. US Hwy 69 was closed by water during the night. Water covered parts of FM Roads 327, 418, and 770. These and later recurring rains kept Village Creek above floodstage several days, and Pine Island Bayou remained in flood until June 21.

Brazoria Co. 11 0215CST 0 0 5 0 Wind
Brazoria Co. 11 0400CST 0 0 4 0 Tidel Flooding
Thunderstorms moving northeast through the county produced heavy rain and strong winds. Pre-report Coast Guard Station reported gusts to 60 mph. Trees and signs were downed; superficial building damage was reported. The pier at Fisherman's Wharf and several mobile homes were wind damaged too. Winds pushed surf and tides into streets of Surfside and closed Hwy 332. A beach subdivision near San Luis Pass reported some tidal flooding. Rain caused minor street and low area flooding inland.

Galveston Co. 11 0245CST 0 0 4 0 Wind
Galveston Co. 11 0300CST 0 0 5 0 Heavy Rain
Thunderstorms moving northeast along the coast produced flooding and damaging wind gusts. Before 3 am winds were gusting to 46 mph at Galveston and by 4 am gusts of 56 mph had been measured at the airport. Higher winds were estimated in west Galveston Co. By 3 am flooding of low areas had begun in LaMarque and Texas City where 2.3 inches rain were measured. Rains continued and flooding worsened in those areas. By 6 am severe street flooding had damaged some cars. By 9 am storm rainfall had reached nearly 6 inches at Texas City, 5.0 at LaMarque, 5.1 at Hitchcock. Major road closures included FM Roads 1764, 1765, and Loop 197.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

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PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Hays Co. 11 All day 0 0 ? ? Heavy Rain
 Serious flash flooding occurred over north Hays Co. with a major flood developing on Onion Creek. Rainstorms hit at 2 am but it was later deluges from 7 am to past noon that put creeks in flood.

Rainfall: Heaviest amounts in Hays Co. were on the Hays-Travis County line area with 6 to 7 inches; Dripping Springs had 5.8. Damages: In Dripping Springs Onion Creek and other small branches damaged roads and some property. At Wimberley the Blanco River flooded bridges and roads. Area creeks there caused minor damage. In San Marcos a 6-ft rise on the San Marcos River arrived in the afternoon, flooding city park areas, but stopping just short of getting in riverside apartments. Sink Creek and Willow Creek rose overbanks between noon and 2:30 pm with minor damages. This flooding primed the area for more severe floods two days later. (See June 13 entry) In the county areas Big Bear Creek and many small streams also closed roads and damaged fences.

Travis Co. 11 All day 0 1 7 ? Heavy Rain
 Flash floods affected most creeks and urban areas of Travis Co. and the city of Austin with the most serious flooding through southeast Travis Co. and south Austin (See Travis Co. June 13 entry Heavy Rain also). Estimates put losses around \$6 million to public and private property.

Slow moving rainstorms at 2 am caused minor street flooding and filled some creeks. Renewed downpours later in the morning began to swell creeks and put deep water over streets by 7 am at rush hour. Rains persisted through afternoon worsening flood conditions and sending major rises down south Travis County creeks. Most flooded areas began receding after 2 pm, except for Onion Creek which remained in high flood into the night.

Rainfall: Center of maximum rainfall was over south Travis Co. and adjacent part of Hays Co. on the Onion Creek watershed. Some rainfall amounts in Travis Co. to 6 am CST were these: Austin Airport 5.66; Manchaca 6.45; Del Valle 6.50; Ford Oaks 7.50; West Lake Hills 3.68; Lake Austin 5.2; south Austin 8.01 (midnight to 11 am CST); plus an unofficial report of 10 inches to early afternoon in southwest Travis Co.

Flood impact: One young man was slightly injured but luckily escaped when his car was swept off a flooded Austin street. Several other motorists were rescued on top of flooded cars. Walnut Creek overflowed in the early morning and damaged some businesses in northeast Austin; twenty persons were rescued from one flooded business. Some of the most concentrated damage was on Williamson Creek in south Austin which reached the highest level in many years. The creek was rising around 3:30 am, but the main surge hit and inundated homes from 12:30 to 2 pm CST. Severe damage was reported to 20 or 30 houses. Swift water and the fast rise tossed contents of houses and washed away dozens of cars. Residents there evacuated quickly when warned telling news reporters, "We didn't want... what happened at Shoal Creek", reflecting the publicity of the May 24 flood in Austin. Onion Creek rose out of banks by noon in south Travis Co. Between 2 and 3 pm the steep flood wave reached a trailer park on FM Road 973. Tannehill Creek in east Austin flooded about a dozen houses. Elm Creek at FM Road 969 forced evacuation of day camp and child care center. Shoal Creek overflowed about 9:30 am but stopped short of entering houses. Near downtown in the afternoon Shoal Creek did flood a few businesses on Lamar Blvd still under repair from the May 24 flood. Cottonmouth creek flooded and damaged several cars in southeast Austin. Boggy Creek damaged several houses and mobile homes. Altogether in Austin over 200 persons were forced from homes. The Fire Dept. reported over 120 assistance calls for escape from water. Elsewhere in the county, lowest homes were flooded around Lake Travis by 10 am as overhead rains put a rise on the lake. Many roads were damaged including some \$100,000 of recent repair work from the May floods which was undone.

Williamson Co. 11 All day 0 0 6 ? Heavy Rain
 Serious flash flooding hit southwest Williamson Co. during the early morning and persisted into the afternoon as heavy rains continued. Flood rises on streams moved into central Williamson Co. by early afternoon. Suddenness of rain and extremely wet ground before-hand led to the high water levels.

Rainfall: At Cedar Park 4.2 inches by 6 am, 8.1 by noon; at Leander 7.0 by noon. One report said that nearly 5 inches of the rain were measured at Cedar Park in 90 minutes.

Flood impact: The Cedar Park and Leander areas received the worst flooding in the county. Some 50 homes were damaged and one business north of Cedar Park destroyed after 9 am. Cluck Creek and Meadowheath Creek overflowed into houses for the first known time. Sandy Creek was at the highest level in a number of years, ravaging houses and mobile homes by around 9 am. Many residents were stranded in subdivisions between Sandy and Long Hollow Creeks. By 9:30 am waters were seeping into some Leander houses.

Lake Creek and Brushy Creek rises moved downstream into Round Rock during the afternoon rupturing water lines and flooding roads. Lake Creek flooded several houses still undergoing repairs from May flooding. Major rises developed on all three branches of the San Gabriel River and filled reservoirs over floodstage. The San Gabriel River overtopped the US 183 bridge north of Leander for the first time in many years.

TEXAS, Southern

Bastrop Co. 11 Early morning-Afternoon 0 2 5 5 Heavy Rain
 Early morning rains sent flash floods down creeks of north and west Bastrop Co. Upstream rains in Hays and Travis Counties sent a major rise down the Colorado River into Bastrop Co. in the afternoon.

Rainfall: Some 24-hour amounts, most of which fell during a few hours in the early morning, included these: Bastrop 6.0 inches to 6 am, 6.85 to 2 pm; Alum Creek 6.0 to 8 am, 10 inches to 2 pm; McDade 7.3 by 8 am; Smithville 6.85 to 7 am; Elgin 4.5 by 8 am, 5.0 by 11 am.

Flood impact: In Bastrop houses and a few businesses flooded by 7 am in scattered low areas where water ponded and along Gill's Branch and Piney Creek which overflowed. City bridges and streets were badly damaged. By noon a rise on the Colorado River was forcing evacuations and during the afternoon some riverside homes were flooded by 3 to 4 feet of water. North of Bastrop at the Alum Creek crossing on Texas 21, two truck drivers were injured, one seriously. About 6 am CST water washed a truck off the bridge there causing injury to the driver and trapping him inside. The driver of a second truck rescued the first from the flooded truck cab but was himself washed downstream into a tree. Both were ultimately rescued by local agencies. Many motorists and residents were stranded by flooded creeks around Bastrop, Paige, Smithville, McDade, and Elgin. In Smithville several houses were damaged on Gazley Creek. Maha Creek threatened homes in the Thousand Oaks community.

Lee Co. 11 Morning-Afternoon 0 0 5 5 Heavy Rain
 Rainfall up to 6.7 inches over northwest Lee Co. produced flooding on Yegua and Willow Creeks as well as most smaller branches in the area. Spilling out of banks by 6 am, a branch of Yegua Creek flooded the community of Blue west of Lexington. At least one motorist was rescued after his car washed off a highway. Yegua Creek flooding moved through rural and farm areas of central and east Lee Co. during the afternoon and evening.

Milam Co. 11 Morning 0 0 ? ? Heavy Rain
 Early morning rains of over 5 inches sent creeks out of banks in southwest Milam Co. Extent of flooding and damages were not reported.

Llano Co. 11 Morning 0 0 4 ? Heavy Rain
 Flash flooding occurred on most creeks in the east part of the county after 4.5 inches of rain fell at Greenwood Acres and over 5 inches at Tow. Considerable rural flooding washed out fences. RM Road 3404 north of Kingsland was washed over.

Medina Co. 11 Afternoon 0 0 4 5 Heavy Rain
Frio Co. 11 Afternoon 1 3 4 5 Heavy Rain
 Intense rains centered over south Medina Co. and north Frio Co. persisted from late morning through mid-afternoon. Over 5 inches fell in the Devine area. Falling onto extremely wet ground, the downpours sent dangerous rises down most creeks beginning by 12:30 pm CST. In the area many rural roads were over washed and farm lands flooded. Road surfaces and bridges were damaged. Around 2 pm in north Frio Co. a few miles south of Devine, a rescue vehicle overturned while returning across flooded San Miguel Creek. Rescue workers and the four elderly campers they were retrieving were swept downstream. One camper, an 82-year old man, was drowned and the other three campers suffered shock and water ingestion.

Guadalupe Co. 11 Afternoon 0 0 ? ? Heavy Rain
 Slow moving thunderstorms dropped 3 inches of rain over parts of north and west Guadalupe Co. between 1 and 4 pm. Falling onto saturated ground, the rain caused brief flash flooding on creeks and put water over rural roads. More importantly, these rains primed countryside for very efficient runoff which led to major flooding two days later. (See Guadalupe Co. June 13 entry)

Madison Co. 12 All day 1 3 0⁵ C Heavy Rain
Grimes Co. 12 All day 0 0 0⁶ C Heavy Rain
Walker Co. 12 All day 0 0 5 ? Heavy Rain

Clusters of slow moving early morning thunderstorms produced flooding over parts of these three counties, caused considerable flood damages in Grimes Co. around Navasota, and sent already swollen creeks out of banks in Madison Co.

Rainfall: Totals included Navasota 7.0 inches to 6 am (most fell after 2 am) and 9.1 to 4 pm; Madisonville 3.5 inches to 6 am; heavier amounts in south Madison Co.

In Grimes Co: The first known overflow in more than 50 years, according to residents, hit Cedar Creek through Navasota. By 5 am severe street flooding had begun. By 7 am water was entering buildings. Flood damages in Navasota included at least 10 downtown businesses, several dozen homes along Cedar Creek and in scattered low spots; scores of automobiles; several city bridges and many streets. Carver School received significant flood damages. Cedar Creek waters receded quickly around 10 am. Elsewhere in Grimes Co. flood damage was reported in Anderson. Roads were damaged and washovers occurred to Texas 6, Texas 90, and FM Roads 244, 362, 1227, 1774, 1372, 2620, 3090. A large section of FM Road 2 was destroyed. Spring Creek flooded rural areas. Agricultural losses included hay and fencing.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS ESTIMATED DAMAGE				CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS ESTIMATED DAMAGE				CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

	<p>Madison Co.: Town Branch Creek overflowed and flooded parts of Madisonville by 7 am. Damage was reported to several buildings. Creeks sent swift water over many roads including Tx 75 and FM 1428. Iron Creek overtopped banks and flooded rural areas. Recurring showers and slow drainage kept some creeks in flood through afternoon and next night. Around 1130 pm CST that night one man drowned and 3 were injured slightly when their pickup truck washed into Bedias Creek when they attempted to cross a flooded bridge on FM 247.</p> <p>Walker Co.: Heavy rains extended into west Walker Co. flooding rural areas. A large rise developed on the West Fork of the San Jacinto River above Lake Conroe and closed Hwy 30. Spillover from the lake and recurring rains over the area produced a steady rise below the lake which eventually flooded a dozen houses by June 14.</p>								
Goliad Co.	12 Morning				0	0	?	?	Heavy Rain
Victoria Co.	12 Morning				0	0	5	5	Heavy Rain
Jackson Co.	12 Morning				0	0	?	?	Heavy Rain
DeWitt Co.	12 Morning				0	0	?	?	Heavy Rain
	Thunderstorms began dropping heavy rains over these counties after midnight and produced flooding of low areas and creeks by 5 am. Most serious flooding was centered over east Goliad, south DeWitt, north Victoria, and northwest Jackson Counties. At Coletto Creek Dam rain totalled 4.5 inches by 5 am. At Nursery and Mission Valley rain totalled 5 inches by 5 am and nearly 9 inches by 8 am. The north side of the city of Victoria got 5.66 between 245 and 6 am, totalling 7.5 inches by 10 am. The Victoria Airport measured 3.94.								
	Widespread flooding developed on Spring Creek and Lone Tree Creek near Victoria by 5 am and continued through the afternoon. Serious street and low area flooding damaged cars, halted traffic, and caused water seepage into some houses. Four boys narrowly escaped drowning when their boat capsized on swift Spring Creek; they were rescued from trees. This storm brought rainfall since May 1 to 26 inches for areas around Bloomington and Placedo in Victoria Co. Local creek runoff on top of the already swollen Guadalupe River put a rise to above floodstage at Victoria by afternoon. Road closures in the four counties included US 77 north of Victoria, Tx 59, FM Roads 444 near Inez, 446, 447, 682, 1685.								
Travis Co.	12 Morning				0	0	4	0	Heavy Rain
	Parts of Travis Co. received a sudden 2 inches of rain during the morning while ground was still saturated and creeks still flowing from the previous day's flood. At 8 am Williamson Creek surged again blocking streets, but by noon had stopped short of reflooding homes damaged the previous day. Storms continued into early afternoon around west Travis Co. and Lake Travis flooding creeks.								
Travis Co.	12 0900CST								Funnel Cloud
	A funnel cloud aloft over Austin between Brodie and Manchaca Rds. was spotted by Fire Dept. units. There was no evidence that it ever touched ground.								
Bandera Co.	12 Morning-Afternoon				0	0	3	?	Heavy Rain
Uvalde Co.	12 Morning-Afternoon				0	0	3	?	Heavy Rain
Medina Co.	12 Morning-Afternoon				0	0	3	5	Heavy Rain
	Thunderstorms during the morning to early afternoon caused flash flooding on streams through Bandera, north Medina, and northeast Uvalde counties. By 11 am over 4 inches were measured in D'Hanis since early morning with more than 5 inches reported north of Hondo. Falling onto already very wet ground, the rain put large rises on Hondo and Seco Creeks by noon. Helicopter rescues took 30 girls from a camp isolated by high waters north of Hondo. Rural roads and the Medina River Rd. near Rio Medina were washed over. Loss of hay was reported in the three counties.								
Victoria Co.	13 Morning				0	0	?	?	Heavy Rain
	Storms dropped 2 inches of rain from 3 to 6 am over north Victoria Co. sending renewed rises on already-swollen creeks from the previous day's rain. Flooding was reported again north of Victoria, around Aloe, Nursery, and Mission Valley.								
Lavaca Co.	13 0500CST				0	0	4	0	Lightning
	A bolt hit a TV antenna on a house, entered the home through wiring, and knocked out an interior wall with explosive force. There were no injuries and no fire was started.								
Brooks Co.	13 ?				0	0	4	?	Heavy rain
	For the second time this month (see June 3-4 entry) flood waters entered the city of Palfrurris down Palo Blanco and Cibolo Creeks. Some houses and businesses were reflooded.								
Blanco Co.	13 Afternoon				0	0	4	?	Heavy Rain
	Heavy rains put a rise on the Blanco River and small creeks through the county. No major damages were reported to private property, however a well-defined flood wave moved through the city of Blanco around 3 pm damaging roads and bridges.								
Comal Co.	13 Afternoon				0	0	3	0	Heavy Rain
	Heavy rains over 5 inches sent swift water cascading down hills of central and north Comal Co. A sudden rise on the Guadalupe River below Canyon Dam washed over portions of River Road and damaged some boats.								

TEXAS, Southern

Bexar Co.	13 Afternoon-night	1	5	6	0	Heavy Rain			
	Serious flash flooding hit streets and streams of Bexar Co. and the city of San Antonio during the afternoon and evening damaging homes, washing cars off roads, and leading to one drowning and many dire rescues of motorists.								
	Rainfall: Most rain fell from 11 am to 5 pm. Some totals in the San Antonio Metro area included Jefferson Village 7.3 inches; Woodlawn Heights 5.3; Glenoake Park 5.14; Dellview 5.0; and 3 to 5 inches elsewhere over north half of the county; 1 to 3 inches over south half. Storms dumped on ground already saturated from previous days' rains.								
	Flood Pattern and Damages: By 330 pm underpasses, streets, and drainage canals were beginning to flood; rises were developing on Leon, Salado, Olmos, Martinez, and other creeks. A drowning occurred when a 13 year old boy was swept down flooded Stx Mile Creek. Fire Dept. reported 60-70 rescues of stranded motorists. Several drivers in dire trouble when swift water overwhelmed their cars at Loop 410 and West Ave. on Olmos Creek were rescued. Several of the motorists and one fireman were injured in rescue attempts. About 30-40 houses were flood damaged on Picoso Creek in San Antonio near Elmendorf Lake. Other homes were reported flooded near the San Antonio River south of downtown, near Woodlawn Lake, along Salado Creek, and in isolated low spots mainly on the west side.								
Guadalupe Co.	13 Afternoon-night	0	0	6	6	Heavy Rain			
	Severe flash flooding began on creeks in extreme north Guadalupe Co. during the afternoon sending damaging flood waves downstream that night. A major flood crest, generated by those same rains in north Guadalupe Co. plus upstream rains in Hays Co., moved down the San Marcos River the night of June 13 and morning of June 14.								
	Damages in the county amounted to several million dollars. There were no losses of life or injury, due to safe evacuation. In the Seguin area considerable private property was saved by relocation in advance of the flood wave.								
	Rainfall: Most storm rainfall accumulated from 11 am to 2 pm; then a renewed deluge began around 530 pm adding to the already developing flood. Center of maximum rainfall was near the Redwood community with 18.4 inches. Other amounts in the same period included Zorn 11.1; Geronimo 7.7; Galle community 12.0; Seguin was south of the storm center and received much less rain although flooding hit the area later on streams.								
	Flooding Pattern: All creeks and the San Marcos River flooded badly in the north part of the county doing considerable damage. Especially concentrated flood damages were reported along Geronimo, Cottonwood, and York Creeks. Around the Redwood Community water began to rise about 1 pm cst, but at 4 pm the well-defined water surge hit and eventually peaked between 6 and 7 pm. Severe damage was reported to houses near the headwaters of Cottonwood Creek. In Redwood 14 residents of an apartment were rescued by helicopter from the highest known water levels ever to hit that area. Huge debris littered the town after the flood.								
	At the Geronimo community low areas began to flood slightly by 2 pm, but the damaging flood waters hit after 3 pm and continued until after 8 pm.								
	In Seguin flood-aware residents on Geronimo Creek packed belongings into vans around 4 pm CST when warned. Others on Walnut Branch also evacuated early. Much property was saved before the flood crest arrived and surged through Geronimo creek-side homes after 7 pm. Water at Elmwood Subdivision created 6 to 12 inches below the 1972 flood, but force of the water was so strong that some brick walls collapsed. Water also damaged houses in the Apache Addition on Walnut Creek. North of Seguin houses in Little Mexico community on FM 1339 were badly damaged. At 5:15 pm a water surge hit and pushed mobile homes off foundations. Many cars were ruined.								
	County-wide severe road and bridge damages were reported including portions of US 90, FM Roads 467, 1978, 1979, 1339, 20, and 477. Nearly all crossings of York and Geronimo Creeks were washed out. Several dozen head of cattle were lost and many poultry were said to have been drowned. At Millwood Creek one car was washed off US 90 but occupants escaped unhurt.								
Hays Co.	13 Afternoon-night	0	0	6	5	Heavy Rain			
	An intense rainstorm, falling onto ground already saturated from a series of other flood-producing rains the past few weeks, caused severe flash flooding around San Marcos and adjacent parts of east Hays Co. and north Guadalupe Co. (See separate entry for Guadalupe Co.)								
	Local estimates put property damages over \$4 million in San Marcos and over \$380,000 in the county. There were no deaths or known injuries.								
	Rainfall: A series of heavy rain cells moved northward over Guadalupe Co. into Hays Co. repeatedly drenching the same area through late morning and afternoon of June 13. At San Marcos rainfall accumulations were 4 inches by 1:30 pm; 6.5 by 3:30 pm; 13.23 by 7:45 pm; and 13.98 by end of rain 11 pm CST. Other storm totals in the area during June 13 were Kyle 13 inches; Buda 10.0; Dripping Springs 8.60.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Flooding: At noon CST minor flooding of low water crossings had begun in San Marcos. By 2:30 pm major flooding began to develop on streams closing roads in eastern Hays Co. Rain continued through 9 pm as all creeks developed large rises and sent a flood wave into the Blanco and San Marcos Rivers. Large scale evacuations were underway in San Marcos by 5:30 pm (mainly on the south side of the city and along banks of creeks and the San Marcos River). The main surge on the San Marcos River hit the city between 3:30 and 4:30 pm with a very fast rise out of banks. At 5 pm much of the city was under severe flood conditions. Some estimates put the San Marcos River crest in the city between 9 and 11 pm CST at about 1 foot below the 1970 record flood. In San Marcos 1800 flood-conscious citizens quickly and safely evacuated in advance of the flood. About 550 buildings suffered flood damage. This included 1 house destroyed, 95 houses with major damage, 352 with lesser damages, 75 apartment units major damage, 10 businesses damaged. Some property moved two days prior (see June 11 Hays Co. entry) during that flood threat, had not been returned by the June 13 flood and was thus saved. The south side of San Marcos suffered flooding from overhead rains of 13 to 14 inches as well as from the San Marcos River rise. At crest the San Marcos River was above ceiling height of first floor apartments beside the river. Severe damage occurred to recreational areas on the river, dozens of cars were ruined, part of the Southwest Texas State University campus was flooded, and one elementary school was damaged. Flood damage also occurred along Purgatory, Willow, and Sink Creeks. Water on Purgatory Creek was not so high this time as in floods of 1970 and 1972, but was said to have been so swift that it caused much erosion damages. Axis of maximum rainfall straddled Interstate Hwy 35 northward from San Marcos to Austin and closed the major route at San Marcos. Rains up to 10 inches at Buda generated a record flood crest on Onion Creek which moved into Travis Co. (See separate entry). In Kyle several businesses, apartments, and houses were flooded. In the county areas severe damage was done to roads, fences, and some bridges by rises on most creeks and the Blanco River through eastern Hays Co. Campers were stranded a couple of days in hills around Wimberley due to flooding and washed out roads.

Tavis Co. 13 1500CST 2/10 35 0 0 4 0 Tornado (F1)
A small tornado touched ground briefly in Austin near a band of intense rainstorms. The funnel scraped ground level near IH 35 and 24TH Street where it took off part of a restaurant roof, damaged a motel, shattered windows of cars. Witnesses said the fierce roar alerted them to the twister. No wind damages were noted within short distances either side of the short discernible tornado track. The funnel did not cross the highway and there were no known injuries.

Travis Co. 13 Afternoon-night 0 0 6 5 Heavy Rain
Severe flash flooding, including a record crest on Onion Creek, caused significant property damage over south Travis Co. during the afternoon through night of June 13. Coming just two days after another major flood in the same area, this storm caused an all-time record crest on Onion Creek in Austin (crest 31.26 feet, floodstage 20 feet).
Damages in Travis Co. were given local estimates of over \$1 million. Damages on Onion Creek from the flood of June 11 were eclipsed by the worse flooding of June 13. Road and bridge repairs underway or just completed from the May 24 flood were undone.

Rainfall: Repetitive storms moved northward from Hays Co. into south Travis Co. along IH 35. Rainfall occurred from late morning through afternoon and reached 10 inches on Onion Creek south of Manchaca & 7.18 inches at Manchaca. Heavy rains in Hays Co. began the Onion Creek rise which was enhanced into the record flood crest in Travis Co.

Flooding: By evening some 100 families evacuated homes in south Travis Co. along Onion and several other creeks. Some during the night were rescued by helicopter. Near Bergstrom Air Force Base quick rises forced about 100 families of mobile home parks beside Onion Creek to evacuate during the late night hours. As the crest passed houses in Travis Co. beginning around 7 pm CST and continuing past midnight, Onion Creek was said to have risen nearly 10 feet in less than a few minutes. Many trailer homes were toppled and crushed by water force. Severe damage occurred to some houses in Dove Springs and Bluff Springs. The crest reached the Garfield community near the confluence with the Colorado River between midnight and 1 am CST June 14. On nearby Williamson Creek water levels were not so high as during the major flood two days earlier but some houses were reported damaged again by this flood too. Rescue operations saved 2 floaters on Onion Creek, 2 on Bull Creek, and 2 on Barton Creek. Hundreds of suburban residents were stranded between Onion and Bear Creeks overnight. Elsewhere in Austin minor overflow hit Shoal, Walnut, Little Walnut, and Boggy Creeks.

Williamson Co. 13 Afternoon-night 1 3 ? ? Heavy Rain
Thunderstorms throughout the afternoon sent small creeks out of banks across much of the county. Flash flooding was not so extensive or damaging, however, as that two days earlier. (See June 11 entry). Roads and bridges that were washed over and other flood damage that was done generally happened to already flood damaged structures. About 5 miles north of Hutto a car and its four occupants were swept into a creek at a low water-crossing after dark. A 46-year old woman drowned when unable to escape from the car. The other three occupants suffered minor injuries but were rescued from the swift water.

LATE REPORTS

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TEXAS, Southern

Caldwell Co. 13 Afternoon-night 0 0 6 5 Heavy Rain
Caldwell Co. 13 Afternoon 0 0 5 0 Lightning
Caldwell Co. 13 1750CST Funnel Cloud

Intense rainstorms sent flash floods down all creeks of southwest Caldwell Co. during the afternoon and evening of June 13. A major rise which developed on the Blanco and upper San Marcos Rivers in Hays Co., traveled downstream into Caldwell Co. during the night of June 13 and early morning June 14 doing considerable damage to riverside property. Damages were reported around the Caldwell communities of Martindale, Maxwell, and Fentress. Some residents of Martindale were rescued by helicopter from the river surge. Residents farther downstream evacuated in advance of the rise. Losses were mainly to near-river property including hay, farm equipment, and live-stock. A funnel passed aloft over Luling during the storm. Lightning hit and damaged an oil storage tank just outside of Luling.

Bastrop Co. 13 Afternoon-night 0 0 ? ? Heavy Rain
Heavy rains mainly over south and west Bastrop Co., as well as an upstream-originated flood crest on the Colorado River generated by rains in Travis and Hays Counties, caused flooding in Bastrop Co. Overall extent and degree of flooding on creeks was not so bad as floods two days prior (June 11) in the same area. The Colorado River crest on June 14 at 5 1/2 feet over floodstage, but low lying property had been evacuated already.

Dimit Co. 13-14 Late night-morning 0 0 9 5 C Heavy Rain
Nearly stationary thunderstorm clusters dropped 6 inches of rain over central Dimit Co. and 4.97 inches at Catarina between 730 pm and midnight. Flooding of low water-crossings began around 9 pm and worsened by midnight as creeks overflowed. Many farm roads washed over east and south of Carriso Springs. One car was swept off a farm road at Appurcon Creek, but no injuries were reported. US Hwy 83 was overwashed by deep water for several hours. In Catarina cars parked in low areas were flooded.

Frio Co. 14 Early morning 0 0 4 5 Heavy Rain
A thunderstorm remained nearly stationary over central and west parts of the county several hours. Flooding of creeks and low areas began around midnight and continued into the 14th as rains fell on already very wet ground. Flooding worsened during pre-dawn hours. Farm roads west of Pearsall and around Dilley were inundated including FM Roads 1581 and 117. Interstate Hwy 35 between Pearsall and Dilley was closed for a while. In Pearsall flood waters damaged streets and cars. Some crops, hay, and fences were damaged in rural areas.

LaSalle Co. 14 Morning 0 1 4 ? Flood
Flood waters moving down streams from neighboring Frio Co. flooded roadways in parts of LaSalle Co. A truck, stalled in high waters, became submerged. The driver was injured when swept into a fence before escaping the swift waters.

Bandera Co. 14 Morning 0 0 5 ? Heavy Rain
Medina Co. 14 Morning 0 0 4 ? Heavy Rain
Kendall Co. 14 Morning 0 0 4 ? Heavy Rain

Early morning thunderstorms over these counties dumped torrential rains onto already very wet ground creating flash flooding on streams. Starting over north Medina Co. around 4 am, the heavy rain spread and redeveloped over east Bandera Co. and Kendall Co. by 8 am. Flash floods were in progress on the creeks in this area from 8 am to noon. At Lake Medina 4.5 inches fell in one hour rapidly closing roads around the lake. On the Bandera-Kendall countyline 5.5 inches fell in 2 to 3 hours sending a large flood wave down Red Bluff Creek which washed out a large earthen dam. Water entered no homes, but residents stranded across the dam said the creek was the highest in many years. The surge traveled from Red Bluff Creek into Pipe Creek and on to Lake Medina washing away a few parked cars but causing no injury. Texas Hwy 46 and FM Road 1283 were closed several hours into the afternoon.

Bexar Co. 14 Morning 0 1 4 0 Heavy Rain
Morning storms from 5 to 11 am CST dropped heavy rains over west and north Bexar Co. onto streams already flowing full from the previous day's rain. In 20 minutes some 1.5 inches fell at Leon Springs around 9 am. Leon and Olmos Creeks rose quickly out of banks in a few places. Streets were covered by swift water through northwest Bexar Co. and San Antonio, including parts of Hwy 90. One couple was rescued from atop their submerged pickup truck just minutes before it was swept down Leon Creek. At the flooded Olmos Basin a family of 8 was rescued from a submerged station wagon. An infant in the car was reported slightly injured in the near escape.

Comal Co. 14 Morning-afternoon 0 0 ? ? Heavy Rain
From 930 to 1130 am a thunderstorm dropped heavy rain over north and west parts of Comal Co. Small creeks flooded roads from 10 am through afternoon.

Gonzales Co. 14 All day 0 0 9 6 C Flood
A large, steep flood crest moved into Gonzales Co. on the San Marcos River during the day. The rise was caused by extreme rains upstream near San Marcos the day and evening before (See June 13 entry). Considerable loss of livestock, fencing, and riverside property was reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

LATE REPORTS

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					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

— TEXAS, Southern

Blanco Co.	14	Midday			4	0	0	0	Flood
<p>Rain falling the previous day and night on the Pedernales River watershed in Blanco and Gillespie Counties caused a sudden moderate rise to develop on the already above-normal flowing river. No significant property damages were reported with this rise. However, at Pedernales Falls State Park the sudden rise caused drowning deaths of four persons, all members of one family. The four adults had waded through shallow, swift water on exposed stones when the advancing edge of the crest arrived. Retreating to a rocky ledge against a cliff, the four were trapped and then washed downstream when water reached waist depth.</p>									
Williamson Co.	14	Night			0	0	4	0	Lightning
<p>Between 6 and 930 pm CST lightning struck and damaged two houses in Round Rock. At one house the charge entered through a TV antenna, shattered part of the roof, cracked inside walls, and damaged furniture. At the other house the charge apparently entered the roof and caused interior damage.</p>									
Guadalupe Co.	14-15	Late night-morning			0	0	?	?	Flood
<p>Heavy rain that fell in Kendall Co. west of Boerne during the early morning of June 14 sent a strong rise down Cibolo Creek. Flooding was enhanced later in the day by rains over Bexar and Comal Counties. The quick flood crest closed the bridge at Schertz and flooded low banks of the creek in Schertz near Schaefer Road for a short while about midnight.</p>									
Val Verde Co.	16	Early morning			0	0	4	0	Heavy Rain
<p>Heavy rains hit the south half of Val Verde Co. at 9 pm June 15 and, by soon after midnight June 16, had started to cause flash flooding. Up to midnight Del Rio got 2 inches of rain, by 9am 3.95 inches. Up to 5 inches fell elsewhere in the area. Severe street flooding was reported. Extent of property damage was not known.</p>									
Edwards Co.	16	Early morning			0	0	4	0	Heavy Rain
Real Co.	16	Early morning			0	0	4	0	Heavy Rain
Kinney Co.	16	Early morning			0	0	4	0	Heavy Rain
Uvalde Co.	16	Early morning			0	0	4	?	Heavy Rain
<p>Flash floods began on creeks throughout these counties between 1 am and 3 am CST and continued during the day. By 6 am most highways and rural roads were closed at stream crossings in all four counties. US 83 was swash at many points through Uvalde, Real, and Edwards Co. At Garner State Park campers were moved away from the Frio River in advance of a gathering flood rise upstream. In Uvalde Co. on the Nueces River 6 members of a family made a narrow escape through their automobile windows after being swept from 19-Mile Crossing in the hills northwest of Uvalde.</p>									
Kerr Co.	16	Early morning			0	1	4	0	Heavy Rain
<p>Over 3 inches of rain fell on both the north and south forks of the Guadalupe River in less than 2 hours up to midnight June 15. By 1 am June 16, nearly 4 inches were registered, and by 2 am Kerrville had gotten almost 5 inches. Soon after 1 am flash floods had developed on both river forks in addition to area creeks. Rain spread east and caused other flash floods around Camp Verde, Center Point, and rural areas. Highway 16 was overtopped by flood waters from Turtle Creek. One motorist was swept off a Turtle Creek crossing and was rescued later from a tree. The Guadalupe River overflowed Hwy 39 near Hunt stranding many campers and residents. The flood crest arrived in Kerrville later in the day flooding low areas to the highest level since the floods of August 1978. Other road washovers included FM 394 at Center Point, FM 1340 on the north fork, FM 1273 and 2771 on Turtle Creek, and FM 1338 at Goat Creek.</p>									
Haverrick Co.	16	Early morning			0	0	3	?	Heavy Rain
Zavala Co.	16	Early morning			0	0	4	4	Heavy Rain
<p>Rainstorms after midnight up to 6 am produced flooding which began about 2am and lasted into the early afternoon. Storms dumped 2 to 4 inches of sudden rain over the area. Mainly rural areas, roads, and (in Zavala Co.) farm areas were affected.</p>									
Llano Co.	16	Early morning			0	0	4	0	Heavy Rain
Gillespie Co.	16	Early morning			0	0	4	0	Heavy Rain
Blanco Co.	16	Early morning			0	0	4	0	Heavy Rain
Travis Co.	16	Early morning			0	0	3	0	Heavy Rain
Williamson Co.	16	Early morning			0	0	5	4	Heavy Rain
<p>Thunderstorms bearing heavy rain moved from northwest to southeast over these five counties. Rains fell in Gillespie and Blanco Counties from midnight to 2 am and over the other counties from 2 am to 6 am CST. Storm totals were 2 to 3 inches, but some areas of Travis and Williamson Counties got 1 inch of that rain in 15 minutes. Flooding of creeks began about 1 hour after rains commenced in each county. In Llano Co., many roads were closed. Texas Hwy 261 was washed over north of intersection with Hwy 29. Gillespie and Blanco Co., Flood impact was limited to road and bridge washovers. FM Road 783 south of Harper was flooded by deep, swift water. A sharp rise developed on the Pedernales River south of Fredericksburg, covered the high bridge at Johnson Historic Park, and moved through Blanco Co. later in the day.</p>									

— TEXAS, Southern

	16	Early morning			0	0	?	?	Heavy Rain
<p>Eastward moving thunderstorms dropped a sudden 2 to 3 inches of rain on the county sending creeks on rises by 4 am CST. Many roads were closed during morning commuting hours including most of RR 12 from Dripping Springs to Wimberley. Upper reaches of Onion Creek were said to have been higher on this morning than during the flood three days earlier, but the crest had abated very much in lower reaches of the creek.</p>									
Medina Co.	16	Early morning			0	0	4	?	Heavy Rain
Bandera Co.	16	Early morning			0	0	4	?	Heavy Rain
<p>Slow moving rainstorms entered these counties from the west between 2 and 4 am CST. By 8 am many areas of both counties had received 3 to 5 inches of rain. Flash flooding began on streams around 4 am in north Medina Co. and over Bandera Co. by 5am. Rural roads were covered by swift water at creek crossings. Texas Hwy 16 was washed over north of Medina around 5 am by a sharp rise on the Medina River.</p>									
Comal Co.	16	Morning			0	0	4	0	Heavy Rain
Guadalupe Co.	16	Morning			0	0	?	?	Heavy Rain
<p>Heavy rains drifted eastward through these counties between 5 and 8 am CST sending sudden surges down recently flooded creeks. In Guadalupe Co. waters came near homes flooded on June 13 but apparently stopped short of doing further damages. Some roads were closed. In Comal Co. a sudden 2.5 inches flooded low spots around New Braunfels. An apartment unit near FM 725 sustained flood damage due to ponding of overhead rains. Many cars in that same neighborhood were damaged.</p>									
Bexar Co.	16	Morning			0	0	4	0	Heavy Rain
<p>Morning downpours created flash flooding on urban streets and area creeks during rush hour. Rains began around 5 am and flooding was in progress by 6:30 am and continued until noon time. Underpasses and streets were covered by deep, swift water in places causing the fire department to conduct at least 35 rescues. Creeks experiencing some overflow included Olmos, Leon, Salado, and Six Mile. Property damage was not serious as during the flood three days prior. This was the last of several heavy rain episodes and flash flood occurrences for Bexar Co. for this month, and it pushed the June 1981 rainfall to the second highest ever for any June.</p>									
Goliad Co.	16	1030CST							Funnel Cloud
<p>The sheriff's office reported a funnel cloud near Berclair moving east near heavy rainstorms. It apparently never touched ground.</p>									
DeWitt Co.	16	Afternoon			0	0	?	?	Heavy Rain
<p>Overhead rains in the late morning and at mid-day were unable to drain due to backwater flooding up tributaries from the overflowing Guadalupe River. This led to sudden flooding of small headwater creeks.</p>									
Orange Co.	16	1530CST							Funnel Clouds
<p>Two funnels passed aloft near Vidor without touching ground. Associated thunderstorms were moving slowly east and soon dissipated.</p>									
Nueces Co.	16	Afternoon			0	0	?	?	Heavy Rain
<p>Rainfall of 4 inches at Calallen and Agua Dulce caused spotty low land flooding in west Nueces Co. The overhead rains put a sudden rise on the already flooded Nueces River causing it to jump to a stage of 9.3 feet at Calallen (Floodstage 7 ft.)</p>									
Hidalgo Co.	16	Evening			0	0	4	?	Heavy Rain
<p>Persisting rains through the afternoon and evening caused extensive street and low area flooding by 7 pm. In south Mission water seeped into some houses. Cars in low areas were reported flood damaged.</p>									
Brooks Co.	16-17	Night-next day			0	0	4	?	Heavy Rain
<p>The third flood during this June damaged parts of Falfurrias (previous floods were June 3-4 and June 13). Rainstorms persisting over Brooks Co. caused flooding of rural areas and damaged crops. Water gathered on Palo Blanco, Cibolo, and Laboritas Creeks during the night June 16 and arrived in Falfurrias on the 17th. While not as damaging as the first two floods, low houses were again flooded in the La Colonia and Mexiquito areas. Water slowly receded the next day.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

LATE REPORTS

CORRECTIONS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

TEXAS, Southern

Jefferson Co.	22	0920CST							Funnel Clouds
A helicopter pilot reported several small funnel clouds near Sabine Pass and just offshore.									
Galveston Co.	23	1215CST							Funnel Clouds
Several funnels were spotted aloft over west Galveston Island and surrounding waters near fast developing showers.									
Jefferson Co.	23	1300CST			0	0	4	0	Wind
A westward moving thunderstorm produced brief, very localized wind gusts. Some damage was reported at Port Neches.									
Aransas Co.	25	1140CST							Funnel Cloud
Live Oak Co.	25	1145CST							Funnel Cloud
Nueces Co.	25	1150CST							Funnel Cloud
A funnel cloud was seen in each of these counties as thundershowers developed rapidly. Funnels were reported 10 northeast of Three Rivers, just south of Corpus Christi Airport, and 5 southwest of Rockport. None touched ground and each lasted just a few minutes.									
San Patricio Co.	26	1030CST							Funnel Cloud
The funnel formed 5 miles south of Sinto and drifted northwest for a few minutes.									
Matagorda Co.	27	0920CST							Funnel Clouds
Matagorda Co.	27	1040CST			0	0	0	0	Waterspout
Galveston Co.	27	1030CST			0	0	0	0	Waterspout
Galveston Co.	27	NoonCST							Funnel Cloud
Coastal thundershowers generated funnel clouds and at least two water spouts along shores of these two counties. Funnels were seen aloft over the Galveston seawall, 5 miles northeast of Palacios, and 10 miles southwest of Palacios. Waterspouts were observed in the Gulf east of Matagorda Island, and 15 miles southeast of Galveston.									
Jim Wells Co.	28	0950CST							Funnel Cloud
Nueces Co.	28	1000CST							Funnel Cloud
Funnel clouds near developing showers were spotted 5 miles south of Corpus Christi Airport and 8 miles south of Orange Grove.									
Kleberg Co.	28	1030CST	Short Narrow		0	0	0	0	Tornado (F0)
A small funnel, similar to those which frequently form and remain aloft in the area, was seen to form downward to ground level for a brief time on an area of the King Ranch. It hit no structures.									
Nueces Co.	29	1045CST							Funnel Clouds
Two funnels aloft lasted a few minutes near a stationary thundershower 2 miles northwest of Robstown.									
Galveston Co.	30	0910CST							Funnel Cloud
A pilot reported a funnel cloud 20 miles southeast of Galveston.									
Matagorda Co.	30	1120CST			0	0	0	0	Waterspout
The waterspout formed in Matagorda Bay east of Palacios and caused no reported problem to boating.									

43 VERMONT

JULY 1981

NONE REPORTED

11 ILLINOIS

JUNE 1981

DELETE:
3 TORNADOES

in McDonough, Schuyler, Cass and Sangamon Counties (page 6), in Tazewell, McLean, DeWitt and Champaign Counties (page 6), and in Hancock, Schuyler, Fulton, Mason, and Menard Counties (page 7).

ADD:
12 TORNADOES

listed below:

Colchester, McDonough County	8	1843CST	?	?	0	0	0	0	0	Tornado (F0)
A tornado touched down briefly south of Colchester causing no damage.										
Brooklyn, Schuyler County	8	1856CST	?	?	0	0	0	0	0	Tornado (F0)
A tornado touched down in Brooklyn, but caused no damage.										
Tazewell County	8	1918CST	?	?	0	0	0	0	0	Tornado (F0)
During the early evening a tornado briefly touched down between Tremont and Pekin in Tazewell County. No damage was reported.										
Champaign County	8	2037CST	?	?	0	0	0	0	0	Tornado (F0)
At 8:37 pm a tornado touched down 3 miles west of Mahomet. No damage occurred.										
Farmer City, DeWitt County	8	2038CST	?	?	0	0	4	0	0	Tornado (F0)
A tornado briefly touched down 0.5 miles west of Farmer City destroying a warehouse.										
Champaign County	8	2040CST	?	?	0	0	0	0	0	Tornado (F0)
A tornado touched down 11 miles west of Mahomet. No damage was reported.										
Sangamon County	8	2040CST	?	?	0	0	0	0	0	Tornado (F0)
Near Bradfordton, which is 3 miles west-northwest of Springfield, a tornado touched down by route 125. No damage was reported.										
McLean County	20	1734CST	?	?	0	0	0	0	0	Tornado (F0)
Two tornadoes touched down approximately 2.5 miles apart at 5:34pm near Hudson. No damage occurred.										
Warsaw, Hancock County	21	1914CST	?	?	0	0	4	0	0	Tornado (F1)
A tornado briefly touched down in Warsaw damaging several outbuildings.										
Hancock County	21	1947CST	?	?	0	0	4	0	0	Tornado (F1)
At 7:47pm a tornado touched down between Denver and Bowman. Three barns were destroyed.										
Schuyler County	21	1950 to 2005CST	150	1	12	6	0	0	0	Tornado (F3)
A tornado touched down 2 miles northwest of Brooklyn and traveled on the ground 21 miles through Littleton to Ray. It first touched down at approximately 7:50pm near Brooklyn, but no significant damage occurred on its way to Littleton. At about 7:55pm the tornado entered Littleton. Its path grew to 1/2 mile and it destroyed half of the town. One person was killed while trying to leave his mobile home. There were also 12 persons in the town that received injuries. As the tornado left Littleton for its 11 mile trip to Ray, 16 farm buildings were damaged.										
McLean County	21	2033CST	?	50	0	0	0	0	0	Tornado (F0)
A tornado touched down 1.5 miles south of the Crestwick Subdivision (3 miles south of Bloomington) in an open field.										

15 KENTUCKY

JULY 1981

DELETE:
ONE TORNADO

in Taylor City (page 17) occurred in August, not in July.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

CORRECTIONS

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS	
32 NORTH DAKOTA																			
<u>JULY 1981</u>																			
DELETE: ONE TORNADO at Mandan 15SW (Morton County) page 26.																			
ADD: ONE TORNADO listed below:																			
Mandan 15SW (Morton County)		30 1720CST	28.0	500	0	0	5	4	Tornado (F3)										
A tornado toppled numerous power transmission towers and poles; wiped out a county bridge; killed at least 20 head of cattle; flipped a trailer; damaged farm buildings; destroyed a quonset hut; blew away 1500 bales of hay; and damaged oat and corn fields. The tornado dissipated about 1820CST after crossing the Missouri River into southern Burleigh County.																			
36 PENNSYLVANIA, Western																			
<u>APRIL 1981</u>																			
DELETE: ONE FUNNEL CLOUD in Butler County (page 14).																			
ADD: ONE TORNADO listed below:																			
Butler County		28 1607EST	0.5	?	0	0	4	0	Tornado (F1)										
A tornado touched down in Buffalo Township in the southeast corner of Butler County. No injuries were reported. It moved over a trailer park where several trailers were lifted off their foundations and damaged. There was also an intermittent path of downed trees.																			

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