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Storm Data

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1970

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1970

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	
Alabama			None reported						
Alaska									
Peter Dahl Slough 15 mi. east of Cordova	13	P.M.			0	0	0	0	Waterspout
			A waterspout was reported with thunder, lightning and heavy rain and hail.						
Arizona									
Central and south- central sections of State	4, 5 & 6	-	-	-	0	0	6	4	Rain
			Tropical storm Norma, located in the Pacific Ocean below Baja California, initiated a flow of moist tropical air over the Gulf of California toward the desert Southwest on the afternoon of the 1st. This surge of moisture entered the State on the 2nd, over-spreading the State and increasing in depth during the next two days. On the morning of the 4th a convergent flow of air developed in the lower levels of the atmosphere in the Tucson area and south-southwestward to near Sasabe. This produced heavy precipitation along and east of the Baboquivari Mountains and northward to Tucson and the Avra Valley on that day. This heavy rainfall caused rapid runoff that washed out roads and several bridges near Tucson and flooded homes. On the 5th, strong southerly winds developed over much of Arizona causing heavy orographic precipitation, with heaviest amounts along south slopes of natural barriers in the southern part of the State. Precipitation along and to the south of the Mogollon Rim in Gila County and along the south slopes of the Bradshaw Mountains in Yavapai County was especially heavy on the 5th. Severe flooding in Christopher Creek, Tonto Creek and Sycamore Creek caused extensive damage to roads, bridges and property along these tributaries. Rainfall was also heavy in the Scottsdale area, where many homes were severely damaged by floodwaters. Flood damage in other parts of Maricopa County was scattered as far west as Wickenburg, where the Hassayampa River overflowed its banks and flooded residential areas. Flooding also occurred along the Little Colorado River from Winslow to the Navajo Reservation. Agricultural damage was reported to range improvements such as fences, wells, stock tanks, and corrals. Loss of cattle was light, as was damage to field crops. By the 6th, precipitation was limited mostly to the mountains in the south-eastern part of the State, but reported damage on that date was light relative to that occurring on the previous two days.						
Scottsdale	5	4:30 p.	1-1/2	100	0	0	4	0	Tornado
			Funnel cloud touched ground about 1/2 mile west of Scottsdale Road moving east. It crossed Scottsdale Road at Fillmore Street and continued farther east for about 1 mile. Fences and trees were blown down and a number of roofs were damaged along the path.						
Arkansas									
Alma, Crawford County	4	12:15 a.	2	500	1	4			Wind
			This was the first touchdown point of a turbulent storm that traveled 125 miles eastward. 3 mobile homes badly damaged, 1 poultry house completely destroyed and numerous roofs and highway signs down. Minor injuries received by woman riding in car between Alma and Van Buren when tree toppled on car. Path of damage from intersection of Interstate 40 and Route 71 southeastward for approximately 2 miles.						
Booneville and north- ern Logan County	4	Early AM	?	?		4			Wind
			Roof ripped off Wolverine Toy Plant under construction on Highway 10 just east of Booneville. Also, minor roof, TV antenna and window damage in north part of county.						
Clarksville, Johnson County	4	Early AM	?	?		3			Wind
			Extensive damage (mostly roof) to new high school building under construction.						
Russellville, Pope County	4	12:45 a.	3-4	50- 100	5	5			Tornado
			5 persons injured when mobile home destroyed along Highway 7 just north of Russellville. One new home destroyed and approximately 60 severely damaged. Major path of tornado in the Crow Mountain area near Highway 124 and Shilo Community in same area. Away from tornado path, damage was reported at Dover and Hector and several county roads were blocked by toppled trees. Violent wind and rain shortly after the tornado struck Atkins, Pope County, and did minor damage.						
Morrilton, Conway County	4	12:50 a.	?	?	1	4			Wind
			Man hurt as trailer home demolished by wind. Trees and utility poles down along Highway 95 north of Morrilton. Other minor damage in downtown Morrilton.						
Conway, Faulkner County	4	1:30 a.	?	?		3			Wind
			High winds tore roof from house in Cane Community southeast of Conway and did some minor tree and house damage in Conway.						
Southeast Greene, North east Craighead and North Mississipi Counties	4	3:30 p. to 5:00 p.	35 to miles	1-1/2		4	5		Wind and hail
			A driving wind and hail storm hit a 3-county area doing the following damage:						
Arkansas (continued)									
PARAGOULD, GREEN COUNTY:			450 foot CATV tower toppled around 3:30 P.M. Also, porches and windows damaged in town.						
DELORE AND CHILDRESS, CRAIGHEAD COUNTY:			Houses unroofed, windows broken and considerable damage to cotton and soybeans.						
MONETTE, CRAIGHEAD COUNTY:			Lumber Company damaged.						
LEACHVILLE, MISSISSIPPI COUNTY:			Grain elevator lost and widespread damage to cotton and soybeans.						
VICTORIA, MISSISSIPPI COUNTY:			One building destroyed. Also minor damage reported at Manila and Shady Grove in Mississippi County.						
Oden, Montgomery County	17	2:20 p.	?	?		3			Tornado
			Tornado touched down in open country and apparently damaged only one farm. Roofs torn from small out-buildings and one completely destroyed. Some of this sheet-iron roofing was found several miles distant in White Town Community.						
California									
Oakland-Berkeley	22				0	2	5	0	Fire
			Strong winds, high temperatures, and low humidities favored the spread of fires in the Oakland-Berkeley Hills. More than 50 homes were destroyed or damaged. Two firemen were injured.						
Southern California	25- 29				0	20	8	0	Fire
			Santa Ana winds brought high temperatures and low humidities to create an explosive fire potential. More than 500,000 acres were burned over in Los Angeles, Ventura, Kern, Orange, San Diego, and San Bernardino Counties. Some 500 homes were destroyed, along with more than 500 other structures, including at least four churches. 20 firemen were injured.						
Colorado									
Montezuma County	5	5:30P	1 1/2	100		4			Tornado
			A small tornado destroyed buildings and damaged fruit trees on a farm about 12 miles WSW of Cortez, in McElroy Canyon. Observers reported seeing funnel cloud touch down.						
Southwestern Colorado	5-6				0	0	6	-	Heavy rain
			Heavy rains from around 8 or 9AM of the 5th to the early morning hours of the 6th caused widespread flooding over an area including the San Juan River Basin, and extending northward into the Dolores and Gunnison River Basins and eastward into the upper reaches of the Rio Grande River Basin. Wet soil conditions from previous rains were conducive to rapid and heavy run-off. Roads, bridges, mountain trails and camp grounds, public utilities and much private property received heavy damage. Rainfall totals for a period of 12 hours or less exceeded 4 or 5 inches in many localities.						
Connecticut			None reported						
Delaware State	22- 27								High temperatures
			Unusually high temperatures for late September, reaching 90° F. and higher, occurred on as many as six consecutive days; some stations reported three days in the upper 90's during this period. A power emergency developed as a result of the unusual demand for electricity.						
State	27				0	0	3	0	Wind
			Strong gusty winds associated with a cold front passage caused scattered minor damage.						
Florida									
12 NNW Key West	02	12:24p							Waterspout
20 NW Key West	02	5:00p							Funnel aloft
9 SE Miami	03	12:17p							Waterspout
SE Ft. Lauderdale	04	10:01a							Funnel aloft
10 NNE Key West	04	abt 10:30a							Funnel aloft
12 N Patricia Target 22 WNW Key West	04	1:30p							Waterspout
1 E Key Largo 20 SSW Homestead	05	6:07a							Waterspout
8 SSE Palm Beach Palm County	05	9:47a							Funnel aloft
20 SW Key West	05	9:45a							Waterspout
25 SW Tampa	06	9:25a							Waterspouts (2) as a funnel cloud
			Waterspout lifted and moved inland						
Miami	06	1:33p			0	1	0	0	Lightning

See reference notes at end of table.

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Florida (continued)									
									Fireman hit by lightning while working at airport, injuries only slight.
15 WNW Palm Beach Palm County	06	2:40p							Funnel aloft
6 SE Tallahassee	06	5:50p							Funnel aloft
St. Petersburg Hillsboro County	07	noon			2	22	0	0	Lightning
									A bolt of lightning struck a huddle of High School football players, killing two and injuring 22 others, some seriously. All 30 players and four coaches on the football field across from Gibbs Comprehensive High School were knocked off their feet by the lightning.
Leesburg Lake County	10	afternoon			0	0	4	0	Wind Damage
									Estimated \$30,000 to \$50,000 damage when a heavy awning crashed due to weight of rain and wind during a severe electrical storm.
10 E Palm Beach Palm County	11	9:02a							Funnel aloft
10 W Venice Sarasota County	13	4:05p							Waterspout
1 N Rickenbacker Causeway 5 ESE Miami	14	12:05p							Funnel aloft
6 S Key West	14	5:00p							Funnel Aloft
Lakeland Polk County	16	afternoon			0	1	0	0	Lightning
									Woman struck by lightning not seriously injured.
12 E Punta Gorda Charlotte County	18	12:29p							Funnel aloft
Daytona	21	10:05a							Funnel aloft
5 W Pensacola	23	2:25p							Waterspouts (2)
2 S Magnolia Field 28 W Pensacola	24	11:14a							Funnel aloft
3 SW Key Biscayne 8 SE Miami	24	6:25p							Waterspouts (3)
Cocoa Brevard County	25	morning			0	0	4	0	Wind Damage
									\$20,000 damage when evangelist's tent was destroyed by wind.
18 S Palm Beach Palm County	29	9:45a							Funnel aloft
15 SE Palm Beach Palm County	30	9:00a							Waterspout
25 E Palm Beach Palm County	30	12:47p							Waterspout
15 N Key West	30	1:48p							Waterspouts (2)
									Several sightings of two waterspouts.
11 WSW Miami	30	4:58p							Funnel aloft (2)
									Several sightings of funnel clouds in vicinity of Miami.
Georgia Northeast	2-3	pm			0	0	4	0	Thunderstorms
									Heavy thunderstorms hit several northeast Georgia communities during the late afternoon and evening of the 2nd and 3rd. Trees were uprooted, utility lines downed and roofs damaged in Banks, Elbert, Franklin, Hart and Jackson Counties. Several fires were started by lightning. Two residences were destroyed and at least 3 others were damaged by fire.
Lowndes County	6	4:15 p			0	0	4	0	Windstorm
									Farm buildings were damaged and several large pecan trees were blown over in the Bahira area. A strage shed and farm machinery inside were damaged by a falling tree. A large tree damaged a mobile home and 3 automobiles were damaged extensively by another uprooted tree.
Patterson	20	7			1	0	0	0	Lightning
									A Florio County farmer was killed by lightning while working in a field near his home.
Brunswick, near	22	7:33 a							Waterspout
									Reported 1 1/2 miles northeast of Brunswick Airport.
Hawaii	27	7:00 a.- 8:19 a.			0	0	0	0	Funnel cloud
									Moving south-southwestward an estimated 15 to 20 miles east-southeast of Central Honolulu (Kaimuki) and extending mid-way to sea surface from towering cumulus with tops at about 10,000 feet.
Idaho Wendell, Gooding County	1	Afternoon	--	--	0	0	3	--	Lightning
									Two calves were killed by lightning and a house was set on fire. The fire was extinguished before extensive damage was done.
Oneida County, (33 mi. ENE of Malad)	2	4:00 p. local	--	--	0	0	3	3	Hail
									Golf ball size hail damaged crops and buildings in sparsely populated area.
McCannon Area, Bonneville County	2	Afternoon	--	--	0	0	4	0	Windstorm
									A localized strong windstorm uprooted eight large trees. One measured 16 feet around and four others were nearly as large. A tractor, potato planter, combine, disk, potato digger and plow were demolished by the falling trees.
Challis, Custer County	2	5:00 p.	--	--	0	0	3	0	Lightning
									Four horses killed by lightning.
Idaho Falls, Bonneville County	17	Afternoon	--	--	0	1	2	0	Wind
									Wind toppled sign that hospitalized a retired school teacher.
Illinois Sangamon County	7	7:35p							Funnel cloud
									Funnel reported just east of Springfield by State Police
Jo Daviess County	9	6:40p	1/4	70	0	0	2	0	Tornado
									Tornado moved up hollow from river causing considerable tree damage before lifting just south of Ill-Wis line and continuing in Wisconsin. NWSO, DBQ.
Cook County	21	late aftn			1	3	0	0	Lightning
									One man killed and 3 others had minor injuries when struck by lightning on golf course in Arlington Heights.
Lee County	22	early a.m.			0	0	4	C	Lightning, rain
									Lightning destroyed a barn and contents and caused numerous power outages. As much as 3" of rain caused local flooding with some property and crop damage.
Adams County	23	2:47p - 3:30p	15	?	0	0	4	C	Tornado and heavy rain
									Tornado moved NNE after ripping roof from a factory complex at NE edge of Quincy at 2:47p. Left intermittent track with damage reported to trees, roofs, and minor outbuildings. Garage destroyed and other outbuildings damaged on farm east of Mendon. Family saw funnel and took shelter in basement. Funnel also sighted at Quincy and crop damage near Mendon indicated tornado pattern. Four inches or more rain in 24-hours caused local flooding. WSPQ, STL.
Indiana Huntington and Bretzville (Dubois County)	3	E.S.T. About 3:00p.	1/4	4	0	4	4	0	Tornado
									Four persons received minor injuries when a small restaurant was destroyed in Huntington. Some trees were also blown down. About the same time an office trailer was destroyed near Bretzville five miles to the east.
Borden, near (Clark County)	3	4:30p.	6	narrow	0	0	4	0	Tornado
									Tornado, travelling northeastward from a spot just southwest of Road 60 between Borden and Pekin, touched down in at least three places, destroying two farm buildings and damaging six dwellings.
Marion Airport (Grant County)	22	12:30p.							Funnel
Lakeville (St. Joseph County)	23	8:00p.	Short	Narrow	0	1	3	0	Wind
									One person was injured when house trailer was demolished.
Iowa Pocahontas, Pocahontas County	9	1:30 p					4	4	Hailstorm
Butler to Winneshek Counties	9	2:30 p					5	5	Windstorms
									Scattered wind damage.
4E Greene, Butler County	9	2:42 p	3	200			4	3	Tornado
									Tornado moved NE 30 mph. When it hit highline big balls of fire dropped to the ground.
Plainfield, Bremer County	9	3:00 p	2	150			4	4	Tornado
									Tornado first sighted south of Plainfield, moved NE.
Sumner, Bremer County	9	3:15 p					4	4	Windstorm

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Iowa (continued)											
4NW West Union, Fayette County	9	3:30 p.									Funnel
Ossian, Winneshek County	9	4:00 p.						5			Windstorm
SE Poveshiek County	9	4:30 p.						5			Windstorm
Dyersville, Dubuque County	9	4:40 p.						5	4		Windstorm
Earlville, Delaware County	9	4:55 p.									Funnels (2)
Williamsburg, Iowa County	9	5:00 p.						4			Windstorm
Dyersville, Dubuque County	9	5:00 p.									Funnel
Dubuque, Dubuque County	9	5:25 p.						16	7	5	Windstorm
Dubuque, Dubuque County	9	5:25 p.									Funnels (2)
Lee & Des Moines Counties	9	6:51 p.						3	5	5	Windstorm
Waucoma, Fayette County	25	2:00 p.						1			Lightning
Kansas											
Rush County	3	5:25-6:15 p.	10	300	0	0	4	0			Tornado
Rush, Russell Counties	3	afn-ve			0	0	4	4			Hail funnel aloft
Ellsworth County	3-4	night of 3-4			0	1	0	0			Lightning
Southeast portion	3-4	afn of 3; night of 3-4			0	0	6	5			Wind, hail, lightning, rain
Northeast one-fourth; north central portion	3-4	eve of 3; night of 3-4			0	0	5	4			Wind, hail, lightning
Norton County	6	5:30-5:45 p.	3/4	200	0	0	3	0			Tornado
Western portion	5	late afn and eve			0	0	4	0			Wind
Montgomery County	6	9:00 p.			0	0	4	0			Lightning
Southern one-third; eastern one-third	9-10	afn of 9; night of 9-10			0	3	5	0			Wind, lightning, 2 funnels aloft
Kansas (continued)											
Clay, Marshall Counties	12	early a.m.			0	0	4	0			Lightning
Labette, Linn, Neosho Counties	12	5:00-5:30 p.			0	0	3	4			Wind, hail
Northeast one-fourth	21-22	afn of 21; night of 21-22			0	1	4	0			Lightning, hail
Southeast portion	22	afn			0	0	4	0			Rain, wind, lightning
East central portion	22-23				0	0	4	5			Rain
Kentucky											
Lawrence County	4	Night			0	0	4	0			Lightning
Blue Grass	7	a.m.			0	0	7	?			Rain
Central	7				0	0	4	?			Lightning, hail, wind, and rain
Central	8	Afternoon			0	0	7	?			Hail, wind, rain
Metcalf County	8	Evening			0	3	0	0			Lightning
Blue Grass	8	Night			0	0	4	?			Lightning, wind, and rain
Metcalf County	9				0	0	7	?			Rain
Metcalf County	9	8:50 a.	?	?	0	2	4	?			Tornado

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Kentucky (continued)									
									ing it over and then slamming it to the ground 50 feet distant from original position. There were two minor injuries, and the mobile home was demolished. One of the witnesses was a man who said his house shook and sounded like a drum until he opened the front door. There was some damage to farm buildings in the area and several trees were downed. (There was some scattered wind damage along a path from the southwest portion of the county to the northeast corner on into Hart County at about the same time).
Barren County	9	7:45 a.			0	0	4	0	Lightning
									A house burned in the Nobob community near Summer Shade, apparently set afire by lightning.
Pulaski County	18				0	0	4	0	Lightning
									Lightning was reported to have struck two houses; fire destroyed one house and severely damaged a portion of the other house.
Jefferson County	21	Afternoon			0	2	0	0	Lightning
									Two men were struck by lightning while in an open field attempting to get two power mowers under shelter.
East	22	Afternoon			0	0	4	0	Lightning, wind
									Fire apparently set by lightning destroyed a mobile home, and furnishings in the London area of Laurel County. In Morgan County, wind blew a barn down.
Oldham County	22	6:30 p.m.			0	0	?	?	Wind, rain, lightning
									A funnel cloud was reported near LaGrange, but later reports and evidence did not confirm the existence and/or persistence of a funnel; indicated were straight-line winds associated with thunderstorms and probably gusting to an estimated 60 m.p.h. The National Weather Service Cooperative Observer at LaGrange reported a variety of damage due to wind, rain and lightning. He also reported the following: "Severe thunderstorm with heavy rain and heavy lightning. 1 1/4 (inches) fell in 1/2-hour then light drizzle. Winds were in excess of 50 m.p.h. (est.), sustained for 15 or 20 minutes. Storm shifted directions many times then hit sharply out of the west-northwest. Air pressure fell so fast, 2-3 inches of water were drained from flush bowls in our bathrooms."
Scott County	25	a.m.			0	0	5	?	Lightning, rain, wind
									Fires apparently set by lightning destroyed two barns and contents bedded down in the Georgetown area. Damage estimated at \$65,000. Heavy rains and some local flooding were reported to have caused some damage to a number of Georgetown business buildings and some homes. Wind was reported to have damaged a number of roofs, especially farm buildings.
Louisiana									
Pietermes Parish	1	3:40p							Funnel Cloud
									Five to eight miles south of Violet.
Lake Borgne	11	2:20p							Waterspout
									Five to 15 miles east of Lakefront Airport, New Orleans.
Coastal Parishes	15	all day			0	0	0	7	Tropical Storm "FELICE"
									Winds briefly minimal gale force sections of coastal parishes. Rainfall very light for tropical storm (0.5 to 2.5 inches). No casualties, significant wind damage, tidal or river flooding reported.
East Baton Rouge Parish	25	12:03 noon			0	1	0	0	Lightning
									LSU freshman thrown 15 feet from seats and lost consciousness when lightning struck as he grasped door handle.
Maine									
Livemore Falls, (Morrison area)	25	3-4 PM			0	0	4	0	Wind, lightning
									Thunderstorm winds felled a barn under construction in Strickland. Boards were strewn for 1/2 mile. Lightning started a chicken barn fire in Morrish Center. Other minor damages. Lightning damage about 10% of total.
Maryland									
Central portion (including Bay area)	10	Late afternoon - Evening			0	0	4	0	Wind, lightning
									Thunderstorms caused scattered damage by strong gusty winds and lightning strikes. A barn near Clinton was set afire by lightning; total damage was near \$4,000. Wind and lightning damage was also reported in parts of Dorchester County, including the Cambridge area.
State, except Garrett County area	21-26								High temperatures
									Unusually high temperatures for late September reached into the 90's on as many as six consecutive days; some stations reported temperatures in the upper 90's on three different days within the period. Maryland's late September record of six days with 90-degree temperatures set in 1930 was matched. A power emergency developed as a result of the unusual demand for electricity.
Maryland (continued)									
Chesapeake Bay area	27	Late Morning			1	0	4	0	Wind
									Strong gusty winds and heavy swells associated with a marked cold front created a dangerous situation in the Bay area. Between 30 and 50 pleasure boats capsized; the Coast Guard and Marine Police reported 55 craft assisted. One man died either by drowning or by head-on attack when his fishing boat capsized in the heavy swells off Hagfish River. Fortunately, all missing persons were found safe. The cooperative observer at Royal Oak reported gusts to 70 mph from the NW and wind picking up clouds of water from a nearby creek and carrying it over land; something he had never seen before. More inland, great clouds of dust and dirt were lifted from the powder-dry farmlands. Roofs were ripped from buildings and many trees were downed. The final day of an outdoor fair at Easton was cancelled when the wind blew down the booths and scattered the debris in all directions.
Massachusetts									
Northeastern	4	6-7 PM			0	0	4	0	Lightning, wind
									Scattered lightning damage to homes and utilities. Wind felled tree limbs, causing scattered utility failures. Damage about 40% from lightning, 60% wind.
State	25	Evening			0	0	4	0	Lightning, rain hail
									Lightning made many direct hits on buildings and utility lines, most with small damage. In Salem a church steeple was partially destroyed. In Springfield, strikes knocked out traffic control equipment. Local flash flooding reported in Norison and Palmer, with hail to 3/4th inch diameter in some areas. Damage nearly all from lightning.
Barnstable-Hyannis area	29	Early PM			0	0	3	0	Hail, lightning, rain
									An unseasonably late hailstorm piled mostly pea-sized stones up to 2 inches deep in streets and caused hazardous traffic conditions. Lightning damaged a shed in Dennisport. Heavy rain caused local flooding. Damage 50% from lightning, 50% from washing and flooding.
Michigan									
Van Buren and Berrien Counties and portions of Northern Michigan	10	12:30 AM			0	0	4	0	Wind
									Strong winds, estimated at about 50 mph, toppled trees, broke windows and damaged power lines. At Paw Paw, Michigan, the wind peeled back about a 40-foot section of roof of the Paw Paw High School, lifted some skylights off the roof, caused window breakage, and slightly bowed a wall. In addition to this more localized storm, an intense low pressure system in Lake Superior caused wind gusts of 40 to 60 mph which caused damage to breakwaters at Grand Marais, felled trees, broke windows, damaged docks, etc., throughout many areas of northern Michigan.
Upper Peninsula and Central Lower Michigan	21	8 am to Midnight			0	0	4	0	Thunderstorms, Wind, Lightning
									Thunderstorms moving across the state were accompanied by strong winds. High winds in Iron Mountain caused damage to downtown buildings, and toppled trees. At or near Greenville, Michigan, 4 fires (3 houses, 1 barn) were started by lightning. A kitchen of a two-story home completely gutted. A vacant farm home completely destroyed by fire believed started by lightning. At Cheboygan, wind toppled trees into power lines. Near Gladwin, a small vacant house was destroyed by fire after being struck by lightning. Wind damaged a house trailer and a pick-up camper over-turned near Flint.
Minnesota									
Winona 10S, Winona County	12	Afternoon & Evening			1	0	3	0	Lightning
									Lightning struck and killed a farmer driving in his cattle 10 miles south of Winona late afternoon and killed 9 beef cattle in the woods 1-1/2 miles west of Hugo during night.
Statewide	20-21	Evening & Early Morning			0	0	5	5	Winds, Rain, Hail & Lightning
									Strong cold frontal thunderstorms with rain, winds, hail and lightning moved across the State late on 20th and early on the 21st. Heavy rains 2 to 3 inches in early evening in the Moorhead-Detroit Lakes area caused basement flooding. Several main highway underpasses were impassible due to deep water for short periods. Strong winds; in the Perham-Benedict-Jenkins area between 7:30pm to 9:00pm damaged several buildings, boats and broke off many trees and branches, damaged several buildings southwest of Mapleton between 1:15am and 1:30am and in Nanamingo about 2:45am. Some scattered hail was reported at many locations across the State. Crop hail damage was confined mostly to Fairbault County. Light-

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Minnesota (continued)									
Orr 75W, St. Louis County	20	10:30pm	1/2	50	0	0	3	0	Tornado
Northern Lake Area	Montl				0	0	0	6	Strong Winds
Mississippi									
Mississippi Sound	6	11:45 a.							Waterspout
Jackson County	22	11:05 a.							Waterspout
Lawrence County	24	1:30 p.	?	?	0	0	0	0	Tornado
Jackson County	25	12:40 a.							Waterspout
Missouri									
Holden, Johnson County	2	4:03 PM	1/2						Tornado
South Johnson County	2	5:00 PM					3		Thunderstorm Winds
Alma, Lafayette County	2	5:10 PM							Funnel Aloft
Southwest Missouri	3	2:30 - 4:30 PM			2	4			Thunderstorm Winds, Hail
Barton, Jasper, Newton Counties	3	6:30 - 9:00 PM					5		Thunderstorm Winds Hail
St. Joseph, Buchanan County	3	10:35 PM			1	4			Thunderstorm Winds
Kansas City area	3	11:00-12:00 PM							Thunderstorm Winds

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	
Missouri (continued)									
Norborne, Carrollton Carroll County	4	Midnight to 12:30 AM					3		Thunderstorm Winds
Mexico area, Audrain County	4	1:45 AM					3		Thunderstorm Winds and Funnel Aloft
Fulton, Callaway County	7	3:00 PM							Funnel Aloft
Kingdom City, 3/4 W Callaway County	7	3:20 PM					3		Tornado
Southeast Stoddard County	9	Mid-afternoon					3		Thunderstorm Winds
Willow Brook Agency area, Buchanan County	9	3:30-3:35 PM							Funnel Aloft
Kansas City, Johnson County	9	4:00-4:30 PM					3		Thunderstorm Winds
Independence, Jackson County	9	4:30 PM							Funnel Aloft
Humphreys, Sullivan County	9	About 5:30 PM					4		Tornado
Marshall, Saline County	9	5:45 PM							Thunderstorm Winds
Rolla, Phelps County	9	8:45 PM							Funnel Aloft
South St. Louis	9	9:55 PM							Thunderstorm Winds
Raytown, Jackson County	10	4:30 PM							Hail
Independence, Jackson County	10	4:35 PM							Hail
Lake Poudre de Terre, Hickory County	22	2:10 PM					1	4	Thunderstorm Winds
Mexico, Audrain County	23	4:00 PM							Hail

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1970

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	
Missouri (continued) Washington, Franklin County	23	Night					3		Thunderstorm Winds
									Thunderstorm winds partially unroofed a house, blew out a picture window and caused other minor structural tree and power line damage on the south edge of Washington, Missouri.
Montana Flathead and Lake Counties	12	8 p.m.			0	0	5	0	Strong wind
									Strong easterly winds caused by arctic air spilling over the Continental Divide increased to destructive speeds on Flathead Lake about 8 p.m., continuing until the morning of the 13th. Large waves destroyed docks, boat houses and other boating facilities on the west side of the lake. Twenty-six boats were reported sunk and many others damaged.
Nebraska Pierce County	6	6:50p	-	-	0	0	0	0	Tornado
									Touched down briefly in open field.
Dawson County	20	5p	?	?	0	0	4	4	Hail, wind
									Hail and wind struck several areas in Dawson Co. but was heaviest in the Cozad area. Stones ranged from 1/2" to 2" diameter. Ground covered to two-inch depth in center of storm. A few sheds and barns blew down.
Howard County	20	7:07p	-	-	0	0	0	0	Funnel cloud
									Sighted near Farwell.
Madison County	20	8:30p	?	?	0	0	0	0	Hail
									Three-fourths inch hail reported 5 miles west of Norfolk.
Eastern Nebraska	25	1a - 3a	110	10*	0	0	4	5	Hail, wind
									Thunderstorms accompanied by hail and occasional strong winds broke out along a line extending from north-central Hall County to southeastern Burt County. The ground was covered in numerous areas, mostly by small hailstones ranging from 1/8" to 1/2" diameter. However, stones up to an inch were reported at Schuyler and up to 3" at Bellwood. The heaviest damage seemed to be in northwestern Butler County. Soybeans suffered considerable damage from shattering. Areas having hail included Wood River, Grand Island, Central City, Marquette, Strasburg, Osceola, Silver Creek, Bellwood, Schuyler, Heman.
Red Willow, Hayes & Furnas Cos.	3	Early pm and evening	15	5*	0	0	4	5	Hail, damaging winds
									From Bartley to Schuyler. One and one-half inch hailstones accompanied by high winds severely damaged corn and soy. Hail covered ground in some areas. Building and tree damage from the winds.
Frontier County	3	6:30p	-	-	0	0	0	0	Two funnel clouds
									Funnel clouds sighted near Curtis.
Phelps County	3	6:30-7:15p	8	6*	0	0	4	5	Hail
									Stones mostly 3/4" diameter with some up to 1 1/2" completely covered ground in some areas. Severe crop damage from hail and considerable tree and building damage from winds. Storm was centered in the north-central portion of the county.
South Central to Northeast Nebraska	6	3:30 to 7 pm	200	30*	0	5	6	5	Damaging winds, hail
									Severe thunderstorms accompanied by widespread damaging winds (92 MPH measured at Kearney) and occasional hail moved northeastward across central Nebraska. Winds caused more damage than the hail. There were reports of scattered isolated damage, but the principal activity was along three distinct paths. One started near Gothenburg in Dawson County about 3:30p CST and moved across southeastern Ouster County, northern Valley County and into southeastern Garfield County. Direction-wise and time-wise this cell could have been associated with the tornado observed near Creighton and described below. The second one started about 4:30p near Brewster in Blaine County, crossed southern Rock County, crossed Holt County from southwest to northeast, crossed eastern Boyd County and apparently moved on into South Dakota. This storm was by far the largest and most damaging of the three and left a path of destruction about 10 miles wide and 100 miles long in Nebraska. The third began about 5:45 p CST near Wilsomville in Furnas County and moved past Holdrege and Kearney into eastern Buffalo County. Trees were uprooted, farm buildings destroyed, trailer houses demolished, thousands of hay stacks blown away, etc. Injuries occurred when trailer houses were demolished. Livestock losses attributed to falling trees and buildings.
Nevada									None Reported
New Hampshire North and central	1	7-9 AM			0	0	3	2	Hail, wind
									Hail fell in various localities, unusual with such low concurrent morning temperatures, generally only near the 40's. At Lost River in Kinsman Notch, hail accumulated to 1/2 inch deep with stones to 3/4 inch diameter. Scattered damage from locally severe wind.
State	18	Evening			0	0	4	0	Lightning
									Scattered lightning damage. A home in Campton was set afire.
Keene area	22	4:30 PM			0	0	4	0	Wind, lightning
									A severe thundersquall moved into the area from the west-northwest. Wind smashed two aircraft at the Keene airport, where a velocity of 92 mph was noted. Wind was extremely gusty, whipping trees first in one direction, then another. Many trees were broken, uprooted, or lost branches, falling on and damaging utility lines, homes, and cars. The worst damage was in the eastern part of Keene, Surry and North Swanzey; though Westmoreland, Marlborough and Harrisville also were hit. Lightning also damaged homes, utilities and trees, accounting for about 10% of the storm damage. Very heavy rain fell in several short periods, with from 1/2 to 1 inch accumulating in about 15 minutes. The thunderstorm cell, measured by radar observations, extended to a great height, around 10 miles, characteristic of very severe storms or tornadoes.
New Jersey Statewide	27	mid-day					4		High winds.
									A cold frontal passage across the State late in the morning brought severe thunderstorms and high winds to scattered areas. Some damaging winds were reported in Union, Mercer, Middlesex, Monmouth and Ocean Counties. Helleghain, in Cape May County, reported high winds with gusts to 75-80 miles per hour over a narrow strip, with damaged roofs and some trees felled by the storm.
New Mexico Albuquerque	12	Afternoon			0	1	0	0	Lightning
									Lightning struck water tower and traveled to ground injuring man nearby.
Albuquerque	13	4:30 p.			0	1	3	0	Lightning
									Lightning struck home and injured woman inside. Damage to roof and electrical equipment and wiring.
Roswell	16	11:45 a.							Funnels aloft
									Two funnel clouds observed over Roswell Industrial Air Center failed to reach the ground.
New York Lake Erie	4	late a.m.					4		Wind
									Winds gusting to 40 miles per hour caused damage to boats, marinas and shoreline installations along Lake Erie. Near Silver Creek some 16 boats torn from moorings and drifted northward on Lake, requiring much effort to recover. Boat lifts smashed and considerable beach erosion at Van Puren Point, near Dundick. Harbor facilities battered by wind driven waves in Buffalo area as two young boys were marooned, but rescued, on breakwater wall. Scattered power lines, poles and trees downed by winds in communities near lake shore.
Chautauque County	8-9	night					4	4	Rain
									Heavy rains of up to four inches centered in the Westfield, Ripley, Kyrtile and Jamestown areas of southwestern Chautauque County during the evening and early morning hours. Westfield measured 4.7 inches, third heaviest 24-hour total in 70 years of record. Orange vineyards suffered extensive damage from soil erosion and washout of poles. Deep water and debris blocked some highways as waters inundated shopping plazas, fields and low lying areas. Lightning strikes caused scattered power failures and fallen tree limbs in other sections of County and minor fire damage to two homes was reported as far away as the Buffalo area.
Madison, Onondaga and Oswego Counties	10	afternoon					5		Wind
									Strong winds of up to 30 mph. caused extensive damage to trees, barns and utility lines over three-county area of central New York. Village of Casenovia, Madison County, especially hard hit as numerous trees broken or toppled and much of community lost electric power due to broken lines. Roof of college building, damaged by fallen tree, large commercial sign blown over, was trapped in car when vehicle smashed by fallen tree and power lines downed by tree caused electrocution of four cows at farm on edge of Casenovia. Winds caused power failures in the Fabius and Pompey areas Onondaga County and the Pulaski, Mexico and Altair areas of Oswego County. Two barns demolished by winds at Altair.
Saratoga County	22	3 p.m.			1		5		Wind
									Violent thunderstorm, lasting less than 30 minutes, brought heavy local wind damage to city of Saratoga Springs. Many large trees toppled in city, resulting in damage to homes, stores and power lines. One person injured in automobile as large tree fell on vehicle; at least four additional autos smashed by falling trees.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1970

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					KILLED	INJURED	PROPERTY	CROPS		
New York (continued)										
										Cottage at nearby Saratoga Lake heavily damaged by toppled trees. Many downtown stores had windows smashed and signs blown down. Trees and other debris clogging streets of city required up to two days for crews to clean up. Cooperative weather observer in city recorded temperature drop from 80 to 71 °F in less than one hour during storm. Minor damage from wind and lightning reported in Olen Falls, some 29 miles to the north.
Buffalo, Erie County	26	7 p.m.			1					Wind
										During evening thunderstorm activity a gust of wind capsize an 18-foot motorboat in Buffalo harbor. One man drowned but three companions were rescued.
Levittown, Nassau County	27	11:10 a.m.	1/2	50-100	0	0	5			Tornado
										Two wings of apartment complex unroofed. Weakening of rest of buildings forced evacuation of 30 families. Twister continued eastward, demolishing garage, damaged several homes and downed large trees. Patterns of roof debris and unrooted trees definitely showed rotating action of wind. Residents in apartment reported increasingly loud roar of wind before tornado struck.
Nassau and Suffolk Counties	27	Midday			3	5	3			Wind, hail
										Winds of 65 to 70 mph. raked wide areas of eastern Nassau and western Suffolk Counties during passage of apparent small line (see tornado above). Some 30 small, private airplanes were overturned and variously damaged at airport near Farmingdale. Another plane landing at airport was overturned by wind and three occupants injured. Airport control tower evacuated when winds reached 60 knots. Restaurant in Farmingdale and store at Merrick unroofed. Damage by wind to trees, lawn furniture and small objects as well as hail of golfball-size reported in Suffolk County communities of East Northport, Commack, Smithtown and Seaaukat. Wide areas of both counties were affected by power failures.
North Carolina										
Cabarrus, Rowan, Stanly Counties	1	11pm-midn't					4	0		Wind
										Trees blown down, power out. Home, mobile home and outbuildings damaged near Gold Hill. Large barn and smaller buildings destroyed near Richfield.
Catawba, Durham, Guilford, Montgomery, Pitt Counties	4	Aftn & evening					4	0		Electrical, wind
										Lightning killed four cattle in Catawba; burned a home in Montgomery; caused power failures in Durham. Wind blew down trees in Guilford, breaking power lines; demolished two carpools in Pitt. Wind gusts to 55 knots recorded at Hickory.
McDowell County	19	5:30 pm					4	0		Electrical
										Home at Dysartville struck by lightning, burned.
North Dakota										
Ramsey and Cavalier Counties	5	3:00 p.	20	*6	0	0	4	4		Hail and wind
										Storm moving in northeastward direction with strong winds pounded crops into ground with hail size of golfballs, produced 2 1/2 to 3 inches of rain, destroyed at least 4 barns, and smashed hundreds of windows in a path from St. Joe to Loda.
Pembina County	5	8:00 p.	40	2	0	0	3			Hail and wind
										Storm shattered crops, damaged buildings and uprooted trees in north-south line through county before moving into Manitoba. Hailstones the size of large eggs fell at Bathgate at 9:15 p.
Logan and McIntosh Counties	6	5:00 p.	35	*2			5	7		Wind and hail
										High winds and hail swept area from near Burnstad to just west of Ventura. Trees in Beaver Lake State Park were stripped of leaves and several campers parked in the park were overturned by the high winds and one camper was blown into lake. Hail at Beaver Lake damaged roofs on cabins and broke windows as well as killing many sea gulls and coots and cutting and bruising some cattle. Elsewhere, late seeded flax fields were wiped out by hail and severe damage to buildings was caused by wind and hail.
Southeast corner	6	9:30 p.	110	?	0	0	4	?		Tornado, high winds, lightning
										Severe storm which apparently began near Monango in Dickey County moved northeastward through Laboure and Enderlin before moving into Minnesota about 2 miles south of Fargo. Brief tornado touchdowns apparently from same storm cell were reported near Lisbon, at Enderlin, and 2 miles south of Fargo. La are hit by 4.26 inches of rain and golfball size hail which defoliated trees and shrubs. A high hip-roofed barn 5 miles north and 8 miles west of Ellendale had a large hole pushed into its roof when high winds lifted an old sheep barn about the size of a double garage off the ground and dashed it into the barn roof. At Enderlin tornadoic winds dipped into Enderlin at 9:30 p. and toppled trees like tents but causing only isolated property damage. Lightning started a fire causing \$100 damage at the Soco Line Depot in Enderlin.
Finley	6	10:30 p.			0	0	4			Wind
										After warm and sultry day storm downed 3 barns and some trees in Finley area.
Fullerton	20	6:00 p.								Hail
										Hail measured by cooperative observer fell in vicinity of cooperative weather station with dimensions of 1.5 x 0.9 x 0.5 inches.
Ohio										
Utica Area, Knox County	3	8:15p	Short	Narrow	0	0	3			Tornado
										A tornado moving toward the northeast inflicted minor damage to 3 Utica buildings. A 2x4 was driven into the side of a garage. Lawn furniture was scattered over a large area. Residents reported the storm hit suddenly with a few flashes of lightning, some thunder and then a roaring sound.
Circleville Area, Pickaway County	3	8:30p	3	100	0	1	4			Tornado
										A small tornado destroyed a service station building and a barn about 4 miles north of Circleville. The storm moved toward the ENE.
Medina Area, Medina County	3	10:30p	Short	Narrow	0	0	3			Tornado
										A tornado touched ground briefly on Wedgewood Road killing several pigs, destroying a greenhouse, uprooting trees and upsetting heavy farm equipment. Residents reported a noise comparable to that of a train as the storm passed.
Scattered Area, Entire State	8	Afternoon evening			3	1	5			Electrical, wind, rain and hail
										Severe thunderstorms were reported at scattered locations throughout the state. Lightning accompanied the storms in most areas, killing two persons in the Cleveland area and one in Columbus. Utility services were disrupted in several areas. Flash floods were reported in Utica and Zanesville where more than 8-inches of rain fell. Rainfall exceeding 1.5 inches were especially common south of a Cleveland to Cincinnati line. Lightning set fires were common.
Rural Dale Area, Muskingum County	8	6:00p	Short	Narrow	0	0	5			Tornado
										Several area residents saw a funnel cloud and heard a sound like an airplane as a severe storm demolished 3 barns and partially ripped roofs from 3 homes.
Unity, Columbiana County	15	4:15p					1			Electrical
										A man stepped from a piece of equipment onto the roadway and was struck by a bolt of lightning.
Avon, Lorain County	18	10:40a	0.3	85	0	2	4			Tornado
										A small tornado moved east northeast, blowing two persons off a tractor ripping the roof off a barn and smashing glass in a greenhouse.
Northern Ohio	22	Afternoon			0	1	?			Wind, electrical, rain, and hail
										Numerous thundershowers caused scattered local wind damage to buildings, trees, and utility lines over the northern third of the State.
Scattered Areas	23	Afternoon			2	0	5			Electrical, wind, rain, and hail
										Two youths, a Boardman boy and the other a Zanesville youth, were struck and killed by lightning. Lightning set fires were especially numerous in northeast and southeast areas. Hail was reported at several locations in Hancock and Putnam Counties.
Medina Area, Medina County	24	6:52p								Funnel aloft
Northeast Ohio	24	Evening			0	0	?			Electrical and wind
										Lightning and wind associated with scattered thunderstorms resulted in power outages, numerous small fires, and some damage to buildings in northeast areas.
Wiegels Corner Area, Erie County	26	2:15p	0.5	33	0	0	3			Tornado
										A tool shed exploded as a tornado touched ground and moved eastward. One piece of thin plywood was driven in the door of a junk bus. Trees were twisted out of the ground.
Orange Area, Coshocton County	26	2:45p	Short	Narrow	0	0	3			Tornado
										A small tornado lifted a double car garage and carried it into a nearby cornfield. A car that was in the garage was also upset in front of the garage's new location. Roofing was blown off a barn and a small shed was demolished. Six acres of corn was leveled.

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					KILLED	INURED	PROPERTY	CROPS	
Ohio (continued) Akron Area, Portage County	26	3:30-4:00p							Funnel aloft
									Public reported funnel alofts over Buchtel High School and 3 miles south of Kent. The funnels moved in a northeasterly direction.
North Central and Northeast	26	Afternoon			0	0	7		Wind
									Widely scattered thunderstorms were accompanied by strong winds which did local damage to utility lines, trees, and buildings.
Oklahoma Tahlequah, Cherokee County	3	2:30a.-3:30a.	1	1	0	0	3	0	Wind, rain
									Strong wind and heavy rain accompanied a line of thunderstorms that moved across the area. There was no major property damage, although several trees were uprooted and roofs of several homes received minor damage from falling trees. Official rainfall measured 5.52 inches.
Vici, DeWey County	3	4:00p.-5:00p.	7	7	0	0	3	0	Wind, hail
									Winds estimated at 50 MPH caused minor damage to several buildings. Hailstones, measuring up to 1 inch in diameter, caused no reported damage.
South of Leedey, DeWey County	3	5:40p.-5:50p.	20	*8	0	0	3	3	Wind, hail
									Winds, estimated at 70 MPH and hailstones measuring 3/4 inch in diameter, caused damage to roofs, power line poles, and the cotton and grain sorghum crops.
SW of Greenfield, Blaine County	3	6:30p.	7	7	0	0	3	0	Tornado
									A tornado, traveling north to south, caused damage to buildings on a farm.
Cushing area, Payne County	3	7:55p.-9:30p.			0	0	0	0	Wind, hail, 2 funnels aloft
									Two funnels aloft were reported in the Cushing area and winds were estimated at 60-65 MPH. No damage was reported from the wind. Peasants hail also fell, but caused no damage.
JN Welch, Craig County	3	8:30p.	Short	Narrow	0	0	3	0	Tornado
									A tornado damaged several barns, one house and trees in the area.
Weslanka, Cefuskee County	3	10:00p.							Funnel aloft
20E Tulsa, Rogers County	3	10:15p.			0	0	0	0	Tornado
									A tornado touched down briefly causing no damage.
Tulsa, Tulsa County	3-4	Evening, 3rd - Early AM, 4th	7	7	0	0	3	0	Wind, hail, lightning
									Strong winds, estimated at 50 MPH, hailstones, measuring up to 1 inch in diameter, and severe lightning hit the area. Trees received minor damage due to the wind and hail, and lightning struck a garage causing a fire which destroyed a new race car.
Ottawa County	3-4	5:00p., 3rd - 3:00a., 4th			0	0	4	3	Wind, hail, lightning
									Strong winds turned an airplane upside down on the ground at Miami. Considerable damage was reported to the airplane. Hailstones, measuring 3/4 inch in diameter, fell north of Fisher. Small hail occurred 5 miles west of Fisher, causing damage to trees and some crop damage. At 3:30 a.m., a large barn filled with 85 tons of hay was struck by lightning near Miami and burned to the ground.
SE of Boise City, Cimarron County	4	6:30p.			0	0	3	0	Wind, 3 funnels aloft
									Strong winds caused several thousand dollars damage to a feedlot operation. Nine hundred pigs were wandering loose when the storm abated. Three funnels aloft were sighted in the area.
9SE Beaver, Boaver County	6	7:25p.	Short	Narrow	0	0	4	0	Tornado
									A tornado touched down briefly destroying three barns and a granary.
NW of Buffalo, Harper County	6	9:30p.	8	7	0	0	4	0	Tornado
									A tornado damaged several barns and other outbuildings.
Duncan and Comanche area, Stephens County	7	8:30p.	**200	200	0	0	4	0	Tornado, wind
									A tornado touched down briefly at Duncan, causing heavy damage to an auto agency and a manufacturing concern. At Comanche, strong straight winds caused minor damage to utility lines.
Oklahoma (continued) South of Gaspey, Ottawa County	8	12:25a.							Funnel aloft
									30W McAllister, McIntosh County
	8	4:44p.							Funnel aloft
	9	6:30p.			1	0	0	0	Lightning
									A woman was killed by lightning while leading a saddle pony in a pasture.
Claremore, Rogers County	9	7:15p.	4	1320	0	0	4	0	Wind
									Windy, estimated at 70-75 MPH, struck Claremore leaving extensive damage in the business district. The storm was moving from the northwest to the southeast.
Morris, Okmulgee County	22	About 11:00a.	1/2	100	0	0	4	0	Tornado
									A tornado cut a swath across the town damaging homes and outbuildings. Trees were uprooted, windows blown out, and utility lines downed.
Near Muskogee, Muskogee County	22	Early p.m.	**200	75	0	0	4	0	Wind
									Strong winds, estimated at 100 MPH, picked up a trailer house, carried it about 50 feet and dumped it upside down. There was some roof damage to a small frame house 50 feet southwest of the original trailer site. Another trailer house in the area was moved about 4 feet, but sustained only minor damage.
Northeast, Central, and South-Central areas	22	Day			0	0	7	0	Heavy rains, flash flooding
									Heavy rains, locally in excess of 8 inches, caused local flooding. Several homes in northwest Oklahoma City had water in them a short time when a branch of Deep Fork Creek flooded. Lightning Creek in southern Oklahoma City also flooded, but no water was reported in homes. SH 76, just north of Healdton, in south-central Oklahoma, was closed about 7:30 a.m. after several cars were stranded in 5 feet of water across the highway. SH 89, north of Ringling, and SH 33, near Ippoo, in south-central Oklahoma, were also closed by high water. Flooding also occurred along Joe Creek in south Tulsa and along Mingo Creek in east Tulsa, but damage was reported as negligible in both areas. The roof of one building in the east part of Tulsa collapsed under the weight of the rain water causing \$20,000 damage.
Just north of Checotah, McIntosh County	25	6:40p.	1/4	300	0	0	0	0	Tornado
									A tornado touched down briefly in a wooded area.
Just SE of Checotah, McIntosh County	25	6:52p.	1/4	300	0	0	0	0	Tornado
									A tornado touched down briefly in a wooded area.
Oregon									None reported
Pacific									None reported
Pennsylvania Southwestern Pa.	3	7:27 PM	2	205	0	5	6	0	Tornado
									A severe thunderstorm accompanied by a tornado moved through Beaver County and continued eastward through northern Allegheny County, southern Butler County and Armstrong County. At 7:27 PM a tornado that formed at Vancourt touched down for about 3 minutes and hopscotched through Monaca, injuring 5 persons slightly and damaged 2 businesses and about 60 homes extensively. Power lines were knocked down and trees uprooted. Damage in the Monaca area was estimated at \$30,000 - \$750,000.
Erle & Crawford counties	8	Evening			0	0	4	4	Rain, wind
									Severe flash flooding caused damage amounting into the thousands to homes and streets when storm sewers throughout Erle and Millcreek clogged and overflowed. Power lines were reported down throughout the area. High water was reported on secondary roads near Hill Village. In Crawford County autos were hit by downed tree limbs. Some flooding was reported near Cambridge Springs on Route 408. There were reports of street cave-ins in Erle.
Warren County	10	Early afternoon			0	0	4	4	Wind
									High winds lifted the roof off a 22-by-20 foot garage near Bear Lake and carried it 100 yards away where it was dropped in a wooded section. Aluminum siding from the garage were scattered over a wide area. A 20-by-50 foot barn with about 20 tons of hay inside was also leveled, and a camper trailer was rolled over about four times with damages estimated at \$5,000.
Eastern Pa.	10	Afternoon & evening			0	0	4	0	Wind, lightning
									The Berwick and Bloomsburg areas in Columbia County suffered blown-over trees. In Berwick there was an electrical blaze in wiring outside a home and a tree was struck by lightning during the afternoon. Lightning struck a large tree in Easton during a series of thunderstorms which pounded the Easton-Phillipsburg area in southeastern Northampton County.

See reference notes at end of table.

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					KILLED	INJURED	PROPERTY	CROPS	
Pennsylvania (continued)									
Lycoming County	11	Evening			0	0	4	0	Electrical
									Many trees were damaged and gutters and other appurtenances were stripped from residences during an electrical storm. The water and sewage systems were out of commission due to power failure and the TV cable was off several hours.
Beaver County	15	Late afternoon			0	1	4	0	Lightning, wind
									In New Brighton a man was indirectly struck by lightning and thrown across the basement room where he was closing a window. In Beaver Falls a camper trailer and a car were damaged by a blown down tree and another car was damaged when the driver of the vehicle failed to come to a stop on Route 988 where a tree had fallen across the highway. North of Sewickley a circus tent was destroyed by heavy wind. Damage was estimated at \$1,200.
Butler County	23	Early evening			0	0	5	4	Lightning, rain
									A two-story barn with silo and milk house attached was struck by lightning and destroyed by the ensuing fire near Emonton in Venango County. The straw now and the granary were full at the time of the blaze. A corn planter and tractor plow were also destroyed. In Sarver lightning caused \$250 damage to a garage. Near Route 359 property damage was reported and some flash flooding.
Statewide	25-27				0	0	4	0	Lightning
									On the evening of the 25th in Bridgeport, Montgomery County near Norristown lightning struck a utility pole around 11 PM and at Montgomery Square the woodwork of the Witchwood Country Kitchen was scorched by lightning. On the evening of the 26th in Ellwood City, Lawrence County, a business-residence was struck by lightning and caused about \$200 damages. On the morning of the 27th a 2 1/2 story dwelling in Stines Corner, Lehigh County, near Route 863 was struck by lightning. Damage caused by the resulting fire was estimated at \$25,000 - 30,000. That evening in Beaver County lightning struck a home in Beaver Falls about 7:30 PM and in Ambridge wires were downed causing a one-hour black-out.
Erie area, Erie Co.	30	1:18 PM							Waterspout
									A waterspout was sighted 6 miles north-northwest of Erie. Time of duration 5 minutes.
Erie area, Erie Co.	30	1:45 PM							Waterspout
									A waterspout was sighted 6 miles northwest of Erie. Time of duration 7 minutes.
Puerto Rico									
San Juan	19	Afternoon			3	0	0	0	Lightning
									Two girls and a boy were killed by a lightning bolt which struck a small tower in Fort El Morro in Old San Juan while they were taking shelter from a severe thunderstorm moving across San Juan Bay area.
Bayamon - Toa Baja	29	2:30 p.			0	0	4	0	Hail, Heavy Rain
									A severe thunderstorm centered over Bayamon - Toa Baja area caused flash flooding from heavy rains in the town of Bayamon and hail in the Barrio Camelarria sector of Toa Baja. Hailstones ranged in size from 1/2 to 1 inch in diameter and fell along a path about 3 to 5 miles in length. The ground was only slightly covered and the stones soon melted. The hail fell in open country with no damages involved. The heavier rains in town flooded some shops and damaged some merchandise.
Rhode Island									None reported
South Carolina									
Anderson County	2	11:00 p.			0	0	5	0	Thunderstorms, lightning
									Lightning struck the main switch yard of a steam plant near Williamston in the eastern edge of Anderson County. Two huge, 100,000 volt circuit breakers were demolished and a third one was damaged. Also three sets of lightning arrestors were destroyed. A crew of 100 workers restored power to the 20,000 homes which had been affected in about 5 1/2 hours.
Greenville County	19	Evening			0	0	5	0	Thunderstorm, high winds
									High winds accompanying a severe thunderstorm damaged four mobile homes, demolished a fruit stand and blew down a huge oak tree in the southwestern part of the city of Greenville. The mobile homes were on a dealer's lot and therefore unoccupied. A privately owned mobile home was overturned but no one was injured. A few store windows were broken by the strong winds.
South Dakota									
Hutchinson, Bon Homme, and ERN Charles Mix Counties	6	About 6:30 - 8:00 p.			0	1	6	5	Wind
									Strong winds damaged or destroyed numerous buildings on farms and in towns. The wind caused considerable crop damage. Extensive damage was caused to trees with some damage reported to utility lines. The greatest damage occurred in the Parkston, Wagner and Tyndall areas.
South Dakota (continued)									
Parkston, Hutchinson County	6	7:00 p							Funnels aloft
									Three funnels aloft were sighted in area and 1 or more may have touched down briefly causing some of above damage.
Just N Madison, Lake County	6	8:45 p							Funnel cloud
									Funnel cloud moving to the northeast.
28NW Ihron, Beadle County	20	3:10 p							Hail
									Golfball size hail fell but no damage was reported.
Redfield, Spink County	20	3:45 p							Hail
									Golfball size hail fell for several minutes but no damage was reported.
1 1/2N Doland, Spink County	20	4:15 p			0	0	0	0	Tornado
									Funnel cloud touched down with no damage reported.
Tennessee									
Cooke County	1	p.m.			0	0	4	0	Electrical, wind
									Fire apparently set by lightning destroyed a barn and some farm equipment. Wind damage to power lines.
Covington, Tipton County	2	11:12 p.m.	3/4	30	0	0	2	0	Tornado
									Tornado touched ground briefly at Covington Airport. Damage to hangar roof and nearby trees. Property damage estimated at \$300.
Southwest	3				0	0	4	4	Heavy rain, lightning, wind
									Thunderstorms occurred at a number of places. These were accompanied at scattered points by heavy rains, lightning, and in small areas by high winds. Damage was nowhere great but total over southwest amounted to several thousand dollars. Numerous brick power outages due to burned out transformers. Rains caused erosion to farm acreage and highways. High winds at Memphis and surrounding areas damaged trees, caused power interruptions, and slight damage to some buildings.
Carroll, Henderson and Gibson Counties	4				0	0	4	4	Thunderstorms
									Torrential rains caused considerable damage over limited areas. Soil erosion from the heavy rains damaged crops and small sections of irrigation systems. In affected areas power was disrupted.
Sparta, White County	9	3:50 p.m.			0	0	3	0	Lightning
									Lightning damaged roof of motel.
20 NNW Memphis, Shelby County	18	4:15 p.m.							Funnel cloud.
									Pilot reported funnel cloud.
Ghattsanooga, Hamilton County	18	8:30 p.m.			0	0	4	0	Lightning
									Scattered damage from lightning including utility outages.
Nashville, Davidson County	19	4:30 p.m.			0	0	5	0	Lightning
									Lightning apparently fired United Cabinet Company warehouse. Damage to building and contents estimated at \$500,000.
Northwest	19-20				0	0	0	4	Heavy rains
									Heavy thunderstorms caused local damage to crops in the bottomlands between the Forked Deer and Obion Rivers in DeWitt, Crockett and Lauderdale Counties. A few farms reported substantial water damage to corn and soybeans.
Memphis, Shelby County	23	10:35 a.m.							Funnel cloud
									Public reported funnel cloud.
Keith Springs, Franklin County	25	6:00 p.m.				1			Lightning
									David L. Campbell was killed instantly when lightning struck a wire fence he was standing near.
Texas									
Brazoria County	1	8:30 a							3 funnels aloft
									Several funnel clouds aloft were sighted south of Angleton moving northwestward about 30 miles per hour.
10 ESE Brownsville, Cameron County	1	12:30 p							Funnel aloft
NE Collin County	1	4:15 p	12	Narrow	0	0	0	0	Tornado
									A tornado touched earth at least twice in northeastern Collin County but caused little or no damage. It struck first near Melissa, uprooting a few trees, then hit again north of Farmersville. The funnel traveled from northwest to southeast.
Rock Island community, Colorado County	1	Night	1	300	0	0	4	?	Tornado, funnel aloft

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1970

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				
Texas (continued)										Texas (continued)												
									A tornado cut a path 200 to 300 yards wide across the southeastern edge of the Rock Island community. The path length was about one mile. The funnel demolished hog pens on the Vernon Crown place, and struck the Oscar Binkauf farm, where a large implement and feed shed was demolished. The roof of the building was lifted and a portion of it came down atop a tree. A funnel cloud aloft, described as being a whitish color and making a noise resembling a freight train, was sighted about 9:30 p.m., but it did not touch ground.												off a porch on one temporary structure at the Cunningham Elementary School at 5100 Gulfton. A tree on the school grounds was blown down.	
									No damage reported.	8 SE Corpus Christi, Nueces County	18	10:50 a							Funnel aloft			
Near Port Lavaca, Calhoun County	2	?	?	?	0	0	0	0	Tornado	Near Palacios, Matagorda County	19	5:23 p							Funnel aloft			
Hookley County	2	6:00 p-7:30 p	15	?	0	0	0	?	Hailstorm	Iyford, Raymondville, Willacy County	20	7:30 a	?	?	0	0	3	0	Tornado, windstorm			
									Hail up to 1 7/8 inches in diameter fell within a 10 to 15 mile strip from northwest of Levelland to about 5 miles southeast. Damage to cotton and grain sorghums varied from about 25 to 70 percent.										A tornado demolished a garage and damaged a house trailer at Iyford, five miles south of Raymondville. What may have been the same funnel was sighted on Farm Road 490 west of Raymondville. Three telephone poles were blown over five miles west of Raymondville. Apparently the tornado was moving in a northwesterly direction. A residence in Raymondville was damaged by high winds.			
3 W Ropesville, Hookley County	2	7:25 p-7:38 p							Funnel aloft	2 E Longview, Gregg County	20	4:00 p	?	?	0	0	3	0	Tornado			
Near Beaumont, Jefferson County	5	8:45 a							Funnel aloft										A tornado touched down on the Gene Palmer farm two miles east of Longview and destroyed a barn.			
Near Beaumont, Jefferson County	9	10:38 a-10:42 a							Funnel aloft	15 SE Iytle, Atascosa County	20	6:00 p-6:30 p							Funnel aloft			
Baytown, Harris County	12	11:45 a							Funnel aloft	Near Sulphur Springs, Hopkins County	20	Night			0	0	3	0	Lightning			
Near Beaumont, Jefferson County	12	2:25 p							3 funnels aloft										Two hay barns and about 300 bales of hay were lost in fire started by lightning on the Mrs. T. J. Davidson place east of Mahdrey road near Sulphur Springs.			
Houston, Harris County	12	12:30 p			1	0	0	0	Lightning	13 NW Miami, Roberts County	21	7:05 p							Funnel aloft			
									Mrs. Linda Jester, 20 was struck and killed by lightning on the parking lot of the Northwest Mall during a thunderstorm.	Edwards and Real Counties	21-22					0	0	5	0	Flooding		
1/2 S Mission, Hidalgo County	13	5:50 a	Short	Narrow	0	0	0	0	Tornado										Rains of four to six inches fell on the drainage areas of the Upper Rio and extreme upper Nueces Rivers on the morning of the 21st, with amounts of six to nine inches in a limited area north of Camp Wood and Leaky. Considerable flooding resulted, with low water crossings closed through the afternoon and night of the 21st. Downstream on the Nueces a brief crest near flood stage of 10 to 11 feet passed the river gage located nine miles southwest of Valde on the early morning of the 22nd. Flash flooding in Real County and in the eastern part of Edwards County caused damage to fences and roads and washed out part of a highway bridge on the Nueces at Barstedale. Total damage was estimated at \$92,000.			
15 S San Antonio, Bexar County	13	3:00 p-3:02 p	**33	17	0	0	3	0	Tornado	Near Galallen, Nueces County	22	12:05 p							Funnel aloft			
									A small tornado touched earth about one-quarter mile south of old U. S. Highway 83 and Taylor Road. It moved a mobile home about six feet off its blocks but caused no other damage, and no injuries.										Reported just northeast of Galallen moving toward the southwest.			
Laguna Madre, Nueces County	15	12:00 p							Waterspout	Donna, Hidalgo County	23	10:30 a							2 funnels aloft			
6 E Alpine, Brewster County	15	1:55 p							Funnel aloft	Fennett, Jefferson County	23	4:10 p							Funnel aloft			
Lake Sabine, Jefferson County	16	3:55 p-4:25 p							Several funnels aloft	La Joya, Hidalgo County	25	10:34 a							Funnel aloft			
S. Humble, Harris County	16	4:00 p							Funnel aloft	9 WSW Nederland, Jefferson County	26	12:15 p							Funnel aloft			
Near Wichita Falls, Wichita County	16	5:20 p							Funnel aloft	7 N Petrolia, Clay County	27	11:00 a	?	?	0	0	0	0	Tornado			
Beaumont, Jefferson County	17	9:40 a			2	0	?	0	Lightning, funnel aloft										Tornado touched earth briefly, then returned to cloud. No known damage.			
									Two employees of the Beaumont Refinery of Mobil Oil Corporation died as the result of a fire that engulfed a tank farm in the north plant. Mobil officials said an eye witness saw lightning strike a storage tank in the north zone of the refinery and the spark ignited a fire along a pipeline right-of-way which extends north and south. A gray-black funnel cloud dipped down near Orangefield on the east side of the thunderstorm about 10:00 a.m.	Utah	4-6				2	?	5	4				Heavy rains and flash flooding.
Orangefield, Orange County	17	10:45 a							Funnel aloft	Southeast San Juan County									Record breaking rains in the extreme south-east part of the state late on the evening of the 4th and continuing thru the 5th into the 6th produced flash floods which destroyed roads, bridges and damaged ranches near Bluff, Montezuma Creek and Aneth. Thousands of dollars damage was done to Navajo truck gardens. An Arizona couple drove their car off a washed-out bridge and were drowned. Their son was washed into shallow water and saved. 6 inches of rain was measured at Bug Point between 7 and 7 pm on the 5th of the month. This is a new 12 and 24 hour record for the state. Damage estimates exceeded \$65,500 to roads and bridges, \$6,600 to crops and over \$6,000 dollars to irrigation ditches and farm buildings.			
5 W Palacios, Matagorda County	17	12:50 p-12:56 p							Funnel aloft	Near Hill Field	5	6:54 p.							Funnel cloud			
Near Prairie View, Waller County	17	2:00 p-2:30 p							Funnel aloft										A funnel cloud was reported by a pilot approaching Hill Field. The cloud did not touch the ground but was moving in a southerly direction.			
Near Cameron, Milam County	17	3:00 p			0	0	?	0	Lightning													
									A bedroom in the Leo Yates home near Cameron was damaged extensively when it was struck by lightning and caught fire.	Houston, Harris County	17	Afternoon	Short	Narrow	0	0	?	0			Tornado, windstorm	
									A small "bluish black" tornado touched down near the intersection of Southwest Freeway and Newcastle, according to a witness, Carl Farrington, a service station attendant at West Park and the West Loop. The service station was slightly damaged and a large billboard was blown down. Thunderstorm winds blew the roof													

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1970

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					KILLED	INJURED	PROPERTY	CROPS		
Vermont Northern	10	Evening			0	0	4	0	Wind, lightning	Scattered damage from locally strong winds. Some large trees uprooted and some windows blown in at South Burlington. Minor scattered lightning damage, amounting to about 40% of storm loss.
Southern	22	3:30 - 4:30 PM			0	0	4	0	Wind	A severe thunderstorm, with high wind, brief intense rain, and much lightning followed a path from Manchester east-southeastward into New Hampshire, toward Keene. At Townshend 0.86 inch of rain was measured in 15 minutes. Keenes, during the night of September 21-22, thunderstorms in northern Vermont caused scattered damage and heavy rainfall with local totals to over 2 inches.
U. S. Virgin Islands			None reported							
Virginia Newport News	4	Aftn			0	0	4	0	Wind	High winds demolished a large building under construction at the Denbigh Mall shopping center. Some minor utility failures occurred and a few trees were downed in streets.
Roanoke Area	9	Aftn			0	0	3	0	Rain	Heavy rain flooded some basements and streets and caused sewage to back up into two houses. The high water caused many cars to stall creating traffic jams.
Fairfax County	10	3:25 p.m.			0	0	0	0	Funnel aloft	A funnel cloud was reported in the vicinity of Fort Belvoir.
Chesapeake Bay	27	About 1 p.m.			0	0	0	0	Waterspouts	Two or three waterspouts were sighted moving eastward 20 miles north of Norfolk.
Washington Whole State	10-12						4	6	Wind	Strong northerly winds associated with an outbreak of arctic air from 10th to 15th resulted in damage to apple crop in Okanogan and Yakima valleys and blowing just in other localities of eastern Washington. Preliminary estimates indicate the loss of apples to be in excess of 1,000 carloads. Highways in some localities in the Central Basin were closed for various periods due to blowing dust. Several automobile accidents resulted from reduced visibility. In western Washington, strong northeasterly winds in the Strait of Juan de Fuca caused damage to small boats in the Crescent Bay and Sekiu areas.
East Central Counties	22	afternoon			2	4			Wind	Visibility was reduced to near zero by blowing dust in some localities of Adams and Lincoln counties. Low visibility streaks across highways ranged from 300 to 600 yards in width. Several accidents were reported on highways in the vicinity of Lind and Ritzville.
West Virginia Weston, Lewis County	18	2:45 p.m.			0	0	5	0	Windstorm	A 509 foot unsupported television transmitter tower of station WTVZ (Channel 15) was blown down during a heavy thunderstorm associated with a cold frontal passage. The station is located 3 miles northeast of Weston. The wind was very strong, there was heavy rain and marble-sized hail at the time.
Wisconsin Calumet County	2	evening			0	0	3	0	Wind, hail	Strong winds and small hail accompanying thunderstorm cause scattered damage at Chilton.
Rock County	6	4:45 a			0	0	3	0	Lightning	Lightning starts major fire in basement of Evansville home.
Monroe County	6	4:57 a			0	0	4	0	Lightning	Lightning severely damaged transformer near Gashton. Damage estimated near \$50,000.
Grant, Lafayette and Iowa Counties	9	5:30 p	15	200	0	0	5	0	Tornado	Severe thunderstorm with strong winds and a tornado or two along line from just east of Tennyson to the north side of Platteville and on towards Mineral Point. Most damage at Platteville where 10 homes and a church were severely damaged or destroyed.
Grant County	9	6:40 p	10	200	0	0	4	0	Tornado	Tornado moving ENE did scattered damage from Dubuque area to a little east of Dickeyville. Several mobile homes destroyed.
Lafayette County	9	7:00 p	7	200	0	0	4	0	Tornado	Tornado moving ENE did scattered damage from south of Hazel Green through New Elgin area to near Shullsburg.
Iowa County	9	6:30 p			0	1	0	0	Lightning	17-year old Elanoharville youth struck by lightning. Had just finished milking and had his hand on the milk cooler when lightning struck. He was knocked unconscious but was revived by rescue squad.

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		
Wisconsin (continued) Clark County	9	evening			0	0	4	0	Lightning	Hail on two neighboring farms in Oelby struck by lightning and burned.
Northern Counties	20-21	night			0	5	6	0	Wind, hail, rain lightning	One of most severe thunderstorm occurrences of season did extensive wind and hail damage from Chippewa Valley eastward to Ripelander, Antigo and beyond. Winds at Mineralander Airport clocked at 115 MPH at about 5:15 am. Large television tower buckled by winds. Very basement flooded by heavy rain. Hail 3/4 inch at 4:20 am at Eau Claire. 10 cows killed by lightning in Door county. Also several lightning fires during night.
Zau Claire County	21	early am	2	100	0	0	3	0	Tornado	Shipping tornado moving ENE destroyed buildings on Gordon Smith farm J M Osage on county trunk HW. Debris scattered over 1/4 mi. Also some tree damage in area.
Dodge County	24	10:30 p			5	0	4	0	Lightning	4 children and their housekeeper fatally burned in fire started by lightning J NWS Columbus.
Jefferson Co.	25	10:00 p			0	0	4	0	Lightning	Interior of home destroyed by lightning fire.
Pond du Lac County	25	11:30 p			0	0	3	0	Lightning	11 cows killed by lightning while under a tree.
Menitowoc County	26	3:30 a			0	0	3	0	Lightning	Church steeple in town of Schleswig damaged by lightning fire.
Wyoming Rock Springs	1	4:30 p.			1	0	0	0	Lightning	Ranch worker killed by lightning on Kenney Rim, 46 miles southeast of Rock Springs.

- * Includes crop damage.
- C Crop damage.
- * Miles instead of yards.
- † Storm damages are placed in categories varying from 1 to 9 as follows:
 - 1 Less than \$50
 - 2 \$50 to \$500
 - 3 \$500 to \$5,000
 - 4 \$5,000 to \$50,000
 - 5 \$50,000 to \$500,000
 - 6 \$500,000 to \$5,000,000
 - 7 \$5,000,000 to \$50,000,000
 - 8 \$50,000,000 to \$500,000,000
 - 9 \$500,000,000 to \$5,000,000,000.

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. Delayed data and corrections will be carried in the June and December issues of this publication.

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