

STORM DATA



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NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL / NATIONAL CLIMATIC CENTER
DATA SERVICE / ASHEVILLE, N.C.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1977

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	
ALABAMA											
Montgomery County	3	1:45p			0	0	0	0			Hail
One inch hail fell briefly in the east section of Montgomery.											
Lamar County	19	9:00a					4	0			Lightning
A house two miles southwest of Sulligent was struck by lightning and burned completely to the ground. Sulligent is located 53 miles northwest of Tuscaloosa.											
Mobile County	30	2:40a	1/4	35	0	0	5	0			Tornado
A small tornado briefly touched down one mile north of Mobile. One house was destroyed, five sustained heavy damage, and 8 had minor damage. Several power lines were blown down, and one large tree was uprooted and blown the entire length of the path. Path was oriented southeast to northwest.											
ALASKA											
Southeast Alaska Coastal Waters	13-14				0	0	5	0			Wind and rough seas
A rapidly developing storm moved northeastward into the Gulf of Alaska on the morning of Nov. 13. By that afternoon, the storm had strengthened to a 95mb central pressure. There were gale to storm force southeast winds in advance of the storm and its associated weather front and storm force west to southwest winds behind the front. There were many ship reports of steady 50-60 knot winds within 100 miles of the coast. A cargo ship carrying freight in truck trailers sailed through the storm. An eyewitness reported that some of the truck trailers looked like they had "exploded"; this was due to violent shifting of cargo inside the trailers.											
ARIZONA											
NONE REPORTED											
ARKANSAS											
3 Miles East of Magnolia - Columbia County	1	2:30 p.	1/4	25	0	0	2	0			Tornado
A tornado moving northward touched down and blew down some out-buildings and trees. Damage was minor.											
Alder Springs community or 10 miles west of Mena - Polk County	15	9:30 p.	1/2	30	0	0	4	0			Tornado
A tornado moving northeastward touched down and destroyed most of the buildings on a farm. Several thousand chickens were also killed on the farm.											
CALIFORNIA											
NORTHERN & CENTRAL											
NONE REPORTED											
CALIFORNIA											
SOUTHERN											
Inyo County	18	unk									
Mammoth Airport was closed due to winds gusting to 65 mph.											
Mono County	6										
Heavy winds, causing blowing dust and sand closed Highway 6 for approx. 6 hours. Numerous accidents were caused due to poor visibilities.											
COLORADO											
Eastern Foothills	08	0300-1500			0	0	0	0			Blowing snow, ice
Near blizzard conditions caused closing of highway 1-70 to the west of Denver in Clear Creek Canyon and east of Denver to Limon. Wind gusts were reported to 67 MPH at Fort Collins, 46 MPH at Denver Stapleton Airport, and 60 MPH at Pueblo. Twelve inches of snow at Rye in Pueblo County.											
Naturita (Montrose County)	19	Afternoon			0	0	3	0			High wind
Wind gusts estimated 65 MPH overturned carport roof, causing damage to vehicle and house. An airplane door was sheared off by winds.											
Northeast Foothills	19	Afternoon			0	10	4	0			Heavy snow, ice
A brief blizzard with winds 35 MPH dropped 6 inches of snow at Fort Collins, where 50 traffic accidents happened during rush hours. 30 accidents were reported in western Weld County, with 40 in eastern Larimer County. Slippery roads caused some traffic accident injuries in the Denver area.											
Northeast Foothills	22	Morning			0	0	4	0			High winds
Wind gusts 62 MPH at Horseshoe Lake near Ft. Collins; gusts to 90 MPH at Air Force Academy, Colorado Springs area. Wind was measured up to 101 MPH in southwest Boulder. Damage at Boulder included side of garage blown down.											
COLORADO - (continued)											
Eastern Foothills	26	Midday			0	13	6	0			High winds
High winds blew windows out of office towers in Denver and Boulder and halted traffic in a 120-mile stretch from Ft. Collins south to Colorado Springs. 13 persons were injured in Boulder, mostly due to flying debris. Gusts to 119 MPH were clocked at Davidson Mesa, southeast Boulder, and 109 MPH downtown. Winds of 80 MPH were measured at the Fort Collins-Loveland airport. Six airplanes were damaged at the Jefferson County Airport, northwest of Denver. Winds of 90 MPH were reported in Lakewood, glass was blown out of several vehicles in Wheatridge, and four roofs were blown off houses in Arvada, all in west Denver. Several houses under construction were collapsed in the Denver area. 75 MPH winds were clocked at the Denver Federal Center, and 90 MPH at Rocky Flats Nuclear Plant northwest of Denver. Gusts to 82 MPH caused power outages, fires and isolated damage at Fort Collins. Gusts to 68 MPH were measured at Pueblo.											
Northeast Foothills	29	Morning			0	0	0	0			High winds
Gusts to 73 MPH near Horseshoe Reservoir and 61 MPH downtown Fort Collins with no damage reported. 85 MPH at Wondervu, SW of Boulder.											
CONNECTICUT											
Stratford (Lordship)	7-8	All Day			0	0	4	0			Wind, rain
Heavy rain and high winds caused many cellars to be flooded and a complete cottage to be washed away.											
Statewide Clinton Hamden New Haven North Haven	17	Evening			0	0	4	0			Lightning
A late season thunderstorm brought many hits of lightning across the state. There were many power outages.											
DELAWARE											
Statewide	17	4:00 p-6:30 p			0	0	3	0			Wind, Rain
Thunderstorm winds gusts to 51 mph at Greater Wilmington Airport doing mostly minor damage. Two New Castle county homes were slightly damaged when a tree fell on them, while a third home had a chimney blow down. Hallstones 3/8th-inch in diameter also were observed, but did no damage.											
Statewide	27-28				0	0	0	0			Snow, Glaze
Light snow fell during the night of the 27th. Melting, it then froze on road surfaces. Rebuilding icy film made it necessary to close Elsmere Bridge, near Wilmington, during the morning of the 28th for ice removal.											
FLORIDA											
Dade County	3	2:00 PM EST			0	0	0	0			Funnel aloft
A funnel cloud aloft was reported by the public in southwestern Dade County.											
Dade County	10	5:05PM EST			0	0	0	0			Funnel aloft.
A funnel cloud aloft was observed in the Greater Miami area near North Kendall Drive and 97th Avenue. It dissipated after 5 minutes.											
Dade County	18	2:15PM EST			0	0	0	0			Waterspout
A waterspout was reported by the public off Key Biscayne near the Sonesta Beach Hotel.											
Dade County	18	2:25PM EST			0	0	0	0			Funnels aloft
A beach patrol from Miami Beach reported several funnel clouds aloft forming and dissipating off South Beach.											
Palm Beach County	23	9:30PM EST			0	0	0	0			Waterspout
A waterspout, associated with a line of heavy thunderstorms, was reported just offshore from Palm Beach.											
GEORGIA											
North Georgia	4-5				0	0	6	5			Flooding
A slow moving storm caused 5 to 9 inch rains in North Georgia. The heaviest occurred in Northeast Georgia on the 5th, later leading to Toccoa dam collapse. Nearly every county in North Georgia reported some damage to roads and/or bridges, the most being in Madison County. In that county, 18 bridges were washed out and 27 others damaged, at a cost of \$237,000.00. Neighboring Oglethorpe County also suffered extensive damage, estimated at \$100,000.00.											
Toccoa	5	8:00 PM	1/4	100	0	0	2	0			Tornado
A small tornado touched down 2 miles west of downtown Toccoa. It touched down only briefly, but dozens of pine trees were uprooted, while some, snapped. This tornado occurred about 5 miles SSE of the location the dam failed several hours later, but no connection was found between the tornado and the dam failure.											
Toccoa Falls	6	1:15 AM			39	45	6	5			Dam Failure
An earthen dam collapsed at approximately 1:15 AM. The flood waters rushed through Toccoa Falls Bible College, killing 3 people in a dormitory and 36 in a trailer park along the stream. Of the 45 injured, 10 were hospitalized. About 40 trailers, 3 other residences, and 3 camps buildings were destroyed. The damage estimate was \$2,300,000.00.											

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					KILLED	INJURED	PROPERTY	CROPS	
HAWAII Over Niohokal	24	2:40p.							Funnel cloud
IDAHO Bonner, Kootenai, Benewah and Latah Counties	1	11:00PM			0	0	4	0	Wind
			Strong Winds associated with a cold front and low pressure caused light to moderate damage in scattered locations. Wind gusts to 79 miles per hour were recorded at the University of Idaho at Moscow, Latah County. The main damage was to power and telephone lines and was heaviest in Bonner and Kootenai Counties.						
ILLINOIS			NONE REPORTED						
INDIANA South Bend, St. Joseph County	25/26	Night/ Morning			1	0	?	0	Heavy snow
			Heavy snow accumulated to 20 inches in the South Bend area Friday night and Saturday morning. One elderly person died from exposure after he wandered away from a convalescent home. Several fence border accidents occurred. There was very little blowing and drifting as the snow was mainly caused by the effects of Lake Michigan. There were no reports of property damage directly attributed to the heavy snow.						
IOWA Northwest Iowa and extreme Western Iowa	8-9	5:00P - 3:00P			0	0	5	0	Blizzard
			Storm first started as rain but turned to snow after midnight. A total of 6 inches of snow fell. Winds increased in the morning hours to 35 to 47 MPH with gusts to 65 MPH. Visibility was 1/4 mile or less from 3:00 A.M. to 4:45 P.M. Travel was almost impossible with drifts of several feet. More than 200 people were stranded in automobiles on I-29 between Sioux City and Onawa. The winds uprooted trees with some falling on cars. Power outages occurred as well as destroying numerous outbuildings.						
KANSAS			NONE REPORTED						
KENTUCKY			NONE REPORTED						
LOUISIANA Terrebonne Parish	1	730PM	0.1	15	0	0	4	0	Tornado
			A tornado struck a service station in Grand Caillou, ripping out a large section of roof. An adjoining car-wash was destroyed. The wreckage landed on two nearby cars.						
Vermilion Parish	8	450 PM	1.0	25	0	1	5	0	Tornado
			A tornado cut a mile-long path three miles south of Gueydan on Highway # 91 where six homes, three trailers, farm buildings, boats and utility lines were destroyed. A tractor trailer was overturned on highway 14.						
Terrebonne and Lafourche Parishes	8	840 PM	0.1	17	0	2	5	0	Small tornado and severe thunderstorms
			Eite and Glynn Ross suffered numerous bruises when their trailer on the Brady Road below the Falgout Canal, south of Theriot, was wrecked. A small tornado took the trailer into the air and dropped it upside down on an auto about 30 feet away.						
			Another trailer on the Grand Bois road was moved off its moorings by high winds.						
			Several houses and outbuildings were damaged along the Laurel Grove road near Thibodaux about 8:30 PM.						
Jefferson Davis and Vermilion Parishes	21	morning			0	1	4	0	Lightning
			A tank at the Evangeline Refining Co. near Jennings containing an estimated 19,500 barrels of oil caught fire after being struck by lightning.						
			Frank Schexnayder, a plumber for Abbeville, was injured in a street in Abbeville when lightning hit a hose that he was holding.						
St. Mary Parish	21	2 PM	?	?	0	0	0	0	Tornado
			Pilot reported a tornado five miles northwest of Patterson						
LOUISIANA (continued)									
Vermilion Parish	27	4:30 PM	Brief	10	0	0	3	0	Small tornado
			Tornado touched down in Gueydan area, damaging one house and some out-buildings.						
Lafourche Parish	27	9 PM			0	0	4	0	Severe thunderstorm
			High winds knocked down a brick garden-wall; damaged the roof of E.D. White High School. Flooded streets. The roof of a house trailer in Labadieville was yanked off. Most of the damage occurred in Thibodaux.						
Cameron Parish	29	3:15 PM	0.1	15	0	1	4	0	Tornado
			South Cameron Elementary school, south of Creole, had roof and doors damaged and tile knocked off ceilings. A number of cars had glass popped-out. One woman was injured by glass. The students had been alerted and escaped injury by going into the halls.						
Lafayette Parish	29	5:25 PM			0	0	0	0	Funnel
			Public reported funnel cloud along highway # 167 south of Lafayette. Did not touch down.						
Southern and southeastern Parishes.	29	Evening	1	50	0	2	5	0	Tornado and severe thunderstorms
			A squall line moved across the lower portion of the state causing flooded streets and roads and damage to trees, utility lines, homes and trailers.						
			Around 6 PM trailers and boats were overturned near Lacour in Pointe Coupee Parish and in West Feliciana Parish near St. Francesville.						
			Baton Rouge and Gonzales had numerous power outages.						
			Napoleonville and Laplace reported high winds and minor damage about 7 PM.						
			An apparent tornado touched down about 8 PM in the outskirts of Albany Livingston Parish, tearing the roof off the residence of Mr. & Mrs. Fred Scott. The elderly couple was shaken up but not injured.						
			The tornado next touched down about one mile east on the Cafe Line Road.						
			Mr. & Mrs. William Jones were hospitalized for broken bones and lacerations after they were found in the wreckage of their trailer home about 75 feet from its foundation. Another residence lost its roof. Many chickens were killed when a large chicken house and several out-buildings were heavily damaged.						
			In Tangipahoa Parish two trailers and a cafe were damaged in independence. In Pointchaoula, high winds ripped off the porch and roof of one residence; pushed a mobile home off its foundation; damaged farm buildings; sput a car around about 8:55 PM.						
			The tugboat Elizabeth II sank when it smashed against the barge it was towing in the Gulf about 25 miles southwest of Intracoastal City. Loss was estimated at \$250,000 but the three crewmen were rescued.						
Cameron Parish	30	9:30AM	0.2	15	0	0	0	0	Tornado
			School officials spotted a small tornado east of Cameron, near Oak Grove. It was moving north through the swamps.						
MAINE			NONE REPORTED						
MARYLAND & D.C.									
Statewide	17	Afternoon			0	0	3	0	Wind
			Winds associated with cold front gusted to more than 40 mph, and caused scattered minor tree and limb damage. Power outage in Denton occurred when tree limb fell across power line. Large tree fell in Cumberland, blocking street and damaging two automobiles.						
Western and Central Portions	26-27							0	Snow, Ice
			Two separate storms brought from 7 to 9 inches of snow to Garrett County during the two-day period. Snowfall was light farther east, but freezing conditions resulted in hazardous roads the evening of the 27th. Numerous traffic accidents occurred in the Baltimore area, causing several injuries and at least one fatality.						

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MASSACHUSETTS Haverhill	8	11:40PM			0	0	3	0	lightning
			As a husband and wife were just retiring a strong blast hit their house blowing a 3 foot hole in the roof. The bolt traveled through the bathroom out of the house and destroyed a large tree.						
Northeastern Areas	8	Late Evening			0	0	4	0	Wind, heavy rain
			Winds of 40 to 50 MPH raked the area knocking over many trees onto buildings. Many basements and low lying areas were flooded.						
Lexington	8	10:50PM			0	0	4	0	Lightning
			Lightning ignited a hydrogen gas tank						
Littleton	17	Evening			0	0	3	0	Lightning
			Four houses were struck but sustained only minor damage.						
Revere Beach	17	Evening			0	2	0	0	Lightning
			A mother and daughter were walking along a shore road when struck. The mother was listed as in good condition but the daughter was placed on a hospital danger list.						
North Adams	17	Late Evening			0	0	3	0	Lightning
			A strong cold front brought strikes to a TV station antenna, several utility poles and small buildings.						
MICHIGAN An area North of Manistee and Cheboygan in Lower and all of Upper Michigan.	20 21	Evening & Early Morning					5		Winds
			60 MPH winds caused scattered power outages throughout the area. Many tree branches and some trees blown down on power lines and roadways. Numerous TV, antennas and signs blown down. A shed collapsed in Ironwood and a wall of a building under construction was blown over in Menominee. The hardest hit counties were Houston, Marquette, Alger, Iron, and Emmet.						
MINNESOTA West & North-Central Minnesota	8-10				4	0	6	0	BLIZZARD
			An intense early winter storm center moved northeast from Colorado to North-Central Iowa Wednesday morning and then to Lake Superior Thursday morning. Rain with temperatures in the 50's on the 8th quickly gave way to freezing rain and sleet and then to snow that night. Six to 14 inches of snow accumulated over West and North-Central Minnesota. North to northwest winds of 60 to 80 mph reduced visibility to zero and piled snow into eight-foot drifts. Temperature dropped rapidly into the 20's. Roads blocked throughout Western Minnesota and snowplows were immobilized by the heavy wet snow. Many cars and trucks snow-bound on the roads and highways. Southwest Minnesota Cooperative Electric Association at Pipestone reported 50 to 75 farms southeast of Luverne without electricity and this was reported many times over the area. Near Fergus Falls, two trucks loaded with turkeys became stuck and half the birds frozen. Also, an elderly man died of exposure. At Worthington, strong winds toppled a 70-foot high corn drier. Six hundred feet of a seven hundred foot KSW Minnesota Public Radio transmitting tower near Chandler was blown down. Many schools were closed the 9th and 10th. Two duck hunters survived two nights in the storm by burrowing under bullrushes and using the frozen snow as a roof. Redwood Falls man killed when struck by truck while he was out of his car during storm. Thief River Falls man killed when bucket of a snow-loading truck fell and crushed him. Two deer hunters are missing and presumed dead. Many fir and pine trees were blown down due extra weight of ice and snow and wet soil due rain on Tuesday. The storm was predicted well in advance and given good public distribution.						
MINNESOTA (continued) Northern Minnesota	19-20				0	0	5	0	BLIZZARD
			Second major winter storm of the season developed over Colorado on the 18th and 19th where it continued to deepen before moving eastward into Kansas and Nebraska the evening of Saturday, the 19th. By daybreak Sunday the 20th, the deepening center had reached Southwest Minnesota and by evening was located over the area of International Falls where it continued to accelerate toward the northeast. This major blizzard blanketed much of Northwest Minnesota. Heavy snow and winds gusting to 60 mph caused widespread drifting making highway travel impossible. Most streets and highways blocked with some drifts up to 10 feet high. Storm intensified through Sunday until early Monday morning when winds began to subside. Many vehicles stuck in ditches of Northwest Minnesota. Buses, trains, and many motorists stranded at Detroit Lakes in Becker County. Schools closed Monday and in a few areas through Tuesday due blocked county roads. Other activities including many Sunday church services cancelled. Heavy amounts of snow measured one to two feet over northwest including 22 inches at International Falls, 18 at Bemidji, 17 at Fargo, and 12 at Grand Forks. Many power and telephone outages. Semi-truck loaded with meat and canned goods overturned and demolished at Humboldt in extreme Northwest. In Southern Minnesota damage due mostly to freezing rain and high winds. 10 to 15 thousand electrical outages in Minneapolis/St. Paul area due fallen tree limbs and power lines. About three thousand additional outages in nearby Champlin, Maple Grove, and Dese. Blizzard warnings continued over Northeast as winds were subsiding southwestward. Waves 0 to 25 feet on Lake Superior with wind gusts exceeding 75 mph. About 95 percent of rural power customers in Cook County of Northeast Minnesota without power due icing and falling trees. At Grand Marais on north shore of Lake Superior, wind lifted roofing at Harbor Inn. Waves pounding across road washed into newly-carpeted building for second time in 10 years. This weekend storm, predicted as early as mid-week prior to storm, found most Minnesota residents well prepared.						
MISSISSIPPI Jackson, Hinds County	4	8:30 PM			0	0	5	0	Wind
			A narrow band of gusty winds stretching south to north passed through central Mississippi moving from east to west between 7 PM and 10 PM and began accelerating as it moved through the City of Jackson around 8:30 PM. Damage from this "fine line" of strong winds was confined mainly to southwest sections of Jackson and included extensive roof damage to an apartment complex, fallen trees, power lines, and transformers, and store windows being blown out. Total damage in Hinds County \$200,000.						
Entire State	21				0	0	6	?	Heavy Rain, Flooding
			A slow moving cold front moved into extreme northern Mississippi around 2 AM triggering thunderstorms and heavy rain as it pushed southward during the early morning hours. Rainfall amounts in excess of 5 inches fell at a few locations including Grenada and Dancy. Flooding began in northern sections and washed out bridges in Grenada and Tupelo. Widespread flooding spread into central and southern Mississippi as the front continued southward washing out several roads and bridges in Pike County. Other areas of the State receiving heavy flooding included Alcorn, Hinds, Clay, and Franklin Counties. The front began slowing down in southern Mississippi before finally stalling near the coast. Exact damage figures not known, but estimated to be between \$500,000 and \$1,000,000 statewide.						
MISSOURI North Half of Missouri	1-4	an let- an 4th	?	?	0	0	6	5	Heavy Rain
			A stationary front through central Missouri and a low pressure system in eastern Oklahoma followed by another cold front from the Northwest caused extensive rains over the state on the 1st through the 4th. This rain, combined with the rains of the latter half of October, caused much flooding in the north half of the state. There was an estimated \$300,000 in damage to roads and bridges in Clark County. At least 775 persons in the town of Franklin in Howard County had to be evacuated from their homes on the 1st when Sulphur Creek overflowed. One estimate of damage there was around \$1 million. By 6 am, most of the town was under water, and the water continued to rise into the afternoon. High water closed many county roads and destroyed many crops that were not yet harvested.						
Kansas City, Jackson County	8	8:55 pm	1 1/2	250	0	0	4	0	Tornado
			A small tornado with an intermittent path of 1 1/2 miles traveled in a northwesterly direction across a portion of southeast Kansas City. Damage included downed trees, roof damage, and destroyed sheds or garages. The worst damage was observed near 77th Terrace and Agnes where a garage and shed appeared to have exploded outward. Damage to a Ferris wheel and other rides were suffered in the western part of Fairyland Park.						

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MISSOURI (continued)										
Western Two-Thirds of Missouri	8	11 pm-12 am	?	?	0	1	5	4		Wind
A line of strong thunderstorms moved across the state causing much wind damage before decreasing in intensity in eastern Missouri. Many small buildings such as machine sheds and garages were destroyed, and others lost their roofs. Several barns were flattened, and many houses suffered roof, window, and antenna damage. Many trees and branches and power lines were downed, and other general property damage was suffered. A mobile home in Green Castle, Sullivan County, was overturned by high winds when the cable that tied down the trailer snapped. Mrs. White who was inside was taken to Sullivan County Hospital with a broken hand and possible hip injury. The mobile home was demolished when it slammed into a nearby house.										
Independence, Jackson County	20	9 am	1	7	0	0	4	0		Tornado
A small tornado struck the Dull residence in East Independence, scattering the garage to the northeast almost a mile away. Inside the garage, a boat and motor, two motorcycles, and other equipment were destroyed or damaged. A chain link fence around the house and around the kennel was blown down. The car was spun around, and nearby trees were either broken off about 20 feet off the ground or twisted out of the ground.										
MONTANA			NONE REPORTED							
NEBRASKA			SEE END OF TABLE							
NEVADA										
Lamille	18	UNK	-	-	0	0	0	4		High Wind
Small cyclone circulation - 60MPH winds damaged hay stacks.										
NEW HAMPSHIRE										
NEW JERSEY										
State	6-8				0	0	8	0		Rain, Flood
A Tropical Depression merged with a weak extratropical storm off the New Jersey Coast on Nov. 6. Strong east winds with speeds to 50 mph were experienced on the New Jersey Shore on Nov. 7, then decreased on Nov. 8. Tides 2 to 5 feet above normal were observed. High tides coupled with high wave action resulted in beach erosion throughout the shoreline. The worse reported was at Sandy Hook where the sandspit became a virtual island. Parking lots were destroyed. Rain began on the evening of Nov. 6 and continued into the afternoon of Nov. 8. Heaviest rainfall was in the northeast counties where about 2 inches fell on the 7th followed by 8 inches or more on the 8th. The counties of Bergen, Essex, Hudson, Passaic, and Monmouth reported heavy flood and water damage, totaling about \$100 million. The greatest damage was in Bergen County with \$62 million damage.										
Mercer and Middlesex Co.	17	3:30p			0	2	?			Severe Thunderstorm
A severe thunderstorm moved eastward from Pennsylvania into New Jersey near Titusville. The storm continued eastward across the state, reaching Jamesburg at 5p. Trenton State College had extensive tree damage, broken windows, walnut-sized hail, and some roof damage. Mercer Co. Airport reports wind gusts to 73 mph. Two minor injuries on campus were caused by flying debris. Hail covered the ground at Princeton in some places 6 inches deep. At Monmouth Junction 3/4 inch diameter hail was reported, and smaller hail at Jamesburg.										
NEW MEXICO										
NEW YORK										
COASTAL										
New York City, Westchester Co., and Rockland Co.	7-8				0	0	7	0		Rain, Flood
A Tropical Depression merged with a weak extratropical storm off the New Jersey coast on Nov. 6, resulting in strong easterly winds on Nov. 7. Tides were 2 to 5 feet above normal. On Nov. 7 Central Park recorded 1.79 inches of rain followed by a heavier downpour of 7.40 inches on Nov. 8. High tides and urban flooding resulted in closure of all coastal roads on Manhattan. Extreme coastal and urban flooding caused damage of \$10 million on Staten Island, chiefly to residences. Flooding in Rockland and Westchester Counties resulted in damages of \$3.3 and \$3.0 million respectively.										
NEW YORK (continued)										
CENTRAL										
ULSTER, ORANGE, GREENE, AND SCHOHARIE COUNTIES	7-8				0	0	5		*C	RAIN
Heavy rain began late Monday and through most of Tuesday causing widespread flooding in the area. Two feet of water flowed over the spillway from Ashokan Reservoir. Many roads were washed out as well as a number of private homes filled with water. 3.66 in. of rain was recorded in the area with the flooding beginning about 9:45 A on Tuesday.										
BROOME & DELAWARE COUNTIES	12-13									SNOW
Freezing temperatures and snow caused icy roads with numerous traffic accidents late Saturday and early Sunday. One man died and five others were injured in traffic mishaps.										
SARATOGA, WARREN, WASHINGTON, SCHENECTADY, OTSEGO, DELAWARE, SCHOHARIE, ONONDAGA & LEWIS COUNTIES	17	3P-6P			0	0	5		*C	THUNDERSTORMS
A squall line with pea-sized hail and wind gusts up to 50MPH caused numerous downed trees and powerlines with scattered power outages throughout the area. A bolt of lightning struck a home in Onondaga County, creating a fire which destroyed the home. Extensive damage resulted to a private home in Lewis County when lightning struck it.										
OTSEGO, HERKIMER AND ONEIDA COUNTIES	25									SNOW
Beginning during the afternoon and lasting through the evening, up to 12 inches of wet snow caused downed trees and powerlines as well as numerous traffic accidents.										
AREAWIDE										
	27									FREEZING RAIN AND SNOW
An extreme amount of multi vehicle traffic accidents resulted from freezing rain and snow throughout the area. A forty car pile up occurred in the Village of Florida, Orange County, between 3P and 6P. Numerous injuries were reported in the traffic mishaps with no fatalities.										
NEW YORK										
WESTERN										
Northern Erie County and Southern Niagara County	11	Friday morning			0	0	4	0		Heavy Snow
Six to nine inches of very heavy, wet lake effect snow over a relatively small area resulted in downed tree limbs and power lines in Northern Erie and Southern Niagara Counties. There were also traffic related problems and accidents. The weight of the snow also collapsed an Air-Bubble Gynnasium at the State University at Buffalo-Amherst campus.										
NORTH CAROLINA										
Beaches	10/30-11/4				0	0	6	0		Beach erosion
Strong northeasterly winds caused about one million dollars damage to the Carolina, Topsail and Wrightsville beaches.										
Stanley County	5th	5:10 P	1/4	7	0	0	3	3		Tornado
A tornado touched down briefly 4 miles east of Albemarle near Highway 740 in the Bodin Air Guard community. Some mobile homes, sheds and trees damaged. Total damage \$7-8 thousand.										
Mountains	566th				11	70+	7	7		Flash floods & mudslides
Flash flooding and mudslides devastated many of the counties in and near the mountains. Roads, bridges, homes and other buildings were damaged. Some town sewage and filtration plants were damaged. Sixteen (16) counties were declared disaster areas. They were: Buncombe, Ashe, Avery, Burke, Caldwell, Madison, McDowell, Mitchell, Polk, Watauga, Wilkes, Yancey, Catawba, Henderson, Rutherford, and Haywood. Total damage was estimated over \$67 million dollars.										
Martin County	17	9:15 P	1/2	15	0	0	0	3		Tornado
A tornado touched down briefly in Williamston. There was about \$15,000 damage to utility lines and buildings.										
NORTH DAKOTA										
Southeast (Cass, Richland, Ransom, Sargent, Barnes, LaMoure, Dickey, Logan, McIntosh, Griggs, Steele, Traill, Grand Forks, Nelson Counties)	8,9				0	0	5	0		Blizzard
Much of southeastern North Dakota was paralyzed by a blizzard that dumped up to 12 inches of snow in Cass County. During the storm wind gusts to 60 mph were recorded, roads were blocked by six-foot high drifts, the Fargo Airport was closed, many motorists were stranded, and power lines were snapped by high winds and snow.										
North Dakota	18, 19, 20				0	0	5	0		Blizzard
A blizzard dumped up to 15 inches of wind whipped snow across North Dakota. During the storm wind gusts over 60 mph were recorded; power lines were snapped; several airports were closed; many roads became blocked; and two people died of heart attacks (one while shoveling and one while driving a plow). The day after the storm (Monday, November 21), many schools, businesses and governmental offices in the eastern and southern parts of the state were closed for digging out operations.										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1977

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 Hopkins County	1	12:00 a-5:00 a			0	0	4	?	Wind, Rain, and Electrical Storm
		Heavy thunderstorm activity that began late on October 31 continued into the early morning hours of November 1. Strong straight winds ripped roofs off of farm buildings and destroyed a airport in the northern Hopkins County town of Birthright about 12:30 a.m. General rains of 2 to 4 inches resulted in minor flash flooding, mostly in the northern portions of the county. Lightning caused minor damage to rural homes and buildings near Sulphur Springs, Birthright, Nelita, and North Hopkins.							
Linden area to northeast Cass County	1	1:00 a-2:00 a	20	?	0	0	?	?	Hailstorm and Flash Flooding
		A severe thunderstorm moved northeast across Cass County. At Linden, hail up to 1.5 inches in diameter fell between 1:00 and 1:30 a.m. Winds of 40 to 50 mph and heavy rain accompanied the hail. In northeast Cass County rains of up to 4 inches caused some flash flooding. The extent of damage within the county was unknown.							
Hooks, Bowie County	1	11:15 a	5	50	0	0	5	0	Tornado
		The tornado touched down on the west side of Hooks, resulting in considerable roof, powerline, and tree damage in a 4 block area between Highway 82 and Interstate 30. Before moving out of town, the tornado increased in intensity, bringing extensive damage to the Carrel Knight home. The roof was blown away and several exterior walls domed at the Knight residence. Fortunately, no one was home at the time the tornado struck. The twister moved north-northeast from Hooks, depositing the Knight's roof 1/4 of a mile away near the interstate highway. Further north, the tornado downed transmission lines several miles from Hooks. Witnesses said that heavy rain preceded the tornado, ending abruptly just before the twister struck. The tornado was on the ground for approximately five miles.							
Eastern Shelby and Sabine Counties	3	10:30 a-11:30 a			0	0	0	0	Funnel Clouds
		Several funnel clouds were observed over Toledo Bend Reservoir. None of the funnels touched down.							
Kilgore, Gregg County	30	5:20 a	0	0	0	0	3	0	Electrical Storm
		Lightning struck and shattered a tree at State Highway 31 and Kings Highway. Portions of the exploded tree struck the Full Gospel Church across the street, shattering windows and damaging the roof. A metal outbuilding was also damaged.							
TEXAS SOUTHERN SAN ANTONIO Bexar County	1	12:15p	1/10	35	0	0	5	0	Tornado, Lightning
		A line of thunderstorms moving southeastward across San Antonio dropped pea-size hail in various locations around the city. One intense thunderstorm produced tornadoic winds that damaged the roof of Madison High School in northeast San Antonio. Witnesses reported hearing a "roaring" sound, and one eyewitness stated that when the heavy rain stopped abruptly he noticed a dark cloud moving northeastward that lifted and whirled debris from the roof of the high school gym.							
		Lightning strikes in other parts of the city damaged power transformers and hit two oil storage tanks.							
CORPUS CHRISTI Nueces County	1	Early evening			0	1	3	0	Lightning
		Lightning knocked a hole in the roof and ceiling of a home on Bahama Street. A woman at another location received first degree burns when lightning struck her house while she was leaning on a dishwashing machine.							
35 KNIPPA Uvalde County	7	12:30a-1:30a			0	0	4	?	Windstorm
		A thunderstorm with small hail and damaging winds moved southeastward just south of Knippa. Damaging one barn and stored hay inside. Winds were estimated to be 50 to 60 mph.							
EL CAMPO-HUNGERFORD Wharton County	8	9:20a-9:30a	?	150	0	0	3	?	Tornado
		A tornado from a fast moving thunderstorm touched down south of El Campo at 9:20 a.m. El Campo Airport registered over 100 mph winds at the time. The same thunderstorm produced a funnel cloud which lowered at Hungerford around 9:30 a.m. and damaged one house trailer.							
FRIENDSHIP Waller County	8	9:35a	4	10	0	0	5	4	Tornado
		A tornado touched down near Friendship and remained on the ground for about four miles, moving from southwest to northeast. Two mobile homes at Star of Hope Mission, Old San Ranch, were destroyed and other metal buildings sustained damage. Several hundred trees along the path were either downed or damaged.							
TEXAS (continued) SOUTHERN WALLER-PRAIRIE VIEW Waller County	8	9:35a	?	?	0	0	2	0	Tornado
		A tornado touched down briefly between Waller and Prairie View doing minor damage to a barn.							
GN KATY Harris County	8	10:10a-10:15a	Short	Narrow	0	0	?	0	Tornado
		A tornado was sighted 6 miles north of Katy and a few minutes later along the Katy-Hockley cut-off road. Damage was confined to downed trees and a few power lines.							
HOUSTON Harris County	8	10:30-11:00a			0	4	4	0	Windstorm
		Minor wind damage was reported throughout the area as thunderstorms moved across Harris County. Three window cleaners were injured slightly when blown off of a scaffold 15 feet about the ground, and a glass window was blown in cutting one man's hand in downtown Houston.							
LIMBERTON Hardin County	24	10:07a			0	0	?	0	Hailstorm
		1-3/4 inch diameter hail fell briefly as a severe thunderstorm moved eastward into Orange and Jasper Counties. The river observed at Weiss Bluff just north of Limberton indicated that the ground was almost covered with 1/2 inch diameter hail. No damage was reported.							
TEXAS WESTERN									NONE REPORTED
UTAH									NONE REPORTED
VERMONT AREAWIDE	12-13								SNOW
		Numerous traffic accidents occurred with three fatalities and nine injuries reported due to wet snow and slippery roads.							
CHITTENDEN AND LA MOUILLE COUNTIES	17						4		THUNDERSTORMS
		Rain, marble-sized hail, strong winds and lightning, caused minor damage and power interruptions. Lightning struck the transmitting stations on Mt. Mansfield, causing two fires and temporary broadcasting shutdowns. Lightning also caused a fire in a residence when it struck and ignited an oil fuel tank near the home in Charlotte, Chittenden County.							
AREAWIDE	26								SNOW
		Two to six inches of wet snow caused many downed trees and powerlines, creating numerous power outages.							
VIRGINIA Western	5-7				0	0	7	5	Rain, Flooding
		Frequent rains during the previous 4-5 days culminated in heavy shower activity that brought another serious flash flood situation. The southwestern counties were again hardest hit, especially Giles, Grayson, Smyth and Washington Counties. In Smyth County alone, losses were estimated in excess of \$13 million. Hundreds were evacuated from their homes, with over 100 houses or mobile homes completely destroyed and an equal number sustaining major damage. Close to 200 secondary roads were blocked, with about a dozen bridges washed out. The river at Radford rose to 10 feet above flood stage for what was termed one of the worst floods since 1940. The west central and northwest portions were less seriously affected despite rainfall amounts of from 5 to 7 inches in less than 24 hours, the night of the 6th into evening of the 7th.							
Tidewater Area	6				0	0	0	0	Rain
		Rain, totaling over three inches, fell in the Norfolk area between midnight and 10:30 PM, breaking a 24-hour record of 2.64 inches set in November 1947. Some traffic accidents and minor flooding was reported in the Chesapeake, Norfolk and Portsmouth areas.							
Petersburg	7	Night			0	0	4	0	Wind
		Strong winds associated with a severe thunderstorm demolished a large tractor shed, flung a 2,000-pound motorboat several yards, and uprooted four trees. Debris was found as far as a half mile away.							
Southwestern	27	All Day			0	0	0	0	Snow
		As much as 16 inches of snow fell in the Big Stone Gap-Appalachia area. Many Thanksgiving holiday motorists were stranded in Wise, Wythe and Buchanan Counties.							
VIRGIN ISLANDS									NONE REPORTED

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1977

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					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
WASHINGTON											
Clallam Jefferson Kitsap Pierce Island Skagit Whatcom counties	11/1	AM & PM			2	2	5				Wind Storm
			A vigorous Pacific cyclone moved inland from the coast into Puget Sound area, and contributed to the deaths of 2 people. Electrical outages affected over 100,000 homes and businesses from Bellingham to Olympia. Southerly winds in the morning hours increased to 30-50 mph over most of the Puget Sound region. The winds downed power lines in many areas and swept the waters of Puget Sound and the Strait of Juan de Fuca. Some fishing boats were reported disabled. Strongest wind gusts reported by the Weather Service were 89 mph at Smith Island. A woman was killed driving across the Tacoma Narrows Bridge when a carpool was blown off another vehicle at 10:30 AM. Wind was blamed for the death of a man on the Mercer Island Floating Bridge when his motorcycle was blown into a bulk-head. A woman in Bremerton was hit in the head by a flying piece of plywood. Some cars were damaged from wind fallen trees in Pierce and King Counties. The storm was accompanied by a few thundershowers during the afternoon. Over an inch of rainfall was reported in Skagit and Whatcom counties in one hour time.								
Yakima Kittitas Grant Klickitat Benton Franklin Walla Walla counties	11/1	PM					5				Wind
			A cold front moved across Eastern Washington during the afternoon. South winds of 20 to 40 mph swept the southern portion of the Columbia Basin. Wind gusts of 83 mph were reported at Priest Rapids Dam. At Beverly near Vantage wind gusts blew eight empty truck containers off a freight train and into the river. A light plane was blown over after landing at Sunnyside Airport causing structural damage to the aircraft.								
WEST VIRGINIA											
Morgantown, Monongalia Co.	17	1:35 PM			0	0	0	0			Wind
			Thunderstorms moved across West Virginia. The most intense thunderstorms passed through Morgantown, where winds gusted to 60 mph. No reports of deaths, injuries or damage were received.								
WISCONSIN											
Outagamie Co.	19	9:15 p									Lightning
			Lightning induced fire destroyed a barn during the evening of the 11th. Twenty cows perished in the blaze.								
Extreme northern Wisconsin	19	Night									Heavy snow
			Snow accumulations of 4 inches were reported in extreme northern and northwestern Wisconsin Saturday night.								
Northern Wisconsin	20	Evening									High winds
			Strong west to southwest winds developed by early evening over northwestern Wisconsin and spread into the northeast part of the state by late evening. Wind gusts over 100 mph were reported at Phelps in eastern Vilas County. Farther south, sustained winds of 40 mph with gusts above 60 mph were reported at Alexander Field Airport in Wood County. Numerous power outages were reported in many northern Wisconsin counties due to limbs falling on power lines. The most extensive wind damage was reported in Langlade, Lincoln, Oneida, and Vilas counties where trees and signs were reported down. In Ashland in Ashland County, a 100 foot section of the roof of a nursing home was ripped off.								
Southwest and central Wisconsin	23	Morning									Heavy snow
			Snow accumulations of 5 to 7 inches were reported in southwest Wisconsin on the morning of the 23rd. Accumulations of up to 4 inches were reported in central Wisconsin.								
Southern Wisconsin	24 and 25										Heavy snow
			Snow developed over western Wisconsin on the night of the 24th and spread into eastern Wisconsin and continued throughout the 25th. Accumulations of 6 to 12 inches were reported in southwest Wisconsin with 10.6 inches reported at Mitchell Field in Milwaukee. Accumulations of up to 4 inches were reported in central Wisconsin. Nine snowstorm related deaths due to heart attack were blamed on the storm.								
Southern and central Wisconsin	27										Heavy snow
			Snow again fell over much of Wisconsin on the 27th with accumulations of 4 to 11 inches reported over southern and central counties.								
WYOMING											
All of Wyoming	16-19	Afternoon-evening			1	0	5	0			Winter storm
			Snow with large accumulations entered the state the afternoon of the 16th, accompanied by very cold temperatures. Some blowing and drifting caused hazardous driving conditions in many areas. The snow ended by the morning of the 18th but was quickly followed by strong gusty westerly winds which moved the large amounts of loose snow into ground blizzards with severe problems on highways, ranches, etc. One man was killed at Rawlins as he tried to walk into town along the interstate from the west. Numerous people were stranded along the highways and in towns and ranches until the roads were opened.								
NEBRASKA											
Panhandle and North Central Nebraska	8	Morning			0	0	4	0			Heavy Snow and Blizzard
			Snow developed over area during early morning with 5 inches at Kimball and around 4 inches reported in western Cherry County. Winds gusting to 40 to 55 m.p.h. caused near zero visibilities in blowing and drifting snow and forced closure of I-80 west of Sidney for a time.								
Northeast and East Central Nebraska	8-9	Late Evening to Early Afternoon			1	0	5	0			Heavy Snow and Blizzard
			Snow began late evening on the 8th and continued to hiddy on the 9th. Heaviest snowfall was in an area from Columbus and Fremont northward into northeast portion of state west of South Sioux City with 6 inches at Fremont and Columbus, 7 inches at Norfolk and 8 inches at Pilger. Forty-five to sixty-five m.p.h. winds caused near zero visibility with considerable blowing and drifting snow along with broken tree limbs. Peak gusts to 84 m.p.h. in the Norfolk area created drifts to 6 feet. Downed utility lines and interrupted electrical service to many in the area. A number of secondary roads remained impassable two days following storm.								
PENNSYLVANIA											
EASTERN Chester, Delaware Counties	7-8	1 AM to 3 AM EST			0	0	4	0			Heavy Rain
			Heavy rain caused widespread roadway flooding, some stream and basement flooding. The heavy rain also caused some washouts on roads. The wet ground combined with somewhat windy conditions caused quite a few trees and power lines to fall.								
Bucks, Montgomery, Chester, Lancaster, Philadelphia, Monroe, Carbon, Schuylkill Counties	17	1 PM to 5 PM EST			0	2	5	0			High Winds, Hail
			Thunderstorms moved across Eastern Pennsylvania accompanied by strong winds and hail. Although strong wind gusts occurred throughout the mentioned counties, damage was confined to an area in Bucks County, a few locations in Monroe, Carbon and Schuylkill Counties. The damage was mainly to roofs of buildings and a mobile home. In Bucks County 20 homes were damaged with one home near Warminster having over half the roof and part of the second floor blown away. The highest reported wind gust was 62 MPH at Lancaster. Hail fell in sections of all these counties with stones of 1 to 2 inches in diameter were reported in many locations. Enough hail fell to cover the ground in some locations and had to be shoveled off sidewalks. Two persons were injured by flying debris.								
North Portion Eastern Penna.	25	4 PM to 7 PM			0	0	3	0			Heavy Snow
			Snowfall accumulated to 3 to 10 inches, but caused only minor damage to utility lines. Innumerable automobile accidents resulted with many injuries and at least one death.								
PUERTO RICO											
South Coast	12				0	0	5	0			Heavy Rain
			Heavy rains over the southern slopes from Yabucoa westward to Peñuelas caused several south coastal rivers to flood. In Yabucoa, damages to bridges and roads near the River Guaynosa were considerable. Further south in Juana Diaz, the Jacaguas River flooded houses in the Guayabal and Manzanilla sectors as well as damaging a bridge. In Peñuelas, small streams overflowed into a wood-working shop and grocery store.								

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	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							KILLED	INJURED	PROPERTY	CROPS		
PUERTO RICO (continued)																				
Eastern Interior	15	2:00 p.- 6:00 p.			1	0	5	0	Heavy Rain											
<p>Heavy rain of three to five inches within a three hour period in the upper water sheds of the Caguas and Bairoa Rivers caused flash flooding and accompanying landslides in the areas of Canaboncito, La Union, La Barra, Urbanization Bairoa and Tierra Linda. One 80 year-old man drowned trying to cross the swollen Caguas River on horseback. Damages to personal properties were estimated at about \$80,000 and damage to highways and roads at \$250,000. 25 families were evacuated by Civil Defense.</p>																				
Eastern Half	22-24				0	0	6	0	Heavy Rain											
<p>A stationary frontal system over the north eastern portion of Puerto Rico generated three days of nearly continuous light to moderate rain culminating in heavy flooding centered around the metropolitan area of San Juan and most of the eastern rivers on the afternoon of the 24th. Total rainfall for the 24th ranged from five to nine inches in the eastern half of the island with some high intensity showers of three to four inches of rain in three hours. The Rio Grande de Loiza River flooded when the Carrizo Dam flood gates were opened on the 24th and the river went over its banks into the lower flood plain. Considerable road and highway damage occurred when the following rivers went over their banks: Rio Grande de Loiza, Espiritu Santo, Mameyes and Fajardo on the north coast; Demajagua, Naguabo, Guayanes, Maunabo and Patillas Rivers on the south eastern coast; the Valenciano, Caguas, Bairoa, Gurabo, and Caguas Rivers in the eastern Interior. A total of 9.24 inches fell in 24 hours on the 24th over the eastern heights of the Luquillo Range. In the metropolitan area of San Juan most damage was sustained in Puerto Nuevo North of Roosevelt Avenue when a bridge collapsed blocking the Margarita Creek outflow to San Juan Bay. Many homes in this area were flooded and property damage was estimated over \$500,000. Out on the island road washouts and landslides accounted for most of the damages with some smaller houses near the banks of the above mentioned rivers being damaged from flood waters.</p>																				
THE FOLLOWING ARE LATE REPORTS, CORRECTIONS, AND DELETIONS:																				
LATE REPORTS										LATE REPORTS										
JUNE 1977										JUNE 1977										
NEW JERSEY	NONE REPORTED									NEW YORK COASTAL	NONE REPORTED									

- o Includes crop damage.
- c Crop damage.
- * Miles instead of yards.
- ** Yards instead of miles.
- † 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 Million
 - 7 \$5 Million to \$50 Million
 - 8 \$50 Million to \$500 Million
 - 9 \$500 Million to \$ 5 Billion

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

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