

STORM DATA



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REFERENCE NOTES

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

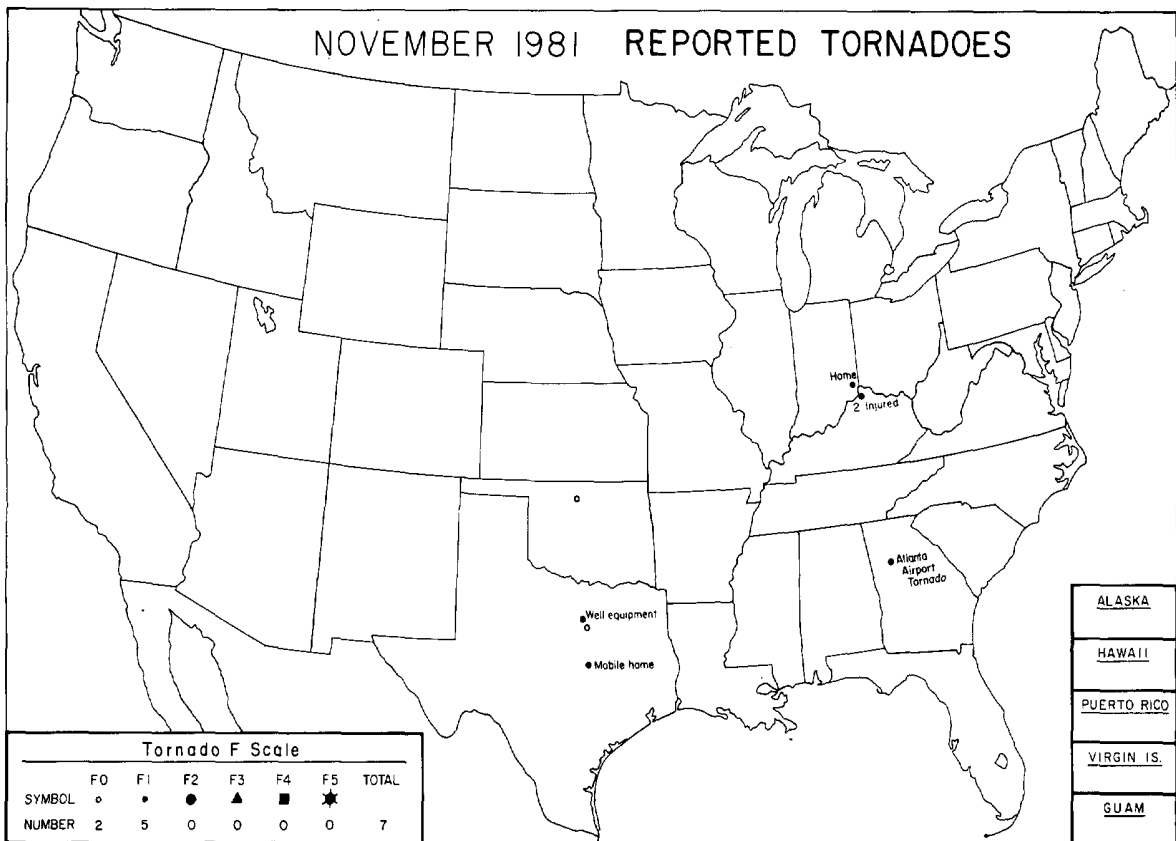
"F" SCALE DEFINITIONS

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

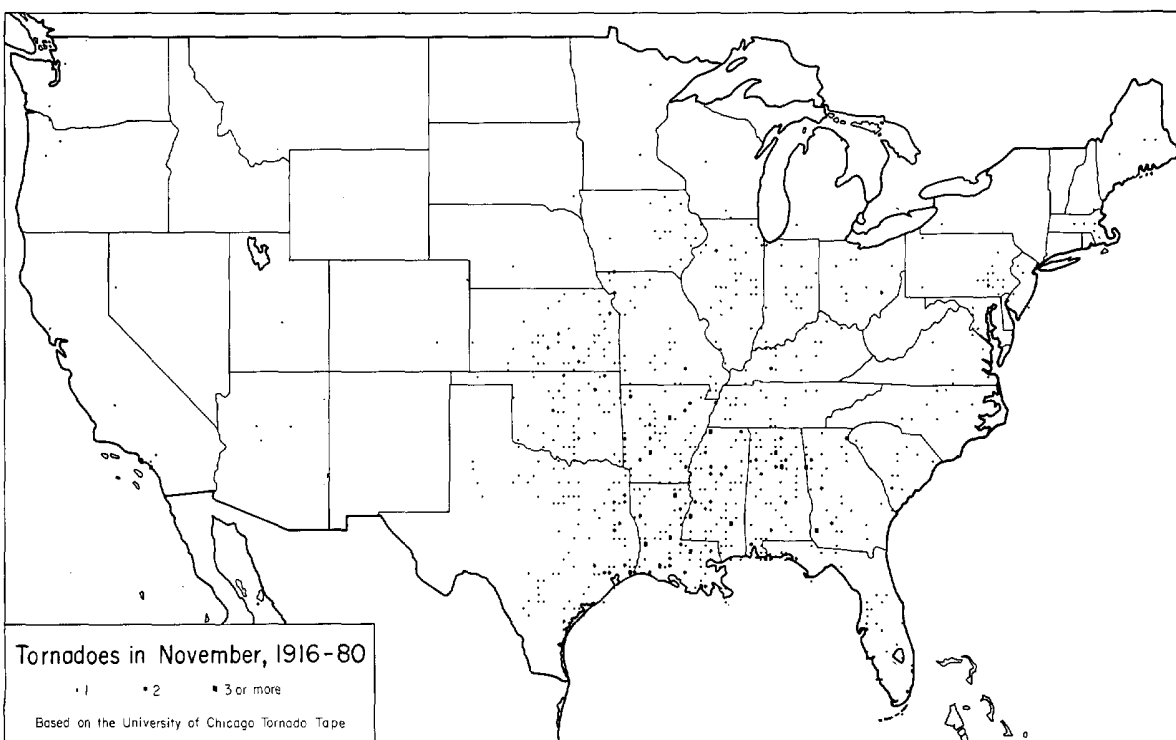
NOTE: This publication contains our best information on storms but, due to the difficulties inherent in collection of this type of data, it is not all-inclusive. Late Reports and Corrections will be carried quarterly.

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OUTSTANDING STORMS OF THE MONTH



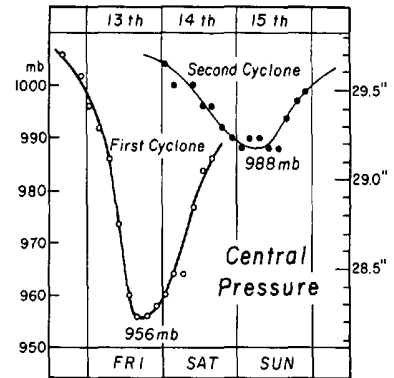
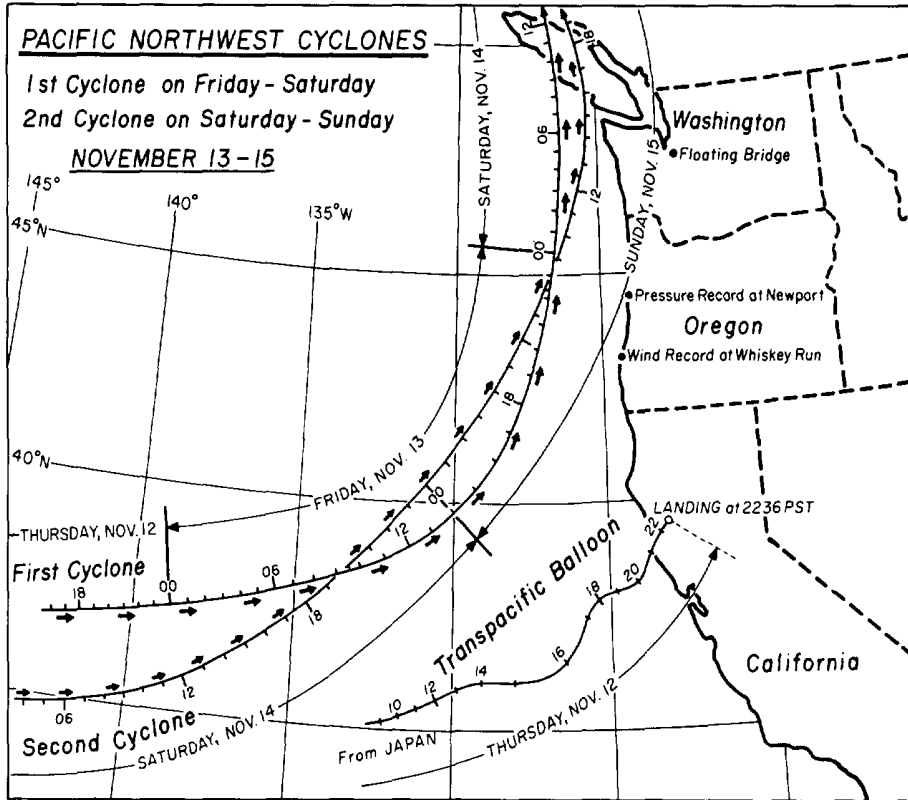
● TYPED REPORT RECEIVED	⊙ PRELIMINARY REPORT RECEIVED	○ NO REPORT RECEIVED	(N) northern (S) southern	(E) eastern (W) western	(C) central (O) coastal
● 1AL	● 5CO	● 10ID	● 15KY	● 20MI	● 25NE
● 2AZ	● 6CT	● 11IL	● 16LA	● 21MN	● 26NV
● 3AR	● 7DE	● 12IN	● 17ME	● 22MS	● 27NH
● 4CA(N)	● 8FL	● 13IA	● 18MD	● 23MO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



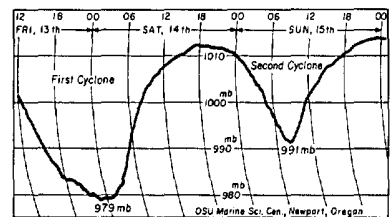
1. PACIFIC NORTHWEST CYCLONES on November 13-15

A strong mid-latitude cyclone formed over the Pacific Ocean about 1000 miles west of San Francisco, Ca. and intensified rapidly while approaching the Oregon coast. The once in 20 year storm, reaching a minimum pressure of 956 mb at 1800 PST on Friday the 13th, produced statewide damaging winds in Oregon and Washington.

A second cyclone, which followed the first some 36 hours later, deepened to a 988 mb minimum pressure.

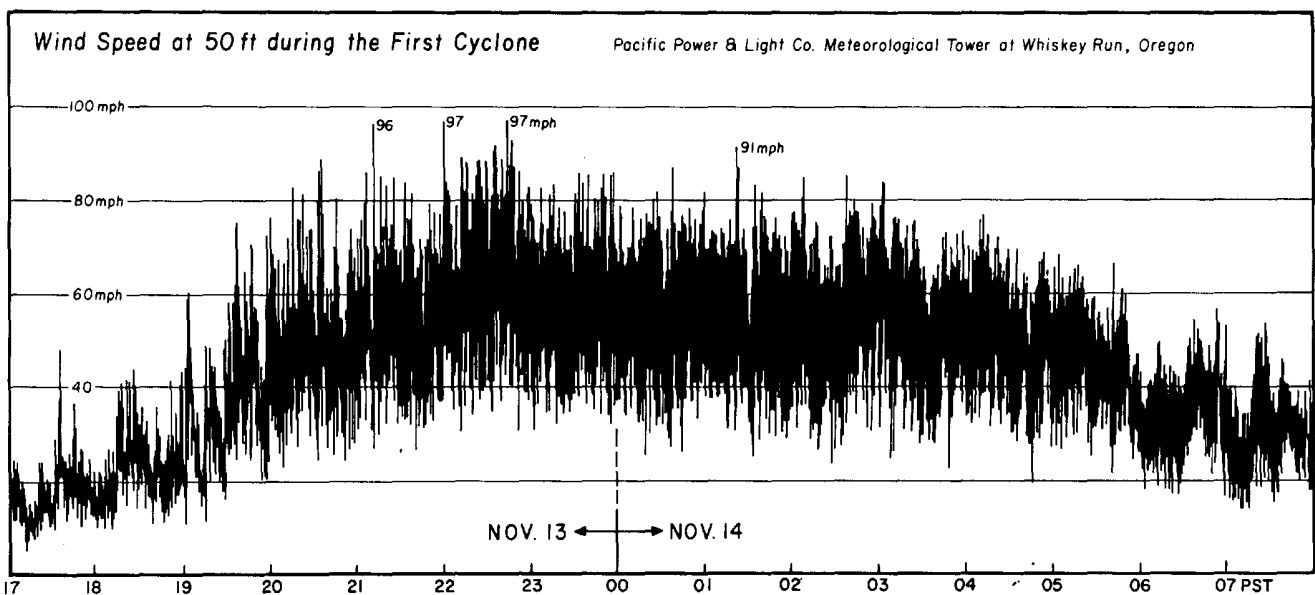


Central pressures of the two cyclones.



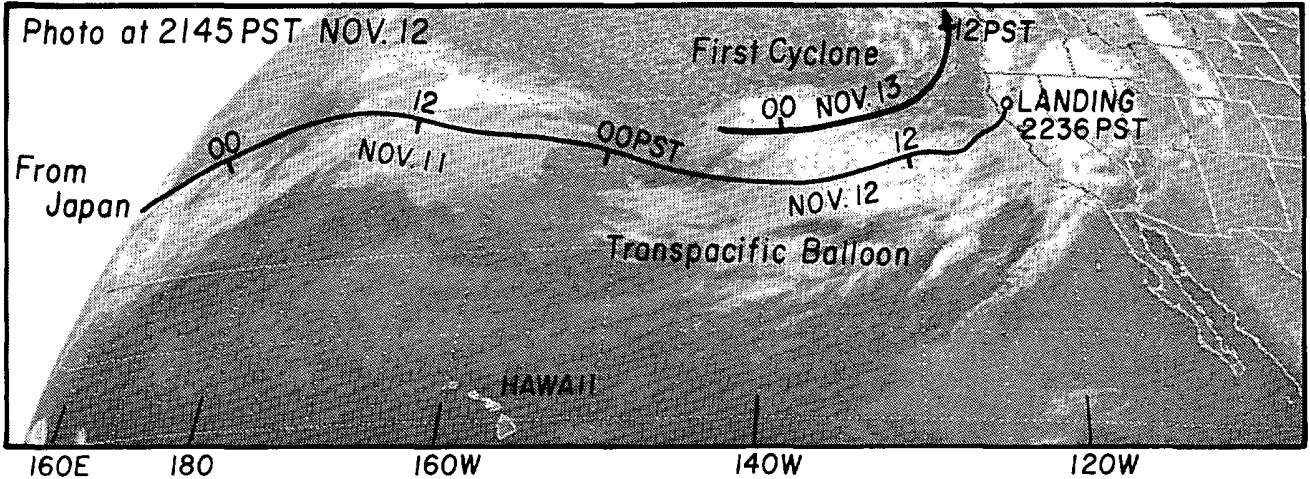
Pressure drops by two cyclones recorded at Newport, Oregon. ---Courtesy of Oregon State University, Marine Science Center.

Paths of the two cyclones which moved northward off the coast of Oregon and Washington. The transpacific balloon Double Eagle V landed 18 hours ahead of the first cyclone.



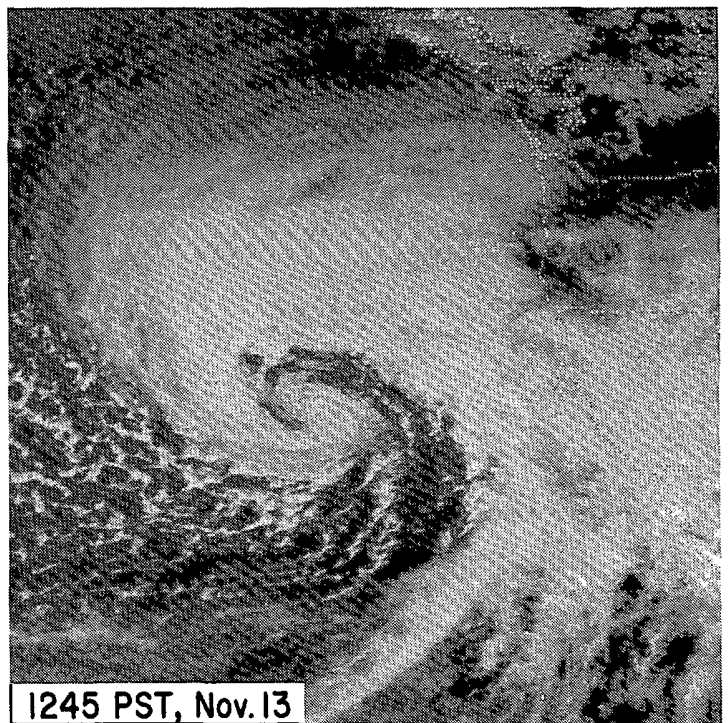
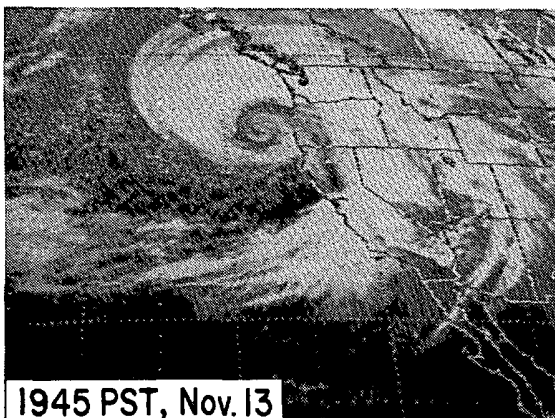
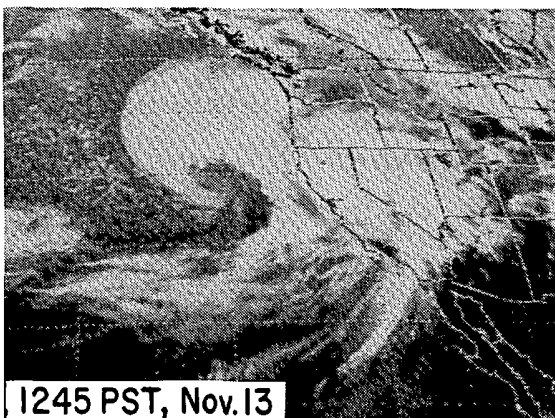
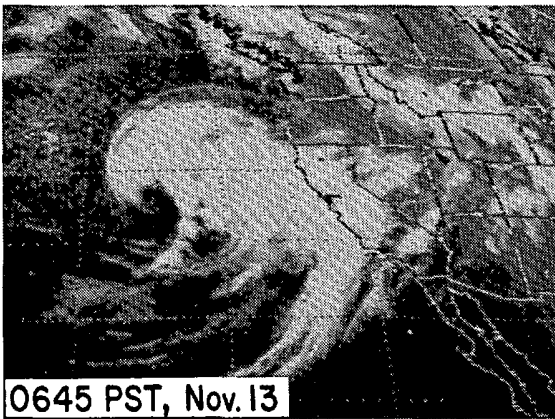
A wind trace from the 50 ft. level of a meteorological tower at the Whiskey Run Wind Turbine Site about 12 miles south of Coos Bay, Ore., shows peak gusts up to 97 mph as the first cyclone passed. The highest one-minute speed (121.8 mph) was recorded at the 200 ft. level at 2240 PST. ---Courtesy of Pacific Power & Light Co.

PACIFIC NORTHWEST CYCLONES --- Continued



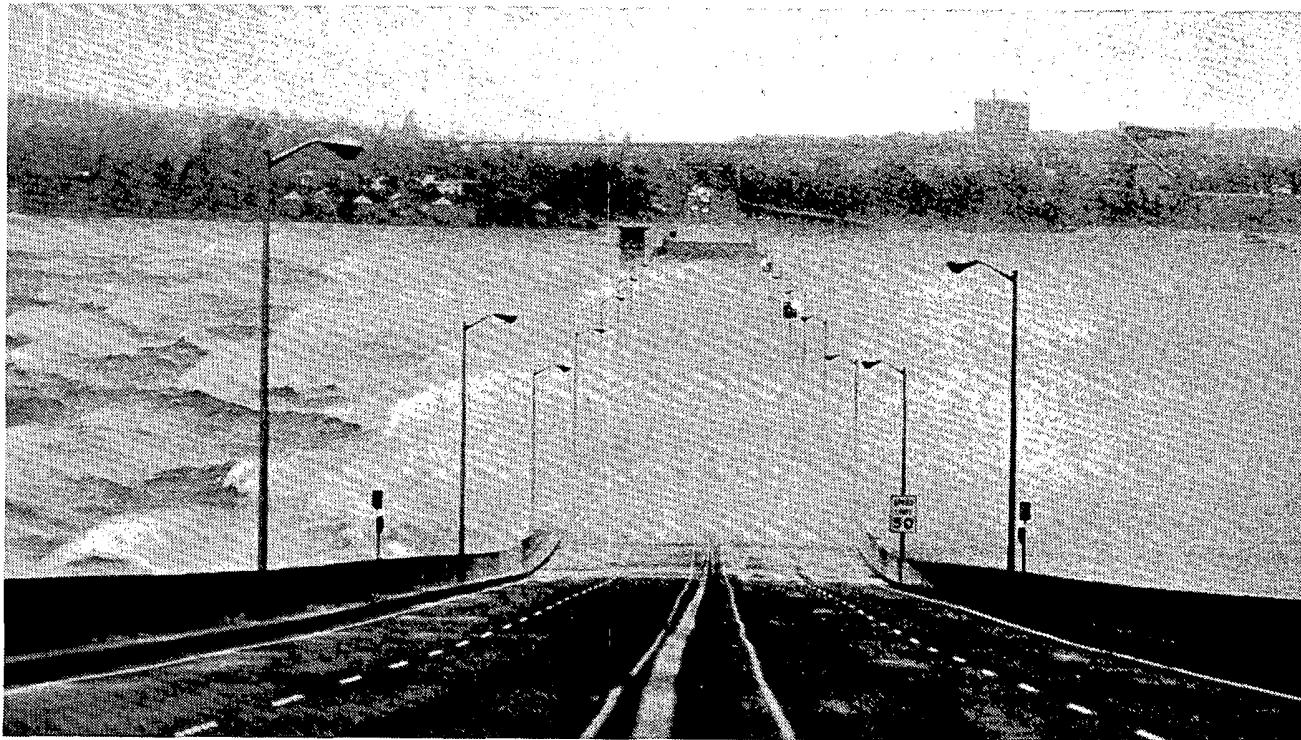
Paths of the transpacific balloon Double Eagle V and the first cyclone which followed the balloon 18 hours later. ----Balloon data supplied by Ed Pearl, GRD, Weather Center, Inc.

The satellite photos at left show the huge cloud swirl of the first cyclone at three different times of its eastward progress. As it passed near the coast, the accompanying winds caused widespread damage and 12 deaths, 7 in Oregon and 5 in Washington. Strong winds were also encountered in northern California, and as much as 4 feet of snow fell in the Sierra Nevadas.



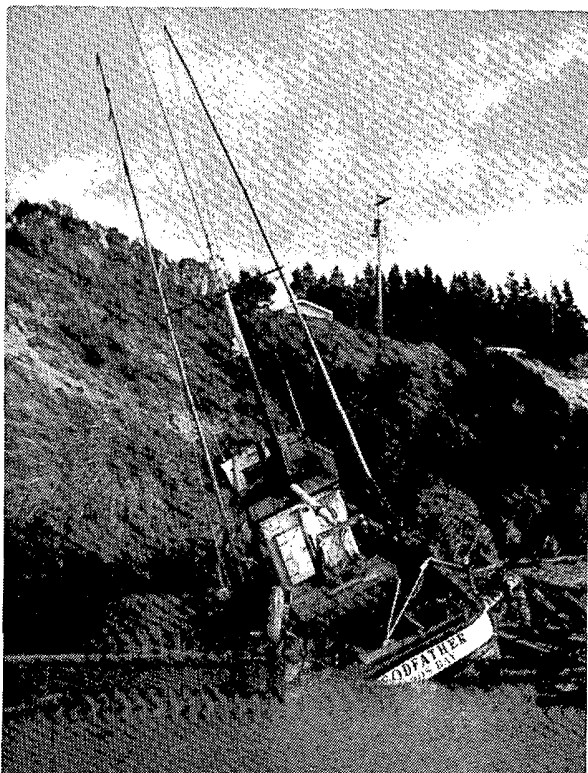
The detail of the swirling cloud pattern is made evident in the enlarged picture shown above. This photo, taken at 1245 PST of the 13th, is the same as the picture at left center. ---- Satellite photos from NESS.

PACIFIC NORTHWEST CYCLONES --- Continued



In Seattle, spray from Lake Washington was blown over the Evergreen Point Floating Bridge by the strong winds. The bridge sustained \$300,000 to \$400,000 damage and was closed for 11 hours as the winds, funneled by the lake shores, gusted to 75 mph. ----Photo by Barry Wong, Seattle Times.

Below and right are a small sample of photos depicting the impact the wind had on the two states. ----Photos and data supplied by NWSFO at Portland, Ore. and Seattle, Wash.



Courtesy of NWSFO, Portland, Oregon

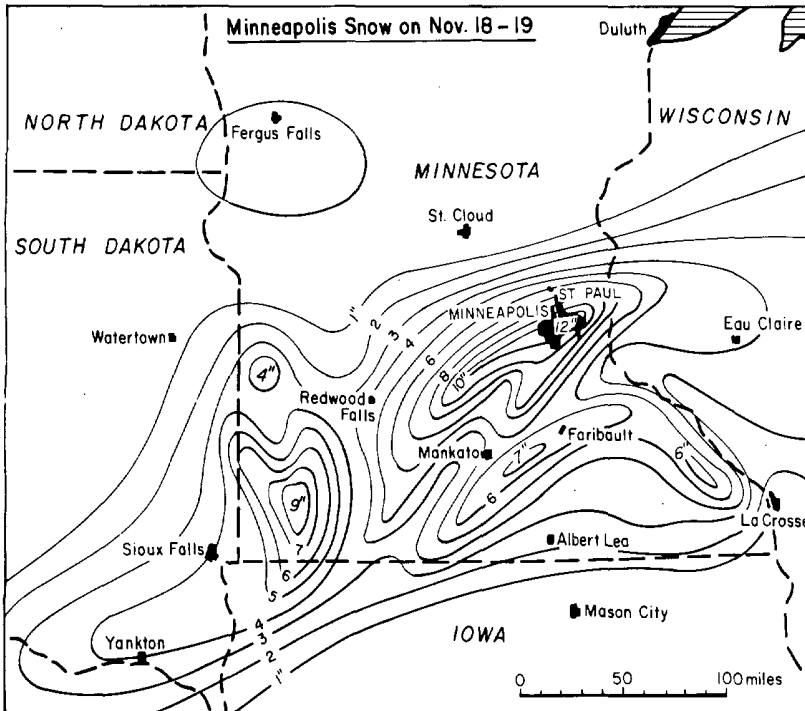


Photo by the Daily Olympian



Courtesy of Cole Porter, Seattle Times

2. MINNEAPOLIS SNOW STORM on November 18-19



---Photo by Roy Derickson, St. Paul Pioneer Press.

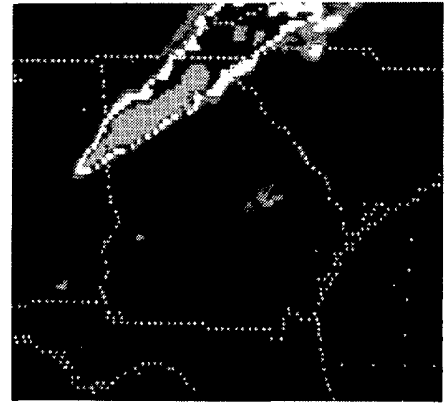
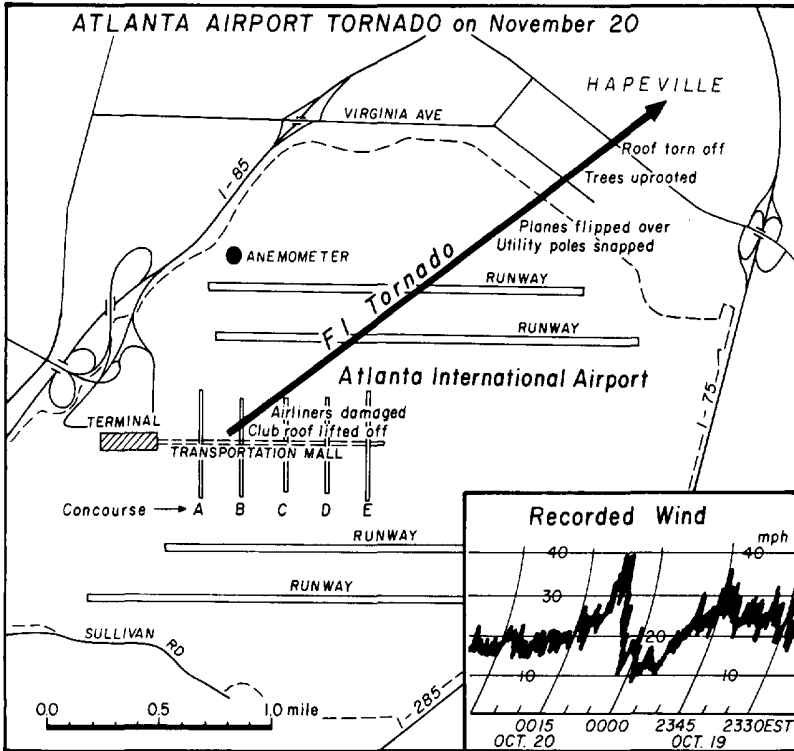
An unusually early, heavy snowstorm passed through southern Minnesota on November 18 and 19. The Twin Cities received the heaviest snowfall in the area with depths reaching up to 12 inches. The wet snow, which accumulated on trees and power lines, caused numerous power and communications outages. ---Data supplied by NWSFO, Minneapolis, Minn. and Earl Kuehnast, State Climatologist.



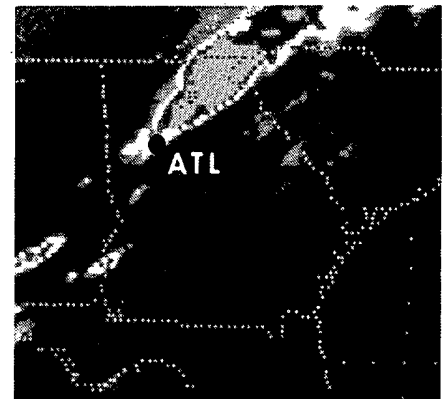
The weight of the heavy snow caused the newly inflated, fabric dome of the Hubert H. Humphrey Metrodome in downtown Minneapolis to collapse and rip. The dome of the under-construction structure was repaired and reinflated several days later. ----Photo courtesy of the Minneapolis Star.

3. ATLANTA AIRPORT TORNADO on November 20

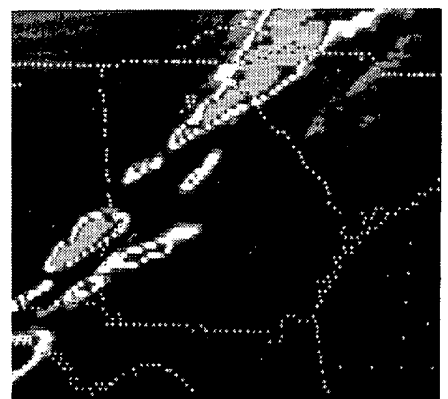
An F1 tornado touched down on Concourse B at Atlanta International Airport and moved 2.5 miles to the northeast into the southern part of Hapeville, Ga. At the airport 5 people suffered minor injuries, three parked, tied-down Beechcraft planes were picked up and flipped over, and a taxiing DC8 had an engine torn off. 20 other jet liners received minor damage. Total damage to aircraft and structures was estimated to be over \$2,000,000. ----Data supplied by Carlos Dunn and Marvin Maddox, NWSFO Atlanta, Ga.



2300 EST, Nov. 19th

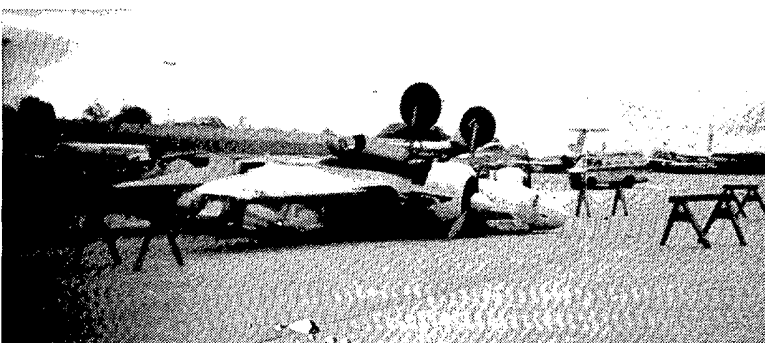
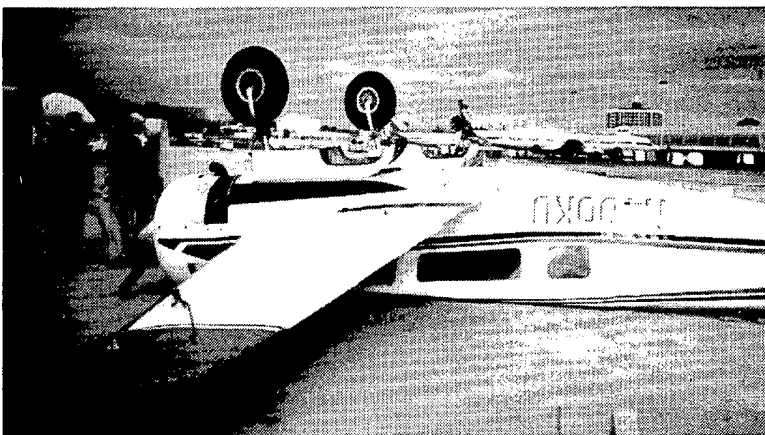


0000 EST, Nov. 20th



0100 EST, Nov. 20th

Satellite photos at 1 hour intervals (above) show the line of storms which produced the tornado at 0007 EST on the 20th. ----Satellite photos by NESS.



----Damage photos by Carlos Dunn.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1961

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	
1 ALABAMA									
Clanton area, Chilton County	19	1930CST			0	0	4	0	Wind
Thunderstorm winds severely damaged a house about 9 miles north of Clanton. A propane gas tank was blown over and ignited. Windows were blown out of one small building in Clanton. Trees and utility lines were also damaged.									
Higdon area, Jackson County	19	1935CST			0	1	4	0	Wind
Thunderstorm winds blew off part of the roof of a house. Two mobile homes were destroyed. One of the mobile homes was blown over an automobile. One person suffered minor cuts and scratches.									
2 ARIZONA ————— NONE REPORTED									
3 ARKANSAS ————— NONE REPORTED									
4 CALIFORNIA, Northern									
Calif. Coast, north of Monterey	11	0500PST			0	1	5	4	Winds, Tidal Flooding
Strong winds up to 80 MPH along the coast with a high tide caused some flooding in Eureka with some damage to local business. Also winds of 90 MPH on top of Mt. Tamalpais at 1900 feet in the San Francisco Bay area.									
Northern Ca.	13	1800 to 2200PST			0	1	5	4	Winds, Lightning, Heavy Snow
A strong winter storm with a post frontal line of thunderstorms produced wind gusts of 52 MPH near Sacramento and 62 MPH near Tahoe. Some fences and trees were blown down with some damage to houses. One man was injured from lightning. Heavy snows of 2 to 4 feet fell in the Sierra Nevada.									
Mt. Shasta, Siskiyou & Sierra Nevada	26	2200 to 27 000PST			0	0	?	0	Heavy Rain, Snow, Flooding
A strong and wet winter storm brought heavy rains to the lower elevations and 3 to 5 feet of snow in the mountains. Only local flooding of streets and underpasses occurred at lower elevations.									
4 CALIFORNIA, Southern									
Inyo County	13-14				0	0	0	0	Heavy Rains
Heavy rains caused minor flooding in City of Bishop.									
Orange County	26	1000PST			0	0	0	0	Waterspout
Santa Ana Sheriff's Dept. observed waterspout on Orange County beach, gradually dissipated									
Orange County	27	0855PST			0	0	0	0	Waterspout
Waterspouts reported by pilots off Orange County beaches.									
Los Angeles County	27	0855PST			0	0	0	0	Waterspout
Airline pilot reported waterspout over Catalina Channel.									
Los Angeles County	27	1020PST			0	0	0	0	Waterspout
Santa Monica lifeguard reported waterspout between Santa Monica and Venice Pier.									
Los Angeles County	27	1800PST	.01	75	0	0	1000	0	Strong Winds
A freaky gust of strong wind from the south blew down .150 feet of a six-foot cement block wall, damaged 6 automobiles, a few windows blown inward, and some major tree damage in the City of Lennox.									
Los Angeles County	27-28	aftn & all day			9	0	0	0	Heavy Rain and Heavy Snow
Nearly 2 inches of rain fell in the Los Angeles area and 3 feet of snow fell in the Big Bear area. Slippery roads caused numerous accidents. 9 highway deaths were reported during the storm period.									
5 COLORADO									
Northeastern Foothills	18	morning			0	0	0	0	High winds
Winds gusting over 60 mph blew down a few trees in Fort Collins and communities in the nearby foothills. The peak gust was 82 mph, recorded at 618 am on the Colorado State University Foothills campus just west of Fort Collins.									
Northeastern Foothills	22	morning			0	0	0	0	High winds
A peak gust of 75 mph was recorded at Wondervu, in the foothills southwest of Boulder.									
Statewide	28-29				0	0	0	0	Snow
Heavy snow hit the Colorado mountains. 22 inches of snow fell in 48 hours at Wolf Creek Pass, along with 50 mph winds. 18 inches fell at Red Mountain Pass. The snow reached lower elevations too, with several inches falling in the western valleys and 1 to 6 inch on the eastern plains.									
Northeastern Foothills	30	morning			0	0	0	0	High winds
Strong winds blasted the foothills north of Denver. Buckhorn Mountain, northwest of Fort Collins, recorded a peak gust of 85 mph. Wondervu clocked 81 mph, with several other spots recording speeds over 60 mph.									
6 CONNECTICUT ————— NONE REPORTED									
7 DELAWARE									
Southern Coast	13-15				0	0	5	0	Coastal Storm
Low center over 100 miles east of the mid-Atlantic Coast combined with above normal tides and tidal currents to cause considerable beach erosion and some flooding. The most serious situation was along the coastal sections of Sussex County, particularly the southern half. At South Bethany thousands of tons of sand were removed, leaving homes that were built in front of the dune line vulnerable to future storms. At Indian River Inlet, one-half of the protective dune was destroyed, leaving a 15-foot cliff within twenty feet of Route 1. The most damaging portion of the storm occurred during high tide of the mornings of the 14th and 15th. It was estimated that it would cost \$95,000 just for replacing the sand at Indian River Inlet.									
8 FLORIDA									
Dade County	09	0730-1000 EST			0	0	0	0	Waterspouts
At least half a dozen waterspouts were observed over Biscayne Bay during the morning. They were all drifting west, but dissipated before reaching land. There were no reports of damage.									
9 GEORGIA									
Carroll County	19	2315EST			0	0	4	0	Wind
Strong thunderstorm winds pushed over three house trailers, shook another from its foundation, snapped pine trees, smashed outbuildings, and caused scattered power outages. Most of the damage was in the southwest part of the county near Tyus.									
Clayton and Fulton Counties	20	0007EST	2½	100	0	5	6	0	Tornado (F1)
A tornado moved northeast across the Atlanta International Airport and the southern portion of Hapeville. The tornado lifted up a skyroof on Concourse B and damaged windshields on several jetliners parked at the gates. Near the Cargo Building a DC8 had an engine torn off as it taxied to a stop and three small parked aircraft were picked up and flipped over. Five airline employees suffered minor injuries. In Hapeville the tornado tore part of the roof from an apartment building. Several homes in Hapeville were damaged by falling trees and tree limbs.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1961

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

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

10 IDAHO

Most Western Idaho Counties including Lewis, Washington, Adams, Idaho, Valley, Bonner, Clearwater, and Kootenai County.	13- 2100- 14 0500MST	0 0 6 0	Wind	<p>The most intense wind storm since the Columbus Day storm of 1962 buffeted the Pacific Northwest. Strong winds near 50 mph, with gusts estimated near 100 mph, raked western Idaho. Many trees and power poles were downed and roofs blown off. About \$10,000 damage to a grain elevator near Fenn, Idaho County, was reported.</p>
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11 ILLINOIS ————— NONE REPORTED

12 INDIANA

Dale Spencer County	19 1500CST	0 0 0 0 4 0	Wind	<p>Storage barn destroyed. Roof blown off house and barn.</p>
Northeast Crawford County	19 1700EST -- --	0 0 4 0	Wind	<p>A garage was destroyed and numerous trees downed.</p>
Northwest Jefferson County	19 1800EST -- --	0 0 5 0	Wind	<p>Extensive damage to buildings. Double wide mobile home was destroyed. Power outages throughout the area.</p>
Ripley County	19 1845EST 5 15	0 0 5 0	Tornado (F1)	<p>There was patchy damage from east of Olean (Ripley County 25 WSW Cincinnati) to south of Moores Hill (Ripley County 20 W Cincinnati). The damage began at State Route 425S and Olean Road (east end of Olean) and ended in Dearborn County southeast of Moores Hill at Bloom Road and State Route 350.</p> <p>Ten buildings were involved: 2 barns and 1 house destroyed, 5 homes and 2 barns damaged plus considerable crop and tree damage. The county officials estimated damage to be \$400,000. There was considerable evidence of a tornado - trees twisted off, damage in a narrow path and in a cyclonic pattern. Also, several people reported hearing a roar. The storm moved from southwest to northeast.</p>

13 IOWA

Northwest Half of Iowa	19 0300-2200	0 0 4 0	Snow, Wind, Glaze	<p>The first significant snowfall of the season. One to three inches of snow was preceded by rain and sleet. Strong winds caused considerable blowing and drifting snow. Many east-west highways were drifted over with snow on top of a heavy ice buildup. A multiple-car pileup on the Veterans Memorial Bridge spanning the Missouri River between Sioux City, Iowa and South Sioux City, Nebraska caused the span to be blocked for 90 minutes.</p>
Extreme North and Extreme Northeast Iowa	23 0600-1930 CST	0 0 4 0	Heavy Snow, Glaze	<p>Freezing rain fell across the Northern two tiers of counties followed by heavy wet snow. Three to five inches of snow fell on top of glazed surfaces. The heaviest snow fell in Winneshiek and Allamakee Counties in the extreme Northeast where 4 to 5 inches were common. Slick roads caused several vehicles to stall on hills due to lack of traction. Cars and trucks slid off roads into ditches. Most schools were closed.</p>

Northwest Half of Iowa	30 1500 - Dec 1 1700 CST	1 0 5 0	Winter Storm, Heavy Snow	<p>The first major winter storm of the season tracked from the Southwest to the Northeast across the State. Four to eight inches of snow was common across the area with the heavier amounts in the North Central Iowa. The snow was preceded by rain and freezing rain that turned to sleet before changing to snow. Winds were gusting to 40-50 MPH. In North Central Iowa, a heavy buildup of ice on power lines plus the strong winds caused the lines to bounce 4 to 6 feet which in turn broke the insulators resulting in hours of power failures. Numerous vehicles were involved in accidents. Many schools were dismissed early on November 30th and most closed on December 1st. There was considerable blowing snow across the Northwest quarter with visibility at or near zero in rural areas most of the evening of the 30th. A 79-year old trapper checking his traps, apparently became disoriented in the blowing snow, fell over a dam and drowned in the Little Sioux River between Linn Grove and Sioux Rapids in Buena Vista County.</p>
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14 KANSAS ————— NONE REPORTED

15 KENTUCKY

Boone and Kenton counties in Northeast Kentucky	19 1930 EST 1/2 50	2 6 2	Tornado (F1)	<p>The first damage location was in Boone county on Rt 338, 3 miles west of Big Bone State Park. A house and barn were destroyed; two persons received minor injuries. There was a narrow damage path through a wooded area and owner Harold Love reported hearing a roaring noise just prior to the storm. In Kenton county there was damage to the roof and windows of Dixie Hights High School in Edgewood. In Ft. Mitchell there was a damage path from Idaho St to Bighland to East Drive. The path was narrow and clearly defined. Several people reported hearing a loud roar prior to the damage, some said ears hurt or popped. Considerable evidence of a tornado. The storm hit the Ft. Mitchell City Police bldg around 1930 EST. There were 37 buildings and numerous cars damaged. Estimated damage was \$500,000. The storm moved from the southwest to northeast. Damage was reported during heavy rain.</p>
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16 LOUISIANA ————— NONE REPORTED

17 MAINE ————— NONE REPORTED

18 MARYLAND and D.C.

Ocean City	13- 15	0 0 4 0	Coastal Storm	<p>Storm that was centered over 100 miles off the coast, combined with high seasonal tides and strong currents to cause beach erosion and some minor flooding. Some sections lost up to 8 feet of beach, leaving the water precariously close to structures. The most damaging portion of the storm occurred during high tide of the mornings of the 14th and 15th. Included in the damage: a broken water main that drained a 500,000-gallon water tank and dropped water pressure to homes near 15th Street.</p>
Garrett County	22 All Day	0 0 0 0	Snow	<p>First heavy snow of the season brought a total of up to six inches over the county and created hazardous road conditions.</p>

19 MASSACHUSETTS ————— NONE REPORTED

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NOVEMBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INURED	PROPERTY	CROPS	PROPERTY	CROPS	
20 MICHIGAN											
North of Bay City-Grand Haven and South of Frankfort-Alpena	20	0200-1100EST			0	0	6	0			Heavy Snow
<p>Over 12" in area bounded by Hesperia-Cadillac-Grayling-Mio-Evart-Hesperia, tapering to 4" at edges of area. Very high water content with density up to 0.35 in western portion. Many trees and power lines down. 70,000 homes without power. Three radio stations in Muskegon off the air. Roads blocked, schools and factories closed. About 100 auto accidents, not considered directly due to storm, caused one death, five injuries. Scattered ice accumulations from freezing rain south of snow area were involved in additional accidents and one injury along Battle Creek-Flint line.</p>											
21 MINNESOTA											
Southern Minnesota	18-19	-- --	-- --	-- --	0	6	0	0			Heavy Snow
<p>A storm center moved from southeast Nebraska through Iowa Wednesday, November 18th and spread rain and sleet as well as a few thunderstorms into southern Minnesota. Rain and sleet began changing to snow during the afternoon of November 18th and continued overnight through November 19th. The heaviest snowfall was in the Minneapolis/St. Paul area. The 10.4 inches of snow reported from the National Weather Service office in the Twin Cities was the heaviest snowfall recorded at that office since March 22/23, 1965 when 13.6 inches fell. The storm knocked out power and phones to many in the Twin Cities metropolitan area; 165,000 customers lost electricity Wednesday night and Thursday morning. By Sunday, 21,000 were still without electricity and all power was not restored until 3 a.m. Monday morning. The estimated repair bill for the Northern States Power Company was in excess of \$1 million. Damage was also done to the Hubert H. Humphrey Metrodome in Minneapolis.</p>											
Southern Minnesota	23	-- --	-- --	-- --	0	0	5	0			Ice
<p>Rain and freezing rain began to move into Minnesota shortly after midnight on Monday, November 23rd. Freezing rain eventually brought most of southern Minnesota to a standstill south of a line from Alexandria to north of St. Cloud to western Wisconsin. Freezing rain gradually ended and snow began Monday afternoon as the storm moved east out of Nebraska and South Dakota. In extreme southern Minnesota, some areas that were not affected by the freezing rain in the morning received 2 to 3 inches of snow by the end of the afternoon. Five inches fell at Albert Lea. Local authorities called this ice storm the worst in the Minneapolis/St. Paul metropolitan area in 25 years. Four hundred cars and trucks were stalled on an icy hill on I-94 near Albertville, Minnesota 30 miles northwest of Minneapolis. An estimate by police, insurance companies and body shops estimated damage due to car accidents at least \$300,000. The Metropolitan Transit Commission pulled all of its buses off the streets for the first time in its 11 years of operation. Many pedestrians suffered fractured legs, arms and ankles and also some head injuries on slippery pavement.</p>											
22 MISSISSIPPI											
Wayne County	4	1630OCT			0	0	4	0			Thunderstorm, High Winds
<p>High winds caused scattered damage in Waynesboro and Clara, which is 8 miles SW of Waynesboro. In Clara, a tree fell on the roof of a home, damaging the roof and breaking windows. Another tree fell on and heavily damaged a car. Part of the roof was blown off the Clara High School gymnasium. In Waynesboro, scattered damage to trees and antennas was reported. The roof of a vocational school was damaged, and minor damage was sustained by several other buildings.</p>											
Sumrall (Lamar County)	4	1730OCT			0	0	4	0			Thunderstorm, High Winds, Hail
<p>Several roofs were blown off chicken houses in Sumrall during a severe thunderstorm. Several trees were also blown down. Police reported that 2 to 3 inches of marble size hail accumulated on Highway 569 at Sumrall.</p>											
23 MISSOURI ————— NONE REPORTED											
24 MONTANA											
Granite, Powell, Deer Lodge, Silver Bow, Madison Counties	14	0815HST						5			Strong Winds
<p>A fast-moving cold front caused widespread damage over southwest Montana. In Butte, the public high school had part of a roof blown off. In Twin Bridges, 3 small airplanes and a hanger were destroyed.</p>											
Rosebud County	26					2					Extreme Cold
<p>A young couple died of hypothermia while hunting after their truck apparently became stuck in a coulee and they attempted to walk out of the area.</p>											
25 NEBRASKA											
Boyd County	18	Afternoon			0	0	2	0			Lightning
<p>Lightning struck a utility pole and traveled into a house near Lynch damaging appliances.</p>											
Boyd County	18-19	Evening to Early Morning			0	0	0	0			Heavy Snow
<p>Four inches of snow fell around Butte.</p>											
Lancaster County	19	Afternoon			1	0	0	0			Snow and Cold
<p>An elderly woman ventured into the cold and snow in Lincoln and died of exposure.</p>											
Panhandle	30	Morning			1	0	5	0			High Winds
<p>High winds 50 to 60 m.p.h. buffeted the Panhandle with a gust of 67 m.p.h. at Alliance. A man was killed near Potter in Cheyenne County as a 55 m.p.h. gust toppled an oil rig. At Oshkosh in Garden County the winds flipped a small airplane attempting a takeoff. The winds turned over a semi near Kimball.</p>											
Sandhills, North Central and Northeast Nebraska	30-12/1	Mid Morning to Mid Morning			0	0	5	0			Blizzard and Heavy Snow
<p>Heavy snow fell north of a line from Merriman to Hyannis to Holdrege to Omaha. Heaviest snowfall was in a 40 to 50 mile wide band from near Hyannis through Mullen to Taylor to Niobrara. Six to twelve inches was common in this area with a report of 14 inches at Taylor. 35 to 45 m.p.h. winds with gusts to near 60 m.p.h. caused blizzard conditions in the sandhills to around midnight on December 1st. The winds knocked down power and telephone lines, interrupting utility service. Ten towns in the area from Mullen east to Burwell and south to Broken Bow were without telephone service. The winds also caused 4 to 7 foot drifts in the heavier snowfall band.</p>											
26 NEVADA											
RENO	15	ALL DAY			0	0	5	0			WIND STORM
<p>High winds all day. Peak gust 60 mph at Reno-Cannon International Airport at 2023P. Unofficial gust to 101 mph in southwest Reno at 9:45am and 95 mph at 6,000 ft. level on Mt. Rose, south of Reno. Main effect was to power lines - some service out 24 hours. Other damage to roofs, trees and vehicles.</p>											
27 NEW HAMPSHIRE ————— NONE REPORTED											
28 NEW JERSEY ————— NONE REPORTED											
29 NEW MEXICO ————— NONE REPORTED											

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM		
					KILLED	INJURED	PROPERTY	CROPS			
30 NEW YORK, Coastal ——— NONE REPORTED											
30 NEW YORK, Central ——— NONE REPORTED											
30 NEW YORK, Western ——— NONE REPORTED											
31 NORTH CAROLINA ——— NO REPORT RECEIVED											
32 NORTH DAKOTA ——— NONE REPORTED											
33 OHIO											
North Canton, Stark County	5	1645EST	-	-	1	11	0	0	Lightning		
<p>A thunderstorm moved over a soccer field and a bolt of lightning struck a metal monkey bar set near a group of boys playing a soccer game. The lightning arced from the bars to the boys killing an 8 year old boy and knocking down and injuring 11 other youths.</p>											
34 OKLAHOMA											
Enid, Garfield County	03	1130CST	?	?	0	0	0	0	Tornado (F0) and 10 Funnels		
<p>A small tornado and numerous funnels were spawned in the Enid area. Temperatures were quite cool and not a lot of energy was available. Vance Air Force Base was placed on alert and some 12 mobile home parks were evacuated for about an hour. No damage was reported.</p>											
Olney, Coal County	06				1	0	?	?	Flood		
<p>A man who had been missing for several days was found in the Clear Boggy Creek. His car with his dog inside were found in a 30 ft. hole about 35 yards south of a low-water bridge after a couple of days of searching. The man's body was found about 2 miles down the stream. Most of the rain fell on Oct. 31, on Nov. 4 a search party of four officers in a lake patrol boat almost capsized in the fast-moving floodwaters, so the search had to be postponed.</p>											
Guthrie, Logan County	19	1500CST			0	2	5	0	Wind		
<p>High wind blew over an oil well rig injuring two workers.</p>											
Coalgate, Coal County	30	1000CST			0	0	?	?	Lightning		
<p>Lightning struck a house, causing a fire. No exact figures on damages.</p>											
Cherokee, Alfalfa County	30	1800CST			0	0	?	?	Wind		
<p>Strong wind blew down the wall of a building under construction. No exact figures on damages.</p>											
35 OREGON											
Lincoln County	13 to 14	1800 PST to 1200 PST			1	UNK	7	UNK	Windstorm		
Tillamook County	13 to 14				UNK	UNK	6	UNK	Windstorm		
Lane County	13 to 14				UNK	UNK	6	UNK	Windstorm		
Coos County	13	Evening			4		6	UNK	Windstorm		
Curry County	13	Afternoon					5	UNK	Windstorm		
Douglas County	13	Afternoon					5	UNK	Windstorm		
Polk, Marion and Yamhill County	14	AM					6	UNK	Windstorm		
Clackamas, Washington Multnomah Counties	14	AM			2		6	UNK	Windstorm		
OREGON											
Columbia, Clatsop Counties	14 to 15	AM					5	UNK	Windstorm		
Jefferson County	14	AM					5	UNK	Windstorm		
<p>A total of 7 persons died in Oregon due to storm of Nov. 13-14. Storm affected Oregon during evening of 13th and lasted thru morning of 14th. (6 PM PST Friday to 12 noon PST Sat). Damage report for other areas of Oregon unknown. Widespread damage was estimated by insurance companies as being worse between Salem, OR and Olympia, WA and to the coast.</p> <p>"Large timber losses" were reported. 260,000 customers lost power during the storm.</p>											
36 PENNSYLVANIA, Eastern											
Royersford, Montgomery County	20	0720EST			0	0	5	0	Electrical		
<p>Lightning struck two neighboring homes in Royersford causing a fire in the one house. The lightning knocked bricks and mortar off the side of the other home. The fire resulted in considerable damage to the one home.</p>											
36 PENNSYLVANIA, Western — NONE REPORTED											
37 RHODE ISLAND ——— NONE REPORTED											
38 SOUTH CAROLINA											
SC Coastline	11-14	-- -- -- --			0	0	5	0	High Tides		
<p>Tidal flooding and beach erosion occurred along the entire South Carolina coastline. High tides were produced by onshore winds at the time of spring high tide.</p> <p>At Hilton Head, tides breached a sea wall.</p> <p>At Charleston, a number of streets were flooded.</p>											
39 SOUTH DAKOTA											
Eastern Half of State	30	0300CST					1		Heavy Snow Blizzard		
<p>A two-day winter storm, beginning as rain, changing to freezing rain and then to snow completely paralyzed the eastern half of the state, Monday, November 30 through Tuesday, December 1, 1981. Snow accumulations of between eight and twelve inches were common. Wind with gusts to near 50 MPH whipped the snow into blizzard conditions. The Governor of South Dakota closed east-west Interstate 90 to all traffic. Hundreds of motorists were stranded. One person died during snow removal after the storm.</p>											
40 TENNESSEE ——— NONE REPORTED											
41 TEXAS, Northern											
Graham, Young Co.	08	Morning					0	0	4	0	Lightning
<p>Lightning set fire to and heavily damaged a home in Graham.</p>											
Western Tarrant Co.	08	1655CST-1730	20	?	0	0	?	?	?	?	Hail and Windstorm
<p>A strong thunderstorm developed in Wise County, covering the ground with 0.5 inch diameter hail west of Decatur at 1510. The storm moved southeastward into Tarrant County, with 0.75 inch diameter hail being reported at Carswell Air Force Base at 1655. The hail swath continued to move southeastward, moving across Benbrook and Southwestern Fort Worth. Little or no damage resulted from the hail, even though it ranged up to golf ball size and covered the ground in portions of Benbrook. Strong winds uprooted trees in several scattered areas of western Fort Worth.</p>											

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1981

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
— TEXAS, Northern									
Northern Johnson Co.	08	1720CST-1740	2	75	0	0	4	0	Tornado F1 Tornado F0 Hailstorm
<p>The Tarrant County storm continued to move southeastward into Johnson County. At 1720, a tornado developed about 2 miles east-northeast of Cresson, in extreme northwestern Johnson County. The tornado, which developed from the storm's southwestern quadrant, destroyed a grain auger and some well-digging equipment at the H.W. Teich ranch, before moving east-southeastward and dissipating. Several funnel clouds were reported about 1730 in the Godley and Joshua areas, with one touching down briefly in open fields between Joshua and Godley at 1730. One-half to one inch hail was reported in rural areas north of Godley and Joshua.</p>									
Northern and Eastern Tarrant County	30	0430CST-0500			0	0	5	0	Windstorm
<p>A squall line moved eastward across Tarrant County, causing scattered wind damage in North Fort Worth and Arlington. Trees and signs were toppled and a hanger door blown down at Meacham Airport in north Fort Worth. One aircraft was damaged by the door. Minor wind damage was reported in the Arlington area about 0500.</p>									
Youngsfort, Bell Co.	30	0505CST	Short Narrow		0	2	4	0	Tornado F1
<p>An apparent weak, gust-front tornado lifted up a mobile home, threw it northward onto an automobile, then returned the mobile home to the south within 10 feet off its original position. It appeared that only a small-scale vortex could have resulted in the south-to-north followed by the north-to-south movement. The two occupants, who were slightly injured, reported hearing a sound similar to a loud motor just before the damage occurred. The mobile home and car were both heavily damaged.</p>									
Garland, Dallas Co.	30	0530CST	2	*1/2	0	0	5	0	Windstorm
<p>A thunderstorm downburst winds of at least 75-80 MPH struck the Garland area just north of Interstate 30. Several homes received severe garage and roof damage in the Sarasota and Tamp Streets area of Garland. At least 27 homes and 30 apartment units received damage. A gym wall was destroyed and tennis court fences felled at Lakeview Centennial High School by the strong winds.</p>									
Hunt and Fannin Cos.	30	0530CST			0	0	5	?	Windstorm
<p>Several barns were destroyed and trees uprooted in the Hickory Creek area, along the border of northern Hunt and southern Fannin Counties. Very strong thunderstorm winds also moved through the Quinlan area of southern Hunt County. A bait-shop, mobile home, and several barns were destroyed in the Quinlan area. Trees and powerlines were also destroyed by the strong winds.</p>									
Mt. Pleasant, Titus County	20	0725CST-0740	4	*1/3	0	0	5	0	Windstorm
<p>An intense downburst of straight-line winds caused heavy damage along a west-southwest to east-northeast path in the western and northern outskirts of Mt. Pleasant. Peak winds at radio station KIMP, outside of the heavy damage area, reached 67 MPH. Civil Defense officials estimated winds of at least 100 MPH within the center of the damage track. Several homes were heavily damaged, having roofs and garages destroyed. Powerline and tree damage was also heavy, and one large truck was turned on its side by the winds on Interstate 30. The windstorm was accompanied by brief, heavy rains but virtually no lightning.</p>									
41 TEXAS, Southern									
Harris Co.	8	1345 CST							Funnel Cloud
<p>A pilot observed a funnel cloud over northwest Harris County as a narrow band of intense thunderstorms moved southeastward along a cold front. The funnel apparently never touched ground.</p>									
Jefferson Co.	17	Afternoon							Funnel Cloud
<p>A thin but very long funnel cloud was photographed over Port Arthur near rapidly building thunder-showers. Lasting less than a minute, the funnel built quickly downward but suddenly receded just before reaching ground.</p>									
41 TEXAS, Western ————— NONE REPORTED									
42 UTAH ————— NONE REPORTED									
43 VERMONT ————— NONE REPORTED									
44 VIRGINIA									
Bedford County	24	All Day			0	0	0	0	Snow
<p>Five inches of snow fell over Bedford City and County, making driving hazardous and causing schools and some businesses to close for the day.</p>									
45 WASHINGTON									
Entire State	14-15					5	?	7	C High Winds
<p>Two Pacific storms moved through Washington State causing high winds statewide. One storm moved in the 14th and one the 15th. The first was longer in duration. Winds at Seattle Tacoma Airport peaked at 58 knots while Hoquiam peaked at 61 knots. Winds at the Evergreen Point Bridge were gusting to 65 kts. Trees and power lines were downed disrupting power to thousands of homes. Five men died during the storm. One man from Auburn died of massive head injuries when a tree fell through his bedroom as he slept. A Maury Island man was electrocuted when he tried to move a downed power line, and a Bellevue man was crushed to death when a tree fell on his tent. Two men from Mukilteo drowned after they were blown from their boat by high winds during a sailing race. Winds damaged about 200 acres of timber statewide, with a value of 1.6 million dollars. The West Bay Marina in Olympia estimates damages at well over \$1 million for the installation itself. This cost does not include the damage to individual boats. Damage to the Evergreen Point Bridge was between \$300,000 and \$400,000.</p> <p>Damages also included a store in Copalis Beach which suffered damage from storm tides flooding the building to a depth of 1 1/2 feet. Six planes were damaged at the Evergreen Airport in Vancouver, Washington. Two historic structures were damaged in the storm. It totally destroyed a round barn in Skamokawa's middle valley. A covered bridge over Grays River had the roof removed. Public utility departments also suffered a lot of damage requiring repairs to power equipment.</p>									
46 WEST VIRGINIA									
Ona, near Huntington mall, Cabell County	5	1500EST			0	0	?	?	Hailstorm
<p>One inch hail reported in a brief hailstorm. No reports of damage or injuries reported to the Weather Service.</p>									
47 WISCONSIN									
Winnebago County	23	0400CST			1	0	0	0	Snow, Wind
<p>A 16 year old girl was found dead of exposure on the median strip of Highway 41, just south of Oshkosh.</p>									
Dane County	26	0940CST			1	1	0	0	Lightning
<p>Lightning struck and killed a 69 year old man in a wooded public hunting ground in Mazomanie, located 20 miles west of Madison. His 38 year old son, standing next to him, suffered burns and temporary paralysis.</p>									
48 WYOMING ————— NONE REPORTED									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

NOVEMBER 1981

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								
49 ALASKA																											
Arctic Coast	10-12	-	-	-	0	?	4	0	0	Blizzard																	
										Winds to 60 mph caused severe whiteout conditions and drifting snow along the Arctic Coast east of Lonely. The blizzard halted all travel in and out of the Prudhoe Bay oil field.																	
Central Interior	11	0600AST	-	-	0	?	5	0	0	Freezing Rain																	
										Warm air over a well packed snow cover combined with freezing rain caused very hazardous road conditions in the Fairbanks area. There were over 100 motor vehicle accidents.																	
South Coast	11	-	-	-	1	0	0	0	0	High Wind & Seas																	
										High winds and seas caused a man to fall from a skiff 12 miles southwest of Cordova and hampered search and rescue efforts.																	
Cook Inlet	26	1200AST	-	-	0	0	2	0	0	High Winds																	
										Wind gusts to 80 mph were reported from the Potter area southeast of Anchorage.																	
South Coast	27	-	-	-	3	0	5	0	0	High Wind & Seas																	
										The m/v Nannin-D was lost in Resurrection Bay south of Seward with all onboard. The wreckage was never located.																	
Cook Inlet	29	-	-	-	1	4	5	0	0	High Wind & Seas																	
										The f/v Norwegian Hood sank off Augustine Island in southern Cook Inlet. Four of the crew were rescued with one member missing and presumed drowned.																	
South Coast	30	0100AST			10	2	4	0	0	High Wind and Seas																	
										A large wave hit the scallop trawler Saint Patrick off Marmot Island north of Kodiak. The vessel was disabled and the crew abandoned ship. Two of the crew made it to shore and were rescued. Six bodies were recovered and four never found.																	
50 HAWAII ----- NONE REPORTED																											
51 PUERTO RICO ----- NONE REPORTED																											
52 VIRGIN ISLANDS ----- NONE REPORTED																											
53 PACIFIC ----- NONE REPORTED																											

STORM SUMMARY

NOVEMBER 1981

STATE	TORNADOES					HAILSTORMS			WINDSTORMS				LIGHTNING			@HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				φ ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE			
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS		
Alabama									1	5																	
Arizona																											
Arkansas									1	5	4		1											9			
California																											
Colorado																											
Connecticut																											
Delaware																									5		
Florida																											
Georgia	1	1		5	6							4															
Idaho												6															
Illinois																											
Indiana	1	1		5								5															
Iowa																	1		5					4			
Kansas																											
Kentucky	1	1		2	6																						
Louisiana																											
Maine																											
Maryland & DC																									4		
Massachusetts																											
Michigan																			6								
Minnesota																											
Mississippi												4															
Missouri																											
Montana												5												2			
Nebraska									1			5															
Nevada												5															
New Hampshire																											
New Jersey																											
New York																											
North Carolina																											
North Dakota																											
Ohio														1	11												
Oklahoma	1	1										2															
Oregon									7	2	5	?												1	?		
Pennsylvania																											
Rhode Island																											
South Carolina																											
South Dakota																											
Tennessee																											
Texas	3	2		2	4							5															
Utah																											
Vermont																											
Virginia																											
Washington																											
West Virginia																											
Wisconsin														1	1										1		
Wyoming																											
Alaska																											
Hawaii																											
Pacific																											
Puerto Rico																											
Virgin Islands																											

TROPICAL STORM JOSE

29 October - November 1981

National Hurricane Center, NOAA
Miami, Florida

Tropical Storm Jose developed from a mid-latitude low pressure system. On 20 October, this low was located at 45°N, 40°W, several hundred miles east of the Canadian Maritime Provinces and well to the north of the Atlantic subtropical high pressure ridge.

During the following eight days, the low moved southward around the east side of the subtropical ridge. By the 28th satellite pictures showed the cloud circulation centered near 25°N, 40°W...to the south of the subtropical ridge and over 1000 miles from land in any direction.

Convective clouds began to increase near the cloud circulation center, and it is estimated that the system became a tropical storm with 35 knot winds at 0000 GMT 30 October. Having reversed the earlier southward motion, Jose moved northeastward for four days and accelerated to a forward speed of 40 knots.

The maximum sustained surface wind speed is estimated at 45 knots on the 31st. All intensity and position data were derived from satellite imagery.

PRELIMINARY BEST TRACK

TROPICAL STORM JOSE
29 October - 1 November 1981

<u>DATE</u>	<u>TIME</u> <u>(GMT)</u>	<u>POSITION</u>		<u>PRESSURE</u> <u>(MB)</u>	<u>WIND</u> <u>(KT)</u>	<u>STAGE</u>
		<u>LATITUDE</u>	<u>LONGITUDE</u>			
10/29	1200	25.0	47.5	1010	25	Tropical depression
	1800	26.4	47.1	1008	30	
10/30	0000	27.7	46.6	1006	35	Tropical storm
	0600	28.7	45.9	1004	35	
	1200	29.6	45.2	1004	35	
	1800	30.2	44.5	1002	35	
10/31	0000	30.7	43.9	1002	35	
	0600	31.1	43.1	1000	40	
	1200	31.5	42.2	998	45	
	1800	31.9	40.8	998	45	
11/01	0000	32.5	39.0	998	40	
	0600	33.7	37.0	998	40	
	1200	35.3	34.9	998	35	
	1800	37.8	32.1	998	30	
11/02						Subtropical depression Dissipated
	0000	41.5	29.5			

HURRICANE KATRINA

03 - 07 November 1981

National Hurricane Center, NOAA
Miami, Florida

Cloudiness and showers appeared over the western Caribbean Sea on 1 November. A low pressure center began to form, and on the 3d a tropical depression was centered 150 miles south of the Cayman Islands.

The depression strengthened while drifting slowly northward and attained tropical storm intensity early on the 4th. Within 24 hours the storm center passed near Grand Cayman Island. Wind gusts to near 60 knots were reported from Cayman Brac, where a waterspout uprooted a seagrape tree, carried it 40 feet and threw it into the Brac Reef Hotel bar.

Katrina accelerated toward the northeast and strengthened. At 1224 GMT on the 5th, a NOAA reconnaissance flight reported a minimum sea level pressure of 980 millibars, and several hours later reported a maximum surface wind estimate of 75 knots. Thus Cuba was threatened by an intensifying hurricane only 12 hours from a potential landfall on the south coast.

Katrina began to weaken as it approached Cuba. By the time the storm's center moved across eastern Cuba early on the 6th, maximum winds had decreased to 60

knots and the central pressure rose 15 millibars. Although such events are difficult to predict, slow moving storms occasionally weaken as they approach land because of the disruptive influence of the terrain.

Cuban sources reported two persons killed. Damage was primarily due to heavy rain-induced flooding, which caused agricultural losses in Camaguey Province.

Katrina continued to accelerate toward the northeast and moved across the eastern Bahamas on the afternoon of the 6th. By this time, maximum winds had decreased to 50 knots, even though the storm was moving with a forward speed of 20 knots.

Reconnaissance aircraft were unable to locate a closed circulation by late on the 6th, and the storm gradually merged with a major frontal system over the southwest North Atlantic.

PRELIMINARY BEST TRACK

HURRICANE KATRINA

3 - 7 November 1981

DATE	TIME (GMT)	POSITION		PRESSURE (MB)	WIND (KT)	STAGE
		LAT.	LONG.			
11/03	0000	16.9	81.2	1005	25	Tropical Depression
	0600	17.2	81.3	1005	25	
	1200	17.5	81.4	1004	25	
	1800	17.8	81.4	1002	30	
11/04	0000	18.1	81.4	1001	30	Tropical Storm
	0600	18.3	81.4	1000	35	
	1200	18.6	81.3	998	40	
	1800	18.9	81.2	996	50	
11/05	0000	19.2	81.1	993	60	Hurricane
	0600	19.6	80.8	988	65	
	1200	20.0	80.5	980	75	
	1800	20.4	80.1	988	75	
11/06	0000	20.9	79.5	996	65	Tropical Storm
	0600	21.6	78.3	999	55	
	1200	22.4	77.0	1001	50	
	1800	23.2	75.5	1001	45	
11/07	0000	24.0	73.3	1001	40	
	0600	25.0	70.6	1002	40	
	1200	25.9	67.5	1002	40	
	1800	26.8	64.5	1002	40	
11/08	0000					Dissipated

SUBTROPICAL STORM (NUMBER TWO)

12 - 17 November 1981

National Hurricane Center, NOAA
Miami, Florida

A cold front moved off the United States east coast and into the Atlantic on 11 November and low pressure began to develop within the frontal cloudiness over the warm waters of the Gulf Stream. Ship reports and satellite pictures indicate that a 1004-millibar low was centered 400 miles east of Jacksonville, with maximum winds of 45 knots at 1200 GMT 12 November.

The low moved generally north northeastward for five days, paralleling the United States east coast, and reached Nova Scotia on the 17th. Winds increased to 60 knots on the 14th, according to ship reports, while the low was moving past the mid-Atlantic states. Winds remained near 60 knots on the 14th and 15th, and the central pressure eventually fell to 978 millibars.

On the 14th while east of North Carolina, the center began a turn toward the northwest, as a blocking high pressure system moved north of the storm. At this time a reconnaissance aircraft measured a surface pressure of 985 millibars, and the densely populated northeast appeared to be threatened by an intensifying storm which was acquiring the tropical characteristic of increasing convective cloudiness near the storm center.

However, the threat was temporary and the storm resumed its north northeast heading on the 15th. The proximity of this slow-moving, 60-knot storm resulted in coastal flooding and beach erosion along much of the Atlantic Seaboard from Florida to Maine. Gale warnings were in effect along the coast at various times from Cape Hatteras, NC northward to Eastport, ME and extended into Nova Scotia.

PRELIMINARY BEST TRACK
 SUBTROPICAL STORM (NUMBER TWO)

12-17 November 1981

<u>DATE</u>	<u>TIME (GMT)</u>	<u>POSITION</u>		<u>PRESSURE (MB)</u>	<u>WIND (KT)</u>	<u>STAGE</u>
		<u>LATITUDE</u>	<u>LONGITUDE</u>			
11/12	1200	31.0	74.0	1004	45	Subtropical storm
	1800	31.4	73.1	1003	45	
11/13	0000	31.8	72.3	1001	50	
	0600	32.2	71.6	999	55	
	1200	32.7	71.0	997	55	
11/14	1800	33.2	70.6	995	55	
	0000	33.7	70.6	993	60	
	0600	34.3	70.8	991		
11/15	1200	34.8	71.1	989		
	1800	35.3	71.4	986		
	0000	35.8	71.8	984		
11/16	0600	36.5	71.9	981		
	1200	37.2	71.8	979		
	1800	37.9	71.4	978		
11/17	0000	38.6	70.9	978		
	0600	39.3	70.2	979	55	
	1200	40.0	69.5	981	55	
11/17	1800	40.7	68.5	983	55	
	0000	41.4	67.1	985	50	
	0600	42.9	65.8	990	45	
	1200	Over Nova Scotia				

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA AND INFORMATION SERVICE
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ASHEVILLE, N.C. 28801

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