

STORM DATA



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NATIONAL CLIMATIC DATA CENTER

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C O N T E N T S

Cover: Floodwater flows through a break in an earthen dam on the White River at White Cloud, Michigan, about 40 miles north of Grand Rapids. The flooding, which occurred in a 60 mile wide band across central Lower Michigan, resulted from three days of thunderstorm rains which fell in amounts nearing 15 inches (see HEAVY RAIN and FLOODING in CENTRAL MICHIGAN, pages 12 through 15). ---Photo by Anna Moore Butzner, the Grand Rapids Press.

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STORM DATA (ISSN 0039-1972)

The section on Outstanding Storms of the Month is prepared by Professor T. Theodore Fujita, editor, and Duane J. Stiegler, associate editor, the University of Chicago with funding by the U. S. Office of Naval Research. The Storm Data and Unusual Weather Phenomena narratives, and summaries of Hurricanes/Tropical Storms are prepared by the National Weather Service. The National Climatic Data Center compiles statistics on deaths, injuries, damage, and prepares the annual summaries of Tornadoes and Lightning. 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. Maps of zones used in the Storm Data and Unusual Weather Phenomena will be published in these editions; Eastern States: JAN, APR, JUL, OCT.
Central States: FEB, MAY, AUG, NOV.
Western States: MAR, JUN, SEP, DEC.

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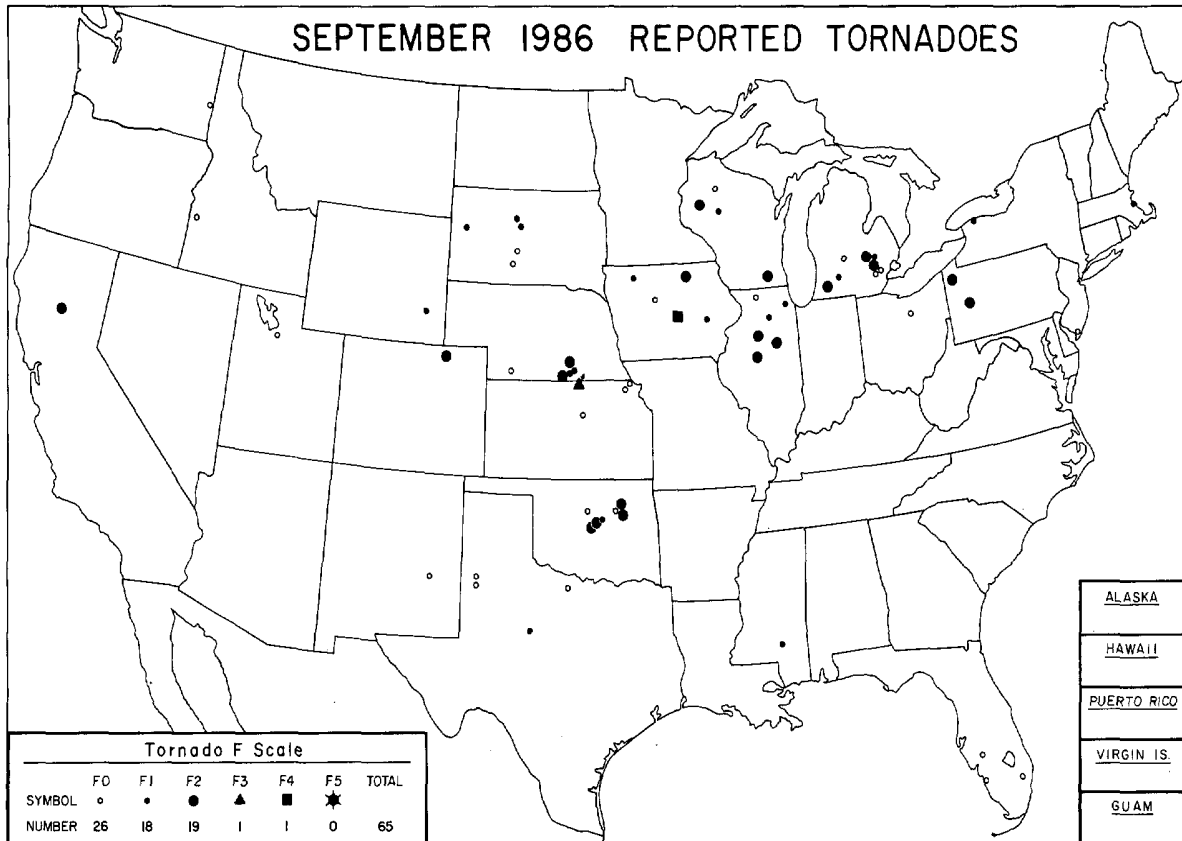
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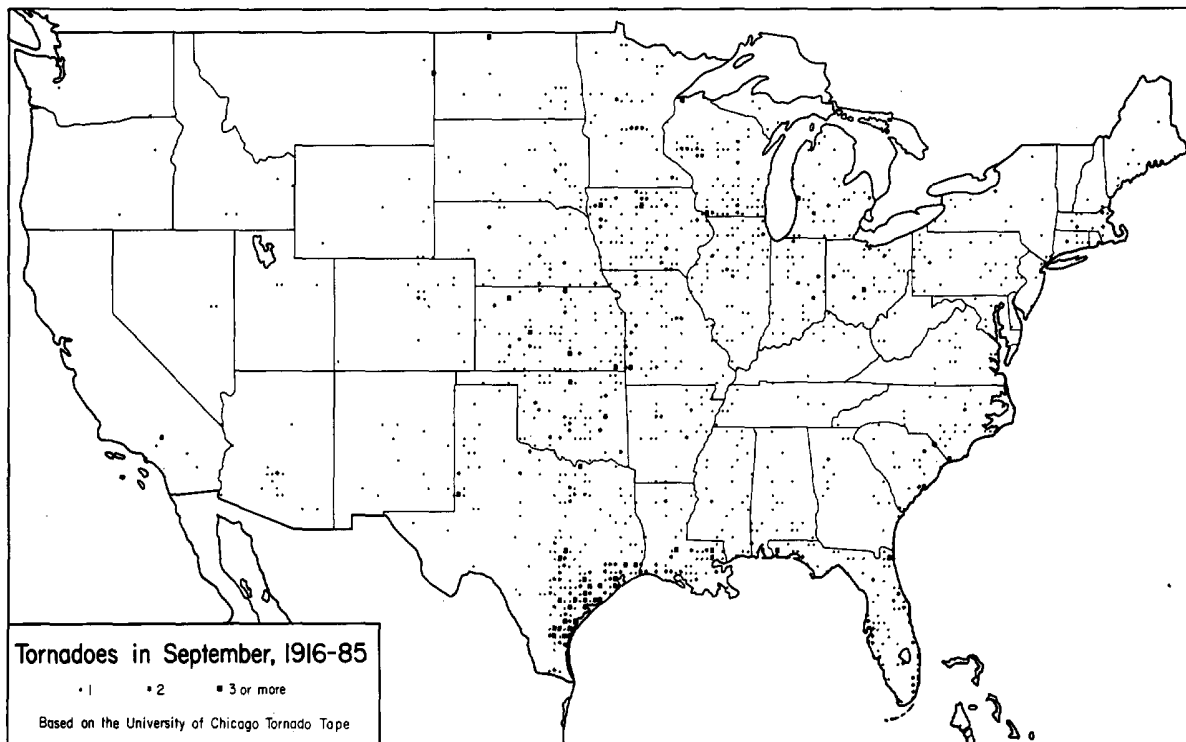
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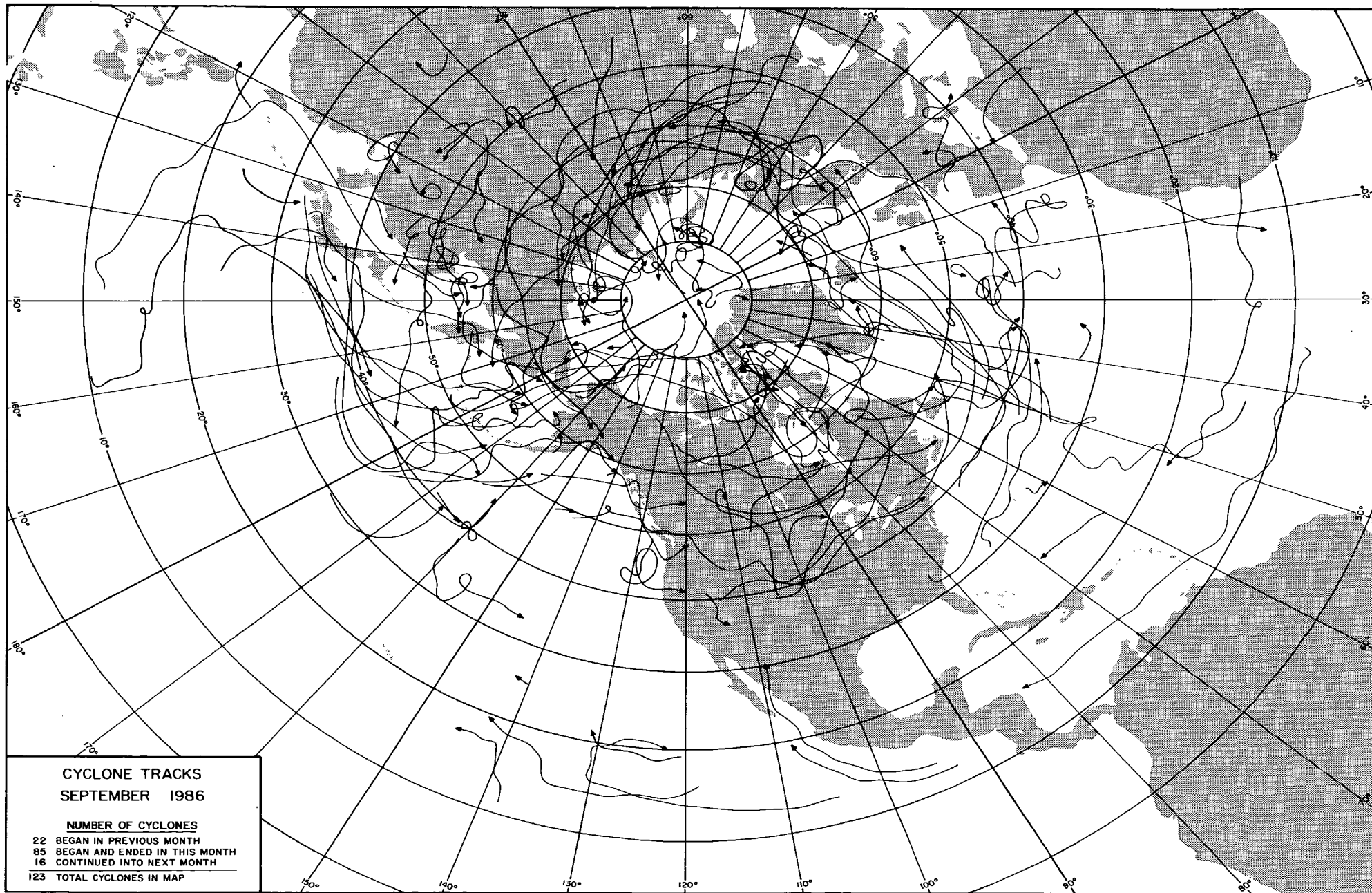
National Climatic Data Center
Federal Building
Asheville, NC 28801-2696

OUTSTANDING STORMS OF THE MONTH



● COMPLETE REPORT RECEIVED	● 1AL	● 7DE	● 14KS	● 21MN	● 28NJ	● 33OH	● 39SD	● 44VA	● 49AK(SE)
⊙ PRELIMINARY REPORT RECEIVED	● 2AZ	● 8FL	● 15KY	● 22MS	● 29NH	● 34OK	● 40TN	● 45WA	● 50HI
○ REPORT NOT RECEIVED	● 3AR	● 9GA	● 16LA	● 23MO	● 30NY(O)	● 35OR	● 41TX(N)	● 46WV	● 51PR
(N) northern (W) western	● 4CA(N)	● 10ID	● 17ME	● 24MT	● 30NY(C)	● 36PA(E)	● 41TX(S)	● 47WI	● 52VI
(S) southern (C) central	● 4CA(S)	● 11IL	● 18MD	● 25NE	● 30NY(W)	● 36PA(W)	● 41TX(W)	● 48WY	● 53PC
(E) eastern (O) coastal	● 5CO	● 12IN	● 19MA	● 26NV	● 31NC	● 37RI	● 42UI	○ 49AK(N)	
(SE) southeastern	● 6CT	● 13IA	● 20MI	● 27NH	● 32ND	● 38SC	● 43VT	○ 49AK(S)	

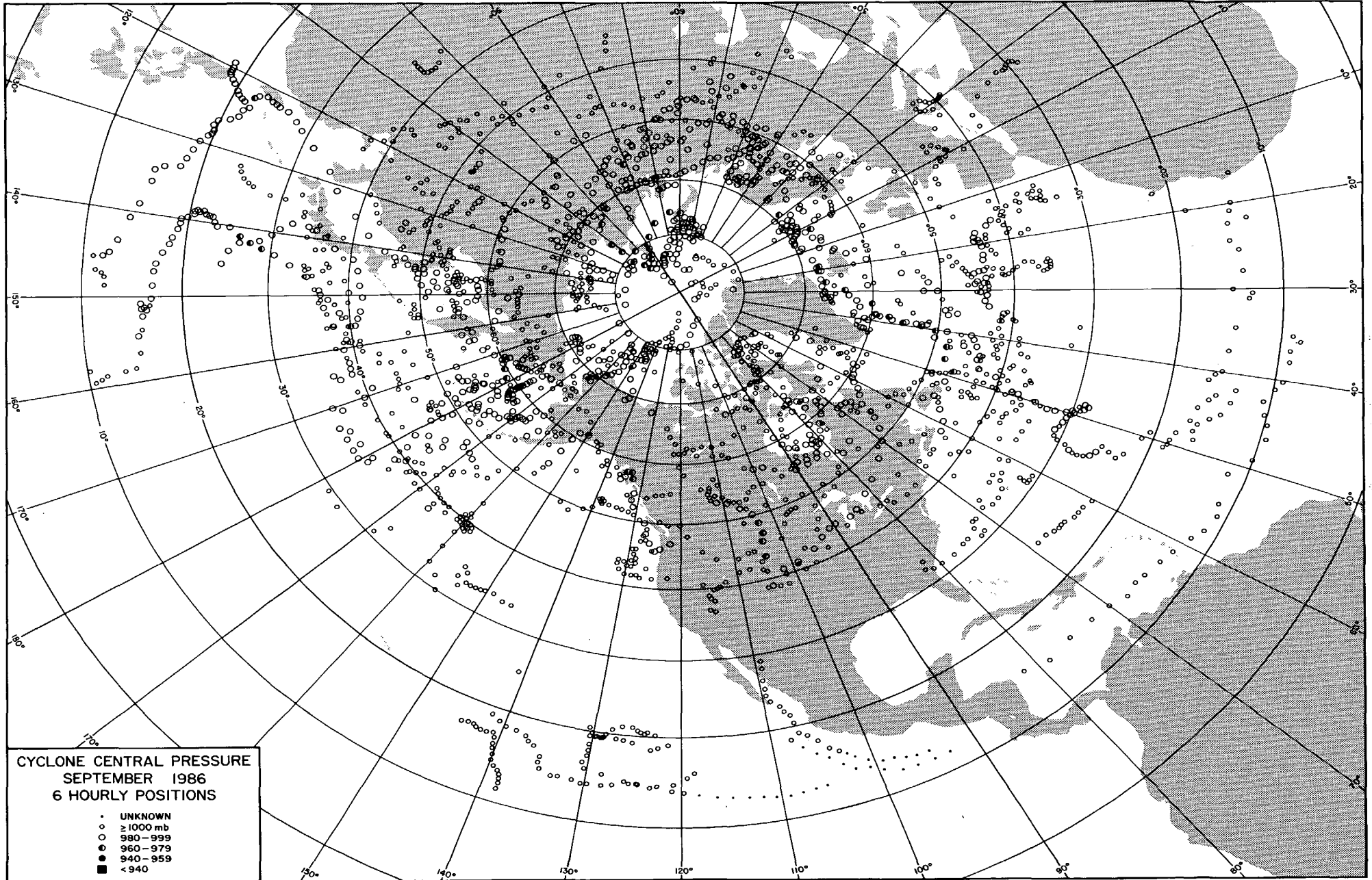




**CYCLONE TRACKS
SEPTEMBER 1986**

NUMBER OF CYCLONES

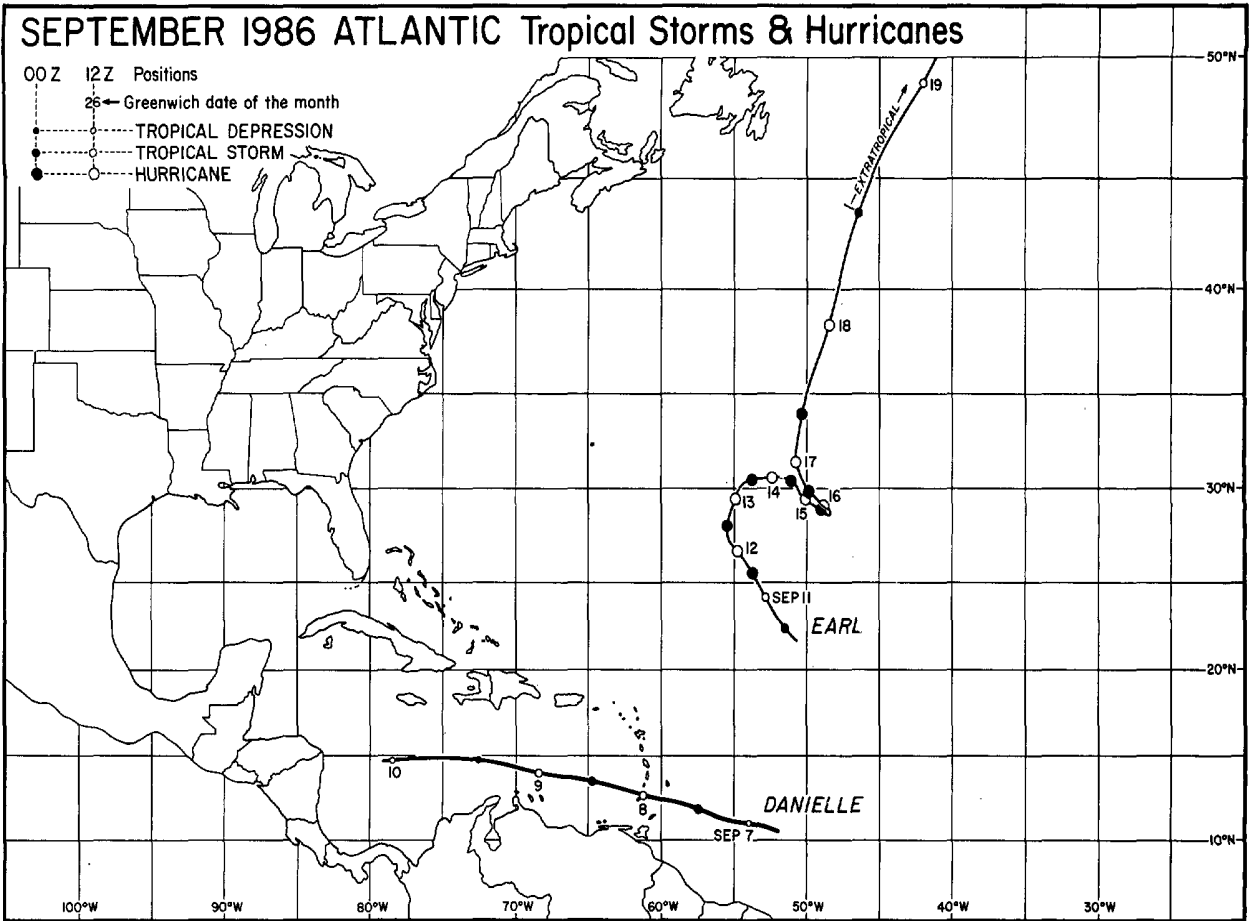
- 22 BEGAN IN PREVIOUS MONTH
- 85 BEGAN AND ENDED IN THIS MONTH
- 16 CONTINUED INTO NEXT MONTH
- 123 TOTAL CYCLONES IN MAP



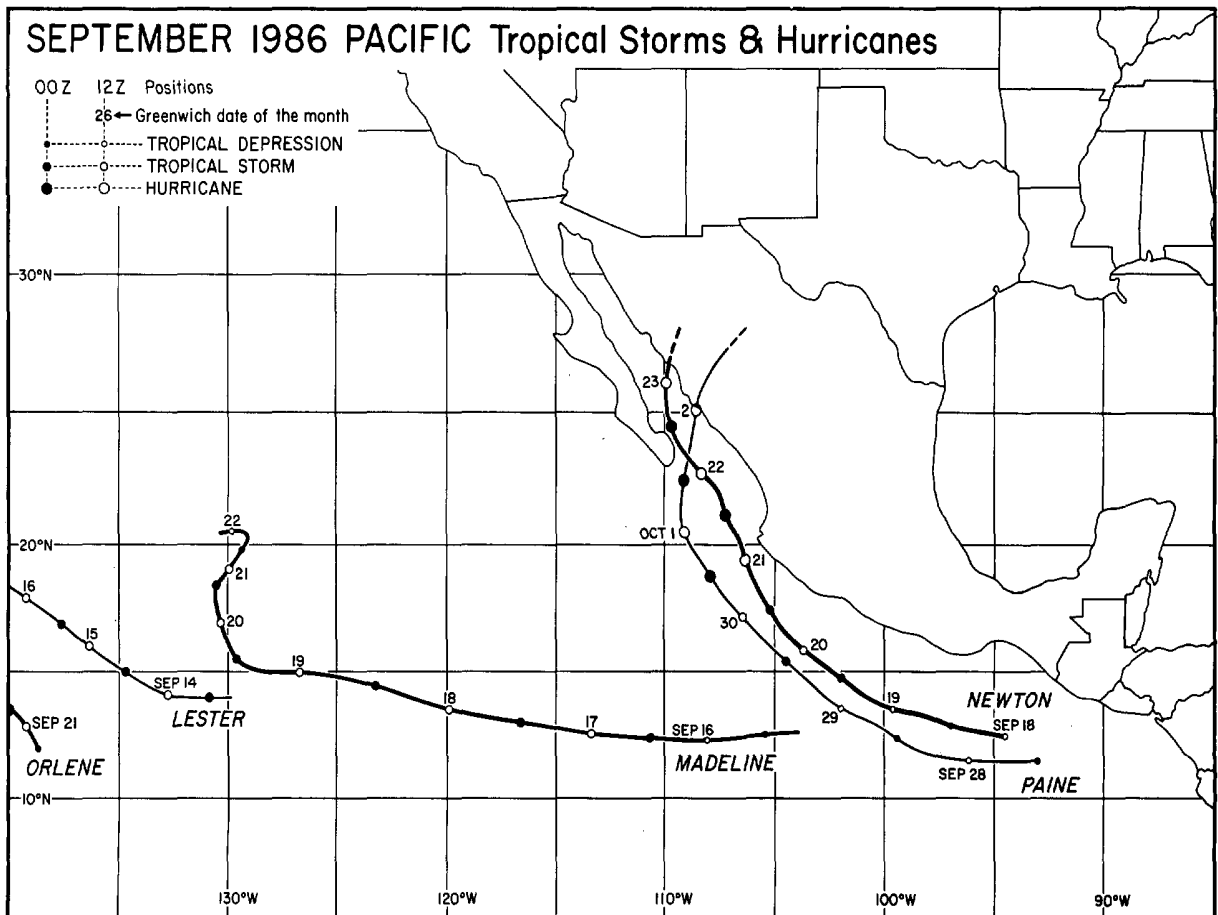
**CYCLONE CENTRAL PRESSURE
SEPTEMBER 1986
6 HOURLY POSITIONS**

- UNKNOWN
- ≥ 1000 mb
- ◐ 980 - 999
- ◑ 960 - 979
- ◒ 940 - 959
- < 940

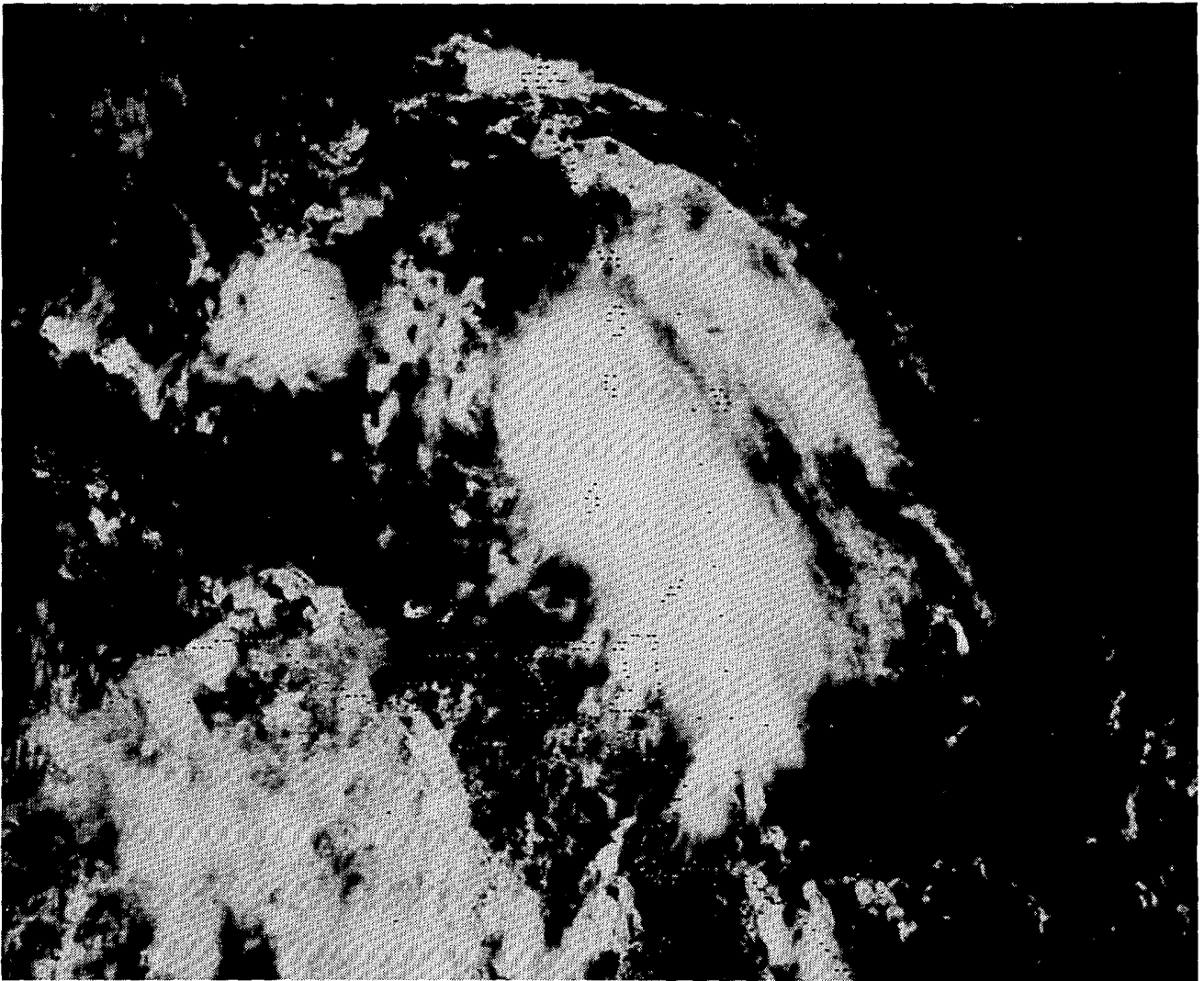
TROPICAL STORMS AND HURRICANES



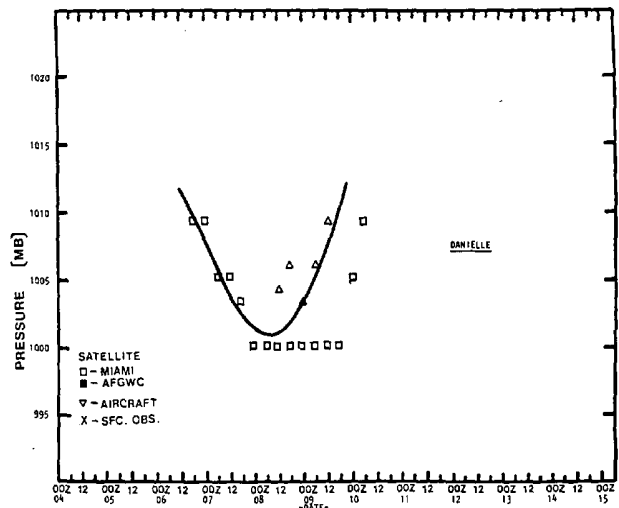
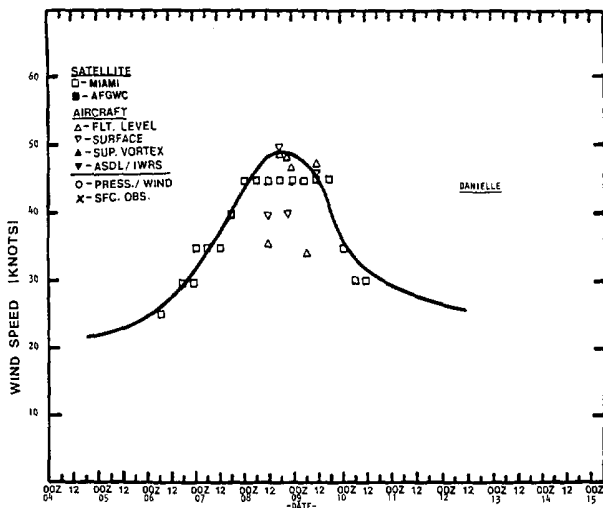
---Best track data from the National Hurricane Center, Miami, Florida.



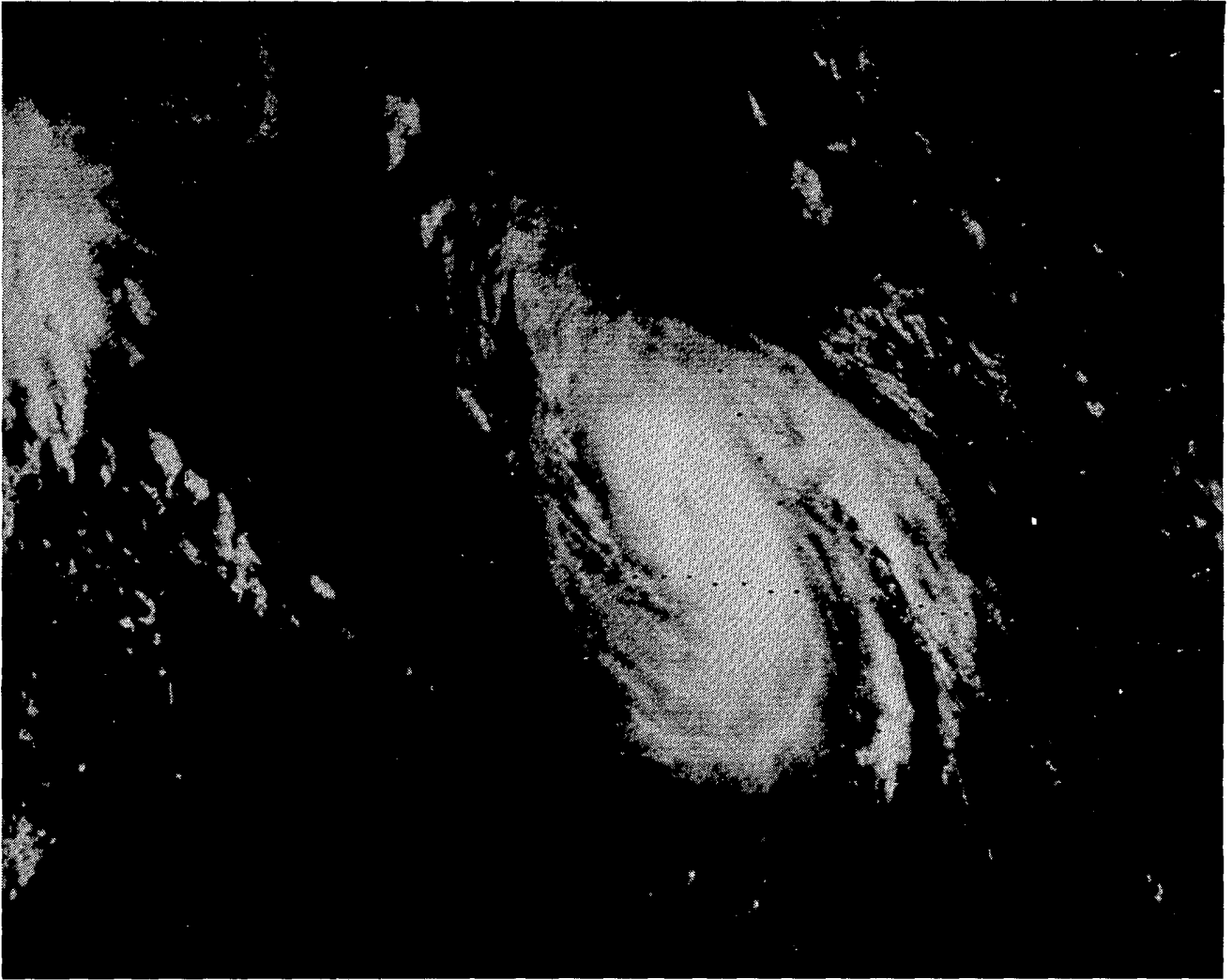
---Best track data from NWSFO, San Francisco, California.



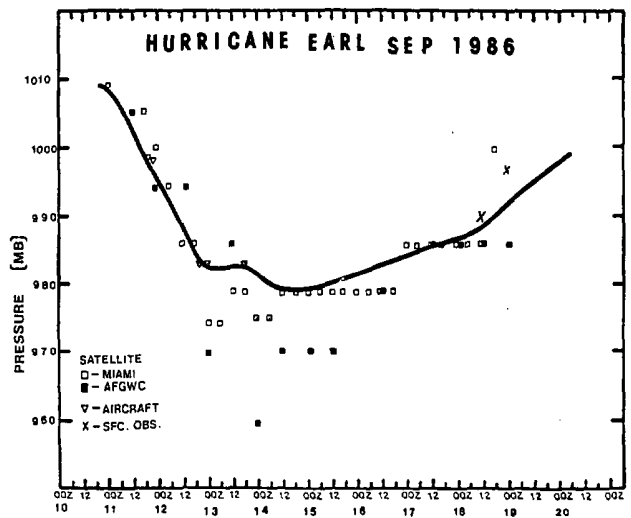
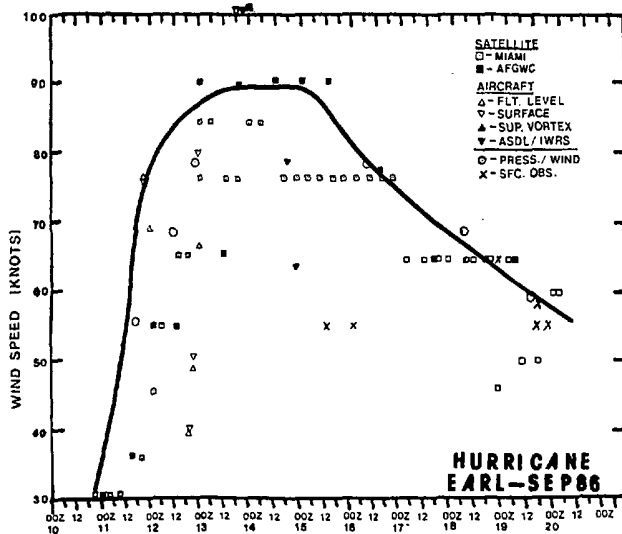
Tropical Storm DANIELLE as seen at 1501GMT on September 8th in a GOES 6 satellite, visible image. At the time, DANIELLE had a central pressure of 1002 mb and was producing its highest, maximum sustained winds (about 50 kts); the storm had just passed over the Windward Islands and into the Carribean Sea. BELOW: Plots of estimated maximum wind speed and minimum surface pressure versus time for Tropical Storm DANIELLE. ---Photo and figures from NHC, provided by AOML/HRD, both of Miami, Florida.



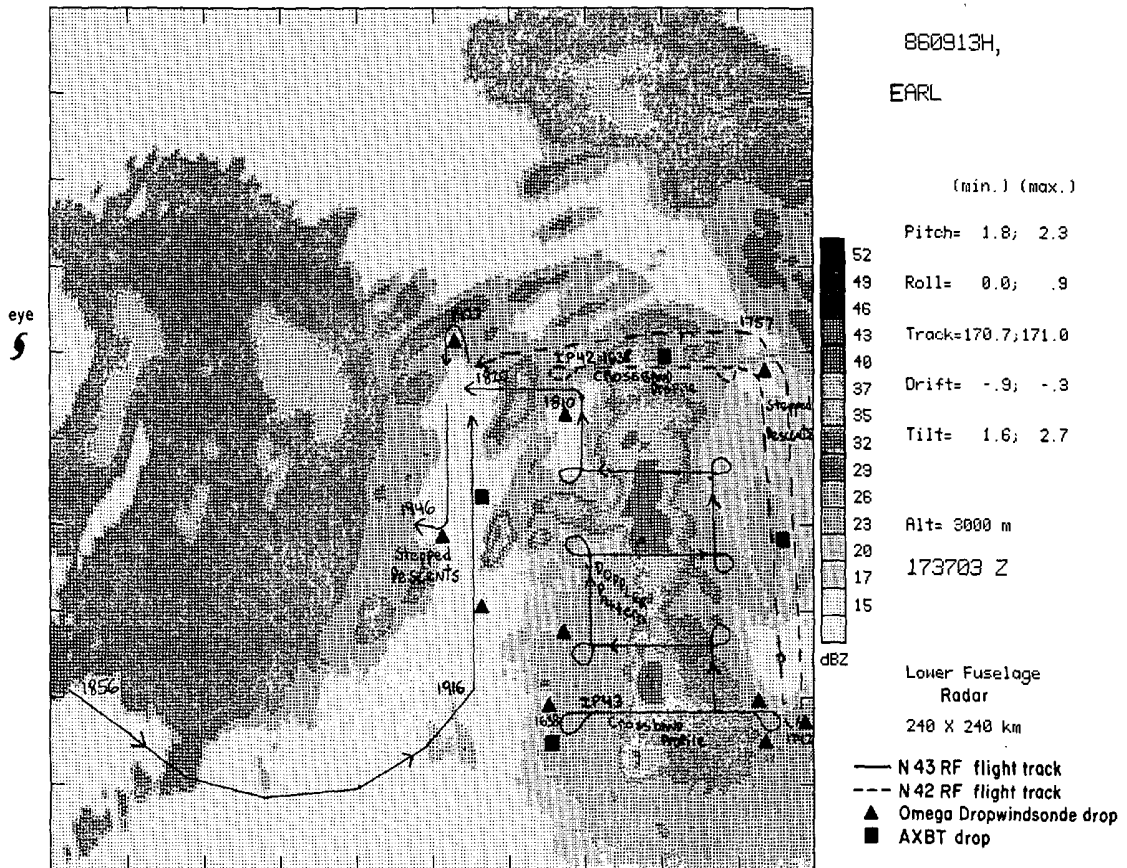
TROPICAL STORMS and HURRICANES ---- continued



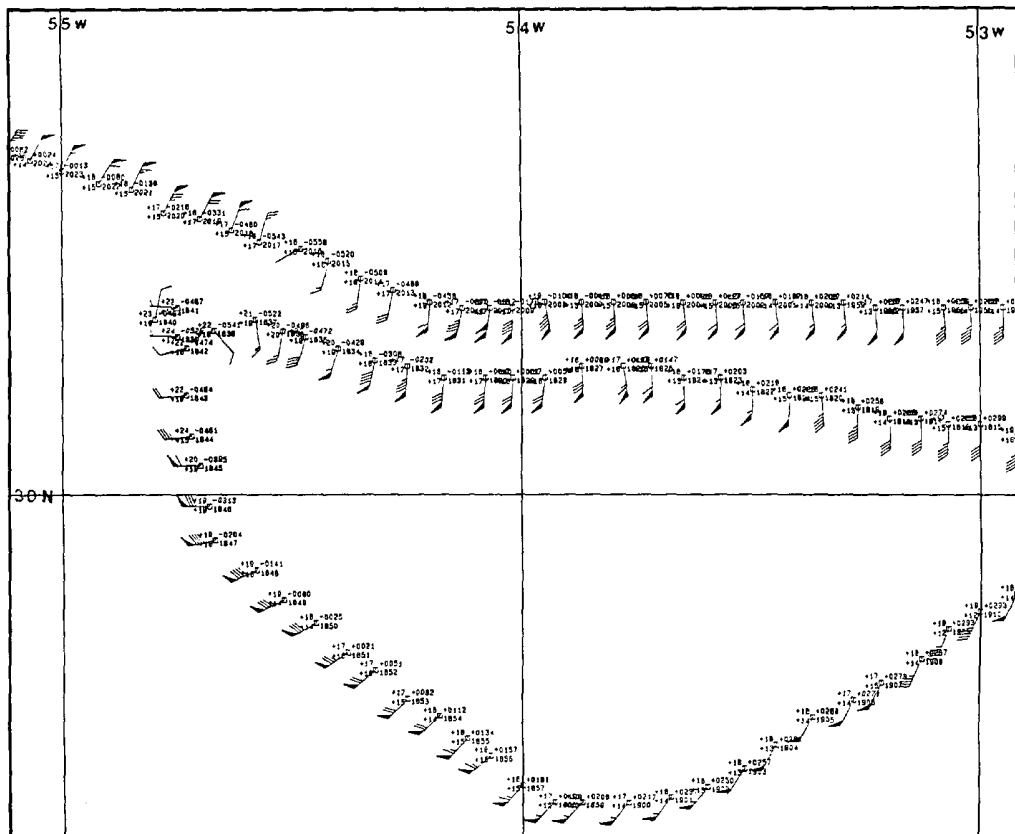
Taken at 1301GMT on September 14th, this GOES 6 satellite, visible image shows Hurricane EARL at its peak intensity at 30.6°N and 52.3°W in the Atlantic Ocean. The storm's central pressure and maximum wind were 979 mb and 90 kts, respectively. BELOW: Plots of estimated maximum wind speed and minimum surface pressure versus time for Hurricane EARL. ---Photo and figures from NHC, provided by AOML/HRD, both of Miami, Florida.



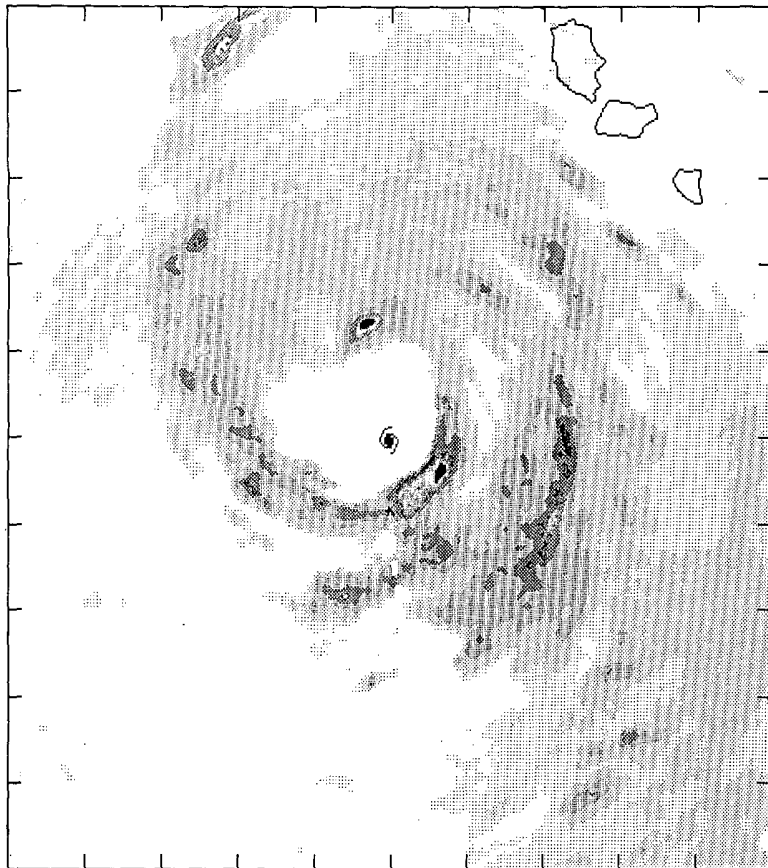
TROPICAL STORMS and HURRICANES ---- continued



As part of AOML/HRD's Hurricane Planetary Boundary-Layer Experiment, two NOAA/OAO WP-3D aircraft flew coordinated patterns through Hurricane EARL on September 13th. ABOVE: Aircraft flight tracks and locations of OWD and AXBT drops are superimposed on an airborne-radar image (horizontal plane) showing EARL's precipitation distribution at 1737GMT. BELOW: An aircraft-to-satellite data link (ASDL) plot from one of the WP-3D aircraft for the period 1809-2038GMT. ---Both figures from AOML/HRD, Miami, Florida.



TROPICAL STORMS and HURRICANES ---- continued



860921I1

NEWTON

(min.) (max.)

Pitch= 1.0; 1.4

Roll= -1.9; -.8

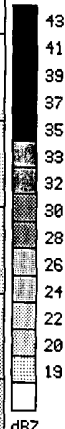
Track=159.3;160.2

Drift=-13.1;-12.5

Tilt= 2.3; 3.3

Alt= 3000 m

215727 Z



Lower Fuselage

240 X 240 km

The horizontal distribution of precipitation in Hurricane NEWTON, positioned about 200 km west-northwest of Puerto Vallarta, Mexico in the Eastern Pacific, as detected by the lower-fuselage radar on a NOAA/OAO WP-3D aircraft at 2157GMT on September 21st. At the time, the storm's central pressure was 984 mb and its peak flight-level wind was 45 m/s.

STREAMLINES AND ISOTACHS

500 MB

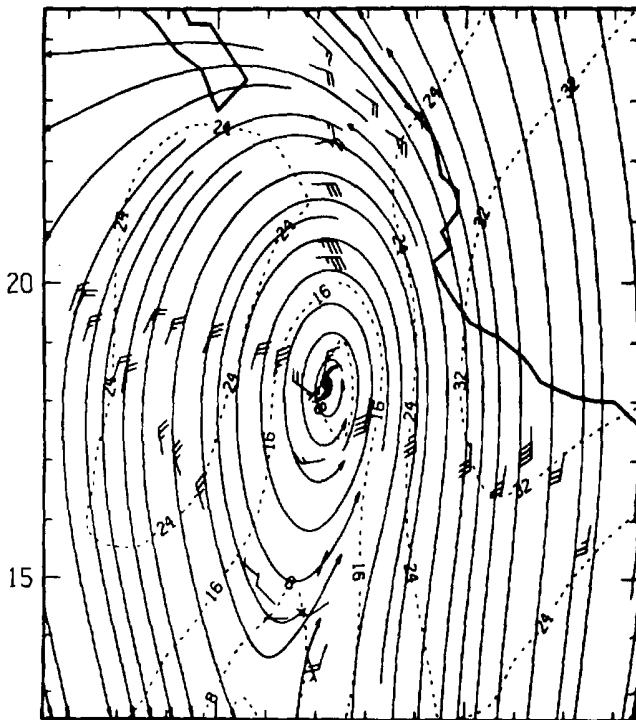
PAINE(1986) STM-RELATIVE COORDS

30/ 9/86. 18 GMT 1/10/86. 6 GMT

XYOCHL=(6. 6)

KBCYTP=(21.21.21.21)

XYBCHL=(9. 9. 9. 9)

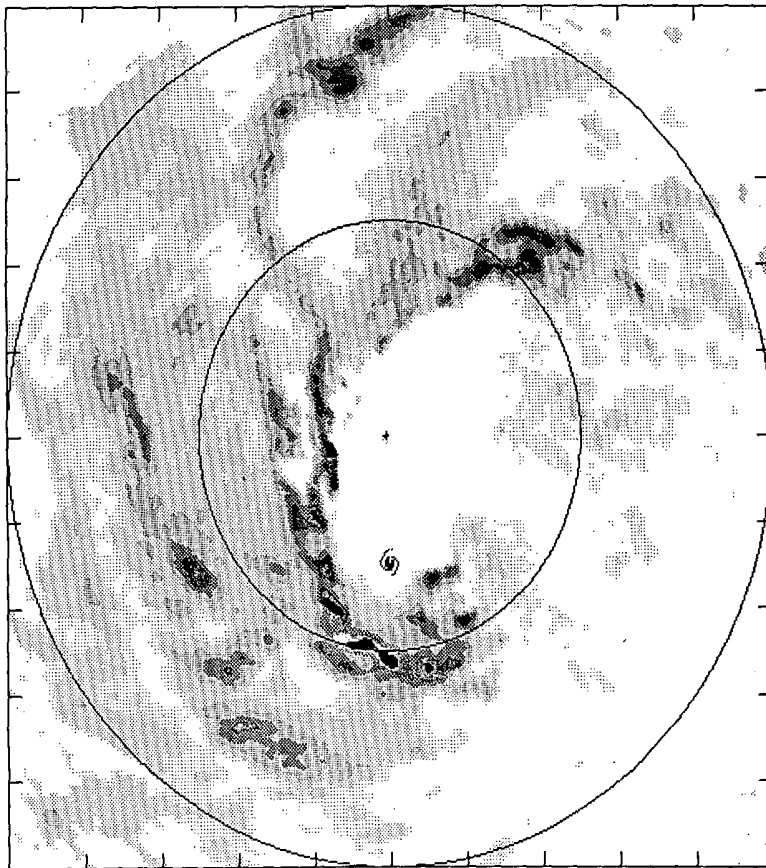


110 105
CONT= 2 4 8 16 24 32 40 52 64 knots

On September 21, 1986, researchers of AOML/HRD conducted a Cloud Microphysics Experiment in Eastern Pacific Hurricane NEWTON (see above figure). Using two NOAA/OAO WP-3D aircraft, microphysical data was collected in the storm's stratiform regions since recent modeling studies suggest that such regions, especially near the melting level, are of considerable importance to hurricane dynamics and organization.

Missions were also flown in Hurricane PAINE on September 30th and October 1st to conduct the Hurricane Environmental Interaction and Structure of Hurricane Rainbands experiments, respectively. On the 30th, two aircraft made simultaneous measurements of the hurricane's environmental flow at two levels (5,000 and 19,000 ft.) to study how changes in the flow might influence a storm's motion. The October 1st study was designed to gather three-dimensional data on air motion within rainbands. LEFT: A 500 mb streamline and isotach analysis derived from flight-level and ODW winds in PAINE from 1800GMT, 30/9/86 to 0600GMT, 01/10/86.

TROPICAL STORMS and HURRICANES ---- continued



860930I1

P A I N E

(min.) (max.)

Pitch= 2.2; 2.5

Roll= -1.6; 7.4

Track=149.9;150.8

Drift= 5.4; 5.8

Tilt= 2.6; 3.7

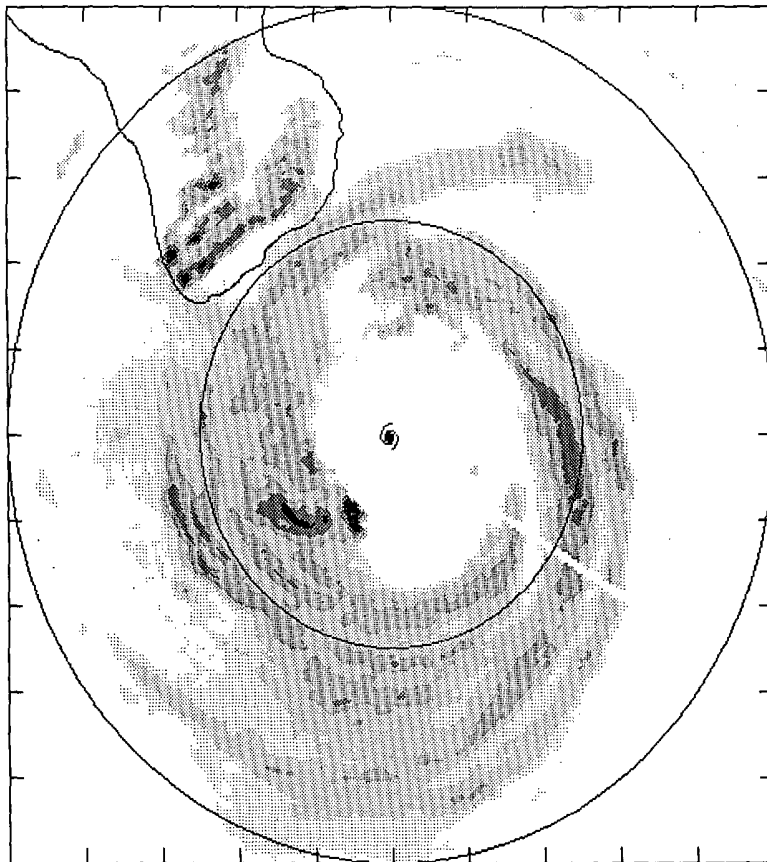
Alt= 3000 m

204209 Z

dBZ

Lower Fuselage

300 X 300 km



861001I1

P a i n e

(min.) (max.)

Pitch= 1.6; 1.9

Roll= -1.6; -.1

Track=120.5;120.8

Drift= -.6; .1

Tilt= 3.2; 4.2

Alt= 3000 m

232903 Z

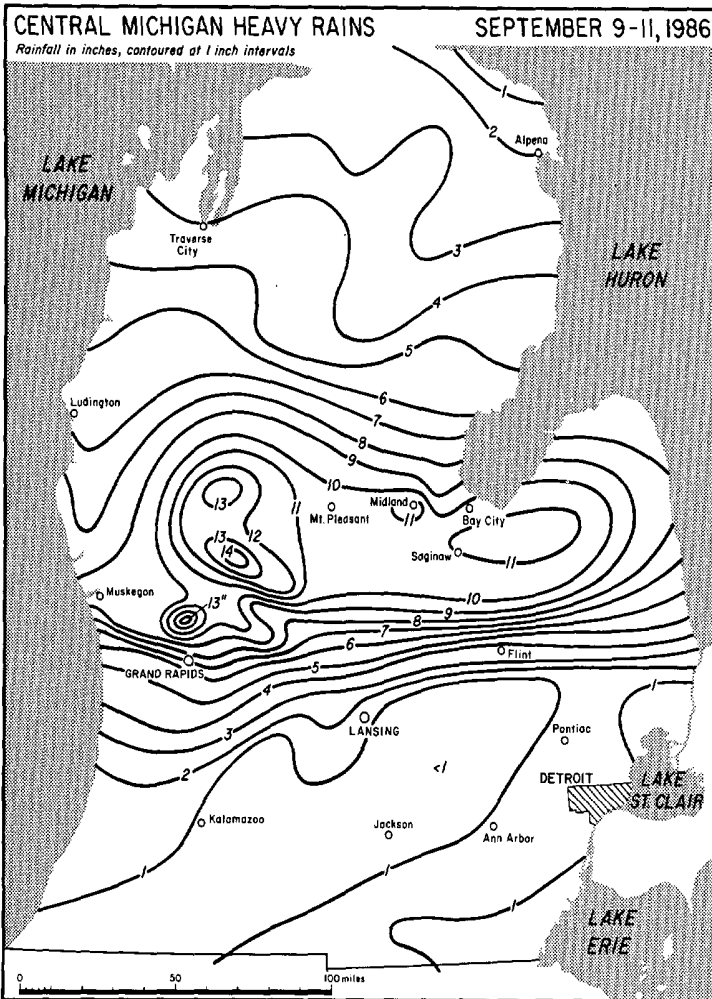
dBZ

Lower Fuselage

300 X 300 km

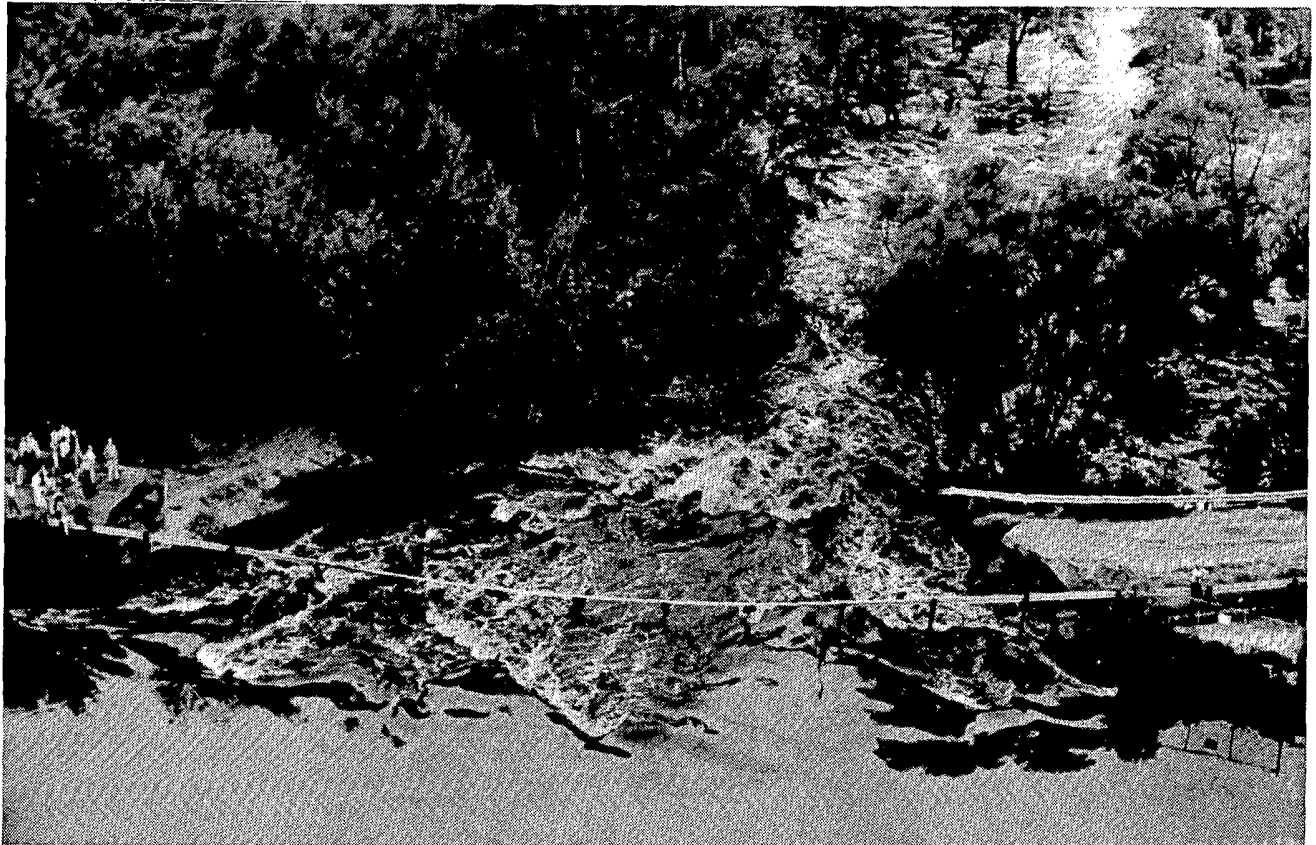
Airborne radar images of the horizontal distribution of precipitation in Hurricane PAINE at 2042GMT on September 30th (top) and 2329GMT on October 1st (bottom). The storm's central pressure and peak flight-level wind were 993 mb, 35 m/s and 980 mb, 45 m/s in the top and bottom figures, respectively. ---All figures on pages 10 and 11 are from AOML/HRD.

1. HEAVY RAIN and FLOODING in CENTRAL MICHIGAN on September 9-11, 1986



Three days of heavy thunderstorm rain, the bulk of which fell in a 12-hour period on September 11th, led to flash flooding in a 60 mile wide band across central Lower Michigan on the 11th and subsequent river flooding as well. 2 deaths were directly attributable to the flooding, and at least 8 others including 2 suicides were indirectly related. The widespread flooding caused 11 dams to fail and threatened 19 others. About 30,000 homes had damage and 3600 miles of road were impassable. Total damage was estimated at \$400,000,000, of which \$120,000,000 was to crops. Runoff from this episode further raised already dangerously high levels of Lakes Michigan, Huron, and St. Clair.

LEFT: Isohyet analysis of 72 hour rainfall ending at 0700EST, September 12, 1986 for most stations.
 ---Mapping by the University of Chicago from 113 cooperative observer reports supplied by NCDC and additional Grand Rapids area data supplied by Jack Cooley, NWSO at Grand Rapids, Michigan.



Floodwater from the White River flows through a break in a dam at White Cloud, Michigan on September 12th. The break occurred in an earthen dyke beside the floodgates.
 ---Photo by Anna Moore Butzner, the Grand Rapids Press.



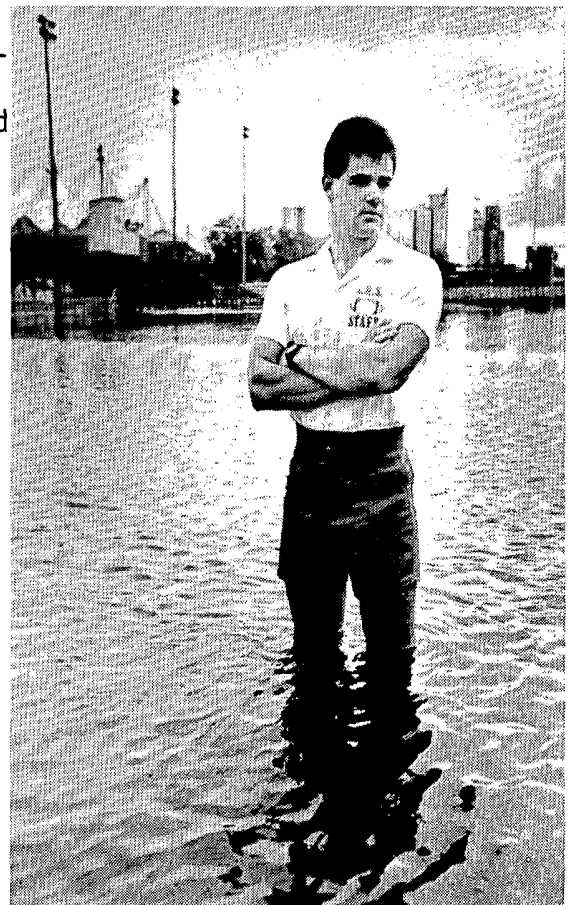
As rains continue to fall, a northwest Grand Rapids resident tries his luck on his flooded street while neighbors tried coping with the unwanted water by swimming and wading in it. BELOW: A Tastee Freeze on Michigan Avenue in Big Rapids that collapsed along with a portion of the street due to erosional forces of rapidly running water in adjacent Mitchell Creek. ---Both photos by Anna Moore Butzner, the Grand Rapids Press.

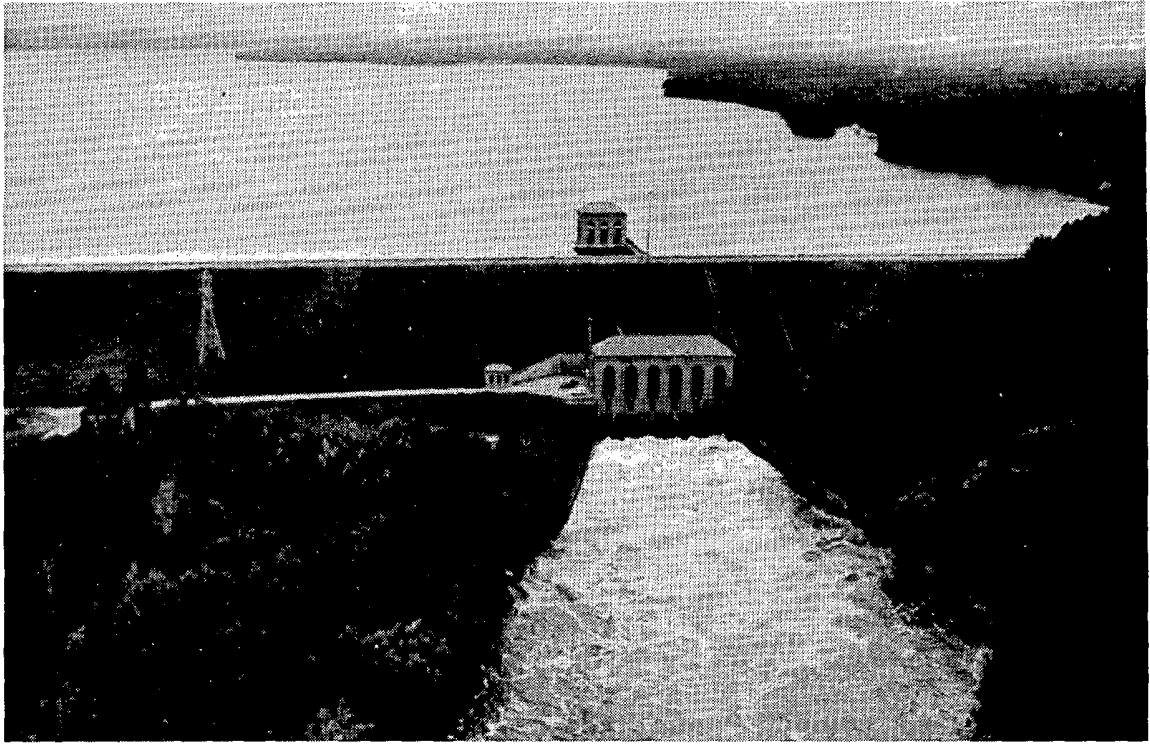




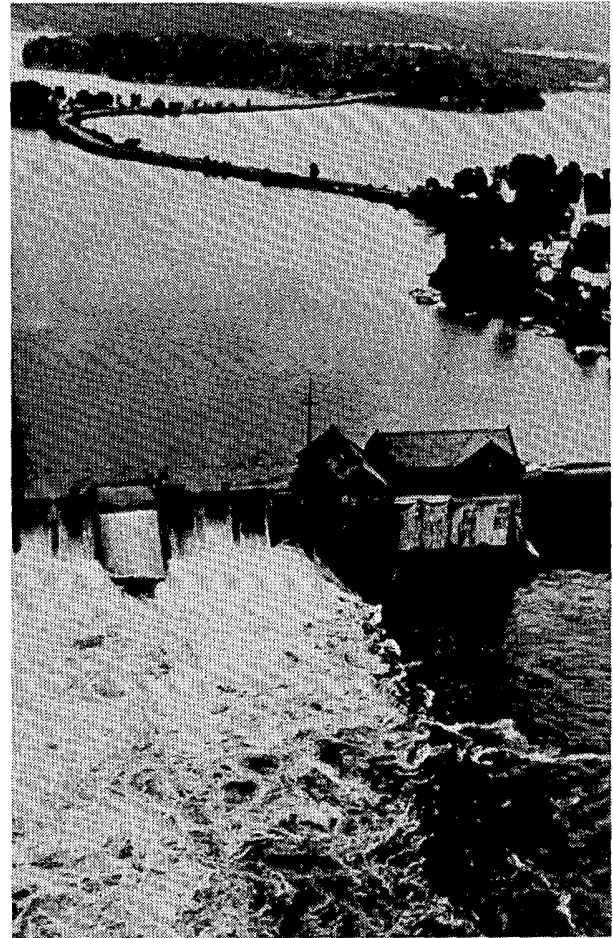
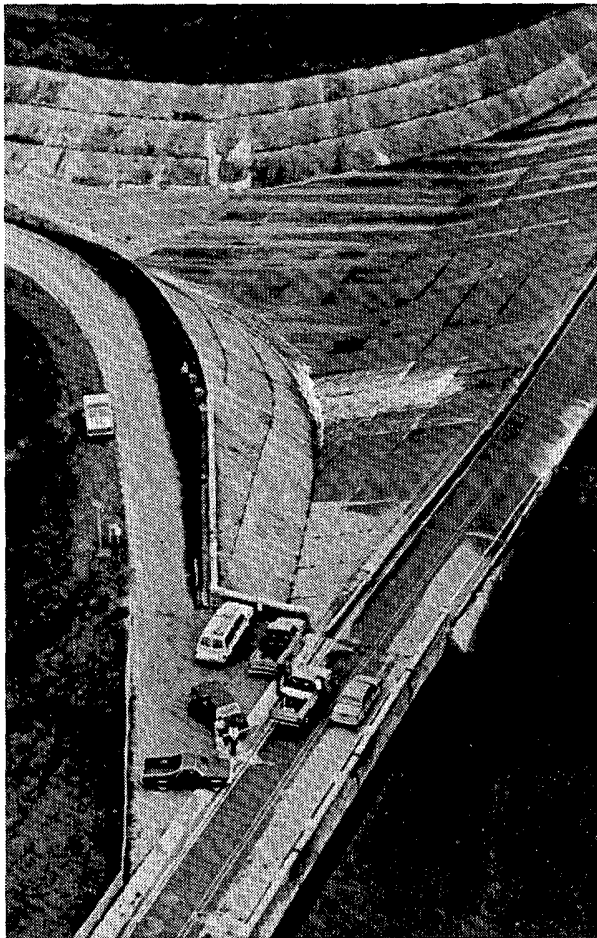
ABOVE: A woman waits for a crane to arrive and lift her car from a huge hole left by the floodwaters in Big Rapids, about 50 miles north of Grand Rapids. 13.13 inches of rain was recorded at the town's waterworks during the deluge. ---Photo by Marvin Laninga, the Grand Rapids Press.

RIGHT: A football coach at the high school in Lowell, about 10 miles east of Grand Rapids, stands within the school's flooded football field. As he waded through the water he could feel bluegills, displaced from their usual home by the flooding, nipping at his legs. ---Photo by Rex D. Larsen, the Grand Rapids Press.





The Muskegan River churns through the floodgates of Hardy Dam south-southwest of Big Rapids (above) as Consumers Power Co. crews attempted to lower the backwater. Authorities feared that the dam might break, sending a wall of water downstream all the way to Lake Michigan. The water crested the dam's emergency overflow spillway (below left), and the downstream Croton Dam (below right) also operated its floodgates at full capacity. ---All three photos by Anna Moore Butzner, the Grand Rapids Press.

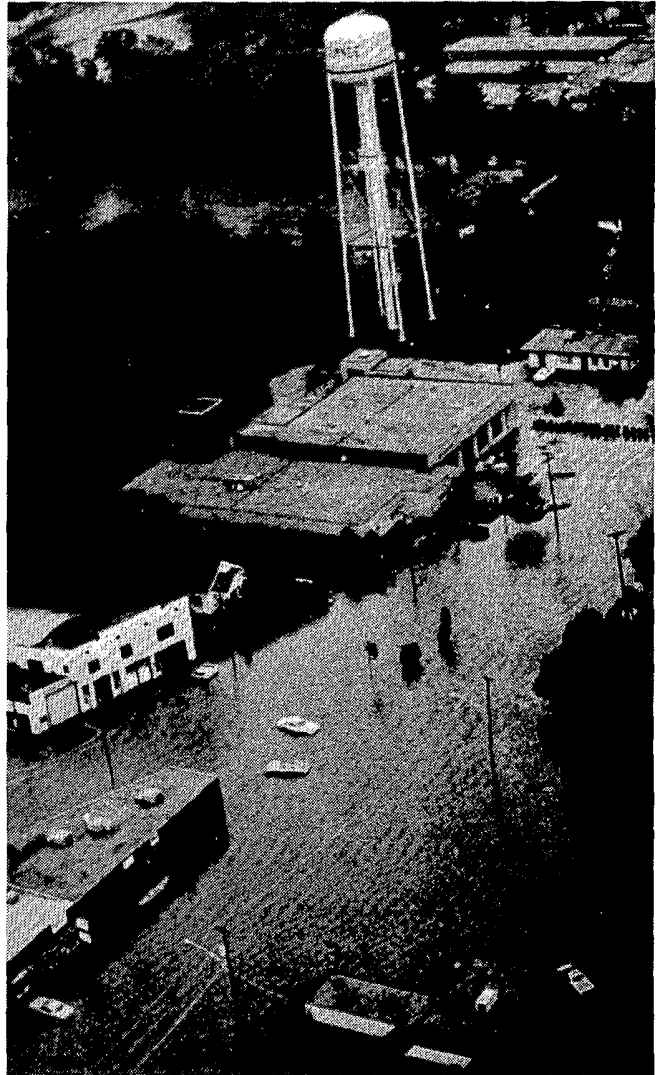


2. FLOODING in NORTHEAST ILLINOIS in Late September, 1986

Heavy rains, record-breaking at many locations and most of which fell from recurring thunderstorms, plagued much of the Midwest during September and resulted in widespread flash flooding and river flooding. Aside from Michigan's 3-day deluge (see item #1, page 12), the rain's effects were probably most prevalent in extreme northeast Illinois where the Des Plaines River spilled into highly urbanized areas northwest and west of Chicago. Significant flooding of the river in Lake and Cook counties from September 26th to October 6th damaged 2200 houses and 150 businesses, broke crest records at most gauge stations, and did \$42,000,000 in total damage.



Isohyet analysis of September, 1986 rainfall in Wisconsin and the northern two-thirds of Illinois. ---Map prepared by the University of Chicago from raw data (Wis) supplied by the NWSFO at Milwaukee, WI; and analysis (Ill) supplied by the NWSFO at Chicago, IL.



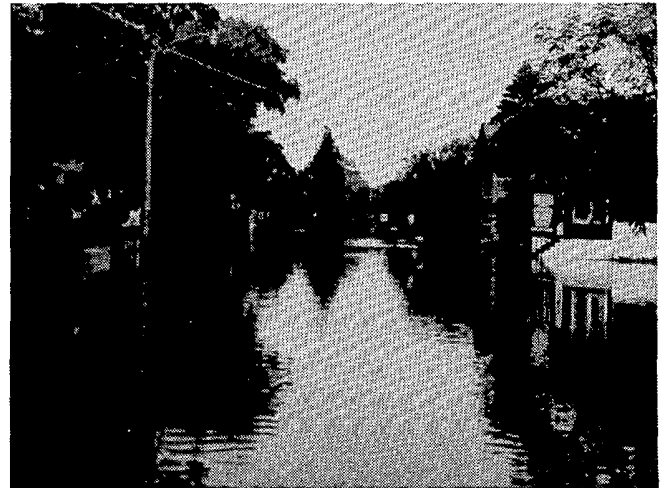
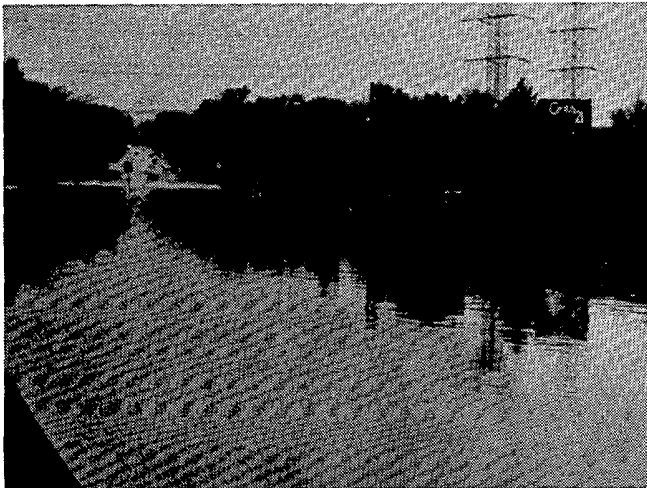
Des Plaines River flooding at Gurnee, Illinois, in its business district (above) and at one of its homes (below).
---Both photos by the Chicago Tribune.



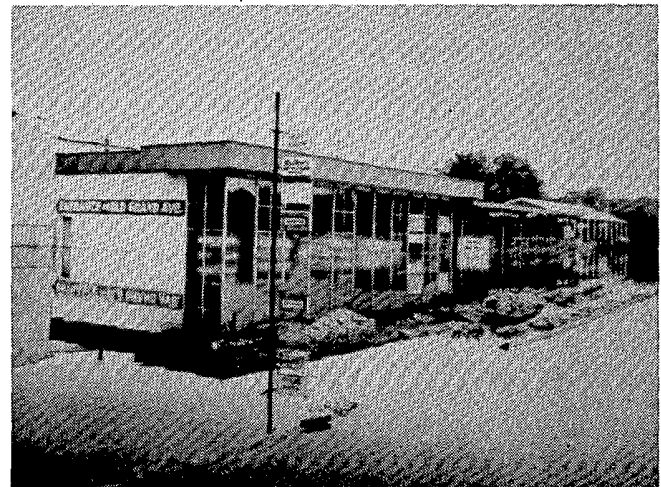
FLOODING in NORTHEAST ILLINOIS ---- continued



Floodwater that crept up to mailbox height at a Gurnee home (left) and up to the door handle of a car parked in front of a Gurnee business (right). ---Both photos by the Chicago Tribune.



Also in Gurnee, Grand Avenue (left) and O'Plaine Road (right) remained submerged on September 30th, while below, the water's current gathered debris around a stoplight (left) and a boat dealership was inundated. ---All four photos (DS).



FLOODING in NORTHEAST ILLINOIS ---- continued



An aerial view of part of Gurnee's swamped business district. ---Photo by the Chicago Tribune.

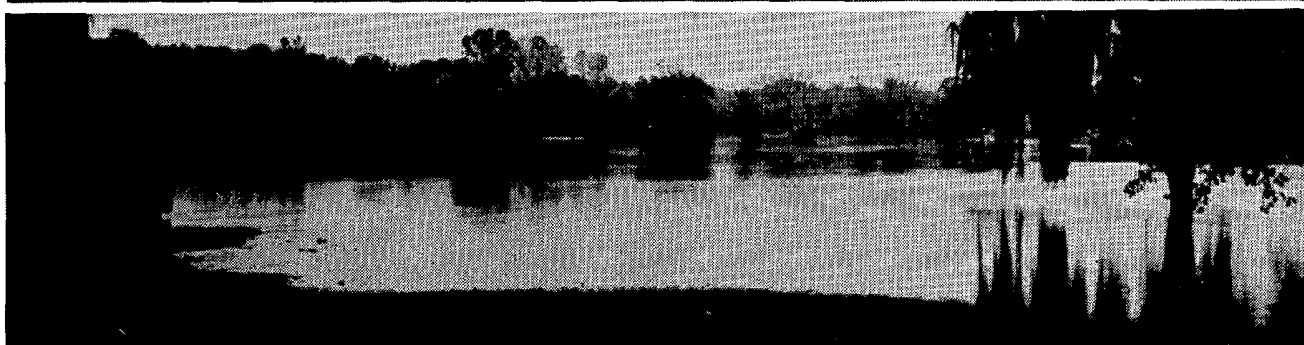
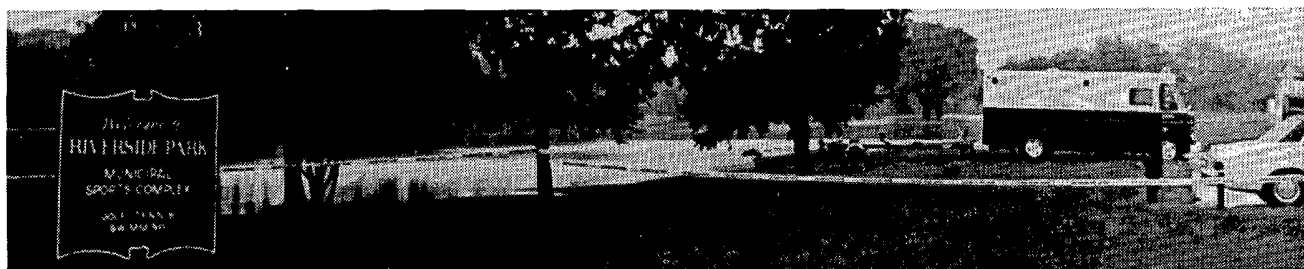
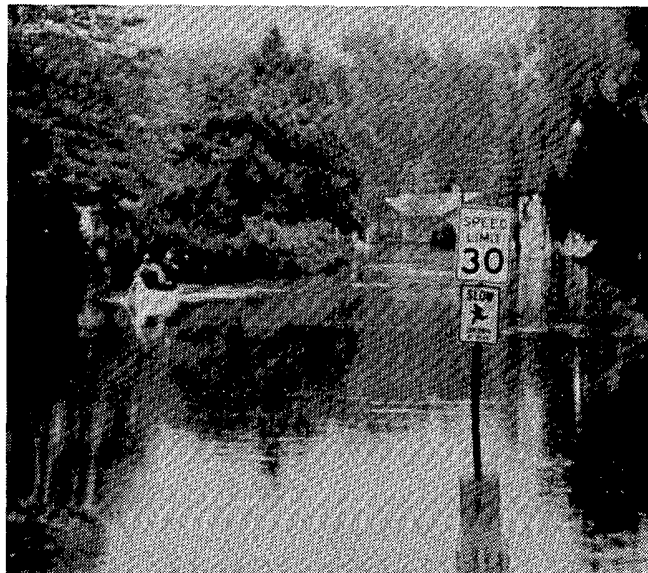
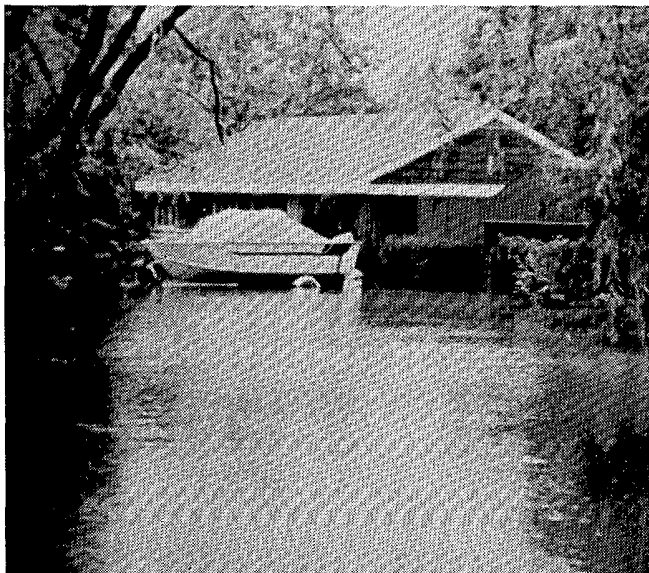


One of many streets of a residential area near Libertyville where almost every home sustained damage. --- (DS)

FLOODING in NORTHEAST ILLINOIS ---- continued



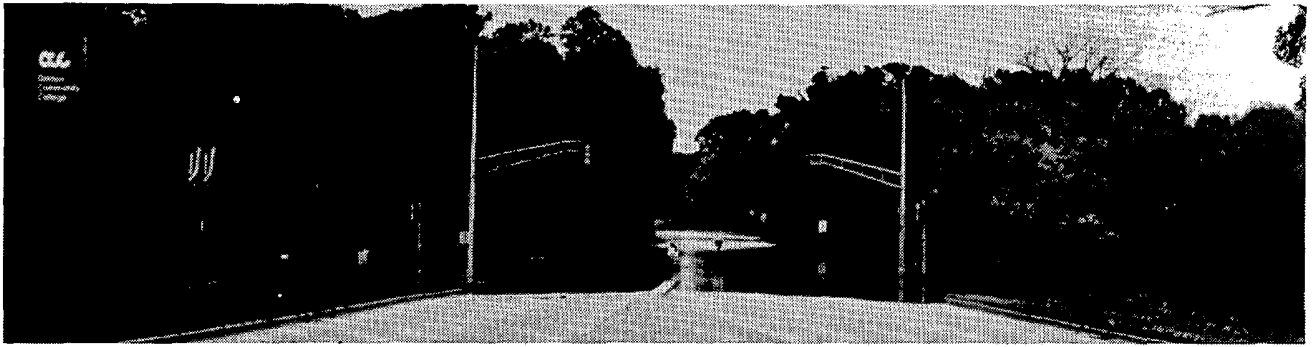
Also near Libertyville on September 30th, sandbagging (left) helped keep some homes water free (right) as long as the water levels remained low. In most cases, however, water levels rose too high for control, resulting in engulfed homes (below left) and making canoes or rowboats mandatory for travel in or out of the afflicted area (below right). ---All four photos (DS).



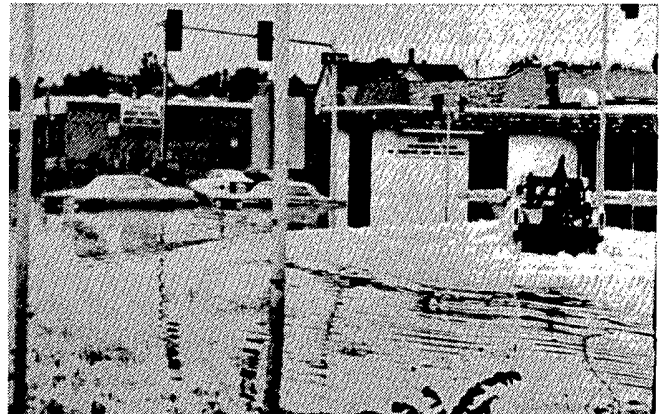
Libertyville's Riverside Park Golf Course, shown here on September 30th, became one huge water trap from which emergency services operations were conducted. ---(DS)

FLOODING in NORTHEAST ILLINOIS ---- continued

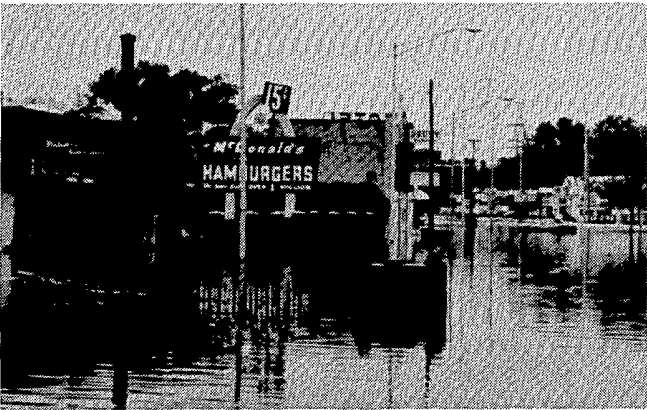
In conjunction with the peak flooding moving downstream from Lake County into Cook County, the photos on this and the following page were all taken in Des Plaines, Illinois on October 2nd. ---All photos on both pages (DS).



Water replaces the usual heavy traffic on Golf Road, one of several east-west thoroughfares that were closed, resulting in major transportation problems for the area.



The intersection of River Road, which literally lived up to its name, and Elk Boulevard.

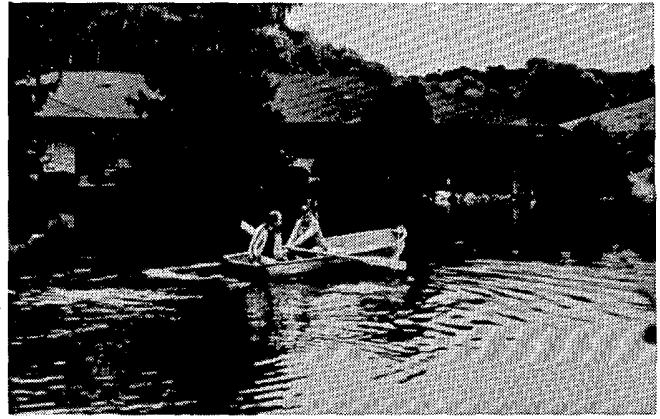


Near US Routes 45 and 12, the very first McDonald's restaurant, now a museum, was infiltrated by the floodwater (left), but a newer restaurant across the street escaped damage with the help of sandbags (right).

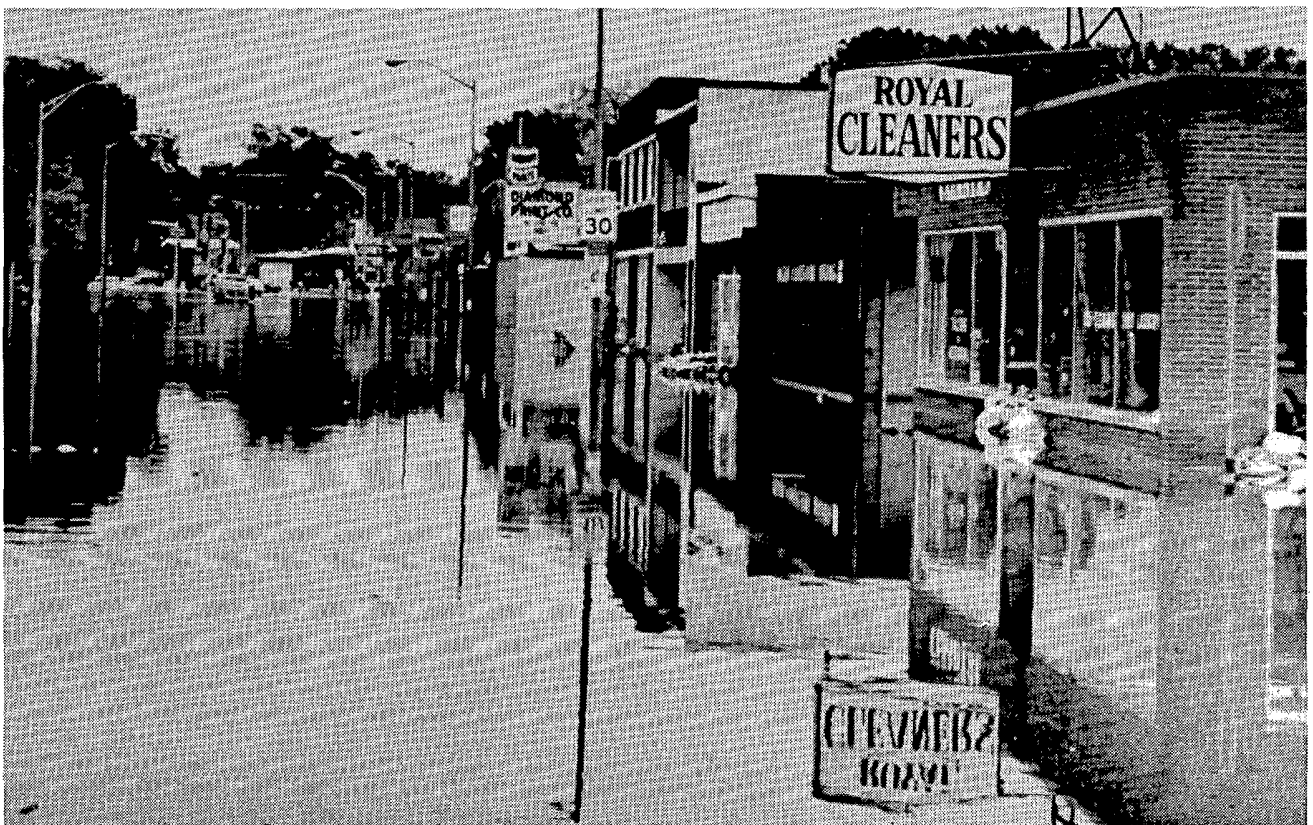


Residential areas within a block of the river in southern Des Plaines.

FLOODING in NORTHEAST ILLINOIS ---- continued



ABOVE and RIGHT: Des Plaines residents use a rowboat to ferry fuel for their sump pumps to their homes. In an attempt to avoid serious structural damage, many kept their pumps operating continuously for over a week while waiting for the water to recede. ---All three photos (DS).



Businesses on Oakton Street that held off the rising water by sandbagging doorways and low windows. Many Cook County residents and businesses were able to take precautions to minimize flood damage thanks to advance warnings and media coverage of the earlier, upstream flooding in Lake County. ---(DS).

FLOODING in NORTHEAST ILLINOIS ---- continued



Businesses on Oakton Street near River Road in Des Plaines. ---(DS)



Highway crews block off an exit ramp of the Tri-state Tollway (I-294) that leads onto submerged Dempster Street in Des Plaines (left), and the intersection of River Road and Grand Avenue in River Grove experiences a rare traffic void (right). ---Both photos by the Chicago Tribune.

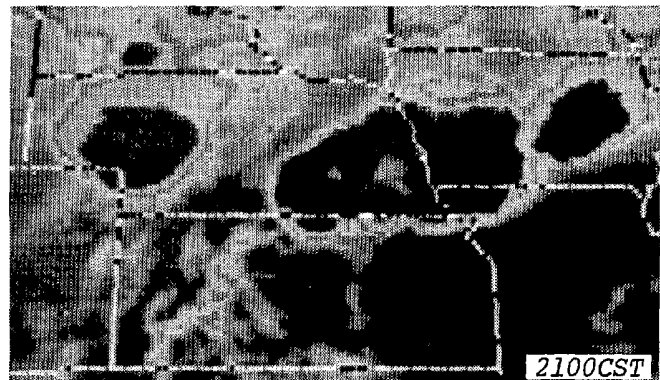
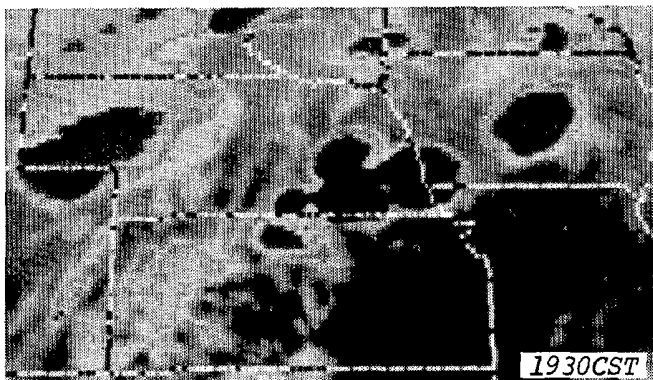
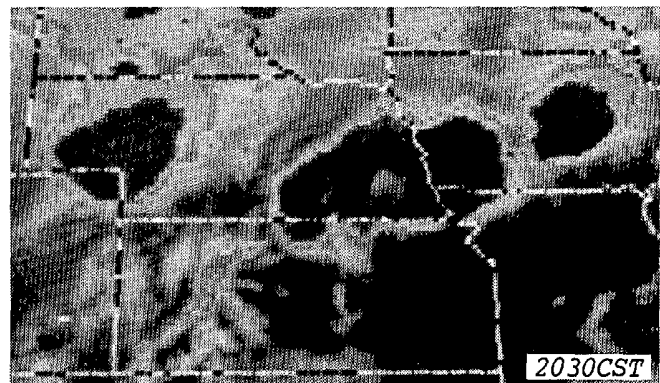
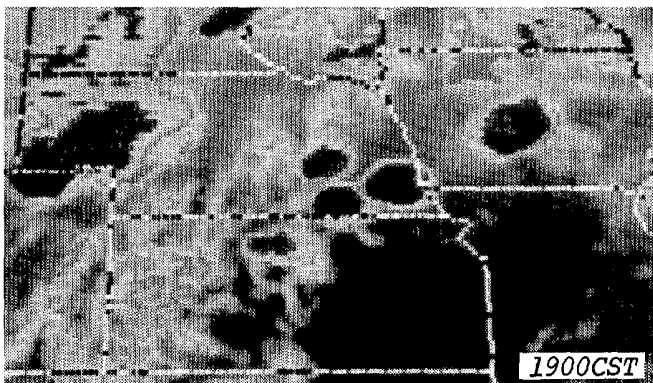
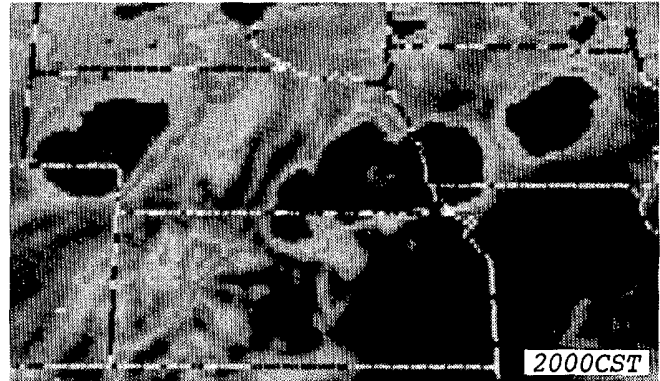
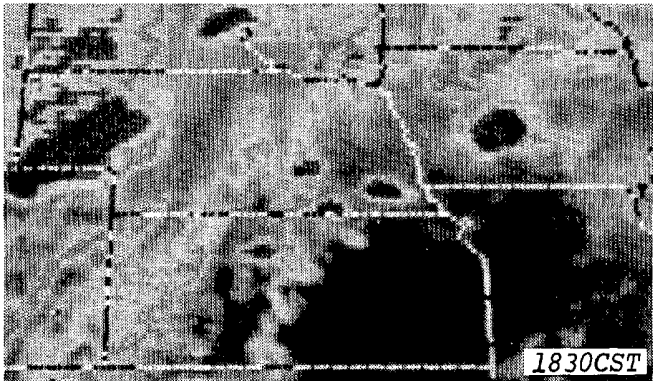
---On pages 16 through 22, all (DS) photos are by Duane Stiegler, the University of Chicago; all Chicago Tribune photos are copyrighted 1986, and used with permission and all rights reserved.

3. TORNADO at HARDY, NEBRASKA on September 18, 1986

At 1915CST on September 18th, a tornado touched down 7 miles west of Republic in North-Central Kansas and moved slightly east of north along the Jewell-Republic county line, doing F2 damage to many farms as it went. The tornado then entered Nebraska and moved through Hardy where it produced F3 intensity damage. In Hardy, seven people were injured, 10 homes and businesses were destroyed, and another 100 buildings sustained minor damage. The tornado traveled a total of 13 miles, 6 in Kansas and 7 in Nebraska. ---All photos other than satellite covering this event were supplied by the NWSFO at Topeka, Kansas.



The tornado as seen to the north from about 2 miles west of Republic, Kansas. ---Photo by Ed Simms of Belleville, Kansas.

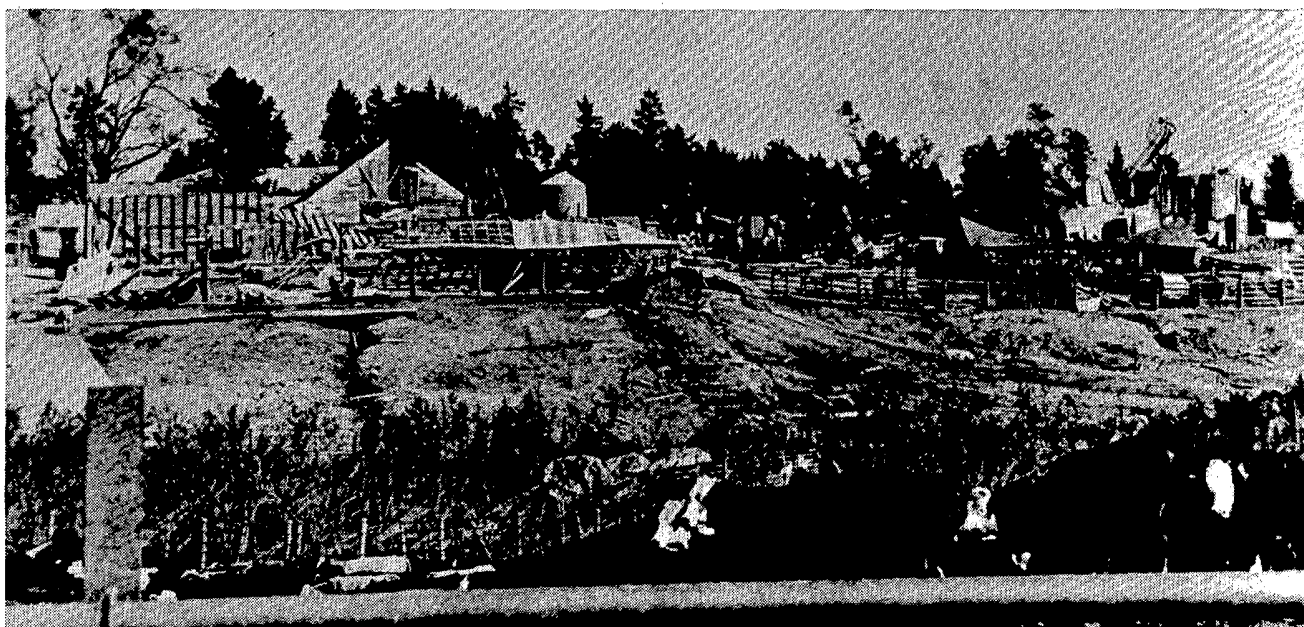


GOES 6 satellite, infrared images showing the thunderstorm complex that erupted over the Central Plains on the evening of September 18th. The storm midway along the Nebraska-Kansas border produced the Hardy Tornado. ---Photos from NESDIS.

TORNADO at HARDY, NEBRASKA ---- continued

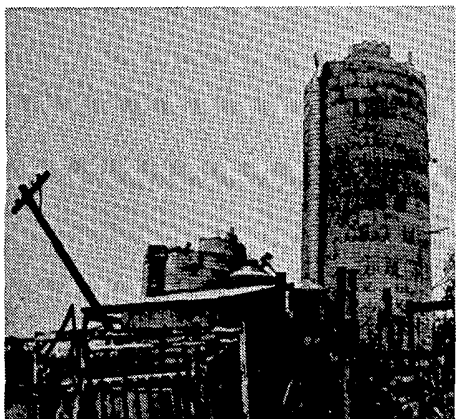


An aerial view of the Ralph Clark farm in northwest Republic County, Kansas shows that some cleanup had been done prior to the photo, although the major damage, destroyed silos and a machine shed on the left and another building that was on the right, is still apparent. ---Photo by The Superior Express.



The Ray Clark farm in northwest Republic County which had most of its buildings damaged or totally destroyed by the twister. Large silos (right) were toppled, six sows were killed by flying debris, an injured steer had to be disposed of, and 117 head of cattle scattered when fences were broken. ---Photo by The Superior Express.

TORNADO at HARDY, NEBRASKA ---- continued



Topped silos at the Ralph Clark farm. ---Photo by The Superior Express.



Wreckage at the Jack Clark farm in northwest Republic County. The farmer's house was blown nearly a quarter of a mile east of its foundation. ---Photo by Deb Sheridan, The Belleville Telescope.

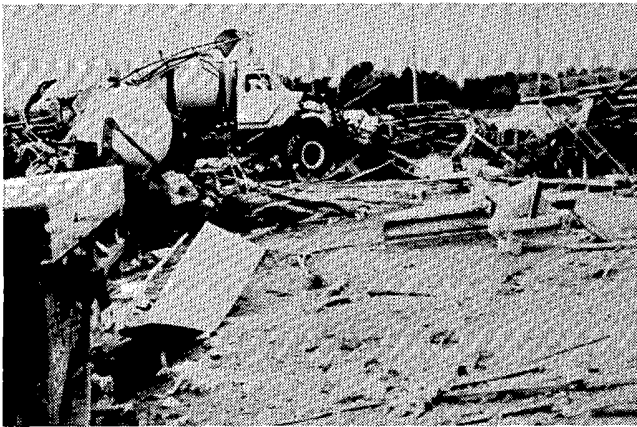


Remains of a mobile home in Hardy, Nebraska. ---Photo by the Superior Express.



Remains of another mobile home in Hardy. The male occupant was seriously injured. ---Photo by Deb Sheridan, The Belleville Telescope.

TORNADO at HARDY, NEBRASKA ---- continued



Debris scattered over trucks and equipment at the Hardy's Farmers Co-op.



The remains of a wood-frame house on the north edge of Hardy.

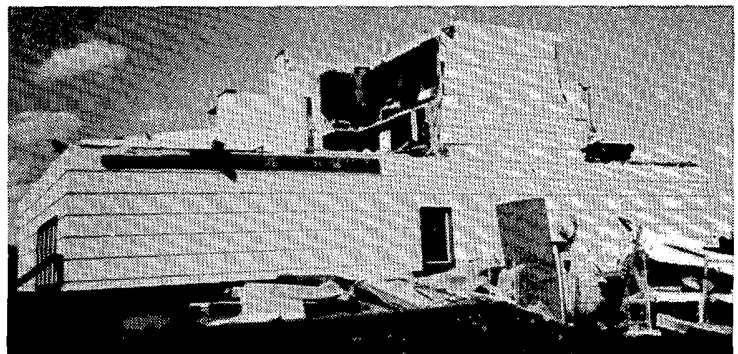
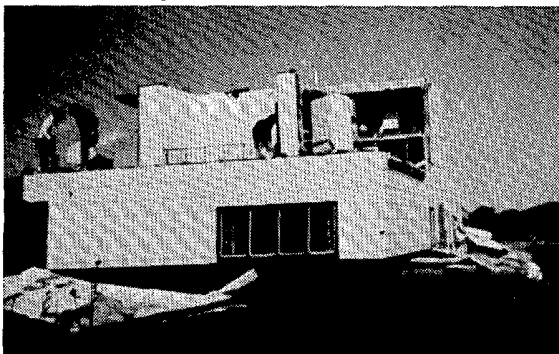
---Both above photos by Deb Sheridan, The Belleville Telescope.

4. DOWNBURST at BISMARCK, NORTH DAKOTA on September 24, 1986

At 2343CST on September 24th, localized downburst winds estimated at 125 to 150 mph destroyed two frame houses and totally demolished two mobile homes on the northeast outskirts of Bismarck, North Dakota. Several other homes and mobile homes were damaged, as were many trees, powerlines and outbuildings. The heaviest damage occurred along a 10-mile long, quarter-mile wide path from 7 miles southeast to 4 miles north of downtown Bismarck. An 84 mph gust was recorded at the airport southeast of the city.

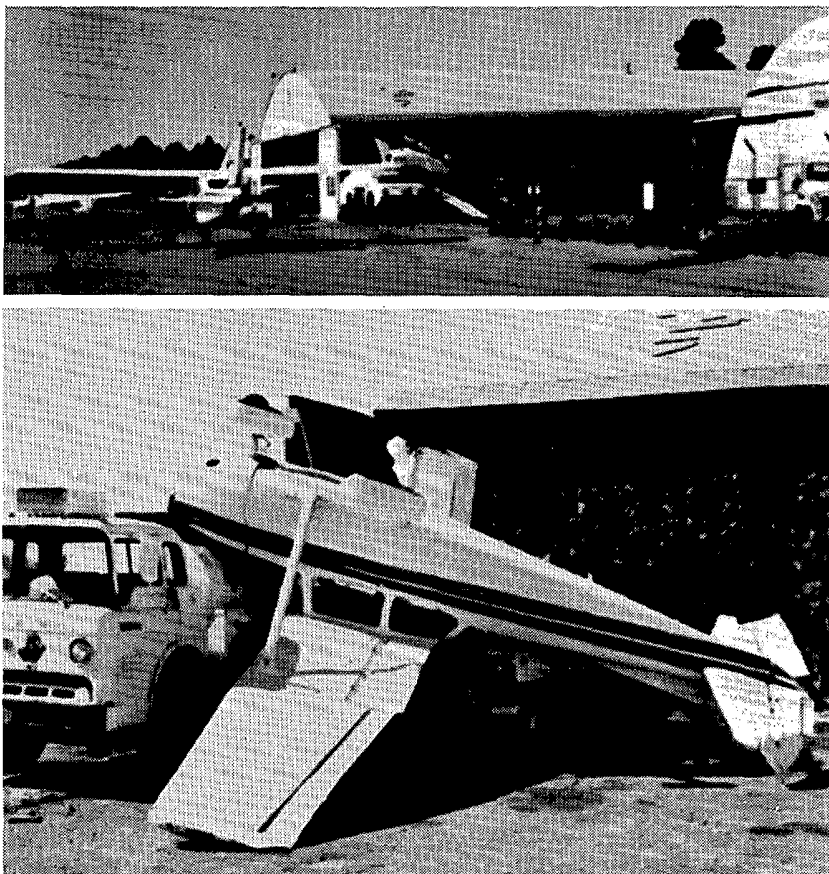


An aerial view of damaged and destroyed homes in northeast Bismarck. The house at the right appears in the two ground-level views below. ---All three photos by Richard May, NWSFO, Bismarck, ND.



5. DUST DEVIL at FLAGSTAFF, ARIZONA on September 4, 1986

At 1423MST on September 4th, an unusually strong dust devil moved across Flagstaff's Pulliam Airport, causing significant damage. A Cessna 182 was flipped over onto two fuel trucks, damaging the trucks slightly and destroying the plane. Roofing was torn off of a hangar and minor damage was done to cars. As the dust devil passed by the terminal building and National Weather Service Office, it blew doors open, sending papers and dust in all directions. A ceiling-mounted light fixture in the weather office crashed to the floor. The RAMOS wind equipment registered a 27 knot gust, and the microbarograph showed an instantaneous pressure decrease from 23.380" to 23.330", followed by a rise back to 23.360".

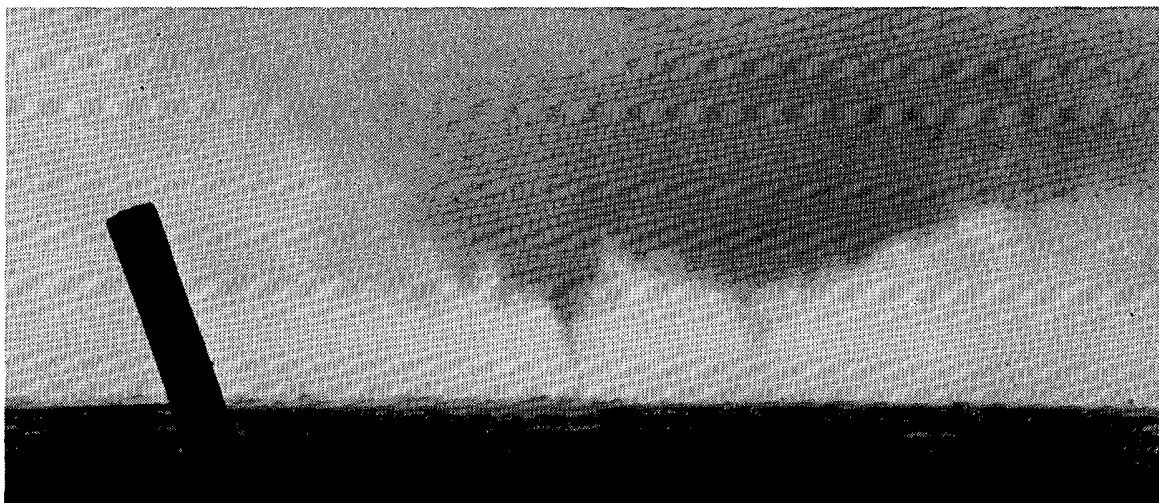


The flipped Cessna 182 at Flagstaff's Pulliam Airport.

---Observations and photos by Byron C. Peterson, NWSO at Flagstaff, AZ; materials supplied by Stephen A. Sipple, NWSFO at Phoenix, AZ.

6. TORNADO near VINA, CALIFORNIA on September 24, 1986

An F2 tornado, unusually strong for one in California, touched down just southeast of Vina at 1215PST on September 26th, and traveled 2 miles through an agricultural area. A mobile home was destroyed, injuring a 22-year-old male occupant. Eleven other buildings were damaged or demolished, and 50 acres of walnut orchards were flattened. The tornado moved from southwest to northeast.



Seen to the west from US 99, the Vina Tornado showed the development of a second funnel as the tornado in contact with the ground was dissipating.
---Photo by Lonnie Osberg, supplied by the NWSFO at San Francisco, CA.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
1 ALABAMA									
Cherokee, Colbert County	11	2050CST			0	0	3	0	Thunderstorm/Wind
									Thunderstorm winds downed some powerlines.
Decatur, Morgan County	21	1345CST			0	0	5	0	Thunderstorm/Wind
	21	1345CST			0	0	?	?	Hail (1.75)
									Downburst thunderstorm winds downed several trees and some powerline poles and damaged the roofs of five buildings. The damage was in an area about 1 1/2 miles long. Some windshields were reported to have been shattered by hail to golf ball size that accompanied the storm.
Irondale, Jefferson County	21	1400CST			0	0	5	0	Thunderstorm/Wind
									Downburst thunderstorm winds ripped the roof from a large furniture store. Part of the roofing struck a parked car.
Geneva area, Geneva County	22	1530CST			0	0	3	0	Thunderstorm/Wind
									Thunderstorm winds downed several trees and a powerline pole.
Decatur area, Morgan County	26	1310CST			0	0	?	?	Hail (1.75)
									Golfball size hail was reported.
Madison, Madison County	26	1312CST			0	0	?	?	Hail (1.00)
									Hail to the size of quarters was reported.
2 ARIZONA									
Maricopa County	03	1500 MST			0	0	4	0	Thunderstorm Wind
									The Lake Pleasant Firing Range received downburst winds estimated to be near 70 mph. All firing line canopies, made of steel, were destroyed.
Coconino County	04	1423 MST			0	0	4	0	Dust Devil
									Flagstaff Pulliam Airport had a rare dust devil that flipped a Cessna 182 onto two fuel trucks, tore roofing off a hangar, and did minor damage to parked cars. The dust devil lifted the aircraft and set it down on the trucks without any resulting fire. Only scattered clouds were reported, with the RAMOS winds peaking at 27 knots. The microbarograph showed an instantaneous pressure decrease from 23.380 to 23.330 and right back to 23.360.
Apache County	07	1430 MST			1	2	0	0	Lightning
									A boy was killed near Eager while walking his horse in a field. His stepfather and a friend nearby were injured. M140
LaPaz County	08	1800 MST			0	0	4	0	Flash Flooding
									Thunderstorms moved northeast between Blythe and Prescott leaving very heavy rains. Five mobile homes in Ehrenburg were washed away. Several roads either flooded or closed during the evening around Yavapai County.
3 ARKANSAS									
Columbia County	04	1455CST			0	0	-	-	Hail (1.75")
									The State Warning Point reported hail ranging in size from marble to golfball at McNeil.
Ouachita County	04	1540CST			0	0	?	-	Thunderstorm Wind
									The Sheriff's Office reported power lines down in Camden.
Washington County	11	0200CST			0	0	4	0	Thunderstorm Wind
									A home in Morrow had two-thirds of its roof blown away by the wind, doing about \$40,000 in damages. Ten trees were uprooted nearby.
Washington County	11	0253CST			0	0	?	-	Thunderstorm Wind
									Two trees were blown down, and one home sustained roof damage 3 miles east of Caneyhill, according to the State Police.
Lawrence County	18	1530CST			0	0	?	-	Lightning
									Lightning destroyed the Sheriff's Office radio in Walnut Ridge.
4 CALIFORNIA, Northern									
Shasta County	17	1245PST							Hail (.75)
									A short wave trough triggered numerous thunderstorms that moved eastward across Shasta County and into Lassen National Park.
Laytonville (5W), Mendocino County	21	1600PST							Hail (1.50)
									Ping pong ball size hail at the lookout on Cahto Peak, elevation 4000', was reported.
Vina, Tehama County	24	1215PST	2	100	0	1	6	C	Tornado (F2)
									Rapidly building thunderstorms moved southeastward down the Sacramento Valley. A VIP Level 5 cell spawned a tornado that then moved through the largely agricultural area near Vina, from the southwest to the northeast. At one time, two funnels were visible with the first one dying out and the second one becoming predominant. A mobile home was destroyed, injuring a 22 year old male slightly. Eleven other buildings were either demolished or severely damaged. Approximately 50 acres of walnut orchards were flattened. Funnels were also reported (apparently from the same cell) at Cottonwood (Shasta Co.) at 1045PST and Cohasset (Butte Co.) about 1330PST.
Butte County	25	1430 PST					?	?	Hail (.75)
									Hail and heavy rain fell in the Chico and Oroville area. Over an inch (1.02") was reported in Chico in a one hour period, and hail up to one foot deep was reported 2 miles east of Chico.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
4 CALIFORNIA, Southern									
Owens Valley, Inyo County, Bishop Airport	06	1554PST			0	0	?	0	TSTM Winds (56) Strong thunderstorm winds overturned an aircraft.
CAZ019 Riverside County, Blythe Airport	08	1815PST			0	0	?	0	TSTM Winds (75) The Blythe Fire Department reported that high winds ripped off the department doors. The airport reported aircraft overturned.
CAZ011-012-013-015-016-017-020	24	all day			0	0	?	0	Heavy Rain The Los Angeles International Airport area was without power, causing some delayed flights. 18,000 L.A. Department of Water and Power customers were without power. 44,000 Southern California Edison customers were also without power. Both the Dodgers and the Angels baseball games were rained out.
5 COLORADO									
Las Animas Cy.	1	aftn.			0	0	0	0	Hail Hail piled up a foot deep on Interstate 25 near the New Mexico border, closing the freeway for two hours.
Yuma Cy.	2	evening			0	0	?	0	Heavy rain A thunderstorm dumped 1 1/2 inches of rain in 30 minutes at Yuma; the water was deep enough for canoeing at one spot in town.
Fremont Cy.	4	aftn.			0	0	3	0	Heavy rain Heavy thunderstorm rains caused street flooding in Canon City, and washed out one road in Florence.
Alamosa and Rio Grande Counties	7	1400-1500MST			0	0	4	5	Hail A rare severe thunderstorm hit the San Luis Valley, dropping hail 3/4 to 1 inch in diameter in Monte Vista and between that town and Alamosa. Grain, lettuce, and barley crops north and west of Monte Vista suffered severe damage. Houses in the area sustained roof damage; windows and skylights were broken, as were a number of car windshields.
Montezuma Cy.	9	1400MST			0	0	3	0	Flooding One lane of a road southwest of Cortez was washed out by high water, caused by nearby heavy thunderstorms.
Weld Cy.	18	1700MST			0	0	0	0	Hail Quarter size hail fell 6 miles north of Keota.
Weld Cy.	18	1720-1800 MST	25	300	0	0	5	0	Tornado (F2) A large and long-lived tornado moved across open country in Weld County. The twister touched down 5 miles southwest of New Raymer, and moved almost due northeast, last damaging property about 20 miles north-east of that town. Five farms suffered damage; sheds and outbuildings were destroyed, and a tool shed was pushed into a field. A motor home was demolished, and other vehicles were overturned. Power poles were toppled, and a moving truck was blown off a road. The tornado missed New Raymer by only a mile. The storm was accompanied by heavy rain; 3 1/2 inches fell 10 miles north of the town.
Logan Cy.	18	1830MST			0	0	0	0	Hail Golfball size hail fell at Willard.
Logan Cy.	18	1920MST			0	0	0	0	Hail Golfball size hail fell 16 miles southeast of Sterling.
Statewide	24	all day			0	1	76	0	High winds A strong weather system roared through Colorado, bringing very strong winds to all areas of the state. The Boulder area was hardest hit. Winds peaked at 131 mph at 2200 MST at the National Center for Atmospheric Research, in the southwest part of the city. This is thought to be the highest gust ever recorded in Boulder during September. Davidson Mesa clocked 118 mph at 1700; the IBM plant about 5 miles northeast of Boulder recorded 92 mph at 2100. Gusts of 70 to 80 mph were noted at the Boulder airport and in the central part of the city. An estimated 70 to 90 large trees were uprooted in Boulder. About a dozen of them hit cars. Two walls of a building under construction were toppled; solar panels were blown off a house. Traffic lights and power lines were downed; damage to power equipment was estimated at \$100,000. Two planes were damaged at the Jefferson County airport southeast of Boulder; wind gusts there reached 87 mph. A woman was seriously injured in Boulder; she suffered a fractured skull when struck by a falling tree limb. Trees were also downed in Louisville, Lafayette, and Estes Park. High winds reached far to the east and
COLORADO									
Mountains	24-26				0	0	0	0	Snow Early season snow fell in most mountain areas during this period. Grand Mesa, near Grand Junction, received 6 to 12 inches on the 24th. 11 inches fell on the 26th at Platoro Reservoir in the San Juans. Many other spots had several inches of snow, and the snow extended into the valleys above 6 thousand feet elevation; Craig and Eagle had 1 to 3 inches on the 26th.
Larimer Cy.	25	0358MST			0	0	0	0	High wind A gust of 63 mph was clocked 3 miles SSE of Fort Collins.
6 CONNECTICUT									
Statewide	16	early morning			0	0	4	0	Thunderstorm Winds and Lightning A cold front moving across the state brought thunderstorms with winds that gusted to 30 to 55 mph and knocked down tree limbs and electric wires, causing disruption of power to up to 8,000 to 10,000 customers statewide. About 3,000 lost power in Fairfield County, about 1,000 in Willimantic, and 5,000 in the Southington and Cheshire area. Other outages were reported in Oxford, Beacon Falls, Torrington, and Waterbury. A few of the power losses were caused by lightning strikes, but most were the result of the high wind gusts.
7 DELAWARE ————— NONE REPORTED									
8 FLORIDA									
Lee Co.	02	1815EST	0.5	30	0	0	5	-	Waterspout/ Tornado (F0) A waterspout 10 miles southeast of Cape Coral destroyed two boats, severely damaged six boats, and damaged 11 other boats at a marina.
Pinellas Co.	03	1315EST			0	1	0	0	Lightning A 22 year old man was injured by lightning when he was getting into his car parked in a parking lot in Dunedin. It was not raining at the time.
Charlotte Co.	03	1430EST			0	1	-	-	Lightning A 30 year old man was injured by lightning when he was climbing onto a fire truck in a field.
Broward Co.	08	1320EST	1.0	30	0	0	0	0	Tornado(F0) A tornado was sighted on the ground by water management district personnel near Andytown.
Polk Co.	08	1600EST			0	1	0	0	Lightning A 16 year old female was injured by lightning when the lightning struck a tree under which she was standing.
Manatee Co.	09	1400EST			0	0	3	-	Thunderstorm wind (55) High wind from a thunderstorm blew a utility shed 150 feet and destroyed the shed.
Monroe Co.	17	1830EST			0	0	0	0	Thunderstorm wind (51) A wind of 51 knots was recorded at Cudjoe Key.
De Soto Co.	23	1700EST	1.0	30	0	0	3	-	Tornado(F0) A tornado reported by civil defense damaged one mobile home and downed trees and light poles three miles southeast of Arcadia.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INURED	PROPERTY	CROPS	
9 GEORGIA									
Bibb County	04	2000EST			0	0	4	0	Thunderstorm winds
									Thunderstorm winds downed several trees in Macon. A roof of a mall was damaged.
Houston County	04	2030EST			0	0	?	0	Thunderstorm winds
									Thunderstorm winds downed several trees in Warner Robins.
10 IDAHO									
IDZ003, Bingham Co.	08	1314MST			0	0	4	0	Thunderstorm wind
									Winds estimated at 40mph caused blowing dust from plowed fields 5 miles west of Shelley. The dust lowered visibilities, causing a traffic pileup at I-15.
IDZ001, Ada Co.	08	1500MST			0	0	0	0	Flash flood
									Brief, heavy rain accompanying a thunderstorm caused street flooding at several locations around Boise.
IDZ003, Bannock Co.	08	1630MST			0	0	3	0	Lightning
									Lightning struck and pulverized a tree in the front yard of a Pocatello home. Several windows were broken also.
IDZ004, Franklin Co.	09	1100MST			0	0	5	0	Lightning
									A lightning-caused fire destroyed a home in Weston.
Canyon Co.	26	1245MST	0.5	10	0	0	0	0	Tornado (F0)
									A tornado touched down at Huston; no damage was reported.
IDZ007	27	0830MST			0	0	0	0	Heavy snow
									Six inches of heavy snow fell overnight at Ketchum; many trees were bent over, and streets were covered with six inches of slush.
11 ILLINOIS									
Whiteside County: Sterling	11	0045CST			0	0	5	0	Lightning
Sterling-Rock Falls area	11	0030-0045CST			0	0	3	0	Tstm. Wind(52)
									A lightning-caused fire destroyed the Coast-to-Coast Building in downtown Sterling, resulting in a \$300,000 loss. High winds caused minor tree and house damage in the area.
Madison County, Edwardsville	11	0755CST			0	0	5	0	Tstm. Wind(61)
									Winds damaged the roof of a large retail/office building. Observers said the winds lasted about 10 seconds. Several houses and cars nearby also experienced damage, mainly in the Montclair subdivision.
Cook County, 1/3 E Evanston	16	1300CST			1	0	0	0	Wind
									A 29 year old woman, windsurfing in Lake Michigan during high wind and wave conditions, drowned just east of Evanston. Wind F290
St. Clair County, Freeburg	18	0147CST			0	0	4	0	Lightning
									A house fire caused 18 thousand dollars damage.
Peoria and Tazewell Counties: Peoria area	19	0430CST			0	0	3	0	Tstm. Wind(45)
									Lightning
Hopedale	19	0450CST			0	0	5	0	Tstm. Wind(52)
									A large thunderstorm caused widespread wind damage. Lightning resulted in a house fire in Peoria, and many streets and basements were briefly flooded by heavy rains. Some power outages were reported. Many large trees blocked roads in the Hopedale-Minier area.
Adams County, Quincy	19	1210CST			0	0	?	?	Hail(0.75)
Scott County, Winchester	19	1350CST			0	0	?	?	Hail(1.00)
Greene County, Roodhouse	19	1630CST			0	0	0	0	Tstm. Wind(45)
									Minor tree damage occurred.
Clay Co, Flora	19	1630CST			0	0	3	?	Hail(1.25)
Adams County, Quincy	19	1848CST			0	0	?	?	Hail(0.75)
ILLINOIS									
Kankakee County, Reddick	19	2115CST			0	0	4	3	Tstm. Wind(65)
									A large grain bin (100,000 bushel capacity) was destroyed.
Douglas County, Arthur area	19	2315CST			0	0	5	0	Tstm. Wind(57)
									Thunderstorm winds caused damage in excess of \$100,000 in the Arthur area. Windows were shattered and trees were downed, mainly in the north end of the business district.
Woodford, Tazewell, McLean, Logan, and DeWitt Counties	19-	2100-0500CST			0	0	5	5	Flash flood
									Three to 7 inches of rain swamped the area, resulting in widespread flooding. Flooding was especially severe in Bloomington(McLean Co) and Atlanta(Lincoln Co). Bloomington recorded 7.12 inches of rain from 2300CST Friday to 0300CST Saturday. Farm fields remained flooded up to 4 days, significantly reducing crop yields.
Adams County	20	0300-0600CST			0	0	4	4	Flash flood
									Three to 5 inches of rain caused considerable rural flooding. The Rocky Run diversion canal levee washed out around 0400CST, flooding 4 thousand acres of crop land with 1/2 to 2 feet of water.
Jo Daviess County	20	2100-2400CST			0	0	5	4	Flash flood
									Three to 4 1/2 inches of rain caused street and basement flooding, mainly in Galena. Flood damage was reported in several downtown business establishments. Widespread flooding of farm fields also occurred.
Du Page and Cook Counties	21	0730-0800CST			0	0	5	0	Lightning
									Intense lightning started 6 house fires in northwest and west suburban Chicago (Bloomington, Schaumburg, Palatine, Arlington Heights). In addition, lightning struck at least 43 other buildings and 15 utility poles in the area.
Carroll County: Mt. Carroll	22	1815CST			0	0	4	0	Tstm. Wind(55)
Savanna to Mt. Carroll	22	1800-2030CST			0	0	5	4	Flash flood
									2 1/2 to 4 1/2 inches of rain fell across western Carroll Co, causing considerable flooding from Savanna to Mt. Carroll. 4.5 inches of rain fell at Savanna and 3.1 inches at Mt. Carroll. High winds damaged several mobile homes in Mt. Carroll.
Warren County, Monmouth	23				0	0	4	4	Flash flood
									2.7 inches of rain in 35 minutes, after 6 inches of rain in the previous 3 weeks, resulted in considerable urban flooding. Two to 3 feet of water flooded some buildings at Monmouth College.
Adams County	24	Afternoon			0	0	4	6	Flash flood
									One to 2 inches of rain, falling on soil saturated from previous heavy rains, caused widespread flooding in rural areas. The Rocky Run diversion canal levee, just repaired from a washout on September 20, washed out once again, flooding 7000 acres of farm land with 1 to 4 feet of water(northwest Adams Co).
Woodford County, 1 N. Roanoke	24	1715CST	2.5	75	0	0	5	3	Tornado (F2)
									A tornado just north of Roanoke damaged three farm houses and several rural structures, and severed seven 65-foot power poles along a 2 1/2 mile path. The same storm continued northeast as a funnel cloud (see next entry).
Woodford, La Salle, and Livingston Counties	24	1715-1820CST			0	0	4	?	Tstm. Wind(60)
	24	1715-1810CST			0	0	0	0	Funnel Cloud
									The thunderstorm which produced the Roanoke tornado (see previous entry) continued northeast, causing intermittent damage to trees and power lines in northeast Woodford Co (1715-1805CST), extreme south La Salle Co(1755-1810CST), and western Livingston Co(1755-1820CST). The Roanoke tornado lifted and continued northeast as a funnel cloud that was widely observed along a 30-mile track from Roanoke(Woodford Co) to Streator(La Salle Co.).
Lake and McHenry Counties	26	0005-0400CST			0	0	4	0	Flash flood
									Two to 4 inches of rain from 2300CST, Sept. 25, to 0300CST, Sept. 26, caused widespread street flooding. Basements in 2000 homes were flooded.
Cook County, Sauk Village	26	1220CST			0	0	3	0	Tstm. Wind(55)
									Trees and power lines were downed.
Lake and McHenry Counties	26	1430-1630CST			0	0	6	3	Flash flood
									Three to 4 inches of rain fell in 2 hours across the same area which experienced flash flooding 12 hours earlier. Severe urban flooding occurred, especially in Mundelein, Round Lake Beach and Libertyville. Water rose so rapidly in a lagoon adjacent to the Milwaukee Roadhouse Restaurant in Libertyville that it pushed in a plate glass window and flooded the restaurant to a depth of 8 feet. Employees and diners fled just ahead of the rising waters. One patron described the incident as "...just like the Poseidon Adventure". Flash flooding in Round Lake Beach put a 3-block area of town under water, 6 feet deep in some places, and forced the evacuation of 70 residents.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
ILLINOIS									
Cook County, Metropolitan Chicago	26	1600-1630CST			0	0	0	0	Urban flooding
		1600-1630CST			0	0	5	0	Lightning
		One to 2 inches of rain in a half hour swamped most express ways in metropolitan Chicago, briefly covering low places with 1 to 3 feet of water. The evening rush hour was a disaster. Hundreds of buildings, utility poles and trees were struck by lightning. Two thousand homes and businesses were without power in Oak Park.							
Fulton County, Cuba	27	1710CST			0	0	5	0	Rain
		The roof of the State Bank of Cuba collapsed during an intense rain, dropping through two floors into the basement.							
Tazewell County, Pekin	28	0730CST			0	0	4	0	Lightning
		Lightning struck a major electric transformer, knocking out electric service to 6120 customers for 20 hours.							
Grundy County, Gardner	28	0938CST			0	0	3	0	Lightning
		Lightning struck a car on Route 53, causing \$3000 damage.							
Winnebago County, 5 W Rockford	28	1715CST	short narrow		0	0	?	?	Tornado(F0)
		A brief tornado touchdown damaged several trees in a rural area west of Rockford.							
Lake County	28	2000-2200CST			0	0	6	0	Flash flood
		One to 3 inches of rain fell in a 2-hour period, causing renewed flooding in areas which had experienced 2 separate flash flood situations only 2 days earlier. Northern Lake Co. was primarily affected, especially the area from Antioch to Zion. 50mph winds also occurred at many locations in extreme northern Lake Co.							
La Salle County, Norway 1 S	29	1255CST	1	?	0	0	5	4	Tornado(F1)
		A tornado cut a 1-mile path just south of Norway, producing damage estimated at about \$220,000. A 260 foot transmission tower also blew down.							
Du Page County, Naperville	29	1305CST			0	0	3	0	Tstm. Wind(57)
Cook County, North Riverside	29	1330CST	0.1	50	0	10	5	0	Tornado(F1)
		A severe thunderstorm produced damaging winds in the Naperville area of southern Du Page County and small (pea size) hail around Hinsdale. It continued northeast and produced a small, brief tornado at 2200 S. Harlem Avenue in North Riverside. The tornado, witnessed by many shoppers, tore a 20x45 foot hole in the roof of a K-Mart store, injuring 7 people inside the building. Three workers at an adjacent construction project were also injured.							
Tazewell County, Hopedale	29	1458CST	2	50	0	0	5	?	Tornado (F2)
Tazewell, McLean, and Livingston Counties	29	1458-1705CST	55	6*	0	0	6	5	Tstm. Wind (61)
McLean and Livingston Counties	29	1634-1655CST	10	50	0	0	6	5	Tornado (F2)
		A strong thunderstorm produced a continuous, 55 mile-long path of damage extending from about Hopedale in southeast Tazewell County northeast across McLean County to Fairbury in southwest Livingston County. The path contained two tornadoes, one at the beginning of the path and one near the end, but consisted mainly of straight-line wind damage from probable downbursts and was several miles wide in some places. The damage path started with a tornado that entered Hopedale at the fire station, which sustained \$25,000 damage, and exited at the south end of Jefferson Street. Thirty houses were damaged, one garage was destroyed, and 100 trees were toppled or uprooted in Hopedale, and damage totaled \$250,000. Extensive straight-line wind damage continued northeast from Hopedale across McLean County, with hundreds of structures in rural areas sustaining damage from winds estimated at 70 mph. The second tornado touched down northeast of Lexington and began a 10-mile path from south of Weston to the north side of Fairbury. This path began south of U.S. Highway 24 in northeast McLean County and extended northeastward. It crossed U.S. 24 about 2 miles west of Fairbury and continued through the north side of Fairbury, and lifted one mile northeast of town. A large microwave tower was destroyed near Lexington. Two million dollar damage occurred in rural McLean County to farm buildings, grain bins, wagons, equipment and houses, and an additional \$1,000,000 in damage was done to field crops. Livingston County sustained one-half million dollars in property damage and one-quarter million dollars in crop damage. Total wind and tornado damage in the three affected counties was \$4,250,000.							
Madison County	29	1530CST			0	0	0	5	Tstm. Wind(58)
		Winds flattened hundreds of acres of field crops around Edwardsville and New Douglas.							
Montgomery and Bond Counties	29	1545-1630CST			0	0	5	4	Tstm. Wind(57)
		High thunderstorm winds raked southern Montgomery and northern Bond Counties. Minor structural damage occurred in Coffeen and Donnellson (Montgomery Co.) between 1545CST and 1610CST, and in Sorento (Bond Co) around 1625CST. Crop damage also was reported in a 10-mile wide band along the Bond-Montgomery county line.							
ILLINOIS									
Champaign County, Tolone	29	1730CST			0	0	4	?	Tstm. Wind(?) Trees and several utility wires were toppled by high winds.
Coles County	29	1815CST			0	0	4	?	Tstm. Wind(55) Many large trees were blown down, bringing down electric utility wires at scattered county locations. Mattoon and Charleston were hardest hit.
Lake County, 5 S Libertyville	29	2000CST			1	0	0	0	Flooding A 20 year old man drowned in the flood-swollen Des Plaines River after his aluminum boat capsized when it became entangled in trees. M200
ILZ002	Sep. 26- Oct. 6				1	0	7	6	Flood extreme northeast Illinois Four to 10 inches of rain fell across the southeast Wisconsin-northeast Illinois watershed of the Des Plaines River from early August to September 10. Then, in the 18-day period from Sept. 10 through Sept. 27, an additional 9 to 16 inches occurred across the same area. Counties primarily affected by the rains were Walworth, Racine, and Kenosha in Wisconsin and Boone, McHenry and Lake in Illinois. Additionally, 1 to 3 inches of rain fell across central and south Cook County from the 28th through the 30th. The excessive precipitation resulted in three distinct flash flood situations (on Sept. 25, Sept. 26, Sept. 28) as well as the Des Plaines River flood. Significant flooding on the river began on Sept. 26 in northern Lake County and ended on Oct. 6, in Cook County. Flood crests equalled or exceeded previous records at most gauge stations. The Des Plaines River flooded the relatively flat plains along the river channel--plains which are densely urbanized. The river damaged 2200 houses and 150 business establishments in Lake and Cook counties, with damage estimated at \$42,000,000. At the height of the flooding, 3,300 people were displaced from their homes. Automobile traffic was snarled in Lake County because so many major east-west roads were closed where they crossed the Des Plaines River which traverses the suburban area from north to south. One drowning occurred in association with the flood(see previous entry).
Statewide	Monthlong				0	0	0	7	Excessive Rain Heavy rainfall flooded fields repeatedly across much of the state, resulting in reduced crop yield--perhaps as much as 10 percent in northern and western Illinois.
12 INDIANA									
Monroe Co: Bloomington	26	1425 EST			0	0	3	0	Tstm. wind
	26	1428 EST			0	0	0	0	Hail (.75)
		Strong thunderstorm winds broke windows in Bloomington.							
St. Joseph Co: Roseland	26	1437 EST			0	0	0	0	Hail (0.75)
Mishawaka	26	1500 EST			0	0	0	0	Hail (0.75)
Elkhart Co, Elkhart	26	1510 EST	2	200	0	1	5	0	Tstm. wind
		Strong winds struck the northeast portion of the city of Elkhart, causing major damage to two homes, causing minor damage to 11 homes, and overturning five semi-trailers, one school bus, and one van. A tree fell on another school bus. Power lines and telephone lines were damaged extensively in the city, and scattered outages occurred throughout the county. Winds of 70 knots (81 mph) were observed at the Elkhart Airport tower before it was abandoned. City streets and intersections were flooded.							
Cass Co, Logansport	26	1515 EST			0	0	3	0	Tstm. wind
		Strong winds downed several trees in Logansport. Some of the trees fell on cars.							
Wells Co, Ossian	26	1540 EST			0	0	0	0	Tstm. wind (52)
		The Ossian Sheriff's Department reported 60 mph winds.							
Whitley Co, Columbia City	26	1630 EST			0	0	3	0	Tstm. wind
		The Whitley County Sheriff's Department reported trees and power lines down in and around Columbia City.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
INDIANA									
Morgan Co, Mooresville	26	1658 EST			0	0	2	0	Tsta. wind
									Strong winds downed trees in Mooresville.
St. Joseph Co, South Bend	29	1718 EST			0	0	?	?	Tsta. Wind (52)
									Three trees, ranging in diameter from 18 to 24 inches, were downed in South Bend. Reports of limbs down and power outages were scattered across the county.
13 IOWA									
Hardin County, Eldora	05	1705 CST			0	0	0	0	Funnel Clouds
									Several funnels were sighted in the vicinity of Eldora.
Linn County, Cedar Rapids	09	1100 CST			0	0	4	0	Lightning
									Lightning struck a couple of buildings at the community college and damaged the air traffic control system at the airport.
Dubuque County, Dubuque	10	1731 CST			0	0	3	0	Wind (58 mph)
Dubuque County, Dubuque	10	1731 CST			0	0	0	3	Hail (0.75)
									A strong thunderstorm moved through Dubuque County, dropping hail and bringing strong winds to the Dubuque Airport.
Statewide	18-30				0	0	4	5	Floods
									Numerous heavy rains commencing on the 18th brought many rivers to flood. Most of the areas affected were low roads, parks and bottom lands, but some small towns were affected by unusually high autumn levels on the Mississippi River.
Cass County, Cumberland	18	1810 CST			0	0	0	4	Hail (1.75)
									Golf ball size hail damaged crops near Cumberland.
Page County, Hawleyville	19	0100 CST			0	2	4	0	Flash Flood
Pottawattamie, Mills Montgomery, Fremont and Page Counties	19	0100 - 0500 CST			0	0	4	0	Lightning
									A downpour of up to 7 inches caused a culvert to wash away on a gravel road, which in turn caused two motor vehicle accidents, with a couple of minor injuries the result. Very intense cloud to ground lightning blew power line fuses and damaged substations and transformers, causing thousands to lose power in Council Bluffs, Red Oak, Glenwood, Shenandoah and Farragut.
Lee County, Donnellson	19	0130 CST			0	0	4	0	Lightning
									Lightning started a house fire that caused at least \$20,000 damage.
Southern Union and Ringold County	19	???			0	0	4	4	Flash Flood
									Heavy rains of 3 to 7 inches in a short period produced flash flooding that damaged or destroyed several small bridges and caused the foundation of a house to collapse.
Woodbury County, Sioux City	20	0607 CST			0	0	3	0	Hail (1.75)
Woodbury County, Woodbury County, Woodbury County, Sioux City	20	0625 CST			0	0	4	0	Hail (1.75)
	20	0640 CST			0	0	4	0	Hail (1.75) and Heavy Rain
									Golf ball size hail was reported in downtown Sioux City and in the Horningside section. Broken windows in cars and houses resulted. The heavy downpours also flooded city streets.
Ida County, Ida Grove and Battle Creek	20	0730 CST			0	0	4	0	Winds (70+ MPH)
									Very strong thunderstorm winds destroyed two buildings at the fairgrounds and damaged other buildings at Ida Grove and Battle Creek.
Poweshiek County, Grinnell	20	0948 CST			0	0	3	0	Hail (1.75)
									Large hail accompanied heavy downpours in a thunderstorm at Grinnell.
Howard County, Cresco	20	Evening-21 Morning			0	0	4	0	Heavy Rains & Urban Street Flooding
									Rains of 3 to 5 inches caused street flooding at Cresco, where the storm sewer project is as yet uncompleted.
Pottawattamie County, Council Bluffs	22	1200 CST			0	0	4	0	Heavy Rains & Urban Street Flooding
									Heavy rains in a short period were more than the sewers could handle, causing flooding on the streets of Council Bluffs.
Mills County, Hastings	22	1350 CST			0	0	3	1	Wind (58+ MPH)
Montgomery County, Villisca	22	1350 CST			0	0	4	4	Hail (1.75)
									Wind gusts blew down trees and broke branches around Hastings; hail of golfball size damaged crops, vehicles and the roofs of houses around Villisca.
Taylor County, Bedford	22	1430 CST			0	0	3	4	Hail (0.75)
Clarke County, Osceola	22	1449 CST			0	0	3	4	Hail (0.75)
Clarke County, Osceola and Woodbine (IA213)	22	1500 CST			0	0	4	4	Flash Flood
Taylor County, Gravity	22	1530 CST			0	0	4	0	Winds (60+ MPH)
Decatur County, Leon	22	1540 CST			0	0	3	3	Winds (58+ MPH)
Lucas County, Chariton	22	1555 CST			0	0	4	3	Winds (58+ MPH)
									Strong thunderstorms moving through South-Central Iowa brought hail and strong winds to the area. Heavy downpours in the vicinity of Osceola resulted in some flash flooding. Strong winds tore limbs from trees and demolished an outbuilding just north of Leon.
IOWA									
Linn County, Mt. Vernon	22	1700 CST			0	0	4	0	Lightning
									A lightning bolt knocked quite a few of the bricks off the tall chimney stack at Cornell College, and damaged a couple of other buildings.
Davis County, Bloomfield	22	1700 CST			0	0	0	0	Funnel Cloud
									A funnel cloud was sighted in the vicinity of Bloomfield.
Johnson County, Oxford	22	1725 CST	?	?	0	1	4	3	Tornado (F1)
Johnson County, Coralville	22	1730 CST			0	0	4	0	Winds (80 MPH)
									An apparent tornado damaged 3 trailers and caused a minor injury at a trailer park at Oxford. At Coralville, strong winds of the same storm cell ripped the roof off an apartment building, and the debris damaged at least 20 cars.
Jackson County, Sabula	22	2300 CST			0	0	4	0	Lightning
									Lightning started a fire at a residence that all but gutted the place.
Pottawattamie County, Oakland	24	1729 CST			0	0	0	0	Funnel Cloud
									A pilot sighted a funnel cloud near Oakland.
Linn County, Cedar Rapids	24	1900 CST			0	0	4	0	Lightning
Linn County, Cedar Rapids	24	Evening			0	0	4	0	Heavy Rains & Urban Street Flooding
									Lightning started a house fire in Cedar Rapids. The thunderstorms that brought the lightning also caused a deluge intense enough to cause one couple's foundation of their house to collapse.
Linn County, Mt. Vernon	26	0300 CST			0	0	4	3	Winds (60+ MPH)
Johnson County, Swisher	26	0300 CST			0	0	3	3	Winds (58+ MPH)
Delaware County, Earlville	26	0400 CST			0	0	3	0	Winds (58+ MPH)
									Considerable tree and power line damage was caused by high winds in thunderstorms at Mt. Vernon and at Swisher. At the junction of Highways 1 & 30, a care center lost part of a roof, and at least 6 cars had windows blown out by the force of the wind. Strong winds also caused tree and limb damage at Earlville.
Wright County, 2N Goldfield	26	1730 CST			0	0	3	5	Hail (1.50)
Pocahontas County, 2 SW Palmer	26	1742 CST			0	0	0	4	Hail (1.75)
Pocahontas County, Pocahontas	26	1745 CST			0	0	4	0	Lightning
Hancock County, Goodell	26	1800 CST			0	0	3	4	Hail (1.0)
Humboldt County, 1E Gilmore City	26	1801 CST			0	0	3	3	Hail (1.50)
Humboldt County, Ottosen	26	1805 CST			0	0	3	4	Hail (1.75)
Wright County, Kanawha	26	1845 CST			0	0	3	4	Hail (1.75)
Webster County, 1S Moorland	26	1900 CST			0	0	4	0	Wind (58+ MPH)
Hamilton County, Jewell	26	1907 CST			0	0	0	3	Hail (0.75)
									Large hail fell in strong thunderstorms that moved from Northwest into Central Iowa, with significant crop damage in some localities. Strong winds also damaged outbuildings near Moorland, and a fire was started at a home in Pocahontas when lightning struck.
Webster County, 3 NW Fort Dodge	26	1940 CST			0	0	0	0	Funnel Cloud
Wright County, 5 NE Eagle Grove	26	2015 CST			0	0	0	0	Funnel Cloud
									Funnels were sighted in both Webster and Wright Counties.
Appanoose County, Moulton	28	1415 CST			0	0	4	0	Wind (60+ MPH)
Appanoose County, Moulton	28	1415 CST			0	0	3	4	Hail (1.5)
									A thunderstorm moving out of Missouri accompanied by wind and hail caused damage to small farm buildings and crops around Moulton.
Polk & Jasper Counties, 4 SW Farrar to 6E & 2S of Baxter	28	1634-1709 CST	20	250	0	0	6	5	Tornado (F4)
									A tornado touched down in northeast Polk County and grew ferocious as it plowed into Jasper County. Of more than 40 houses that were damaged, at least 7 were levelled, and about 5 more badly damaged. The devastation might have been much greater, but the storm missed hitting any towns. Total damage was about \$2 million.
O'Brien County, Pringhar	28	1700 CST			0	0	4	0	Wind (58+ MPH)
Clay County, 1SE Everly	28	1805 CST	.1	15	0	0	4	3	Tornado (F1)
									A farm building by Pringhar was demolished in strong thunderstorm winds. A tornado near Everly damaged buildings at several farms, including a garage and storage building, a cement brick silo, and a number of grain bins.
Monona County, Mapleton	28	1815 CST			0	0	3	0	Winds (58+ MPH)
									Trees and limbs were downed and the football scoreboard and baseball dugout were destroyed at the high school playing field in Mapleton.
Tama County, 2S Vining	28	1820 CST			0	0	0	4	Hail (1.75)
									Large hail fell in Tama County out of the same storm that produced the tornado near Baxter.
Webster County, 3SW Fort Dodge	28	1835 CST	.1	15	0	0	0	0	Tornado (F0)
									An observer saw a tornado briefly touch down near Fort Dodge.
Shelby County, Harlan	28	1905 CST			0	0	0	0	Wind (58+ MPH)
Cass County, Marne	28	1945 CST			0	0	3	3	Winds (58+ MPH)
									A thunderstorm moving through Marne brought winds strong enough to knock down 6 trees, one of which fell on a pickup. A large barn was damaged as well as the farmstead.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS		
IOWA										
Floyd County, Colwell	28	2045 CST	.2	25	0	2	5	4		Tornado (F2) A tornado struck a farmhouse, slightly injuring a couple of people, removing the roof, tipping the house over into the basement, and destroying a number of outbuildings.
14 KANSAS										
Jewell Co, Lovewell Dam	05	2020CST			0	0	0	0		Funnel
Jewell Co, Lovewell Dam	05	2040CST			0	0	0	0		Funnel
Several funnels were sighted near Lovewell Dam. None touched down.										
Jewell Co, 15NE Mankato	05	2145CST			0	0	3	4		Hail(.75) A severe thunderstorm dumped 3/4 inch hail and damaged crops at three farms northeast of Mankato.
Ford Co, Kingsdown	10	1536CST			0	0	3	3		TSTM Wind(52kt), Hail(1.75)
Bucklin	10	1542CST			0	0	4	4		TSTM Wind(52kt), Hail(1.75)
Kiowa Co, 3W Mullinville	10	1622CST			0	0	2	3		TSTM Wind(52kt), Hail(1.75)
Pratt Co, 10W Pratt	10	1747CST			0	0	2	4		TSTM Wind(52kt), Hail(1.00) A thunderstorm formed near Meade and spread a narrow path of large hail and produced 60 mph winds as it moved toward Pratt. Hail damaged crops in several spots and the roof of a home in Bucklin was damaged by the wind.
Ottawa Co, 1E Tescott Near Minneapolis	10	1625CST			0	0	3	4		Hail(1.75)
	10	1638CST			0	0	3	4		Hail(1.75)
Golfball size hail fell just east of Tescott and again from the same storm near Minneapolis.										
Reno Co, 1S Yoder	10	1800CST			0	0	3	0		TSTM Wind An isolated severe thunderstorm produced wind that ripped part of the roof from a building on the Hutchinson Community College Campus. Debris broke windows in 7 cars.
Saline Co, 2E Salina Dickinson Co, 5NE Solomon	10	1823CST	1	25	0	0	2	0		Tornado(F0)
	10	1845CST			0	0	3	4		TSTM Wind(65kt), Hail(1.75)
5NE Solomon Geary Co, 3SE Millford Riley Co, Fort Riley	10	1847CST			0	0	3	4		Hail(2.50)
	10	1915CST			0	0	3	0		Hail(1.75)
	10	1925CST			0	0	0	0		Hail(1.75)
A severe thunderstorm formed near Salina and moved toward Manhattan. The storm spawned a small tornado that dropped to the ground for a short time east of Salina. Large hail fell upon several spots between Solomon and Manhattan.										
Hamilton Co, 5S Syracuse	10	1831CST			0	0	4	4		TSTM Wind(52kt), Hail(1.75)
Kearny Co, 5N Lakin	10	1900CST			0	0	3	4		TSTM Wind(70kt), Hail(1.00)
Finney Co, 1N Holcomb 10N Garden City	10	1915CST			0	0	4	0		TSTM Wind
	10	1920CST			0	0	2	4		TSTM Wind(65kt), Hail(1.00)
A cluster of thunderstorms moved from Eastern Colorado into Kansas west of Syracuse and continued to near Dighton. The storms produced large hail and winds near 80 mph. A good deal of hail damage was done to crops and two power poles were knocked down south of Syracuse. The wind blew a barn apart north of Holcomb.										
Lincoln Co, 4S Lincoln	10	1950CST			0	0	4	4		TSTM Wind, Hail(1.75)
Ottawa Co, 2E Bennington McPherson Co, McPherson Airport	10	2030CST			0	0	3	3		Hail(.75)
	10	2030CST			0	0	4	0		TSTM Wind
A line of thunderstorms formed from Lincoln to near Lyons and moved east through Salina and McPherson. The storms dropped large hail in a few spots. Strong winds damaged outbuildings near Lincoln and several hangars at the McPherson Airport.										
KANSAS										
Ness Co, 12 N Ness City	10	2100CST			0	0	2	2		TSTM Wind(52kt) Thunderstorm wind gusts estimated at 60 mph hit north of Ness City.
Barton Co, Great Bend Arpt. Rice Co, Aiden	10	2210CST			0	0	4	0		TSTM Wind
	10	2300CST			0	0	3	0		TSTM Wind Severe thunderstorm winds damaged several buildings and vehicles at the Great Bend Airport. Winds also tore part of the roof from a railroad depot converted to a museum at Aiden.
Sheridan Co, 7W Hoxie	16	1730CST			0	0	3	3		TSTM Wind(55kt), Hail(1.00)
13NE Hoxie Decatur Co, 4E Oberlin	16	1810CST			0	0	0	2		TSTM Wind(52kt)
	16	1835CST			0	0	0	4		Hail(1.75) A series of thunderstorms dropped pea size to inch hail in spots as they crossed Northwest Kansas. Wind gusts estimated 60 mph and stronger were also reported in several locations. The storms were strongest as they passed through the Hoxie and Oberlin areas.
Scott Co, 15SE Scott City	16	1800- 2100CST			0	0	3	5		Flood A cluster of thunderstorms formed south of Scott City around 1700CST and drifted slowly east. The storms dropped heavy rain over much of the southeast quarter of Scott County from 1700 until about 1900CST. Some spots measured about 5 inches in that 2 hour period. A good deal of surface flooding resulted and most country roads were impassable. Small creeks overflowed and low spots were filled with water. The storms dumped small hail that resulted in a good deal of crop damage in that area as well. The storms later produced winds estimated at 70 mph near Healy and 3/4 inch hail near Dighton.
Lane Co, 4S Healy 3S Dighton	16	1920CST			0	0	2	3		TSTM Wind(61kt)
	16	1940CST			0	0	0	3		Hail(1.75)
Inch diameter hailstones fell at Stillwell. Little damage resulted.										
Johnson Co, Stillwell	17	2302CST			0	0	3	0		Hail(1.00)
Southern Wyandotte and Northeast Johnson Counties	18	0000- 0400CST			0	0	6	0		Flash Flood Four to seven inches of rain fell in the Kansas City, Kansas metropolitan area. Several streets were flooded, especially in southeast Kansas City along Turkey Creek near Southwest Boulevard and Mission Road. Water was up to the roofs of some cars there. Several businesses in that area were flooded and a fire station had 4 feet of water in it. Homes were flooded in the Argentine, Armourdale and Rosedale areas of Kansas City, KS. At least 30 people were evacuated by boat from those neighborhoods, and several others were taken to safety from stranded cars at the Mission Shopping Center in Mission. Several streets and Highway 32 were closed by flooded creeks in Edwardsville. Runoff into Brush and Indian Creeks sent those streams out of banks in Kansas City, Missouri.
Leavenworth Co, Easton	18- 19	0600- 1800CST			0	0	4	0		Flood Three to five inch rains throughout the Stranger Creek drainage basin sent the stream out of its banks and into a few homes in the east part of Easton. Kansas Highway 192 was closed east of Easton. The creek crested more than 5 feet above flood stage at 1630CST, the 19th.
Smith Co, Reamsville	18	1800CST			0	0	4	4		Hail(2.00) Golfball and slightly larger hail fell in an area around Reamsville. A good deal of damage was done to crops and vehicles.

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SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS	

KANSAS

Republic and Jewell Co, 7W Republic to Hardy, Nebraska	18	1915-1930CST	6	500	0	0	6	4	Tornado(F2)
A tornado dropped to the ground 7 miles west of Republic just west of the Jewell-Republic County border. It traveled on the ground north to Hardy, Nebraska. Extensive damage was done to a farm in Jewell County and to several more in Republic County. The twister continued just a little east of north across the Nebraska border and into Hardy.									
Nemaha Co, 5E Kelly	22	1510CST			0	0	2	2	Hail(.75)
Brown Co, 5S Fairview	22	1520CST			0	0	2	2	Hail(.75)
13NE Hiawatha	22	1520CST	1	80	0	0	5	0	Tornado(F0)
2SW Fairview	22	1530CST	.2	25	0	0	0	0	Tornado(F0)
Robinson	22	1550CST			0	0	4	4	Hail(2.75)
Everest	22	1550CST			0	0	4	4	Hail(2.75)
5S Hiawatha	22	1630CST			0	0	2	3	Hail(.75)
Hiawatha	22	1630CST			0	0	2	2	Hail(.75)
Atchison Co, Huron	22	1615CST			0	0	3	4	Hail(1.75)
Doniphan Co, Denton	22	1640CST			0	0	4	4	Hail(2.75)
Bendena	22	1655CST			0	0	4	4	Hail(2.75)
A series of severe thunderstorms formed west of Hiawatha and dropped large hail as they drifted east toward Atchison and St. Joseph, MO. The storms spawned two small tornadoes. One touched down briefly southwest of Fairview and did no damage. The other came to the ground just south of the Nebraska border in the extreme northeast corner of Brown County, about 3 miles northwest of White Cloud. This twister destroyed a barn and damaged several farm buildings and two houses. Baseball size hail broke windows, tore up roofs and damaged siding of homes in Robinson, Everest, Denton and Bendena.									
Meade Co, 8N Meade	22	1630CST			0	0	2	3	Hail(1.75)
A thunderstorm dropped golfball size hail north of Meade.									
Rice Co, 15NE Lyons	22	1745CST			0	0	3	3	TSTM Wind, Hail(.75)
McPherson Co, Lindsborg	22	1825CST			0	0	3	0	TSTM Wind
Thunderstorm winds uprooted several large trees northeast of Lyons, and damaged trees and power poles at Lindsborg. Hail damaged crops in northeast Rice County.									
Jefferson Co, Oskaloosa	22	1900CST			0	0	4	0	TSTM Wind
Thunderstorm winds blew down several trees in Oskaloosa. A home 2 miles southeast of town lost several windows and had its roof damaged.									
Johnson Co, Olathe	23	1625CST			0	0	3	0	TSTM Wind(60kt)
Lenexa	23	1645CST			0	0	4	0	Hail(1.50)
Leawood	23	1650CST			0	0	5	0	TSTM Wind
Mission	23	1700CST			0	0	5	0	Flash Flood
Prairie Village	23	1715CST			0	1	5	0	Heavy Rain, TSTM Wind(52kt)
Thunderstorm wind gusts 60 to 75mph hit the northeast part of Johnson County. The winds damaged trees from 103rd and Mission Road northeast to the Missouri border at 95th Street. Buildings and equipment suffered extensive damage at the Leawood Country Club. Rain that flooded parts of the clubhouse submerged the tennis courts under 12 feet of water. Wind and weight of the water collapsed the roof over 12 businesses at the Ranch Mart Shopping Center in Prairie Village. One woman suffered a minor facial cut from falling debris. Rain flooded the parking lot at Mission Shopping Center in Mission and an underpass on Roe Avenue. Several cars were submerged and two people were rescued from a truck at the underpass.									
The storm did more damage in Kansas City, Missouri.									
Leavenworth Co, Easton	23-24	0000-0900CST			0	0	4	0	Flood
Two to four inches of rain fell upon the already saturated Stranger Creek drainage basin early on the morning of the 23rd. Runoff sent the creek out of its banks and into the east side of Easton. The creek crested 6 feet above flood stage at 0500CST, the 24th.									

KANSAS

KSZ001-002-003 Extreme Western Kansas	24	1230-1830CST			0	0	0	4	High Wind
South winds of 35 to 45 mph with gusts to more than 60 mph blasted the extreme western counties of Kansas throughout the afternoon. The northwest corner caught the worst of it. Goodland's Airport measured gusts of 62 mph at 1354CST and 64 mph at 1806CST. Gusts were greater than 50 mph there, from 1230 until 1830CST. The Garden City Airport measured a sustained wind of 44 mph just before 1400CST.									
Blowing dust cut visibility to near zero at times and contributed to several automobile accidents. The Highway Patrol closed Interstate 70 between Goodland and Coily from 1512 until 1815CST.									
Lyon Co, Neosho Rapids	26	1345CST			0	0	3	0	Hail(1.50)
Walnut size hail fell briefly at Neosho Rapids. A few roofs and vehicles were damaged.									
Sedgwick Co, West Wichita	26	1527CST			0	0	2	0	Hail(1.00)
Valley Center	26	1550CST			0	0	2	0	Hail(1.75)
Marion Co, Florence	26	1600CST			0	0	2	0	Hail(1.00)
Chase Co, Cedar Point	26	1601CST			0	0	0	0	Hail(.75)
Harvey Co, Newton	26	1610CST			0	0	3	0	Hail(1.75)
Reno Co, Hutchinson	26	1620CST			0	0	2	0	Hail(1.00)
A line of thunderstorms moved southeast through Central Kansas and dropped large hail at scattered locations from Wichita to near Cottonwood Falls.									
McPherson Co, 15SE McPherson	26	1655CST			0	0	3	3	TSTM Wind, Hail(.75)
Thunderstorm winds damaged several farm buildings and hail damaged crops southeast of McPherson.									
Lyon Co, Reading	26	1730CST			0	0	5	0	TSTM Wind
Osage Co, Lyndon	26	1750CST			0	0	4	0	TSTM Wind
Thunderstorm winds popped the windows out of a house, tore apart 4 large hay barns and overturned a cattle trailer on a farm near Reading. The same storm blew out windows, and damaged signs and store fronts at several businesses in Lyndon. Roofs and windows were also damaged at several Lyndon area homes.									
Chase Co, Cottonwood Falls	26	1800CST			0	0	0	2	Hail(1.75)
A thunderstorm dropped three-quarter inch hail at Cottonwood Falls.									
Johnson Co, Overland Park	26	1945CST			0	1	0	0	Lightning
Lightning struck near a security guard at a football game at Shawnee Mission South Stadium. The charge moved through a fence and to the man. He suffered bruises and contusions and was hospitalized 2 days.									
Coffey Co, 1N Burlington	27	1800CST			0	0	4	0	TSTM Wind
Franklin Co, 2E Ottawa	27	1840CST			0	0	4	0	TSTM Wind
Princeton	27	1840CST			0	0	3	0	TSTM Wind
Severe thunderstorm winds tore apart barns just north of Burlington and east of Ottawa. The winds also turned over a tractor-trailer truck parked near Princeton.									
Finney Co, 2E Garden City	28	1600CST			0	0	5	0	TSTM Wind(52kt)
Hodgeman Co, 12NW Jetmore	28	1625CST			0	0	0	2	Hail(1.00)
Thunderstorm winds destroyed a barn, moved a mobile home 3 feet and tore apart another mobile home east of Garden City. Another storm cell dropped inch diameter hail northwest of Jetmore.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
KANSAS									
Cloud Co, 5NW Concordia	28	1642CST			0	0	3	3	Hail(.75)
Concordia Airport	28	1750CST			0	0	3	0	TSTM Wind(54kt)
15S Concordia	28	1820CST			0	0	3	3	Hail(.75)
Washington Co, 1NE Clifton	28	1650CST			0	0	4	0	TSTM Wind
Washington	28	1730CST			0	0	4	4	TSTM Wind, Hail(1.00)
Marshall Co, Waterville	28	1725CST			0	0	4	0	TSTM Wind
Mitchell Co, Glen Elder	28	1730CST			0	0	4	0	TSTM Wind
Glen Elder	28	1747CST			0	0	4	0	TSTM Wind (65kt)
Jewell Co, 10S Mankato	28	1832CST			0	0	3	3	Hail(.75)
<p>A series of severe thunderstorms crossed North-Central Kansas during the late afternoon and early evening. Winds damaged several buildings and a mobile home at Glen Elder. Winds also uprooted trees and downed power lines at Glen Elder, just northeast of Clifton, around Washington, on the south side of Waterville and in Concordia. Hail damaged crops in a few spots in Jewell, Cloud and Washington Counties.</p>									
Haskell Co, 10N Sublette	28	1740CST			0	0	2	0	TSTM Wind(52kt)
<p>Thunderstorm winds estimated near 60 mph hit north of Sublette. Little damage resulted.</p>									
Sumner Co, 3WNW Udall	29	0730CST			0	0	4	4	Flash Flood
<p>Rainfall of 2-4 inches in the early morning raised several small creeks above bankfull in Sumner and Cowley Counties of South-Central Kansas. A school bus was swept from a bridge covered with water on a county road northwest of Udall. The water there was rising about a foot every 15 minutes. The driver and 15 school students were helped through a bus window and escorted to safety by a high school student.</p>									
Southeast Kansas	30	0000-2400CST			0	0	6	6	Flood
<p>Four to nine inch rains fell over Southeast Kansas south of a line from Anthony to El Dorado and Paola from the evening of the 28th through early morning, the 30th. More than 6 inches fell south of a line from Arkansas City to Yates Center to Mound City. Overflows from several creeks left a good deal of farmland under water.</p> <p>Roads were flooded in Cherokee County along Lightning Creek and the Spring River. A man nearly drowned the night of the 30th when his car was swept from a road by floodwater from the Spring River northeast of Galena. The man had driven around several barricades warning of the high water. He climbed a tree to escape the flood at about 1600CST, the 30th and stayed there until he was rescued at 0500CST, October 1st.</p> <p>Other streams that flooded adjacent lowlands included the Neosho River from Erie to the Oklahoma border, Labette Creek from Parsons to Chetopa, Onion Creek near Coffeyville, the Elk River from Howard to Elk City Reservoir, Grouse and Silver Creeks east of Arkansas City, and the Walnut and Arkansas Rivers in western Cowley County.</p> <p>Major roads closed by floodwaters included: Highway 160 at Oak Valley in Elk County; Highway 39, 6 miles north of Elk City; Highway 166 from Coffeyville to Chetopa; Highway 101 at Edna in Labette County; Highway 96 east of Crestline in Cherokee County.</p> <p>The rains left streams high and the soil saturated, and contributed to more serious flooding in the first part of October.</p>									
SPECIAL HAIL SUMMARY									
<p>Kansas-Oklahoma Hail Loss Service reports indicate hail was especially damaging to crops in the listed counties on the following dates:</p>									
<p>10 Finney,Ford,Pratt 16 Scott 21 Sheridan 22 Atchison,Brown,Doniphan 28 Gray,Washington</p>									
15 KENTUCKY ————— NONE REPORTED									
16 LOUISIANA									
Cameron Parish	21	MRNG			0	0	4	0	TSTM-Lightning
<p>Lightning did \$8,000 damage to an electrical breaker at a Cameron high school.</p>									
Calcasieu Parish	22	1245CST			0	0	5	0	TSTM-Lightning
<p>A lightning-caused fire did \$50,000-\$60,000 damage to some oil storage tanks near Winton.</p>									
17 MAINE ————— NONE REPORTED									
18 MARYLAND and D.C. ————— NONE REPORTED									
19 MASSACHUSETTS									
Plymouth County, Scituate	16	0535EST-0540EST	0.1	50	0	0	5	0	Tornado (F1)
<p>A small tornado touched down in the Humarock section of Scituate causing property damage that was confined to the South River Yacht Yard and a few nearby houses. A boat storage building was heavily damaged when three of its walls blew out. A few boats were damaged as well as some piers and floats. A porch was torn from one house and a chimney toppled on another. This tornado was spanned along a sharp cold front which was accompanied by thunderstorms and gusty winds. Its direction of movement was toward the east at a rapid rate, and it quickly disappeared over the nearby ocean. The tornado was confirmed by National Weather Service investigation, and damage estimates ranged up to \$250,000.</p>									
Plymouth, Barnstable and Dukes Counties	16	Early morning			0	0	3	0	High winds, Lightning
<p>A sharp cold front moving across the area brought thunderstorms and winds gusting to 40 to 60 MPH. About 8,000 Plymouth residents lost power when lightning struck a main electric feeder line. Brief power outages were reported on the Cape and Martha's Vineyard. A number of boats were reported to have been beached. Peak wind gusts were recorded to 59 MPH at Falmouth and 61 MPH at Chatham on Cape Cod.</p>									
20 MICHIGAN									
Iosco County, Gscoda	18	unknown			0	0	4		Lightning
<p>A house was destroyed by a lightning-set fire.</p>									
Kent, Montcalm, and Muskegon Counties	18	afternoon			1	3	4		Lightning
<p>A woman was killed and 2 persons injured in a shed near Stanton. A man loading a truck was injured in Grand Rapids. 2 teenagers were injured in a church in Holton. 2 buildings were destroyed and several others damaged. FIBD.</p>									
Calhoun County, 3 miles WNW of Bedford	18	1703EST	3.8	225	0	0	4		Tornado (F1)
<p>The funnel was seen by trained observers. All damage was 20 to 30 feet above the ground. A transmission tower and many trees and antennas were snapped off. Roofing was damaged on several houses.</p>									
Allegan County, Oscego	18	1712EST			1	0	3		Thunderstorm
<p>A woman was killed when a falling tree fell on her car. Major wind damage occurred to the high school. FSDV</p>									
Ingham County, 3 miles north of Stockbridge	18	1830EST			0	0	3		Thunderstorm
<p>Several large trees were uprooted. 3 houses were damaged and a pickup camper destroyed.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
MICHIGAN									
Oakland County, Commerce to 1 mile NW of Sylvan Lake	10	1058EST	7.7	50	0	0	5		Tornado(F2)
									The funnel aloft was seen over the General Motors Proving Ground near Milford, which is 10 miles WSW of the touchdown point at the east end of Coscorra Lake. Several houses were unroofed and trees uprooted along a track from Chenoa Street to Fox Street. The tornado then moved through open country until it reached the subdivision just north of Union Lake, where every property along Second Street was damaged. It was then mostly aloft until it reached the north shore of Cass Lake. It came down hard on the isthmus between Cass Lake and Sylvan Lake, damaging houses on LaBrosse, Otter, Beachland, and Kessler Streets. It apparently lifted off over Sylvan Lake.
West side of Muskegon County	10	1938EST			0	0	2		Thunderstorm
									Several large trees were blown down and a road washed out.
Macomb County, Utica	10	2038EST			0	0	3		Thunderstorm
									Power lines were blown down and lighting damaged a house.
Midland County, Midland	11	0208EST			0	12	4		Thunderstorm
									6 camping trailers were rolled over, 3 of them destroyed. 12 occupants were injured, 9 of them seriously.
M17883-084-085-086-010-011-012-013-014 A band 60 miles wide across central Lower Michigan	11	all day			2	3	8	8	Flash Flood
									The body of a hunter who had been missing for several days was found on the bank of the Muskegon River in Newaygo County. A woman drove her car off a flooded highway into the Cass River near Bridgeport. 3 persons were injured when vehicles were washed off roads. Several other deaths were indirectly due to this flash flood and the river floods which followed. 2 children drowned playing near flooded streams. 2 persons drowned in recreational boating accidents on flooded streams. 2 men died using sump pumps improperly. 2 farmers committed suicide upon seeing ripened crops under water. About 90 persons were injured during frenzied efforts to minimize flood damage and during cleanup activities. 8 to 14 inches of rain fell in a period of about 12 hours. 11 saws failed, 19 others were threatened, requiring the evacuation of 1500 people. 38,000 hoses suffered basement or structural damage, 3600 miles of road were impassable. Moderate to heavy rains continued over the entire Lower Peninsula through the end of the month, resulting in widespread and continued flooding. The Chippewa, Titabawassee, Cass, Muskegon, Little Muskegon, Maple, Kogee, and Grand Rivers reached new record crests. Runoff from this storm further raised the already dangerously high levels of Lakes Michigan, Huron, and St. Clair. Total damage is estimated \$400,000,000, of which \$120,000,000 is to crops. Severe local storms listed below were part of this same thunderstorm complex. M500 F42V
Oakland County, Waterford	17	0510EST			0	5	3		Lightning
									A gas line was ruptured. The resulting explosion injured 5 persons.
Gratiot County, Ithaca	22	17:2EST			0	0	0		Hail(0.75)
Genesee County, Flint	22	1925EST			0	0	0		Hail(0.75)
Ionia County, 1 mile west of Pewee	26	0808EST	0.1	10	0	0	3		Tornado(F0)
									The porch was torn off a house, a small barn was destroyed, and trees were down in a narrow path. The funnel was seen.
Monroe County, Monroe	26	0838EST			0	0	2		Thunderstorm
									Trees and power lines were blown down; lawn furniture was scattered.
Oakland County, Milford	26	1543EST			0	0	0		Hail(0.75)
Oakland County, West Bloomfield	26	1545EST			0	0	0		Hail(1.75)
Macomb County, Sterling Heights	26	1608EST			0	0	2		Thunderstorm
									Winds gusted to 52 mph. There was widespread lightning damage.
MICHIGAN									
Calhoun County, Marshall	26	1648EST			0	0	0		Hail(0.75)
Jackson County, Brooklyn	26	1738EST			0	0	3		Thunderstorm
									A barn was destroyed by wind. A funnel cloud was reported in the vicinity.
Washtenaw County	26	1738EST			0	0	0		Funnel Clouds
									There were 3 unconfirmed reports.
Lenawee County	26	1808EST			0	2	4		Thunderstorm
									2 persons were injured when a tree limb fell on a car. Large trees and power lines were blown down. 2 barns were destroyed by lightning fires.
Monroe County	26	1808EST			0	1	3		Thunderstorm
									A man was injured by a falling tree limb in Monroe; several large trees were blown down and vehicles crushed. 2 small buildings were damaged at LaSalle. An unconfirmed funnel cloud was reported.
Livingston County, Howell	26	1825EST			0	0	3		Thunderstorm
									Large trees and power lines were blown down.
Wayne County, Dearborn	26	1838EST			0	0	1		Thunderstorm
									Large trees were blown down.
Oakland County, Farmington Hills	26	1845EST	0.1	20	0	0	3		Tornado(F0)
									A brief touchdown at 10-mile and Inkster Roads destroyed a house under construction and did minor damage to other buildings and vehicles. The funnel aloft had been seen earlier 4 miles to the WSW.
Oakland County	26	1910EST			0	0	4		Thunderstorm
									Several unconfirmed funnel clouds were reported. Lightning started fires in 4 buildings. Power lines were damaged by wind and lightning.
Macomb County, Near Washington	26	1955EST			0	0	0		Funnel Cloud
									Two trained observers saw the cloud at separate locations.
Alcona County, Near Curran	26	2338EST			0	1	1		Lightning
									Lightning damaged a truck and slightly injured the driver.
Lenawee County, Near Adrian	28	1815EST			0	0	0		Funnel Clouds
									5 funnels were captured in 1 photograph.
Allegan County	28	2855EST			0	0	2		Thunderstorm
									Wind damage occurred near Hamilton. A man was injured when he lost control of his car during heavy rain at South Haven.
Calhoun County, Near Marshall	28	2145EST			0	0	0		Hail(0.75)
Genesee County, Near Lennon	28	2329EST			0	0	1		Thunderstorm
									The wind gusted to 52 mph.
Tuscola County, Millington	29	0022EST			1	8	3		Lightning
									A house was destroyed by fire. F16P
Oakland County	29	0039EST			0	0	3		Thunderstorm
									A car was struck by lightning. Many trees and lines were blown down, resulting in widespread power outages.
Wayne County, Livonia	29	0045EST			0	0	2		Tornado(F0)
									The funnel was seen to dip down briefly and take the roof off a house. Several other funnels seen in the vicinity remained aloft.
Wayne County	29	0058EST			0	0	3		Thunderstorm
									3 buildings were unroofed in Detroit; a store was destroyed by a lightning-set fire. A car was damaged by a falling tree in Plymouth. Trees and lines were blown down in Dearborn.
Macomb County, Roseville	29	0125EST			0	0	2		Lightning
									Lightning set fire to a house. Wind damage was reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS	
MICHIGAN									
St. Clair County, Port Huron	29	0200EST			0	0	2		Thunderstorm
									Trees blown down caused power outages.
Washtenaw County, 2 miles east of Whitore Lake	29	0228EST			0	0	0		Thunderstorm
									Trees and power lines were blown down.
Ingham County, East Lansing	29	1300EST			0	0	3		Lightning
									A church was severely damaged.
Van Buren County, 2 miles SE of Paw Paw to Mattawan	29	.1630EST	3.8	400	0	1	5		Tornado(F2)
									5 mobile homes were rolled over, 1 occupant was slightly injured. The roof was partially removed from a church. A hangar was unroofed; 5 small aircraft were damaged. Several houses and cars were damaged by falling trees.
Van Buren County, Near Paw Paw	29	1640EST			0	0	0		Hail (1.75)
Kalamazoo County, Pennfield	29	1725EST			0	0	0		Hail (0.75)
Eaton County, 1 mile SW of Olivet Station	29	1730EST			0	0	2		Thunderstorm
									Large trees and power lines were blown down.
Calhoun County, Marshall	29	1750EST			0	0	1		Thunderstorm
									Winds gusted to 52 mph. Limbs were torn from trees. An unconfirmed funnel cloud was reported in the vicinity.
Genesee County, 4 miles SW of Rankin to 2 miles E of Rankin	29	1851EST	5.6	400	0	0	5		Tornado(F2)
									A house "exploded" near the beginning of the track. 5 houses were destroyed, 2 suffered major damage, and 15 minor damage. The track was intermittent, about 60% on the ground.
Genesee County, 3 miles S of Goodrich to 4 miles SE of Goodrich	29	1910EST	1.3	20	0	0	3		Tornado(F1)
									1 house was severely damaged, several others slightly damaged.
21 MINNESOTA									
Nicollet Co. Nicollet	03	1750CST			0	0	0	0	Thunderstorm Wind
									Winds knocked down 25 large maple and basswood trees at a residence on the east side of Nicollet.
Watsonwan Co. 10NW St. James	10	0743CST			0	0	0	0	Hail (3.0)
Goodhue, Wabasha, Dodge, Olmsted and Winona Counties	20-21				1	0	6	0	Flash Flood
									Numerous showers and thunderstorms fell over southeast Minnesota from the evening of September 20th through the morning of September 21st. This precipitation followed days of intermittent showers and a particularly heavy rainfall event on September 10th. Rochester received 5 1/2 inches of rain between 2100CST and 0900CST, September 20th and 21st and went on to record its wettest September on record. The heaviest rain fell in a west to east band with up to 6 inches just west of Rochester. The worst flooding occurred along the tributaries of the Zumbro River including Cascade, Willow and Bear Creeks. Eighty families evacuated areas of northwest Rochester as Cascade Creek flooded into streets. Sixty people from two trailer parks abandoned their homes along the south branch of the Whitewater River in St. Charles. At 0330CST, a St. Charles man was swept away and drowned when he got too close to a culvert. One hundred campers were moved to higher ground in Whitewater State Park. The Cannon River also flooded, especially along the Little Cannon River between Nerstrand and Cannon Falls, where some homes were abandoned. Roads were closed or partially blocked throughout the five counties involved in flooding. High water levels caused extensive property damage. Agricultural losses were mainly from damaged fences. M550.
Hennepin, Ramsey, Dakota Counties	21	Morning			0	0	6	0	Lightning
									During the morning of September 21st, numerous buildings were hit by lightning causing various degrees of damage. In Egan, a lightning bolt caused a chimney to explode, throwing bricks 75 ft. and damaging three vehicles. A lightning strike blew a hole in the wall of a Deephaven home and turned on remote control appliances. At 0530CST, lightning caused \$200,000 of damage to a commercial building in Richfield and at 0600CST, lightning caused a fire that destroyed a department store in Minneapolis.
MINNESOTA									
Ottertail Co. 5S Underwood	21	1330CST			0	0	3	0	Thunderstorm Wind
									Thunderstorm winds uprooted a half dozen large trees in a tree line and several more in a farm yard. Falling trees punched holes in the roof of a farm house and damaged a vehicle.
Ramsey Co. St. Paul	21	1645CST			0	2	0	0	Lightning
									Two people were hospitalized for burns they received after the tree they stood under on Harriet Island was struck by lightning.
Ottertail Co. Urbank	21	1700CST			0	0	3	0	Thunderstorm Wind
									Thunderstorm winds uprooted trees, flattened a barn and moved some outbuildings off their foundations in the Urbank area.
Goodhue Co.	27	1425CST			0	0	0	0	Funnel
									A funnel cloud was reported by a pilot between Hastings and Red Wing.
22 MISSISSIPPI									
Seminary, Covington County	5	1615CST	1.0	50	0	0	5	0	Tornado (F1)
									A tornado touched down briefly in the town of Seminary. A mobile home was destroyed, but was vacant when the tornado struck. Numerous large trees were uprooted and several roofs damaged.
Picayune, Pearl River County	20	1000CST			0	1	0	0	Lightning
									Three individuals were out horseback riding when a storm approached. The group took shelter under a tin-roofed shed during the storm. One boy put his hand to the tin roof when lightning struck the roof. The bolt also traveled through the boy and caused him to pass out. One of the individuals performed mouth-to-mouth resuscitation and revived him. The boy survived with only minor injuries.
Florence, Rankin County	22	1615CST			0	0	?	?	Hail (1.75)
									Hail up to the size of golfballs fell in the town of Florence.
23 MISSOURI									
DeKalb County	10	0300CST			0	0	0	5	Flash Flooding
									Rainfall exceeding 7 inches produced flash flooding that resulted in moderate erosion. The Maysville ASCS reported 4.53 inches.
Moniteau, Morgan, Pettis and Cooper Counties	18	0200-0300CST			0	0	4	5	Flash Flooding
									Flash flooding made Highway 50 from Sedalia to California impassable in several places, and a mud slide blocked the road in Morgan County. Up to 6 inches of rain fell over the area.
Clark County	19	late day			0	0	?	?	Flash Flooding
									Flooding occurred in Grange where as much as 13 to 15 inches of rain were reported.
Scotland County	19-20	late day-morning			0	0	4	5	Flash Flooding
									Flooding resulted from rainfall amounting up to 14 inches in the county; Memphis received 9.50 inches.
Adair County	22	1730CST			0	0	4	5	Hail (1.75)
									Hail of up to 1 3/4 inches in diameter fell at Kirksville.
Ray County	22	1815CST			0	0	3	0	TSTM Winds
									Scattered wind damage occurred across the county.
Knox County	22	1845CST			0	0	0	0	Hail (1.00)
									Hail of up to 1 inch in diameter fell at Edina.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS	

MISSOURI

Jackson County	23	1715-1800CST			0	0	7	4	TSTM Winds, Flash Flooding, Hail A severe thunderstorm produced 70 to 80 mph winds as it moved out of Kansas and into Jackson County. Large hail and very heavy rain were also reported. Due to the flash flooding, streets were flooded and some cars were submerged. The wind and hail produced scattered damage across the county.
Boone County	23	1742CST			0	0	0	0	Hail (0.75) Hail of up to 3/4 inch in diameter fell in Sturgeon.
Howard County	23	1812CST			0	0	0	0	Hail (0.75) Hail of up to 3/4 inch in diameter fell 1 mile north of Fayette.
Boone County	23	1830CST			0	0	4	0	TSTM Winds Winds produced damage to trees and power lines in northeast Columbia.
Lawrence County	26	1815CST			0	0	?	?	Hail (2.00) Hail from 1 to 2 inches in diameter fell in Monett.
LaCade County	26	1920CST			0	0	0	0	Hail (0.75) Hail of 1/2 to 3/4 inch in diameter covered the ground at Lebanon.
Webster County	26	1933CST			0	0	4	0	TSTM Winds Wind damage occurred at Marshfield and Seymour.
Barton, Cedar, Dade, Greene, Jasper, Lawrence, Polk, Barry, McDonald, and Newton Counties	30	0300-0700CST			0	0	7	0	Flash Flooding Widespread flash flooding occurred across Southwest Missouri. Rainfall amounts of 5 to 8 inches were reported. Homes were evacuated in Neosho and Seneca, and by late morning, a mobile home park was evacuated in Springfield. Many highways and county roads were closed. The worst flash flooding was along creeks and rivers in Newton and McDonald Counties.

24 MONTANA

MTZ005-008	25	0400MST			1	1	7	7	Flood Four to eight inches of rain fell over North-Central and Central Montana, ending on Thursday, September 25th. The heaviest rains fell over the headwaters of Lodge and Battle Creeks in southern Saskatchewan (Canada) and northern Blaine County. Record flooding occurred on these streams and major damage occurred on the Milk River from near Chinook to Malta. Rapid rises on other small streams in Blaine County flooded many homes in north Harlem and took the life of a woman as she attempted to reach high ground from her stalled automobile. Major damage to crops and roads also took place in southern Phillips County from Beaver Creek. The Milk River was in flood through Valley County until October 16th. Total damage is estimated at 29 million dollars.
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25 NEBRASKA

Cuming County	03	1545CST			0	0	?	?	Hail (1.75) One and three-quarter inch hail stripped crops in a twenty square mile area north of West Point.
Douglas County	03	2135CST			0	0	3	0	Thunderstorm Wind Wind gusts blew down trees and fences at a west Omaha golf course.
Custer County	05	1720CST			0	0	5	3	Hail (1.5) One and a half inch hail broke windows and dented vehicles in Mason City and Ansley.
Sherman County	05	1745CST			0	0	4	4	Hail (1.5) One and a half inch hail damaged cars and broke windows in homes at Litchfield. Area crops were also damaged.
Buffalo County	05	1805CST			0	0	4	5	Hail (3.0) Three inch hail was reported just north of Ravenna with damage to crops and vehicles.
Phelps County	05	1810CST			0	0	5	5	Hail (2.25) Hail up to 2 1/4 inches in diameter damaged roofs and cars, and did extensive damage to crops around Bertrand.
Adams County	05	1815CST			0	0	3	3	Hail (1.5) One and a half inch hail was reported in Prosser with damage to roofs and area crops.

NEBRASKA

Adams County	05	1900CST			0	0	2	4	Hail (1.5) One and a half inch hail damaged crops south of Hastings.
Webster County	05	1930CST	0.2	50	0	0	1	1	Tornado (F1) A tornado touched down briefly with no apparent damage 6 miles east of Blue Hill.
Webster County	05	2000CST	0.2	50	0	0	1	1	Tornado (F1) A tornado was on the ground momentarily about 9 miles north of Red Cloud. No damage was reported.
Kimball County	05	2018CST			0	0	0	3	Hail (1.75) One and three-quarter inch hail damaged crops 5 miles northeast of Kimball.
Adams, Clay and Nuckolls Counties	05	2300CST			0	0	2	3	Flash Flood Two to six inch rains in the upper reaches of the Little Blue River caused lowland flooding from south of Hastings to Deweese. Deweese crested a half foot above flood stage on the 7th.
Holt County	10	0530CST			0	0	3	3	Hail (1.75) One and three-quarter inch hail fell at Emmet damaging roofs and crops.
Hall County	14	1730CST			0	0	1	1	Hail (0.75) Three-quarter inch hail was reported south of Grand Island.
Custer County	15	1652CST			0	0	?	?	Hail (1.00) One inch hail fell briefly 10 miles west of Broken Bow. No reported damage occurred.
Rock and Holt Counties	16	0600CST-1300CST			0	0	5	5	Flash Flood Four to seven inch rains from Newport to O'Neill pushed small streams out of banks. Urban flooding was reported around O'Neill with some damage to businesses and homes. Crops suffered from field erosion. Rainfall amounts included Atkinson, 7.0 inches; Butte and O'Neill, 6.3 inches; Emmet, 6.2 inches; and Stuart, 6.0 inches.
Hitchcock County	16	1700CST	0.1	10	0	0	1	1	Tornado (FO) A tornado touched down briefly 1 mile south and 3 miles east of Palisade.
Thomas County	16	1712CST			0	0	0	0	Funnel Cloud A funnel cloud was reported just south of Seneca.
Dawes County	17	2350CST			0	0	3	3	Hail (1.75) One and three-quarter inch hail fell 12 miles south of Chadron, damaging vehicles and crops.
Gage County	18	0615CST			0	0	2	4	Hail (4.0) Hail with a few stones upward to 4 inches in diameter damaged crops 4 miles east of Pickrell.
Butler County	18	1020CST			0	0	4	4	Hail (1.5) One and a half inch hail fell at Ulysses, damaging crops, roofs and vehicles.
Dodge County	18	1040CST			0	1	0	0	Lightning Lightning struck and injured a construction worker at Fremont.
Pawnee County	18	1340CST			0	0	?	?	Hail (1.0) One inch hail fell briefly at Pawnee City. No reported damage occurred.
Nuckolls County	18	1915CST	7	80	0	7	6	4	Tornado (F3) A tornado developed 7 miles west of Republic, Kansas, and moved north across the border through Hardy. Seven people in Hardy were injured, one seriously. Ten homes and businesses in Hardy were destroyed and another 100 buildings sustained minor damage. Trees were uprooted and utility lines destroyed.
Thayer County	18	1940CST			0	0	5	5	Hail (4.0) Hail upwards to 4 inches in diameter hit the Bruning area, damaging roofs, vehicles, windows and outbuildings. Area crops sustained extensive damage.
Adams County	18	2015CST			0	0	2	1	Hail (0.75) Three-quarter inch hail was reported in Hastings with minor damage.
Webster County	18	2015CST	2	50	0	0	5	3	Tornado (F2) A tornado touched down 6 miles north of Inavale and moved northeast 2 miles, destroying a barn, downing power lines and trees, and damaging several other outbuildings.
Hall County	18	2115CST			0	0	?	?	Hail (0.75) Three-quarter inch hail fell just south of Grand Island. No reported damage occurred.
Johnson County	18	2115CST			0	0	2	4	Flash Flood Four inch rainfall in less than two hours caused lowland and small creek flooding around Crab Orchard. Field erosion damaged crops.
Adams County	18	2132CST			0	0	3	2	Hail (1.5) One and a half inch hail fell around Holstein, causing minor property damage.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
NEBRASKA									
Adams County	18	2143CST			0	0	2	2	Hail (0.75) Three-quarter inch hail was reported around Roseland with minor damage.
Howard County	18	2202CST			0	0	3	3	Hail (1.0) One inch hail fell around Cotesfield, with minor crop and property damage having occurred.
Clay County	18	2228CST	1	40	0	0	4	3	Tornado (F2) A tornado dipped down just southwest of Trumbull and moved northeast. Windows were sucked out of a house, power lines were downed, numerous monuments toppled in a cemetery, and many trees destroyed.
Hamilton County	18	2240CST			0	0	5	4	Hail (2.5) Two and a half inch hail fell 3 miles northeast of Phillips, damaging roofs and vehicles and causing some crop damage.
Howard County	18	2250CST			0	0	4	4	Hail (2.0) Hail upwards to 2 inches in diameter fell in Elba, damaging vehicles and area crops.
Douglas and Sarpy Counties	19	0100CST-0500CST			0	0	4	0	Lightning Very intense lightning blew numerous power line fuses and damaged substations and transformers, causing thousands to lose power. Lightning strikes also damaged structures.
Custer County	20	0020CST			0	0	3	1	Hail (1.0) One inch hail fell in Merna, with some damage to vehicles having occurred.
Dawson County	20	0030CST			0	0	3	3	Hail (1.5) Hail to 1 1/2 inches in diameter damaged vehicles and roofs around Eddyville.
Howard County	20	0155CST			0	0	1	1	Hail (0.75) Three-quarter inch hail was reported in Cotesfield.
Dakota County	20	0615CST			0	0	6	6	Hail (1.75) One and three-quarter inch hail from South Sioux City to 5 miles south of the city dented vehicles, broke numerous windows and damaged roofs. Crops suffered damage also.
Merrick County	22	0810 CST			0	0	1	2	Hail (0.75) Three-quarter inch hail was reported at Clarks.
Polk County	22	0830CST			0	0	5	6	Thunderstorm Wind, Hail (1.5) Hail upwards to 1 1/2 inches and strong winds damaged several farms northeast of Shelby. Windows were broken out of homes, vehicles dented, roofs damaged and outbuildings destroyed. Crop damage was as much as 80 percent northeast of Shelby.
Butler County	22	0930CST			0	0	6	6	Thunderstorm Wind, Hail (1.0) Strong winds and 1 inch hail damaged crops and buildings and dented vehicles in about a one mile wide area extending near Highway 92 from Rising City to northeast of Brainard. Downburst winds destroyed outbuildings near Brund.
Saunders County	22	0950CST			0	0	7	7	Hail (3.0) Hail upwards to 3 inches in diameter broke windows and windshields, dented vehicles, damaged roofs and siding, and caused substantial crop damage in a swath along and north of Highway 92 including Wahoo, Malmo and Weston. Damage also occurred north of Valparaiso. An estimated 40 farm dwellings, 80 farm buildings and 40 pieces of equipment suffered damage.
Douglas County	22	1010CST			0	0	8	5	Hail (1.75) Hail upwards to 1 and 3/4 inches in diameter from southwest of Elkhorn into Omaha broke windows, dented vehicles, broke windshields, and damaged roofs and siding. Leaves were stripped from trees, and gardens damaged. Crops suffered damage from southwest of Elkhorn to Boystown. Hail accumulated to 6 inches deep in some southwest Omaha areas. Clogged catch basins resulted in hail slush accumulating to waist deep levels, trapping vehicles. Snowplows were called out to open roads. Up to 3 1/2 inches of rain in an hour with the storm caused areas of lowland and street flooding.
Douglas County	22	1017CST			0	0	0	0	Funnel Cloud A funnel cloud was reported at the Millard airport in southwest Omaha.
Douglas County	22	1245CST-1300CST			0	0	5	1	Thunderstorm Wind (52) Wind gusts estimated to 60 m.p.h. uprooted trees, broke branches, and downed power lines in southwest and central Omaha.
Richardson County	22	1430CST-1440CST			0	1	7	3	Thunderstorm Wind Strong winds blasted the Falls City area, blowing out windows, blowing off portions of roofs, damaging sheds and grain storage bins along with uprooting trees and downing power lines. One man was injured by flying debris. The city park was heavily damaged, with the concession stand blown into the swimming pool along with the bath house and equipment buildings sustaining heavy damage. On farms southeast of Preston, the farm outbuildings and grain storage bins were heavily damaged. An empty school bus was overturned. Trees were uprooted and power lines downed.
NEBRASKA									
Richardson County	22	1510CST			0	0	6	6	Hail (4.0) In the Falls City area, hail upwards to 4 inches in diameter broke windows and damaged roofs, dented vehicles, broke windshields, and heavily damaged crops.
NE2005-001 Panhandle Nebraska	24	1500CST-1600CST			0	0	?	?	High Wind (54) Northwest winds gusted to 58 m.p.h. at Sidney and 62 m.p.h. at Scottsbluff at 1504 CST with the passage of a cold front. No reported damage occurred.
NE2012-016-017 Southwest Nebraska	24	1630CST-1745CST			0	0	3	1	High Wind (52) Strong south winds buffeted southwest Nebraska, making visibility at times less than 1 mile in blowing dust. Peak gusts to 60 m.p.h. were recorded at McCook at 1640CST and 58 m.p.h. at North Platte at 1727CST.
Nemaha County	26	1730CST			0	0	1	1	Hail (0.75) Three-quarter inch hail fell briefly just east of Auburn. No reported damage occurred.
Saunders County	28	1650CST			0	0	3	3	Thunderstorm Wind, Hail Tree limbs were broke by strong winds around Wahoo. Hail damaged crops near Wahoo and Mead.
Gage County	28	1700CST			0	0	4	2	Thunderstorm Wind Wind gusts destroyed farm outbuildings near Liberty.
Saunders County	28	1700CST			0	0	0	0	Funnel Cloud A funnel cloud was reported at Valley View just southwest of Fremont.
Dodge County	28	1715CST			0	0	5	3	Thunderstorm Wind, Hail Strong wind gusts damaged the roofs of two stores and a skating rink at Fremont. Trees and power lines were also damaged northeast of Fremont. Hail damaged windows and crops.
Washington County	28	1720CST			0	0	5	2	Thunderstorm Wind Wind gusts blew shingles off of roofs, tore signs off of buildings, and blew down trees and power lines at Arlington. Some vehicles in town were damaged by fallen limbs. Farms in the area also reported some damage to grain bins and outbuildings.
Pawnee County	28	1730CST			0	0	5	0	Thunderstorm Wind (60) Winds estimated at up to 70 mph blew the roof off the fairground grandstand at Pawnee City.
Douglas County	28	1745CST			0	0	4	1	Thunderstorm Wind Wind gusts, blew over a shed, tore skirting off of trailer homes and broke tree limbs in the extreme northwest part of Omaha.
26 NEVADA									
Elko County	7	1300PST			0	0	5	0	Thunderstorm Wind This thunderstorm produced little rain, but winds of 58 mph were recorded at the Elko airport. Some roofing was blown off at the Stockmans Hotel in downtown Elko, and some damage was done to the swimming pool. This storm also blew over an unfinished wall being constructed for a new county jail.
Washoe County NV2003	24	Noon PST			0	0	0	0	High Winds Winds ahead of a fairly strong front gusted to 53 mph at Reno during the afternoon of the 24th. No damage was reported.
Washoe and Douglas Counties NV2003	24-25	1800PST			0	0	0	0	Heavy Snow This was the second snowfall for the Lake Tahoe area this month and the first to spread significant snow to a large area of the Tahoe basin. Some overnight snowfalls were 4 inches at Incline and 8 inches at Mount Rose. This snow caused the chain law to be issued over many passes around Lake Tahoe.
Elko County	25	0830PST			0	0	0	0	Funnel Clouds Two funnel clouds were observed in the Elko area, including one observed by the Meteorologist Technician at the Elko airport. The funnel clouds were about 10 miles east of Elko and were observed moving towards the east. There were no reports of the funnel clouds touching down. The funnel clouds occurred in cold unstable air behind a cold front.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
NEVADA									
Washoe and Douglas Counties NVZ003	26-27	1800PST			0	0	0	0	Heavy Snow
	<p>The second storm of this week produced a large area of significant snow to the Lake Tahoe basin. This caused many roads in the basin and in the passes surrounding Tahoe to come under chain control. Some snowfall totals were: 6 inches at Incline, 9 inches at Deggett Pass, 12 inches at Mount Rose and 12 to 18 inches at some automated snotel sites.</p>								
27 NEW HAMPSHIRE — NONE REPORTED									
28 NEW JERSEY, Northern									
Monmouth County	26	2030EST			0	0	?	0	Thunderstorm Wind
	<p>Uprooted and toppled trees smashed several cars and damaged at least 25 homes in Asbury Park, New Jersey as a severe thunderstorm moved through.</p>								
28 NEW JERSEY, Southern									
2 SE Woodbine, Cape May County	23	2100 EST	1.0	33	0	0	5	0	Tornado (FO)
	<p>A tornado moved across the Woodbine Airport, flipping over two private airplanes. Along a nearby road, 4 utility poles and five trees were snapped off.</p>								
29 NEW MEXICO									
Guadalupe County	01	PM			0	0	6	0	Flash Flood
	<p>A three-year-old bridge was washed out during a flash flood near Santa Rosa.</p>								
Chaves County	04	1755MST	?	?	0	0	0	0	Tornado (FO)
	<p>A tornado was reported by the public 10 miles north of Roswell.</p>								
Chaves County	04	1755MST			0	0	0	0	Hail (0.50)
	<p>One-half-inch hail was reported by State Police 20 miles north of Roswell.</p>								
Chaves County	04	1839MST			0	0	3	0	Hail (0.75)
	<p>Three-quarter-inch hail fell at Roswell airport, and unofficial reports of hail the size of a man's fist in the city of Roswell were also received.</p>								
Santa Fe County	07	PM			0	0	4	0	Flash Flood
	<p>A flash flood washed away part of a road to the Eldorado subdivision in Santa Fe.</p>								
San Juan County	09	PM			0	0	2	0	Thunderstorm/High Winds
	<p>High winds destroyed a shed at Bloomfield.</p>								
Valencia County	24	AM			0	0	3	0	Thunderstorm/High Winds
	<p>High winds tipped over a truck and took a roof off a mobile home.</p>								
Valencia County	28	PM			0	0	3	0	High Winds
	<p>Five people in a mobile home were unhurt when their mobile home flew over.</p>								
Roosevelt County	29	1547MST			0	0	0	0	Hail (0.75)
	<p>Golfball-sized hail was reported southwest of Portales.</p>								
30 NEW YORK, Coastal — NONE REPORTED									
30 NEW YORK, Central									
Franklin County	15	2230EST			0	0	4	0	Snow
	<p>Heavy wet snow fell throughout the Adirondacks, starting during the late evening hours. Heaviest snowfall was in the area of Saranac Lake. Heavy snow brought down power lines across two (2) cars which caught fire. Isolated amounts of six (6) inches were reported in this area.</p>								
Saratoga County	23	0710EST			0	2	4	3	Lightning
	<p>Lightning struck a barn and resulted in a fire along Rt 29. Two (2) firefighters were injured during firefighting operations.</p>								
Tompkin County	30	1430EST			0	0	0	3	TSTM Wind
	<p>Convective winds downed trees and power lines.</p>								
30 NEW YORK, Western									
NYZ001 Genesee & Wyoming Counties	12	0120 EST			0	0	4	0	High Wind
	<p>High winds downed trees and power lines. Power outages were reported in Akron, Perry, Elba, and Warsaw.</p>								
Wayne County	19	1500 EST			0	0	3	0	Rain
	<p>Heavy rains produced poor drainage and basement flooding in portions of Wayne County.</p>								
Erie, Niagara, & Monroe Counties	23	0320 EST			0	0	4	0	Lightning
Cayuga, Onondaga, & Seneca Counties	23	0400 EST			0	0	4	0	TSTM Wind, Rain, & Lightning
	<p>Lightning strikes caused power outages in portions of Niagara County. In Asherst, Erie County, a lightning bolt bore an 8-inch hole in the roof of a house.</p>								
	<p>In Rochester, Monroe County, lightning struck a 34,000-volt line. More than 7000 lost power for several hours.</p>								
	<p>In Auburn, Cayuga County, lightning struck a transformer, resulting in a power outage to more than 300 homes.</p>								
	<p>Power blackouts and street flooding were reported in Syracuse and in parts of Seneca County.</p>								
Jefferson County	24	0900 EST			0	0	4	0	Lightning
	<p>Lightning is believed to have caused a fire which destroyed a house in Henderson.</p>								
Tompkins County	26	0600 EST			0	0	3	0	Lightning
	<p>Lightning struck and felled a tree in Groton. Some power outages were reported.</p>								
Chautauque County	26	0930 EST			0	0	3	0	Lightning
	<p>Two homes in Jamestown were damaged by lightning strikes.</p>								
Chautauque County	26	1330 EST			0	0	4	0	TSTM Wind
	<p>Strong thunderstorm winds downed electric lines in Bemus Point. There were power outages in Falconer.</p>								
	<p>Heavy rainfall caused street flooding in Panama.</p>								
NYZ021 Orleans County	29	1200 EST			0	0	4	0	Rain
	<p>Three inches of rain from thunderstorms fell in a few hours over ground saturated with up to 10 inches of rain that fell in the last 10 days. Hardest hit with street and basement flooding was the village of Lyndonville.</p>								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
NEW YORK, Western											
Wayne, Seneca, Ontario, Livingston, Monroe, Wyoming, & Cayuga Counties	29	Afternoon			0	0	5	0			Rain & Lightning
											Thunderstorms lashed portions of these counties, knocked down tree limbs, caused power outages, and flooded streets. Quite a few homeowners suffered flooded basements.
											There were many cases of basement flooding in the towns of Williamson, Ontario, andodus, all in Ontario County. Extensive street flooding occurred in the city of Rochester and vicinity.
											The towns of Warsaw, Perry, Wyoming, Dale, Gainsville, Castile, and Silver Springs, in Wyoming County; and Leicester and Cuylerville in Livingston County were without power for more than a few hours due to downed trees and lightning strikes.
											A chimney of a house in Geneva was struck by lightning.
Orleans County	29	2105 EST	1/2	25	0	0	4	0			Tornado (F1)
											Tornado moved southeast off Lake Ontario to northwest Orleans County (north of the Village of Lyndonville), crossed West Lake Road, looped around a house, moved northeast to the Village of Shadigee, and back to Lake Ontario.
											Most of the damage was to one house on West Lake Road with many minor damages to other residences in Shadigee. There were no deaths and injuries. Many tree branches were felled.
Cattaraugus County	30	1423 EST			0	0	3	0			Hail (0.75)
											Hail was reported at 5 sites just north of Little Valley.
Monroe & Wayne Counties	30	2045 EST			0	0	3	0			Rain
											Heavy rainfall from showers and thunderstorms caused street flooding in Webster and Irondequoit, Monroe County; and basement flooding in Williamson, northwest Wayne County.
31 NORTH CAROLINA											
Stones Bay, Onslow County	12	1900EST			0	1	0	0			Lightning
											A man was struck and critically injured by lightning while he was clammng.
NCALL Statewide	All	Month			0	0	?	?			Drought, Heat
											After a very wet August, dry, hot weather returned to the state in September. Therefore, cumulative effects of the drought continued, and by the end of the month some communities in the western part of the state were reporting water shortages once again.
32 NORTH DAKOTA											
Griggs County, Cooperstown	21	0200CST			0	0	4	0			Lightning
											Lightning struck an auto shop building, causing a fire inside.
Trall County, Hatton	21	0300CST			0	0	4	0			Lightning
											Lightning struck a garage, causing a fire inside.
33 OHIO											
Burling County, Bismarck	24	2335CST			0	1	6	0			Tem. Wind (73)
											A wind gust to 84 mph was recorded at the Bismarck airport, two miles southeast of downtown Bismarck, at 1135 PM CST. At 1143 PM CST, estimated wind speeds of 125 mph to 150 mph occurred in localized areas on the northeast outskirts of Bismarck. These strong downburst winds destroyed two frame houses, and totally demolished two mobile homes. A 38 year-old man was injured inside one of the demolished mobile homes. The strong winds also moved other mobile homes off their foundations, damaged other frame houses, downed trees and power lines, tipped over campers and sheds, and damaged roofs. Twenty families were left homeless. The worst damage occurred along a ten-mile track from about seven miles southeast of downtown Bismarck, to about four miles north of downtown Bismarck. The path of the worst damage averaged less than a quarter mile in width.
ND2001-002-003-004-005-006-007-008-009-010-011-012-013-014 West, Central and East-Central North Dakota	24	Nighttime to 25 Afternoon			0	0	6	6			High Wind
											Strong winds with sustained speeds of 30 to 50 mph, and gusts to 75 mph, occurred with a deep low pressure system that moved north through eastern Montana and western North Dakota. At the Bismarck airport, the barometric pressure dropped to 28.78 inches at 1150 AM CST. This is the lowest pressure ever to occur in Bismarck during the month of September, and the second lowest pressure reading ever recorded in Bismarck.
											The high winds uprooted trees, caused power outages, damaged row crops, destroyed quonset huts, tore off doors, and damaged mobile homes and barns. The high winds also blew down an airport hangar at the Watford City airport. At the Bismarck airport, two commercial landings had to be diverted because of the strong erratic winds.
											In addition, the high winds damaged storage sheds and steel siding on buildings, tore off sheet metal roofing, twisted off the tops of grain silos, and tipped over a hopper tank.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
OHIO									
Erie County	26	1849EST			0	0	4	0	Thunderstorm wind
A thunderstorm felled trees and produced 60 mile an hour winds in Bay View and western Sandusky.									
Raron County	26	1900EST			0	0	5	0	Thunderstorm wind
A thunderstorm badly damaged a plaza under construction and caused a falling tree to destroy a camper in Norwalk.									
Muskingum County	26	1920EST			0	0	4	0	Hail (1.75), Thunderstorm wind
A thunderstorm produced large hail in the county and destroyed several trees in Zanesville.									
Lorain County	26	1930EST			0	0	4	0	Thunderstorm wind
Winds of 64 miles an hour were observed at the Lorain lighthouse.									
Franklin County	26	1945EST			0	0	4	0	Thunderstorm wind
A thunderstorm produced winds of 60 miles an hour in downtown Columbus.									
Stark County	26	2040EST			0	0	4	0	Thunderstorm wind
A thunderstorm toppled trees in Hartsville.									
Trumbull County	26	2120EST			0	0	4	0	Thunderstorm wind
Trees were downed by a thunderstorm in Warren.									
Licking County	27	1345EST			0	0	4	0	Thunderstorm wind, Hail (1.0)
A thunderstorm knocked over trees in Granville. The same storm dropped large hail in Pataskala. Hail damage was minimal compared to wind damage and did not exceed \$1000.									
Lorain County	27	1445EST			0	0	4	0	Thunderstorm wind
A thunderstorm destroyed numerous trees in Avon Lake.									
Pickaway County	28	1600EST			0	0	4	0	Thunderstorm wind
A thunderstorm blew over several trees in the southeast part of the county.									
Huron County	30	1230EST			0	0	4	0	Thunderstorm wind
A thunderstorm felled at least three trees in Norwalk.									
Gauga County	30	1420EST			0	0	4	0	Thunderstorm wind
A thunderstorm downed numerous trees from Newbury to Burton.									
Ashland County	30	1430EST			0	0	4	0	Thunderstorm wind
A thunderstorm toppled trees at scattered locations in the northern part of the county.									
Ashtabula County	30	1455EST			0	0	4	0	Thunderstorm wind
Trees were downed in the southwest part of the county by a thunderstorm.									
Montgomery County	30	1455EST			0	2	4	0	Thunderstorm wind
A thunderstorm blew a tree onto a car, injuring two people.									
Wayne County	30	1500EST			0	0	4	0	Thunderstorm wind
A thunderstorm caused winds of 70 miles an hour and downed several trees in Wooster.									
Stark County	30	1520EST			0	0	4	0	Thunderstorm wind
A thunderstorm felled trees and produced 70 mile an hour winds at scattered locations in the county.									
Portage County	30	1530EST			0	0	5	0	Thunderstorm wind
A thunderstorm produced winds of 70 miles an hour in many areas. A school was partially deroofted in Aurora and several outbuildings were destroyed or damaged.									
Summit County	30	1530EST			0	0	4	0	Thunderstorm wind
A thunderstorm destroyed an outbuilding in Franklin Township.									
Trumbull County	30	1545EST			0	0	4	0	Thunderstorm wind
A thunderstorm toppled trees just south of Newton Falls.									
OHIO									
Mahoning County	30	1612EST			0	0	4	0	Thunderstorm wind
Trees were downed by a thunderstorm in the west-central part of the county.									
Tuscarawas County	30	1630EST			0	0	4	0	Thunderstorm wind
A thunderstorm knocked over numerous trees in Dover.									
Fairfield County	30	1740EST			0	0	4	0	Thunderstorm wind
Trees were felled on the southwest side of Lancaster by a thunderstorm.									
34 OKLAHOMA									
Garvin County	10	1725CST			0	0	?	?	Hail (0.88)
Stephens County	10	1726CST			0	0	4	?	Tstm.Wind
Seminole County	10	2230CST			0	0	5	?	Lightning
Hail the size of nickels fell 2 miles northwest of Wynnewood. Winds of 60 to 70 mph damaged 3 roofs in Comanche, with damage estimated at \$30,000. Lightning caused \$72,000 damage to a house just east of Seminole.									
Nowata and Washington Counties	16	1200CST			0	0	?	?	Flash Flooding
Rainfall of 3 to 4 inches caused several small creeks to flood in Bartlesville and Nowata. Water got into several houses and closed Highway 61 for a few hours.									
Haskell County	16	1455CST			0	0	?	?	Hail (1.00)
Haskell County	16	1520CST			0	0	?	?	Hail (1.00)
Canadian County	16	1603CST			0	0	?	?	Hail (0.75)
Oklahoma County	16	1617CST			0	0	?	?	Hail (0.75)
Grady County	16	1830CST			0	0	?	?	Tstm.Wind
One inch size hail fell 5 miles west of Stigler and in Stigler. Dime size hail fell near Piedmont and Edmond. Strong winds damaged a barn and downed trees and power lines about 5 miles east of Tuttle.									
Oklahoma County	26	1156CST			0	0	?	?	Hail (0.75)
Creek County	26	1528CST			0	0	?	?	Hail (0.75)
Rogers County	26	1600CST			0	0	4	?	Tstm.Wind
Tulsa County	26	1618CST	0.1	50	0	0	0	0	Tornado (F0)
Washita County	26	1630CST			0	0	?	?	Tstm.Wind
Garvin County	26	1645CST			0	0	?	?	Hail (0.75)
Pontotoc County	26	1645CST			0	0	?	?	Hail (0.88)
Alfalfa County	26	1710CST			0	0	?	?	Hail (0.88), Tstm.Wind
Washita County	26	1715CST			0	0	?	?	Hail (0.88)
Wagoner County	26	1745CST	8.0	75	0	0	5	?	Tornado (F2)
Grady County	26	1910CST			0	0	?	?	Hail (1.75)
Oklahoma County	26	1920CST			0	0	?	?	Hail (1.00)
Oklahoma County	26	1930CST			0	0	?	?	Hail (0.88)
Oklahoma County	26	1958CST			0	0	?	?	Hail (0.75)
Oklahoma County	26	2050CST			0	0	?	?	Tstm.Wind
Grady County	26	2100CST			0	0	?	?	Hail (0.75)
Lincoln County	26	2120CST			0	0	?	?	Hail (0.75)
Pottawatomie County	26	2200CST			0	0	?	?	Hail (0.75), Tstm.Wind
Cleveland County	26	2201CST			0	0	?	?	Tstm.Wind
A tornado touched down briefly on 181st Street on South Memorial, or near Bixby, doing no damage. A second tornado set down 3 miles south of Coveta at 1745CST and moved northeastward for about 8 miles to a point 7 miles east-northeast of Coveta at 1800CST. The tornado damaged two houses, destroyed a garage and several barns, and downed many trees and powerpoles. Damage was estimated at \$100,000. Thunderstorm winds destroyed a mobile home near Catoosa and downed trees and powerlines at Sentinel, 2 miles southwest of Burlington, in southwest Oklahoma City, near Lake Thunderbird east of Norman, and at Pink. Hail ranging from 3/4 inch to one inch fell at several locations. Golfball size hail fell at Tuttle.									
Oklahoma County	27	0555CST			0	0	?	?	Tstm.Wind (58)
A thunderstorm produced winds over 60 mph at Will Rogers World Airport.									
McCain County	28	1957CST			0	0	?	?	Hail (0.75)
Canadian County	28	2020CST			0	0	?	?	Hail (1.00)
Penny to quarter size hail fell 4 miles northeast of Dibble and just north of Mustang.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	

OKLAHOMA

Jackson County	29	0330CST			0	0	5	?	Tstm. Wind
Oklahoma County	29	0520CST			0	0	6	?	Tstm. Wind
Lincoln County	29	0615CST	4.0	100	0	0	5	?	Tornado (F1)
Okmulgee County	29	0715CST			0	0	5	?	Tstm. Wind
Rogers County	29	0715CST	2.0	100	0	1	5	?	Tornado (F2)
Tulsa County	29	0720CST			0	0	?	?	Tstm. Wind
Logan County	29	1407CST	0.1	50	0	0	0	0	Tornado (F0)
Oklahoma County	29	1430CST			0	0	?	?	Hail (0.88)
Oklahoma County	29	1516CST			0	0	?	?	Tstm. Wind
Oklahoma County	29	1525CST	5.0	100	0	0	5	?	Tornado (F2)
Oklahoma County	29	1530CST	0.1	75	0	0	5	?	Tornado (F2)
Lincoln County	29	1549CST			0	0	0	0	Tstm. Wind
Roger Mills County	29	1630CST			0	0	?	?	Hail (0.88)
Ellis County	29	1710CST			0	0	?	?	Hail (1.75)
Ellis County	29	1735CST			0	0	?	?	Hail (0.88)
Roger Mills County	29	1750CST			0	0	?	?	Hail (0.75)
Custer County	29	1800CST			0	0	?	?	Tstm. Wind
Woodward County	29	1805CST			0	0	?	?	Tstm. Wind
Dewey County	29	1810CST			0	0	?	?	Tstm. Wind
Woodward County	29	1828CST			0	0	4	?	Tstm. Wind
Major County	29	1830CST			0	0	?	?	Hail (0.88)
Beckham County	29	1845CST			0	0	?	?	Hail (1.00)
Roger Mills County	29	1850CST			0	0	?	?	Hail (0.75)
Alfalfa County	29	1900CST			0	0	?	?	Hail (1.00)
Custer County	29	1900CST			0	0	?	?	Hail (0.75)
Dewey County	29	1928CST			0	0	?	?	Hail (0.75)
Custer County	29	1940CST			0	0	?	?	Hail (0.88)
Garfield County	29	1955CST			0	0	?	?	Hail (0.75)
Key County	29	2100CST			0	0	?	?	Tstm. Wind
Grant County	29	2100CST			0	0	?	?	Tstm. Wind
Kingfisher County	29	2100CST			0	0	?	?	Tstm. Wind
<p>Thunderstorms produced strong winds during the morning hours and again during the afternoon and evening. Winds caused \$150,000 damage at Altus, probably the result of a microburst. The winds took a roof off a house and damaged several businesses and autos. Several other buildings were also destroyed. Over a million dollars (\$1,025,650) in damages occurred in southwest Oklahoma City when a series of microbursts damaged 17 businesses and 127 houses from Oklahoma City into Del City. The city of Beggs received \$75,000 damages to businesses, and houses and one mobile home was destroyed. Winds caused damage at many other locations, destroying barns and outbuildings, downing trees and power poles, and damaging other houses and businesses. Hail ranging from 3/4 inch to one inch fell in several areas. A tornado touched down 3 3/4 miles southeast of Meeker and moved northeast for about 4 miles to a point 2 1/3 miles southeast of Meeker. The tornado destroyed a barn and several outbuildings and damaged several houses and barns, with damage estimated at \$75,000. Another tornado set down just southeast of Catoosa and moved northeastward across the town, destroying a mobile home, unroofing two houses, and downing many trees and power poles. Damages were estimated at \$100,000. A tornado touched down briefly but caused no damage 2 3/4 miles west-northwest of Seward in Logan County. A tornado touched down 2 3/4 miles east of Choctaw in Oklahoma County and moved toward the northeast, making intermittent ground contact for 5 miles to a point 5 1/2 miles east of Jones. The tornado destroyed a mobile home and damaged several houses and barns. Damage estimated at \$80,000 occurred. A second tornado in Oklahoma County damaged an apartment complex in Midwest City, causing \$70,000 damage.</p>									
OK2011-015-016	29	0900 to 1000CST			0	0	?	?	Flash Flooding
<p>Rainfall of 3 to 5 inches in a few hours caused several small creeks and streams to overflow their banks, causing many roads to be closed for a short time.</p>									
OK2006-010-011-016	29	1100 to 1800CST			0	0	?	?	Flash Flooding
<p>Rainfall amounts of 7 to 10 inches in the past 12 hours caused many creeks and streams to overflow their banks. Many roads were closed in the area. About 300 families were evacuated in northern Kingfisher as Uncle John and Kingfisher Creeks threatened their homes. Fifty families were evacuated in Guthrie as Cottonwood Creek flooded.</p>									
OK2007-012	29	1400 to 2200CST			0	0	?	?	Flash Flooding
<p>Rainfall amounts of 7 to 10 inches caused many small streams and creeks to flood roads and many houses. Bird Creek flooded 35 to 40 houses and 15 businesses in Skiatook. Several people had to be rescued because their cars and houses became surrounded by water rapidly.</p>									
OK2008-012-013	29	2000 to 2300CST			0	0	?	?	Flash Flooding
<p>Seven to ten inch rainfall amounts caused many streams and creeks to flood. The water rose so fast in some areas that residents had little or no time to evacuate. Many roads and bridges suffered damage as well as many houses and businesses.</p>									

OKLAHOMA

Caddo County	30	2140CST			0	0	?	?	Hail (0.88)
Oklahoma County	30	2300CST			0	0	?	?	Hail (2.75)
Oklahoma County	30	2306CST			0	0	?	?	Tstm. Wind
Lincoln County	30	2320CST			0	0	?	?	Tstm. Wind
Oklahoma County	30	2323CST			0	0	?	?	Tstm. Wind
Pottawatomie County	30	2330CST			0	0	?	?	Tstm. Wind
Cleveland County	30	2330CST			0	0	?	?	Hail (2.75), Tstm. Wind
<p>Thunderstorms produced hail and strong winds over central Oklahoma. Hail up to baseball size and winds up to 80 mph occurred in southeast Oklahoma City and the north sections of Cleveland County near 89th and Sunnylane. Strong winds caused \$515,000 damage in Shawnee where one building was destroyed and many damaged in a shopping mall. Two aircraft were overturned and many trees and power poles were downed. Many cars were damaged from the blowing debris.</p>									
35 OREGON									
Malheur County	9	?			0	0	?	0	Flash Flood
<p>Heavy rain from a thunderstorm washed out a section of the county road in Leslie Gulch, 30 miles south of Adrian near Owyhee Lake.</p>									
36 PENNSYLVANIA, Eastern									
Berwick, Columbia County	23	1345 EST			0	0	4	0	TSTM Wind (60 MPH)
Catasauqua, Lehigh County	23	1455 EST			0	0	3	0	TSTM Wind (60 MPH)
<p>Thunderstorm wind gusts tore off 3/4 of the roof of a house in Berwick, Pa. The winds carried a trash dumpster 50 yards and into an automobile. Two other houses received minor damage and several trees were broken off in another area just outside Berwick. The wind gusts were estimated at 60 MPH. Wind gusts were measured at 52 knots at the Allentown-Bethlehem-Easton Airport in Lehigh County near Catasauqua. The thunderstorm wind gusts also caused some minor roof damage in the city of Bethlehem.</p>									
Montgomery County, Ambler	26	1950 EST			0	0	3	0	TSTM Wind
<p>Wind gusts associated with thunderstorms brought down many trees in the area around Ambler. In Fort Washington, 1-1/2 miles southeast of Ambler, a path of fallen trees and debris nearly 1/2 mile long spread across four neighboring backyards. In one yard a 200-pound gas grill and a cement-weighted umbrella stand were moved.</p>									
Snyder County, Selinsgrove	27	1000 EST			0	0	4	0	Lightning
<p>Lightning struck the waste water plant just south of Selinsgrove causing severe damage to the roof and damaging some of the instrumentation. There were two gaping holes in the roof and damage was estimated at between 20,000 and 40,000 dollars.</p>									
36 PENNSYLVANIA, Western									
Armstrong County	23	1506EST	0.5	40	0	1	6	0	Tornado (F2)
<p>A tornado touched down briefly one mile west of Kellersburg in Madison Township. It took off one half of the roof of an elementary school, destroying the end of the building housing the cafeteria. Several trees behind the school were uprooted. 1/4 mile nearby, a house received minor damage. A barn also lost its roof.</p>									
Erie County	26	0735EST			0	0	5	0	Flood, Lightning
<p>Beaver Run went over its banks, 2 1/2 feet of water filled the ground floor of a convalescent home, and street flooding occurred in Erie. Lightning started a fire in the kitchen of a tavern, causing \$65,000 in damage.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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	
PENNSYLVANIA, Western									
Erie County	26	1300EST			0	0	6	0	Lightning, Flood Lightning struck a barn, setting it on fire. Nine farm animals were killed and pieces of farm equipment were destroyed. A high school had minor water damage from flooding consisting of loosened ceiling and floor tiles on the floor below ground level.
Jefferson County	26	1530EST			0	0	0	0	Thunderstorm Wind Large trees and power lines were downed in Punksutawney.
Clearfield County	26	1600EST			0	0	?	?	Thunderstorm Wind, Hail (1.00) Large trees and power lines were downed in West Sandy Township, one mile north of DuBois. Two buildings were struck by lightning, and one inch diameter hail fell as well.
Armstrong County	26	1830EST			0	0	0	0	Thunderstorm Wind Trees and power lines were downed at Parker and throughout the county.
Armstrong County	26	1835EST			0	0	5	0	Lightning An East Franklin barn was ignited by lightning.
Erie County	26	2038EST			0	0	4	0	Lightning Lightning set fire to a commercial building in Mill Creek, one mile south of Erie.
Crawford County	30	1520EST	0.5	60	0	1	6	0	Tornado (F2), Hail (3.00), Lightning Five miles east of Cambridge Springs in Rockdale Township, a tornado destroyed a mobile home, injuring one occupant. The tornado lifted the mobile home and threw it 60 feet away; its roof was found 200 feet away. A mobile home next to the first one was knocked off its foundation. One quarter mile away, a chimney of a home was destroyed, though the rest of the house was not seriously affected. Baseball size hail left a large hole in a barn one half mile away. The hail affected an area one quarter to one half mile around the destroyed trailer. One wall of a commercial building was blown out by a lightning strike in Cambridge Springs at around 1500EST.
Erie County	30	1630EST			0	0	0	0	Funnel Cloud A funnel cloud was sighted moving east at Mill Village and Edinboro.
Venango County	30	1630EST			0	0	5	0	Thunderstorm Wind Trees were downed, and an oil rig was damaged by falling trees two miles east of Pleasantville in Allegheny Township.
Lawrence County	30	1645EST			0	0	0	0	Funnel Cloud A funnel cloud was sighted over Slippery Rock Township, 5 miles east of New Castle.
Butler County	30	1650EST			0	0	0	0	Thunderstorm Wind Large trees were downed in Slippery Rock.
Jefferson County	30	Evening			0	0	5	0	Lightning Lightning struck a farmhouse in Richardsville, six miles northeast of Brookville, setting it ablaze.
Clearfield County	30	1830EST			0	0	0	0	Thunderstorm Wind Trees were downed in DuBois.
Allegheny County	30	1830EST			0	0	5	0	Thunderstorm Wind Trees were downed in Monroeville, Edgewood, Forest Hills, Oakland, Mt. Washington, Crafton, and the north and south sides of Pittsburgh. Forty steel joists lifted by the wind penetrated the roof of a department store in Monroeville, allowing a considerable amount of water to leak through and cause damage to merchandise.
Armstrong County	30	2018EST			0	0	5	0	Lightning A barn in West Franklin, two miles south of Worthington, was struck by lightning and subsequently burned to the ground.
37 RHODE ISLAND									
Statewide	16	Early morning			0	0	3	0	Lightning A line of thunderstorms moving across the state brought lightning strikes that knocked out electric power in scattered areas. In Pawtucket, about one thousand customers were left without power. In Newport, Middletown and Jamestown, a brief outage affected up to two thousand people.
38 SOUTH CAROLINA									
SCZ001-002-003-004-005-006-007-008 Statewide	1-30				0	0	?	?	Drought Much below normal rainfall plus record high temperature late in the month intensified drought conditions statewide.
39 SOUTH DAKOTA									
Yankton County	09	0915 CST			0	0	0	0	Hail (1.00) Hail up to one inch in diameter fell near Yankton.
Roberts County	09	1100 CST			0	0	2	0	Lightning Lightning damaged a tree, several appliances and a television set in Wilmot.
Bennett County	10	ERY MRNG			0	0	0	0	Hail (2.00) Two inch diameter hail fell one mile west of Vetal.
SDZ00E Eastern SD	14- 21	MRNG- ERY MRNG			0	0	5	?	Heavy Rain, Flooding Heavy rains produced river, small stream and lowland flooding. Some streets and rural roads were impassable or closed. Total rainfall amounts for the period ranged from four to eleven inches. Seven and a half inches of rain fell 6 miles south of Geddes (Charles Mix County) on September 11, with a total of 11 inches for the period. Five inches fell just east of Flandreau (Moody County) from the evening of the 20th to sunrise on the 21st. Several homes were flooded in Flandreau. The Vermillion, lower James and Big Sioux Rivers and their tributaries were out of their banks for much of the period from the 14th through the 21st. Some roads were blocked by high water in Minnehaha County and several farms in the county lost as much as 200 acres of crops per farm.
Butte and Meade Counties	24	1715- 1720 CST 1705- 1720 CST 24- 25	3	40	0	0	4	0	Tornado (F1) Tstm.Winds Heavy Rain A tornado touched down on the south edge of Newell and moved east three miles. The tornado damaged a storage shed and downed a power line in southern Newell, and a granary and stockade were destroyed one and one-half miles east of Newell. Thunderstorm winds blew down trees in the area and tore the roof off of a house in Newell. Wind damage to buildings was also reported in the Vale area. Heavy rain also fell from Newell to Sturgis, with up to six inches reported in Newell and 5.2 inches at Arpan. The heavy rain caused street flooding in Sturgis and caused streams in the area to rise out of their banks. Several roads near Vale were under water for a time.
Mellete County	24	1852- 1855 CST	1.5	60	0	0	4	0	Tornado (F0) A tornado touched down a half mile east of Cedar Butte, damaging a trailer house and blowing apart one hundred 500-pound bales of hay. Power poles were also downed.
Jones County	24	1915 CST	.1	40	0	0	0	0	Tornado (F0) Tstm.Winds A tornado touched down briefly six miles west of Murdo. No damage was reported. Thunderstorm winds destroyed a two-car garage in Okaton and tore a roof off of a school. Several other buildings in the area were badly damaged including some north of Murdo. Several trees were also uprooted.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS	
SOUTH DAKOTA									
Todd County	24	EVE			0	0	5	0	Tstm. Winds
	24	EVE			0	0	0	0	Funnel Cloud
Thunderstorm winds damaged 39 homes in the county and left two trailer homes destroyed. A funnel cloud was reported one-half mile north of Parmelee.									
Stanley County	24	2000 CST			0	0	1	0	Tstm. Winds
	24	2015 CST	.1	40	0	0	3	0	Tornado (F1)
Thunderstorms produced 60 to 70 mph winds 30 miles west of Pierre. Large branches were broken. A tornado occurred 20 miles northwest of Pierre. A corner of a house was lifted off of its foundation. Several 10 inch diameter trees were uprooted.									
Charles Mix County	24	2100 CST			0	0	4	0	Tstm. Winds
Thunderstorms produced winds to 65 mph in Platte, tearing the roof off of an aircraft hangar and damaging three planes. Several trees and power lines were also blown down by the winds.									
Dewey County	24	2118 CST	.3	40	0	0	4	0	Tornado (F1)
A tornado touched down northwest of Ridgeview and traveled a short distance. The tornado destroyed a satellite dish and damaged two grain bins, a shed, a television tower and a large machine.									
Walworth County	24	2200 CST			0	0	3	0	Tstm. Winds
Thunderstorm winds gusted to 60 MPH in Mobridge, causing numerous-tree damage. The winds downed power lines and caused a two-hour power outage in Mobridge.									
Brown County	24	2315 CST			2	5	6	0	Tstm. Winds
Strong thunderstorm winds damaged 18 mobile homes near Aberdeen. Seven of the homes were destroyed and three were heavily damaged. Three of the mobile homes were overturned and a fire resulted in one home, killing two girls. Wind F11M FBM.									
SDZ00W Western SD	24-25	LT EVE- MRNG			0	0	4	?	High Winds
Strong winds up to 80 mph occurred over parts of western South Dakota. The strong winds uprooted trees and downed 24 power poles near Wicksville (Pennington County) and several near Lemmon (Perkins County). Power was out for several hours in parts of rural Pennington County. Several buildings were damaged by the winds, including a large frame quonset building north of Martin (Bennett County).									
40 TENNESSEE									
Fayette County	03	Afternoon			0	0	3	0	Hail
Varying but large and damaging sizes of hail fell during a thunderstorm in western Fayette County. A house on Highway 64 between Oakland and Somerville had 5 windows broken out, and a truck sustained over \$1,000 in damage.									
Rutherford County	04	0000CST			0	0	0	6	C Flash Flood
As much as 11 inches of rain fell in a six and a half hour time period beginning about 2100CST on the 3rd and continuing until around 0200CST on the 4th, causing major flash flooding in Murfreesboro and much of northern Rutherford County early on the 4th. The Stones River, and tributaries feeding into it, overflowed their banks, and water rose quickly into homes and businesses. About 30 people were evacuated from 19 homes beginning around 0000CST on the 4th. Some cars were washed over bridges into creeks, and a few barns and sheds were carried away by the water. One bridge was washed away, and U.S. Highway 231 was closed for a time just west of the Rutherford-Wilson county line. One hundred college students were forced to evacuate two dormitories at Middle Tennessee State University, and 100 cars were swamped on campus. An automobile dealership sustained a \$750,000 loss when 47 cars were flooded. Five feet of water accumulated in parts of the Middle Tennessee Medical Center in Murfreesboro. Total damage to homes, businesses, automobiles, and industry amounted to over \$1.9 million. Damage to 36 homes was more than \$360,000. Two golf courses, both located in low-lying areas adjacent to the Stones River, sustained more than \$10,000 each in damage. Official rain measurements were between 6 and 8 inches, but unofficial storm totals near 11 inches occurred near Lascassas and Compton. Lascassas, Compton, Lofton, Hall's Hill Pike, Walter Hill, Leanna, and Murfreesboro were the hardest hit areas of the county. There were no fatalities or significant injuries.									
41 TEXAS, Northern									
Johnson County	2	0512CST			0	0	?	?	Flash Flooding
Heavy rains of up to 7.5 inches produced street flooding in Cleburne and closed low water crossings.									
Comanche County	2	0550CST			0	0	?	?	Flash Flooding
Heavy rains flooded and closed Highway 36 between Comanche and Gustine. Four bridges were washed out in the southeast part of the county and numerous county roads were closed.									
Hamilton County	2	0735CST			0	0	?	?	Flash Flooding
Heavy rains flooded and closed Highway 36 west of Hamilton. Up to 9.20 inches of rain fell near Hico.									
Archer County, 2 N Scotland	2	1130CST	Short Narrow		0	0	4	?	Tornado (F0)
A tornado touched down briefly near Lake Arrowhead, damaging several houses.									
Bell County, 5 SW Belton	2	1455CST			0	0	0	0	Funnel Cloud
A funnel cloud was observed briefly 5 miles southwest of Belton near the Stillhouse Hollow Dam.									
McCulloch County	2	1740CST			0	0	?	?	Flash Flooding
Heavy rains flooded streets with up to two feet of water in Brady.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS	
TEXAS, Northern									
Fannin County, Leonard	4	1655CST			0	0	?	?	Hail (0.75)
			Hail to the size of dimes fell at Leonard in the southwest part of the county.						
Falls County, 8 N Marlin	4	1800CST			0	0	3	?	TSTM Winds
			Strong winds destroyed an implement building and chain link fence 8 miles north of Marlin.						
Collin County	5	0940CST			0	0	?	?	Flash Flooding
			Heavy rains flooded and closed a portion of Highway 380 in McKinney.						
Cooke County, Muenster	5	1400CST			0	0	0	0	Funnel Cloud
			A funnel cloud was observed briefly near Muenster.						
Bell County	7	2000CST			0	0	?	?	Flash Flooding
			Heavy rains flooded and closed a portion of Highway 36 north of Lake Belton and a portion of Interstate 35 between Temple and Troy.						
Wichita County, 5 W Wichita Falls	10	1445CST			0	0	4	?	TSTM Winds
			Strong winds damaged three houses just west of Wichita Falls.						
Kaufman County, 1 W Seagoville	16	1630CST			0	0	?	?	TSTM Winds
Dallas County, 1 E Seagoville	16	1632CST			0	0	3	?	TSTM Winds
			A thunderstorm in western Kaufman County produced strong winds which downed trees along the Kaufman/Dallas County borders and took the roof off a barn in the southeast part of Dallas County.						
Young County	18	1900CST			0	0	?	?	Flash Flooding
			Heavy rains flooded and closed Highways 251 and 1769 in the northern part of the county.						
Delta County, 1 N Cooper	19	1500CST			1	0	0	0	Lightning
			Lightning struck and killed a 43 year-old man at a construction site just north of Cooper. M430.						
Collin County, Plano	28	1700CST			0	0	4	?	TSTM Winds
Collin County, Celina	28	1730CST			0	0	?	?	TSTM Winds (52)
			Strong winds downed ten power line poles in Plano at 1700CST. Winds to 52 knots were observed at Celina at 1730CST.						
Foard County, Crowell	29	2310CST			0	0	?	?	TSTM Winds (56)
			Winds to 56 knots were observed at Crowell.						
Wilbarger County	30	0100CST			0	0	3	?	TSTM Winds
			Strong winds destroyed a truck shed near Vernon.						
Runnels County, 8 NW Winters	30	1735CST	0.2	50	0	0	4	?	Tornado (F1)
			A tornado 8 miles northwest of Winters downed several utility poles and damaged two barns and several cotton trailers.						
41 TEXAS, Southern									
Guadalupe County	01	1900CST			0	0	4	0	Wind
			High winds from a thunderstorm tore the roof off of a building near the town of Marion. The winds were estimated at near 60 MPH.						
Bastrop and Travis Counties	06	0130-0600CST			0	0	5	0	Flash Flooding
			Up to 12 inches of rain fell over the southeast part of Travis County near the town of Elroy. The heavy rains extended eastward into the eastern part of Bastrop County, Dry Creek and other smaller creeks in the area went on a rampage. The resulting flood waters rose into about 50 homes in the area, with major damage to 21 of them reported. 42 persons were evacuated from the area. Numerous low water crossings in the area were under water and many cars were washed off the roadways, 10 persons had to be rescued by helicopter from the tops of trees and cars. The Gilles Branch in the town of Bastrop got out of its banks from up to 6 inches of rain and overflowed into several homes. Other rainfall reports in the area include: 6.8 inches one mile north of Creedmore, and Bergstrom Air Force Base received 4.65 inches in a 6 hour period ending at 0700CST.						
TEXAS, Southern									
Blanco, Comal, and Kerr Counties	06	Early Morning			0	0	4	0	Flash Flooding
			4 to 8 inches of rain fell over portions of these counties producing flash flooding. Many low water crossings were flooded and roads were closed. Rainfall reports in the area included: 5.20 in Kerrville, 7.55 at Blanco, 5.20 at Sisterdale, 4.44 inches at Comfort, 7.00 at Kendallia and 8 inches at Spring Branch. Several roads in the area were closed including US Hwy. 281.						
Brazos County	06	Day			0	0	0	0	Flash Flooding
			Heavy rains in and around the Bryan-College Station area caused street flooding and the flooding of several low water crossings. Many automobiles were stalled out in the high water. Several underpasses were closed in the area due to high water.						
Frio County	07	0730CST			0	0	0	0	Flash Flooding
			4 to 6 inches of rain fell over the northern part of the county and flooded several roads including US Hwy. 81 and portions of I-35. Several streets in Pearsall were flooded. Local streams and creeks rose out of their banks. Rainfall reports in the area included: 6.90 at Hindes, 4.80 at Charlotte, 5.20 at Batesville and 4 inches at Pearsall.						
Kerr and Real Counties	26	0500CST			0	0	5	0	Flash Flooding
			Up to 9 inches of rain fell over the western part of Kerr County with heavy rains extending southward into Real County. Heaviest rains were centered in and around Hunt. 6 inches fell along the Real-Kerr County line. Several roads were closed in the area as many low water crossings had several feet of water across them. Several vehicles were washed off of crossings. Many motorists were stranded in high water. State Highways 41 and 39 were closed because of high water as well as other farm-to-market roads. The Guadalupe River at Hunt rose about 14 feet and inundated Schumachers Crossing. Heavy rains extended northward and the resulting flood waters sent Johnson Creek on a rampage with a 20 ft. rise. Rainfall reports in the area include: 7.14 inches 23 miles east of Rocksprings, 3.40 inches 16 miles north of Leakey, 4.10 inches 15 miles west of Mountain Home and 8.70 inches 9 miles west of Hunt.						
41 TEXAS, Western									
Tom Green County	02	0200CST			0	0	4	0	Lightning
			Lightning struck and set fire to a home in San Angelo. The fire destroyed half the roof and attic.						
Reeves County	02	Late Evening			0	0	5	0	Wind
			Thunderstorm wind resulted in widespread light damage across the city of Pecos. An automobile was pushed 75 yards across a supermarket parking lot by the wind. A nearby car wash had a brick wall collapse because of the force of wind. The wall was not reinforced.						
			Other damage included partial collapse of the south grandstand of the local rodeo arena, and the unroofing of its adjacent concession stand. Scattered fence damage was reported throughout the city.						
Winkler County	02	2030CST			0	0	4	0	Windstorm
			Approximately 10 power poles were broken by high wind between Monahans and Kermit -- or 6 miles east of Wink.						
Brewster County	03	1900-2000CST			2	0	6	?	Flash Flooding
			Two elderly women drowned in Alpine from flash flooding as slow-moving thunderstorms brought 2 inches of rain in about 2 hours. Mrs. Jesuita Reyes, 62, drowned about 2000 CST as she stepped from her stalled car into between 2 and 3 feet of water rushing through the downtown business district. Mrs. Nora Pallanes, 63, perished after her car was caught in flood waters at a railroad crossing over raging Alpine Creek. Flood waters swept her car off the roadway and into the creek. The vehicle subsequently floated beneath 4 bridges before becoming lodged under a fifth.						
			The flash flooding also damaged streets, bridges, sewer lines, and railroad tracks. In addition, 31 homes were damaged by flood waters.						
			F62V, F63V						

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

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, Western									
Fisher, Nolan, and Scurry Counties	03-04	Morning-Evening			0	0	?	?	Flash Flooding
									Torrential rains caused widespread flooding of fields and urban areas. Rains, totaling between 4 and 6 inches, swelled creeks and streams out of their banks causing flooding of low-lying roadways. U.S. Highway 84 (9 miles north of Roscoe) in northwest Nolan County was closed for nearly 36 hours as were State Highway 70, U.S. Highway 180, and several Farm-to-Market Roads in Fisher County.
Lubbock County	04	1300-1600CST			0	0	?	?	Flash Flooding
									Rains of between 2 and 3 inches caused flash flooding in and around the city of Lubbock. The flooding of city streets snarled afternoon traffic, spilled into businesses, and stalled numerous vehicles well into the evening hours. Flooding from a nearby playa lake mandated the closing of Quaker Avenue (just north of Loop 289 South) for 3 days thereafter.
Midland and Ector Counties	04	All Day			0	0	?	?	Flash Flooding
									Slow-moving thunderstorms rolled across the two-county area, bringing rains that totaled 4.31 inches -- an all-time 24-hour record for Midland Airport. Resultant flooding caused the stranding of over 400 families in residential north Odessa in Ector County. Several roads in the area were closed due to high water, among them Interstate 20 at State Highway 307 south of Midland. Several feet of water closed the Interstate.
Reagan County	04	1740CST			0	0	0	0	Funnel
									A funnel cloud was sighted 13 miles west of Big Lake, near the community of Texon, according to Department of Public Safety officials.
Tom Green County	05	1730CST			0	0	?	?	Flash Flooding
									Rains between 2 and 3 inches sent flood waters through residential streets in San Angelo. Widespread street flooding resulted in closure of some low-lying intersections. A total of 2.77 inches of rain was measured at San Angelo Mathis Field between 1330 and 1730 CST.
Andrews County	15	1730CST			0	0	0	0	Hail (1.00)
									The public reported one-inch diameter hail at the point 10 miles north of the city of Andrews.
Dawson, Martin, Andrews, and Gaines Counties	15	Evening			0	0	?	?	Flash Flooding
									The thunderstorm complex that brought one-inch hail north of Andrews produced between 3 and 5 inches of rain that caused several rural roads and highways to be closed. Water (30 inches deep) flooded U.S. Highway 87 ten miles north of Lamesa in Dawson County. Water (2 feet deep) inundated State Highway 349 between 25 and 30 miles north of Midland in Martin County. Many of the roads were closed for weeks.
Lubbock County	16	2100CST			0	0	4	0	Lightning
									Lightning struck and set fire to a house in the 5200 block of 91st Street in south Lubbock. The fire inflicted considerable smoke damage to contents, and partially destroyed the roof and attic.
Lubbock County	16	2127CST			0	0	0	0	Hail (1.75)
									The public reported golfball-sized hail 2 miles east of Reese Air Force Base in western Lubbock County.
Lamb County	18	1705CST			0	0	0	0	Hail (1.75)
									The public reported golfball-sized hail in the city of Sudan. The hail was accompanied by heavy rainfall.
Western and Central South Plains	22-23	All Day			0	0	?	?	Flash Flooding, Tornadoes, Hail
									Moisture associated with the remnants of eastern Pacific Hurricane Newton combined with daytime heating of highly unstable air to bring torrential rains to the South Plains. The abundant rain caused flash flooding that inundated roads, flooded urban areas, and caused evacuation in some residential areas. Additionally, severe storms were responsible for large hail, numerous funnel clouds, and at least two tornadoes. The following details the county-by-county events over the two day siege:
TEXAS, Western									
Hockley County	22	1610-1845CST			0	0	0	0	Funnels
									Numerous funnels were reported by law enforcement officials and volunteer Skywarn Storm Spotters across much of the county. The single severe thunderstorm responsible for the funnels was more than 20 miles in diameter and turned direction a full 180 degrees during its life cycle. The storm moved into the county on a northeast trek, turned right to southeast, and then back to the southwest; all the while, it maintained a supercell structure and configuration both visually and on radar.
Hockley County	22	1614CST	short narrow		0	0	0	0	Tornado (FO)
									A Hockley County Deputy Sheriff reported a small funnel with surface rotation (dust) 6 miles north of Levelland.
Hockley County	22	1708CST-1730CST			0	0	0	0	Hail (1.75) Hail (1.75)
									The tornadic thunderstorm that produced the tornado at 1614 CST later produced hail that the Deputy Sheriff reported to be as large as golfballs. The report was from a point 6 miles west of Oklahoma Flat and occurred at 1708 CST. Twenty-two minutes later, a Skywarn Storm Spotter noted golfball-sized hail near the community of Opdyke in the eastern part of the county.
Hockley County	22	1818CST	short narrow		0	0	0	0	Tornado (FO)
									Skywarn Storm Spotters reported a small tornado 4 miles southeast of the community of Clauene in southern Hockley County.
Hockley County	22	1830-Overnight			0	0	5	?	Flash Flooding
									The severe thunderstorm that remained and continued to regenerate over Hockley County brought very heavy rain and, consequently, serious flash flooding. Rainfall within the city of Levelland included, among others, a 5.98 inch total at the local radio station. In fact, no gage in town collected less than 5 inches in the 6-hour storm. Most roads and highways in the county were closed for a time during the night. Water was reported by law enforcement and civil defense personnel to be waist deep in many downtown streets. Water rose into houses and forced some evacuation.
Bailey and Lamb Counties	22	1900-2100CST			0	0	0	0	Flash Flooding
									Skywarn Storm Spotters reported very heavy rainfall causing flash flooding. Water covered several roads in eastern Bailey and western Lamb Counties. Highway 84 between Sudan and Muleshoe was briefly under water.
Yoakum County	22	1945-2300CST			0	0	0	0	Flash Flooding
									The large Hockley County thunderstorm built into Yoakum County and brought rain that sent water one foot deep over FM Road 2196 in the eastern part of the county.
Terry County	22	1945-2345CST			0	0	?	?	Flash Flooding
									The Hockley County storm spread into Terry County as well, inundating several FM Roads in the western and northern part of the county. Flood waters rose to automobile headlights between the communities of Johnson and Needmore (on FM Roads 303, 2196, and 211).
Lubbock County	23	1830-2230CST			0	0	0	0	Flash Flooding
									Very heavy rainfall (as much as 2.50 to 3.00 inches in three hours) caused flash flooding over most of the county. The rain fell between 1730 and 2030 CST and sent water raging through Lubbock city streets, rapidly filling and overflowing playa lakes. By 1935 CST, city police reported water up to car doors along the exit ramps on Interstate 27 just north of Loop 289 North. In the northeast part of the county, U.S. Highway 62/82 at Idalou was under at least a foot of water and was therefore closed for a time. In the southwest part of the county, most streets were under water in Wolforth. Normally flood-prone sites in Lubbock (including Quaker Street just north of South Loop 289) remained under water for several days.
Hockley County	23	1800-2330CST			0	0	5	0	Flash Flooding
									Heavy rain from thunderstorms adjacent to the Lubbock County storm were responsible for another siege of flash flooding in Hockley County. Rain only totaled another 1 to 1.50 inches around the county, but flooding had only partially receded from the 5 to 6 inch rains of the day before. Several streets and highways were still under water when rains began, and those streets that had only reopened during the afternoon quickly filled with water again. Water once again poured into the low-lying residential areas of Levelland, and damaged interior furnishings, carpets, and automobiles.

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					KILLED	INJURED	PROPERTY	CROPS	
TEXAS, Western									
Lamb County	29	0655CST			0	0	?	?	Hail (0.75)
									Earth Volunteer Fire Department reported dime-sized hail that covered the ground to a depth of between 1 and 2 inches just east of Earth.
Hale County	29	1505CST			0	0	?	?	Hail (1.75)
									Golfball-sized hail was reported on the east side of Plainview. No damage was noted.
Potter, Randall, and Carson Counties	29	1510-1600CST			0	0	4	5	Hail
									A line of severe thunderstorms extending from Hereford to the Canadian River passed through the Amarillo area dumping a lot of mostly small hail, but in some areas up to baseball size hail fell.
Randall County	29	1510CST			0	0	?	?	Hail (1.75)
									Golfball-sized hail fell at the intersection of Rockwall Road and Interstate 27, southwest of Amarillo.
Randall County	29	1530CST			0	0	?	?	Hail (2.75)
									Baseball-sized hail fell in the same location as occurred at 1510 CST.
Randall County	29	1540CST			0	0	4	5	Hail (2.75)
									Hail up to baseball size damaged vehicles and destroyed a milo crop 3 miles northwest of Canyon.
Potter County	29	1550CST			0	0	0	4	Hail (1.75)
									Golfball-sized hail inflicted considerable damage to milo between 3 and 5 miles north of Amarillo Municipal Airport.
Carson County	29	1555CST			0	0	0	0	Hail (1.00)
									Nickel-sized hail fell at a power plant 5 miles northeast of Amarillo Municipal Airport.
Lubbock County	29	1607CST			0	0	3	0	Hail (1.75)
									Golfball-sized hail broke numerous windows out in the community of Acuff in the eastern part of the county.
Carson County	29	1625CST			0	0	0	0	Hail (1.75)
									Golfball-sized hail fell in the community of Panhandle. No damage was noted.
Andrews County	29	1715CST			0	0	0	0	Hail (1.00)
									Skywarn Spotters reported one-inch hail 12 miles northwest of the community of Goldsmith in extreme southern Andrews County.
Lynn County	29	2037CST			0	0	0	0	Hail (1.75)
									Golfball-sized hail fell near the community of New Home. No damage was reported.
Lyan County	29	2047CST			0	0	0	0	Hail (1.75)
									Baseball-sized hail fell 3 miles south of the community of New Home. Again, no damage was reported.
Lynn County	29	2048CST			0	0	0	0	Hail (1.75)
									Golfball-sized hail fell about 4 miles southwest of Slaton.
42 UTAH									
Utah County	7	1610MST			0	0	3	0	Thunderstorm Winds
									A thunderstorm downburst wind gust was measured at 64 mph on this Sunday afternoon. Some roofing material was blown off a house and into a car. Several large tree limbs were broken and small metal sheds were blown over.
Salt Lake County	8	1610MST			0	0	3	0	Thunderstorm Winds
Box Elder County	8	1644MST			0	0	1	0	Thunderstorm Winds
									Thunderstorm winds gusted to 63 mph and 58 mph in West Kearns and West Valley City, respectively on this Monday afternoon. A power line was blown down and a few trees suffered damage. A short time later, the Sheriff's Office in Brigham City reported estimated gusts to 65 mph.
UTAH									
Box Elder County	9	0950MST			0	0	4	0	Hail (0.75)
Salt Lake County	9	1114MST	short narrow		0	0	1	0	Tornado (F0)
Weber County	9	1115MST			0	0	1	0	Hail (1.00)
Salt Lake County	9	1225MST			0	0	1	0	Lightning
									A line of heavy thunderstorms moved into the Wasatch Front around midday on this Tuesday. The first report of severe weather came from Hill AFB personnel at the Eagle Range Training Grounds west of the Great Salt Lake. 3/4 inch to 1 inch hail occurred there and cracked the windshield of an F-16 fighter that was returning to base. As the line of storms moved on into the Wasatch Front area, a tornado touched down briefly in the Kearns area. The funnel was only on the ground for a few seconds. Near the time the tornado occurred, a spotter in Roy, Utah was receiving 1 inch diameter hail. A short time later, a lightning strike hit the runway of the Salt Lake International Airport and blew a hole 6 inches deep and about 6 inches across in the pavement.
San Juan County	9	1445MST			0	0	2	0	Flash Flood
									A flash flood occurred just east of Aneth, Utah, along Mc Elmo Creek. The swollen creek pushed a foot of water over the highway. The flooding was produced by heavy rainfall just across the Colorado border.
Tooele County	10	1000MST	N/A	N/A	0	0	0	0	Waterspout
									A railroad brakeman observed a waterspout over the southern end of the Great Salt Lake sometime during the morning on this Wednesday. The exact time was not available. The waterspout had drawn water about 1/3 the way up the funnel.
Box Elder County	24	1645MST			0	0	1	0	Thunderstorm Winds
									A thunderstorm downburst gusted to 58 mph at the Lakeside station of the Eagle Range Training Grounds west of the Great Salt Lake.
UTZ010 Northern Mountains	24-	2300MST			0	0	1	0	Heavy Snow
	25	1400MST							Between midnight and 3 p.m. on this Thursday, 19 inches of snow fell at the Snowbird Plaza at 8000 feet and 32 inches fell at Hidden peak.
UTZ011 Southern Mountains	28-	0200MST			0	0	1	0	Heavy Snow
	28	1200MST							The Brian Head ski resort and a spotter in nearby Duck Creek reported receiving approximately 12 inches of snow during this time period.
Weber County	30	1220MST	N/A	N/A	0	0	0	0	Waterspout
									A waterspout was observed over the Great Salt Lake by a Utah Highway Patrol trooper. The waterspout was located about 10 to 15 miles northwest of the north end of Antelope Island.
43 VERMONT ————— NONE REPORTED									
44 VIRGINIA									
Statewide		Monthlong			0	0	0	?	Drought
									The summer-long drought continued into September. Norfolk had the driest September since 1895 with only 0.26 inches of rain. This was 4.09 inches below normal. Richmond was 2.89 inches below normal with 0.63 inches. Most locations reported precipitation deficits in the 1.5-2.5 inch range. The precipitation deficits for the year range up to just over 20 inches.

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					KILLED	INJURED	PROPERTY	CROPS	
45 WASHINGTON									
2E Farmington (Whitman Co.)	14	1740PST	0.2	30	0	0	1	0	Tornado (F0)
	An eyewitness working for the Garfield/Farmington Ambulance Service saw a tornado touch down in a plowed field near the WA/ID border. The event lasted only several minutes and lifted a great deal of dust off the ground, but no serious damage was reported. Unconfirmed reports said another tornado occurred to the southwest near Garfield about the same time and that a funnel cloud was observed to the northeast, north of the town of Tensed, ID, about 1800PST.								
Grandview (Yakima Co.)	15	0230-0330PST			0	0	4	?	Thunderstorm, Lightning
	Scattered thunderstorms moved over southern parts of Washington early on the 15th. One thunderstorm moved over Grandview with rain, pea-sized hail, and lightning that struck four homes. This caused a fire at one and structural damage at the others.								
46 WEST VIRGINIA — NONE REPORTED									
47 WISCONSIN									
Near Chetek, Barron Co.	03	1423-1433CST	4.0	100	0	0	5	?	Tornado (F2)
	A tornado touched down NNE of Chetek on the southwest shore of Pokegama Lake and continued northeastward before lifting NW of the Barron-Rusk county line. The tornado uprooted or snapped off dozens of trees, damaged several homes, and leveled 2 barns, as well as destroying a machine shed, boat and motor.								
Bruce and Ladysmith, Rusk Co.	03	1450CST			0	0	0	?	Hail (1.00)
	03	1455-1505CST			0	0	0	0	Funnel Cloud
	03	1455-1505CST			0	0	3	?	Thunderstorm Winds
	A severe thunderstorm dropped hail up to 1 inch in diameter in Bruce. The storm then hit Ladysmith where a funnel cloud passed over the city. The intense winds from the storm briefly lifted the corner of a house off its foundation, picked up a 75 pound trailer and carried it 60 feet, dropping it on a row of lilac bushes 7 feet high, and blew down several trees in Ladysmith.								
Altoona and Eau Claire, Eau Claire County	03	1530-1545CST			0	0	?	?	Hail (1.75)
	A severe thunderstorm deposited hail the size of pingpong balls and golfballs in the city of Eau Claire, and hail up to 3/4 inch in diameter was reported at Altoona.								
Blair, Trempealeau Co.	03	2120-2125CST			0	0	4	?	Thunderstorm Winds
	Very strong thunderstorm winds broke windows, damaged awnings and a roof of a house, tore a metal canopy off a restaurant building and downed several trees in Blair.								
Winnebago, Fond du Lac, Calumet, Manitowoc, Sheboygan, Dodge, Washington, Ozaukee, Milwaukee, and Waukesha Counties	10	Evening hours into 11 Morning hours			0	0	7	?	Flash Flooding
	Showers and thunderstorms developed on Tuesday (Sep-9) and saturated the ground by dumping 1 to 2 inches of rain in an east/west path from Eau Claire and La Crosse to through Fond du Lac and Sheboygan. Heavy rain, Wednesday evening (Sep 10) into Thursday morning (Sep 11) produced flash flooding across east-central and southeast Wisconsin. Vivid lightning caused widespread power outages which lead to failure of many pumps in homes and businesses. 24 hour rainfall amounts ending on the morning of the 11th ranged from 3 to 6 inches with 3.75 at Two Rivers (Manitowoc County), 4.00 at Neenah (Winnebago County), 5.56 at Fond du Lac (Fond du Lac County), 5.87 at Chilton (Calumet County), and 6.72 at Holy Hill (Washington County). From Tuesday the 9th to Wednesday morning the 11th, 13.27 inches of rain were measured at the Chilton City Wastewater Treatment plant. In Winnebago County, Oshkosh received a tremendous amount of street and basement flooding. Some of the 60 flooded streets caved in and collapsed storm sewers. In Fond du Lac County, the hardest hit area was the city of Fond du Lac where \$3 million in property damage resulted from flooded basements and streets. Nearly 1300 homes in Fond du Lac and North Fond du Lac were affected by the flooding. Schools and businesses were closed and many roads closed or blocked due to high water including parts of Highway 41 where trucks were abandoned and cars were submerged near Hickory Street. Ripon and Rosendale also reported minor flooding.								
WISCONSIN									
Pierce, St. Croix, Chippewa, Trempealeau, Clark, Taylor, Marathon, Jackson, and Wood Counties	21	1600-0200CST			0	0	6	?	Flash Flooding
	Several roads were washed out in Pierce County and some displayed holes 12 feet deep along Lost Creek Road in El Paso Township. In St. Croix County, several homes were flooded in Hudson. More widespread flooding took place in Chippewa County where bridges, roads, businesses, and homes sustained \$1 million in Stanley, Cadott and Bloomer. \$100,000 damage in Stanley included 20 residences while \$30,000 in street damage took place in Cadott. In Trempealeau County, Pigeon Falls basements were flooded and water undermined a storage area at a mill, collapsing part of the foundation. Roads and culverts were washed out to the tune of over \$50,000 throughout the county. One of the hardest hit areas was Clark County. Most roads were affected by numerous washouts and many schools were closed Monday. In Neillsville, major damage was done at the New Grand Avenue Bridge construction site and numerous homes were flooded. Highway O, just west of Thorp, had crater-like holes. Minor home flooding and some road washouts were reported in Taylor, Marathon, Jackson and Wood counties.								
Chilton, Calumet Co.	22	0120CST			0	0	4	?	Thunderstorm Winds
	Intense thunderstorm winds blew down several large trees in Chilton. A 50 foot pine tree crushed a car while other trees crashed into homes and power lines.								
Pell Lake, Walworth Co.	22	1530CST			0	0	?	?	Hail (1.00)
	A severe thunderstorm dropped hail up to 1 inch in diameter near Pell Lake.								

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SEPTEMBER 1986

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					KILLED	INJURED	PROPERTY	CROPS	
WISCONSIN									
Kenosha Co.	24	Nighttime hours into	0	0	6	?	Flash Flooding		
	25	Morning hours	Heavy downpours of rain, amounting to over 4 inches in some areas and falling on already saturated ground, caused widespread flooding throughout the county and nearly \$2 million damage. In the city of Kenosha, the St. Joseph Home for the Aged sustained nearly \$4 million in damage. Over 200 homes and 3 small businesses flooded with several basement walls collapsing. Camp Lake and Silver Lake rose several feet, inundating many homes along the shores. The towns of Twin Lakes, Trevor, Bristol, and Paddock Lakes also reported flooded homes, roads, and businesses.						
Montello, Marquette Co.	26	0550-0605CST	0	0	5	?	Thunderstorm Winds		
			Thunderstorm downburst winds cut a destructive path 8 miles long from near Glen Oak to Montello. Numerous trees and power lines were snapped off, especially along County Highways C, D, and K. Near Montello, a 160 X 80 foot barn was destroyed and a mobile home was lifted over a road and smashed.						
Sheboygan, Sheboygan Co.	26	0705-0726CST	0	0	5	?	Thunderstorm Winds (62)		
	26	0705-0900CST	0	0	5	?	Flash Flooding		
			Nearly \$900,000 in wind and flood damage occurred throughout the city of Sheboygan due to a severe thunderstorm. Downburst winds gusting to 71 mph ripped off several roofs, and uprooted numerous large trees, some of which fell on vehicles and knocked down power lines. Heavy rain (2.36 inches in less than a half hour) accompanying the storm forced 25% of Sheboygan's roads to be closed, flooded 200 homes while causing a half dozen basement walls to collapse, and washed out some railroad tracks.						
Fredonia, and Port Washington, Ozaukee Co.	26	0710-0720CST	0	0	3	?	Thunderstorm Winds		
	26	0710-1000CST	0	0	5	?	Flash Flooding		
			A severe thunderstorm dumping heavy rainfall up to 2 inches in less than a half hour hit the northern half of Ozaukee County. Several trees, power lines and out-buildings were blown over by intense winds in Fredonia. In Port Washington, flood waters hit the same business district area flooded only 15 days ago. Several businesses and homes again had flooded basements, and many streets as well as roads throughout the northern half of the county again were under water.						
Egg Harbor, Door Co.	26	0800CST	0	0	5	0	Lightning		
			Lightning caused a \$150,000 barn fire near Egg Harbor.						
Eau Claire, Eau Claire Co.	26	1600-1620CST	0	0	?	?	Hail (1.75)		
			A severe thunderstorm produced hail up to the size of golfballs in Eau Claire and at Seymour.						
Thorp, Clark Co.	26	1650CST	0.5	50	0	0	5	4	Tornado (F1)
			A tornado briefly touched down on a farm 25 of Thorp. The tornado heavily damaged a barn, uprooted numerous trees, one of which landed on a car, and blew the windows out of a home.						
Near Winter, Sawyer Co.	26	1700CST	0.5	50	0	0	0	?	Tornado (F0)
			A small tornado touched down briefly at the Flambeau Correctional Center, 17SE of Winter, uprooting several trees and downing power lines.						
Hillsboro, Vernon Co.	26	1830CST	0	0	0	0	Funnel Cloud		
			An intense thunderstorm spawned a funnel cloud near Hillsboro.						
Wausau, and Mauston Juneau Co.	26	1901CST	0	0	0	0	Funnel Cloud		
	26	1915CST	0	0	?	?	Thunderstorm Winds (61)		
			A severe thunderstorm generated a funnel cloud near Wausau and generated winds up to 70 mph in Mauston.						
Eau Claire, Eau Claire Co.	26	2035CST	0	0	?	0	Thunderstorm Winds		
			Intense thunderstorm winds knocked down power lines and tore away part of a roof to a high school in Eau Claire.						
Stoughton, Dane Co.	28	1552CST	0	0	?	?	Hail (1.75)		
			Hail up to golf ball size was generated by a severe thunderstorm 1W of Stoughton.						
Orfordville, Rock Co.	28	1610CST	0	0	0	0	Funnel Cloud		
			A thunderstorm produced a funnel cloud SW of Orfordville.						
WISCONSIN									
Near Whitewater to near Palmyra, Jefferson Co.	28	1623-1637CST	9.0	100	0	1	6	?	Tornado (F2)
			A tornado skipped through a 9 mile path first touching down on County Trunk N just north of Whitewater, damaging a house, then hitting the Twin Oaks trailer camp, damaging a number of mobile homes, trees, wires, and small sheds. The tornado next destroyed a large barn on Piper Road as well as extensively damaging 2 homes. A woman was injured when a portion of the chimney fell on her in one of the homes. The tornado continued in an east-northeast direction through the 600 acre Cold Spring Egg Farm on Highway 59, 2W of Palmyra, tearing large holes in the 3 story barn, knocking down trees, and breaking 16 windows in the house. Before it lifted, the tornado sheared off the top 65 feet of an 85 foot grain elevator just north of Palmyra. In all, damage totaled almost \$750,000.						
Pewaukee, Waukesha Co.	28	1715CST	0	0	0	0	Funnel Cloud		
			A funnel cloud was spotted during a strong thunderstorm over Pewaukee.						
Milwaukee, Milwaukee Co. Oak Creek, Milwaukee Co.	28	1731CST	0	0	?	?	Thunderstorm Winds (50)		
	28	1747CST	0	0	0	0	Funnel Cloud		
			Winds gusting to 58 mph were measured from a severe thunderstorm at Milwaukee's Mitchell International Airport. A funnel cloud was observed over Oak Creek.						
Reedsburg, Sauk Co.	28	2310CST	0	0	3	?	Thunderstorm Winds		
			Intense winds from a severe thunderstorm toppled 3 large fuel tanks, a large shed and numerous trees in Reedsburg.						
Statewide	Entire Month		0	0	0	?	Heavy Rains		
			Monthly rainfall amounts across the state ranging from 4 to 18 inches slowed or prevented harvesting of crops. The rainfall, more than 300% greater than normal in some areas, reduced harvest estimates of corn, oats, barley, soybeans, potatoes and hay by 10 to 30 percent. Some farmers, in low-lying areas and where heavier rainfall persisted, reported 40 to 80 percent production losses.						
48 WYOMING									
Natrona County: 5S Casper	02	1600MST	0	0	3	0	Thunderstorm wind (?)		
Casper	02	1850MST	0	0	6	?	Hail (2.00)		
			At 1600MST on Casper Mountain, about 5 miles south of Casper, thunderstorm winds damaged the roof of a house, toppled power poles and uprooted 50-100 pine trees. At 1850MST, hail up to 2 inches in diameter moved through Casper, causing extensive damage to vehicles, buildings and vegetation.						
Goheen County, 1N Lingle to Torrington	05	1635 to 1712MST	0	0	6	6	Hail (1.75)		
			A swath of golfball size hail from just north of Lingle to Torrington did over a million dollars damage to farms in the area and devastated crops and pastureland. Winds to 50 mph and heavy rain also accompanied the storm.						
Platte County: 3NW Wheatland 1N Wheatland 1SN Wheatland	18	1422MST	2	50	0	0	5	0	Tornado (F1)
	18	1515MST	0	0	?	?	Hail (1.75)		
	18	Unknown	0	0	?	?	Hail (?)		
			A tornado 3 miles northwest of Wheatland near Festo Lake at 1422MST damaged signs, uprooted 15-20 trees, overturned several campers, and damaged garages and storage sheds. As the tornado moved over water, ducks and water were sucked into it. Just north of Wheatland at 1515MST, golfball size hail was reported. Fifteen miles north of Wheatland, 2 inches of rain fell in 45 minutes, causing the hail to pool knee deep.						
Laramie County, Carpenter	18	1630MST	0	0	?	?	Hail (0.75)		
			At 1630MST, hail up to 3/4 inch in diameter was reported at Carpenter.						

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1986

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS							KILLED	INJURED	PROPERTY	CROPS	
WYOMING																			
WY2002-011-015-016-017 Northwest Chinook and Southeast	24-	Late day and																	
	25	Morning			0	0	?	0	High wind										
Gusts to 73 mph were logged at Arlington in Carbon County at 1750HST. During the evening and morning hours, gusts of 53-63 mph were recorded from 25 miles west of Cheyenne to Cheyenne, and at Laramie, Casper and Cody.																			
Johnson County, W Buffalo	25	Overnight			0	0	0	?	High wind										
	Overnight, several large areas of trees were uprooted in the Big Horn National Forest west of Buffalo.																		
49 ALASKA, Northern ————— NO REPORT RECEIVED																			
49 ALASKA, Southern ————— NO REPORT RECEIVED																			
49 ALASKA, Southeastern																			
Southeast Alaska	Entire Month								Drought followed by Heavy Rain										
A blocking ridge remained over the Gulf of Alaska during most of the month, causing an unprecedentedly dry September across Southeast Alaska. This caused the deaths of numerous salmon trying to traverse drying streams to reach their spawning grounds, especially on Prince of Wales Island. A tight water program was implemented at at least one pulp plant. When the rain finally came, it came in overabundance. A strong Pacific low crashed into the area on the 23rd dropping almost 5½ inches in Ketchikan during 1½ days and sinking 10 boats in the Ketchikan Harbor.																			
50 HAWAII																			
HI2004 Hawaii	26	1800HST			0	0	4	0	Flash Flooding, Lightning										
	Heavy rains accompanying intense thunderstorms in the Hilo area and to the north of the town deposited 6 to 10 inches of rain in as many hours. There were reports of mainly minor flash flooding, and the Bayfront Highway was closed for much of the night. Frequent lightning caused disruption in electric utility and radio and TV service.																		
HI2002 Oahu	28	0600HST			0	1	4	0	Flash Flooding										
	Rainfall amounts in excess of 3 inches, falling in a very short time along the windward slopes of Oahu from Kaneohe and Kahaluu northward to Kaaawa, caused moderate flooding and closure of the main Kamehameha Highway in several spots for several hours on this Sunday morning. The rains fell on top of soils soaked by heavy rains on the day before. One 35-year-old man and his small car were swept off of the highway into a swollen stream. He escaped from his car and hung on to some branches till help arrived. The swift current stripped his body of clothing and even his watch. He was only very slightly injured.																		
51 PUERTO RICO ————— NONE REPORTED																			
52 VIRGIN ISLANDS ————— NONE REPORTED																			
53 PACIFIC ————— NONE REPORTED																			

STORM SUMMARY

SEPTEMBER 1986

TYPE	ALABAMA	ARIZONA	ARKANSAS	CALIFORNIA	COLORADO	CONNECTICUT	DELAWARE	FLORIDA	GEORGIA	IDAHO	ILLINOIS	INDIANA	IOWA	KANSAS	KENTUCKY	LOUISIANA	MAINE	MARYLAND & DC	MASSACHUSETTS	MICHIGAN	MINNESOTA	MISSISSIPPI	MISSOURI	MONTANA	NEBRASKA	NEVADA	NEW HAMPSHIRE
TORNADOES																											
Number				1	1			3		1	6	SEE PAGE 54		5	4					1	8						
Days				1	1			3		1	3			2	3					1	3						
Deaths																SEE PAGE 54						1					
Injuries				1							10			3							1						
Property Damage				6	5			5			7			6						5	5						
Crop Damage				o/c							5			5	4							5					
HAIL																											
Deaths																											
Injuries																											
Property Damage	?			?	4						3			4	5							?	4			8	
Crop Damage	?			?	5						?			5	5							?	5			7	
THUNDERSTORM WINDS																											
Deaths																					1						
Injuries																					15					1	
Property Damage	5	4	4	?		4		3	4	4	6			5	6					4		3				7	5
Crop Damage														3	3						4			7		5	
HIGH WINDS																											
Deaths											1																
Injuries																											
Property Damage					1																						
Crop Damage					6										4					3						3	1
LIGHTNING																											
Deaths																											
Injuries																											
Property Damage	1																				1						
Crop Damage	2		4			3		3		5	5		5	1						4		2	1			1	4
FLASH FLOODS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage		4	4							3	7		4	6							2	1				5	
FLOODS																											
Deaths											1																
Injuries																											
Property Damage					3						7		4	6											1		
Crop Damage											7		5	6											1		
HEAVY SNOWSTORMS AND BLIZZARDS @																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ICE STORMS #																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
HURRICANES AND TROPICAL STORMS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage																											
ALL OTHERS																											
Deaths																											
Injuries																											
Property Damage																											
Crop Damage	4			?	3						5																

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

STORM SUMMARY

SEPTEMBER 1986

TYPE	NEW JERSEY	NEW MEXICO	NEW YORK	NORTH CAROLINA	NORTH DAKOTA	OHIO	OKLAHOMA	OREGON	PENNSYLVANIA	RHODE ISLAND	SOUTH CAROLINA	SOUTH DAKOTA	TENNESSEE	TEXAS	UTAH	VERMONT	VIRGINIA	WASHINGTON	WEST VIRGINIA	WISCONSIN	WYOMING	ALASKA	HAWAII	PACIFIC	PUERTO RICO	VIRGIN ISLANDS	NATIONAL DEATHS & INJURY TOTALS	
TORNADOES																												
Number	1	1	1			1	7		2			5	SEE PAGE 54	4	1			1		4	1	4						
Days	1	1	1			1	2		2			1		3	1			1		3	1	3						
Deaths																												
Injuries							1		2											1								26
Property Damage	5		4			4	5		6			4		4						6	5							
Crop Damage							?							?						?								
HAIL																												
Deaths																												
Injuries																												
Property Damage		3	3			3	?		?					4	4					?	6							
Crop Damage							?							5						?	6							
THUNDERSTORM WINDS																												
Deaths						1						5																1
Injuries						2						5																26
Property Damage	?	4	4		6	6	6		5			6		5	4					6	3							
Crop Damage			3				?							?						?								
HIGH WINDS																												
Deaths																												1
Injuries																												1
Property Damage			4		6							4										?						
Crop Damage					6							?										?						
LIGHTNING																												
Deaths														1														4
Injuries				1																								16
Property Damage			5		5		5		6	3		2		5	1				4		5			4				
Crop Damage			3				?																					
FLASH FLOODS																												
Deaths														2														5
Injuries																								1				4
Property Damage		6					?	?						6	2						7		4					
Crop Damage							?							?							?							
FLOODS																												
Deaths																												2
Injuries																												1
Property Damage			5				?		3			5																
Crop Damage							?					?																
HEAVY SNOWSTORMS AND BLIZZARDS @																												
Deaths																												
Injuries																												
Property Damage			4																									
Crop Damage																												
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HURRICANES AND TROPICAL STORMS																												
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Property Damage																												
Crop Damage																												
ALL OTHERS																												
Deaths																												
Injuries																												
Property Damage																												
Crop Damage																												

SEE REFERENCE NOTES FOR STORM DAMAGE CATEGORIES

REFERENCE NOTES

† Storm damage categories are 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

- * Miles instead of yards
- ** Yards instead of miles
- @ Includes heavy sleet storm
- # Freezing drizzle and freezing rain, commonly known as glaze
- ≠ Not received or incomplete
- o/c Under Estimated Damage, Property/Crops, indicates crop damage amount is included in the figure given

Definition of Fujita Tornado Scale (F scale)

(F0) Gale tornado (40-72 mph): Light damage
Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage sign boards.

(F1) Moderate tornado (73-112 mph): Moderate damage
The lower limit (73 mph) is the beginning of hurricane wind speed; peel surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads.

(F2) Significant tornado (113-157 mph): Considerable damage
Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.

(F3) Severe tornado (158-206 mph): Severe damage
Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

(F4) Devastating tornado (207-260 mph): Devastating damage
Well-constructed houses leveled; structure with weak foundation blown off some distance; cars thrown and large missiles generated.

(F5) Incredible tornado (261-318 mph): Incredible damage
Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 m; trees debarked; incredible phenomena will occur.

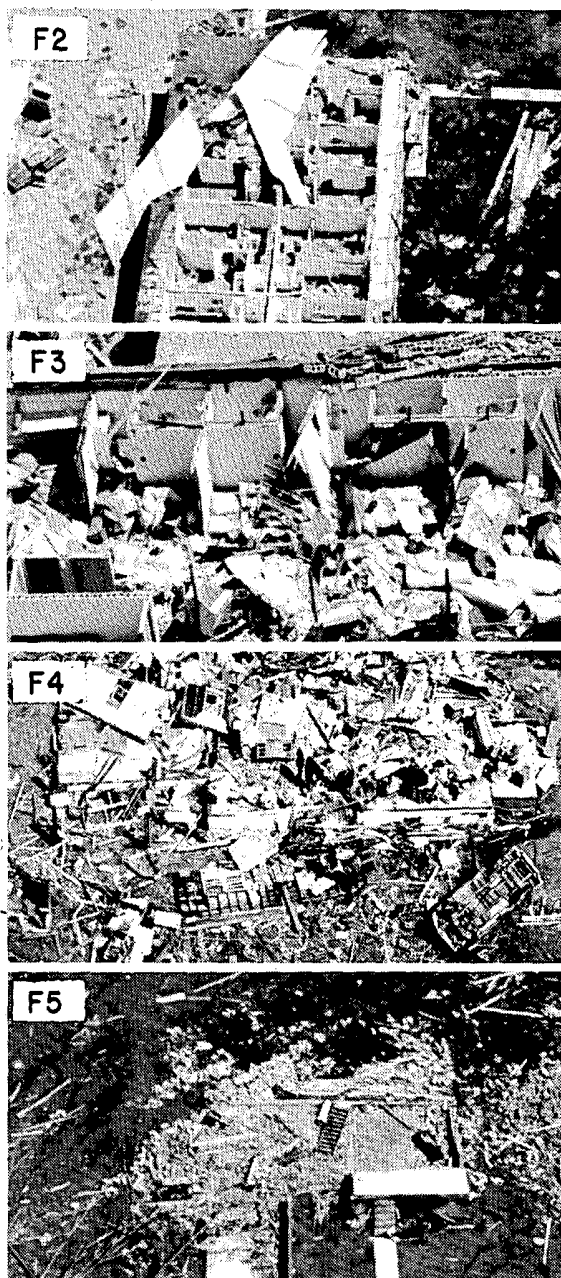
(F6-F12) (319 mph to Mach 1, the speed of sound):
The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds.

(F0+F1) Weak Tornado

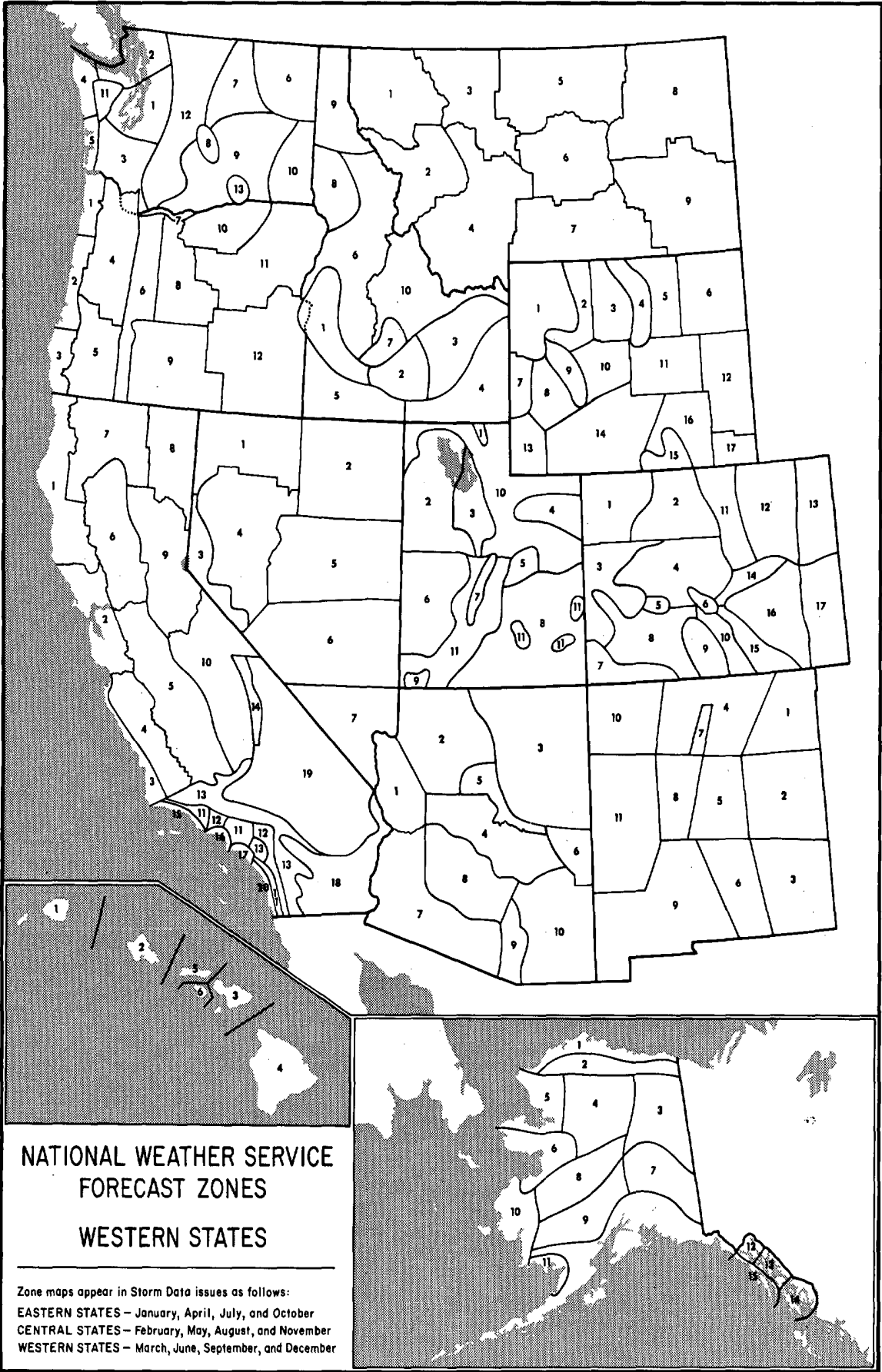
(F2+F3) Strong Tornado

(F4+F5) Violent Tornado

From J. Atmos. Sci., August 1981, p. 1517-1519



USCOMM-NOAA-ASHEVILLE, N.C. 1986-2075





Association of State Floodplain Managers
11th Annual Conference

Seattle, Washington
June 9 - 12, 1987

FLOODPLAINS '87

Realistic Approaches to Better Management

CONFERENCE HOST: Washington Department of Ecology

The Association of State Floodplain Managers (ASFPM) is a national organization and its goal is the reduction of flood hazards through sound floodplain management. Its members include representatives of local, state and federal government as well as those of the private and non-profit communities. The Association sponsors an annual conference on the state-of-the-art in flood hazard reduction. Conference topics always span a broad spectrum of issues of interest to those involved in floodplain management.

This year's conference theme focuses on realistic approaches to solving problems associated with managing floodplains:

- * How can practitioners best manage floodplains with minimal data?
- * How can state and local governments be instilled with a greater sense of responsibility for floodplain management?
- * How do we balance the need to preserve vanishing natural values of floodplains with the pressures to develop them into fully urbanized areas?
- * How do we reduce flood damages when current methodologies don't adequately address local and regional flood hazards such as areas below unsafe dams, alluvial fans, meandering streams, rising lakes, mud slides, wetlands, ice jams, and so on? How can these areas be better managed?
- * How do we best mitigate existing flood damages?
- * What is the best way to tie floodplain management goals into other river or coastal management goals such as recreation, environmental protection, and economic development?
- * As stormwater flooding and substandard drainage increasingly become a more significant hazard in the country, what floodplain management tools can we apply to solve these problems?
- * How can we make the floodplain resident and property owner more aware of flood hazards?
Where do we find the resources to deal with these problems?

About the Conference

The technical conference will be held Wednesday, Thursday and Friday and will include a field trip in the Seattle area. The conference will feature one track of concurrent sessions dealing specifically with the western states' flood damage reduction problems. The ASFPM will conduct its committee and general membership meetings on Tuesday. All members and prospective members are invited to participate. A Puget Sound boat cruise including dinner is scheduled one evening. Optional field trips and spouse activities will be available.

Registration Rates

Registration prior to May 1, 1987 will be \$150 for members, \$165 for non-members, and \$65 for students and local government officials from Washington state.

Exhibit Space

Exhibit space will be made available for a fee to individuals or organizations who wish to display a product or service to attendees. Information on exhibit space can be acquired from Mark Riebau, Exhibits Coordinator at the address below.

About Seattle

Located on Puget Sound, Washington's treasured inland arm of the Pacific, Seattle has a lively port and is the Northwest's cultural and commercial center. Seattle's spring weather is mild and typical of the regional maritime climate. Visitors to Seattle are only a couple hours drive from any of Washington's three spectacular national parks: Mt. Rainier, Olympic Mountains and the North Cascades.

The conference will be held at the Stouffer Madison Hotel in downtown Seattle. Conference room rates are \$62 single, and \$74 double. The compact downtown area features an excellent aquarium and waterfront, the fascinating Pike Place Market, old Pioneer Square, and a number of superb restaurants. As well as providing exercise for pedestrians, Seattle's downtown hills offer fine views of the city, the Sound, and the mountains.

CONFERENCE DIRECTOR

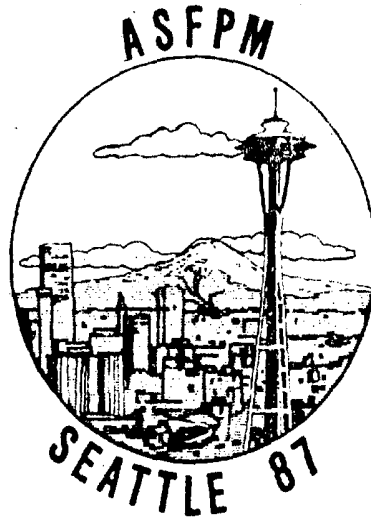
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Association of State Floodplain Managers
11th Annual Conference
Seattle, Washington
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FLOODPLAINS '87: Realistic Approaches to Better Management

* * CONFERENCE DETAILS ON PAGE REVERSE * *

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