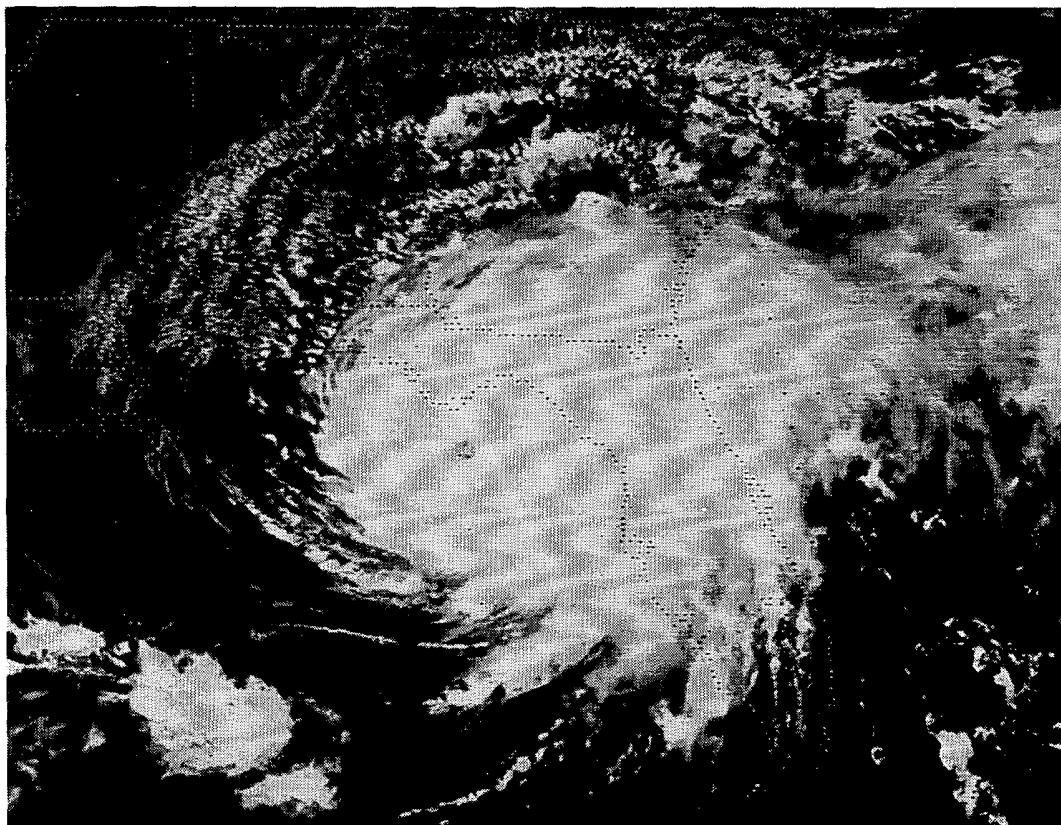


STORM DATA



"I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AND IS COMPILED FROM INFORMATION RECEIVED AT THE NATIONAL CLIMATIC DATA CENTER, ASHEVILLE, N.C. 28801"

Kenneth D. Hadler

DIRECTOR
NATIONAL CLIMATIC DATA CENTER

C O N T E N T S

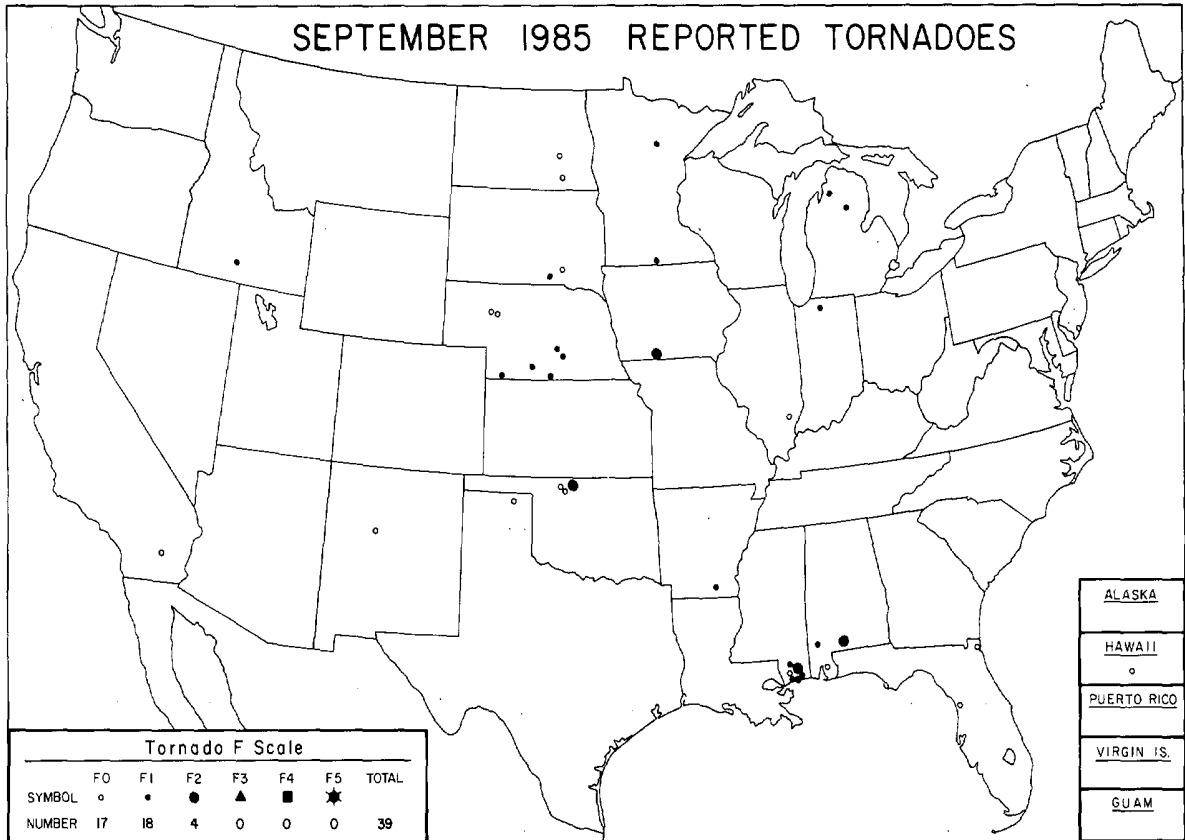
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Outstanding Storms of the Month.....	3
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Cover: A GOES 6 satellite, visible image taken at 1901GMT (1401EST) on September 1st shows Hurricane ELENA as its eye was most pronounced, just offshore of Apalachicola, Florida. ELENA made landfall at Biloxi, Mississippi and dissipated inland, but not before inflicting damage all along the Gulf Coast from Tampa Bay to the Mississippi River Delta (see HURRICANE ELENA, pages 6 through 19). ---Photo from NHC and provided by AOML/HRD, both of Miami, Florida.

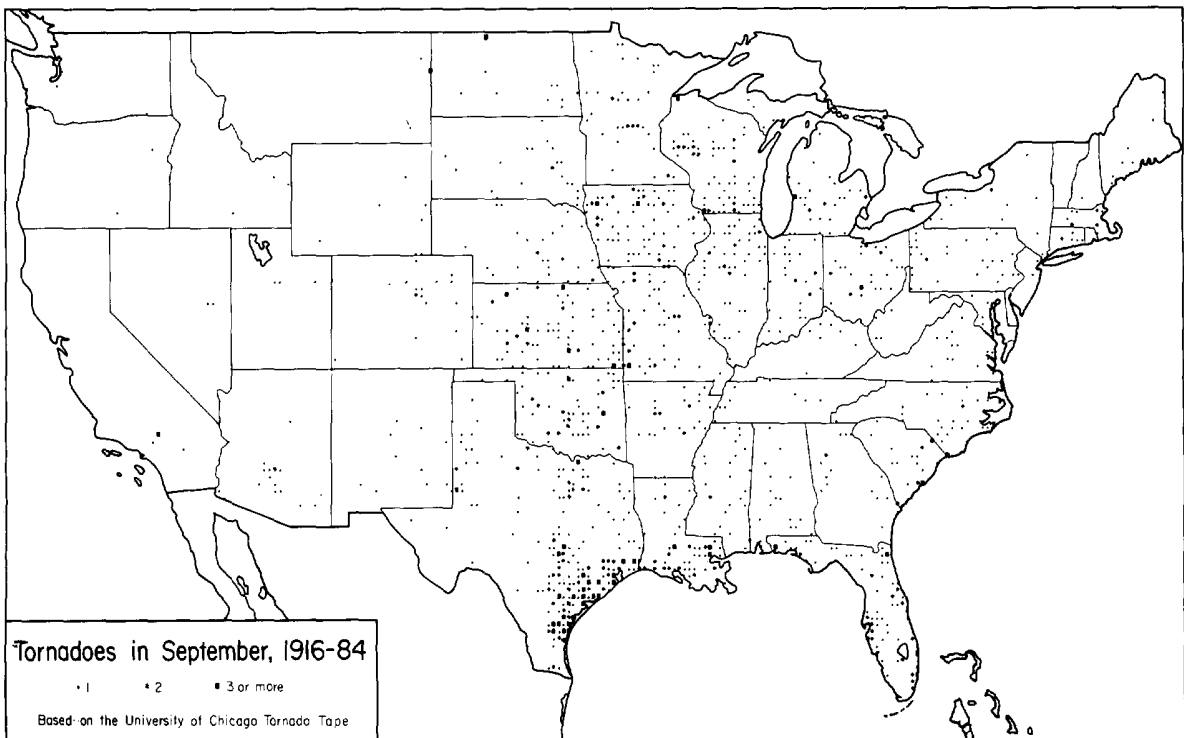
NOTE: The section on Outstanding Storms of the Month is prepared by Professor T. Theodore Fujita, editor, and Duane J. Stiegler, associate editor, University of Chicago. The narrative descriptions of Storms by State and Summaries of Hurricanes and Tropical Storms are prepared by the National Weather Service. The National Climatic Data Center compiles the statistics on deaths, injuries, and damage. This publication contains our best information on Storms, but, due to the difficulties inherent in collection of this type of data, it is not all-inclusive. Late reports and corrections will be carried quarterly.

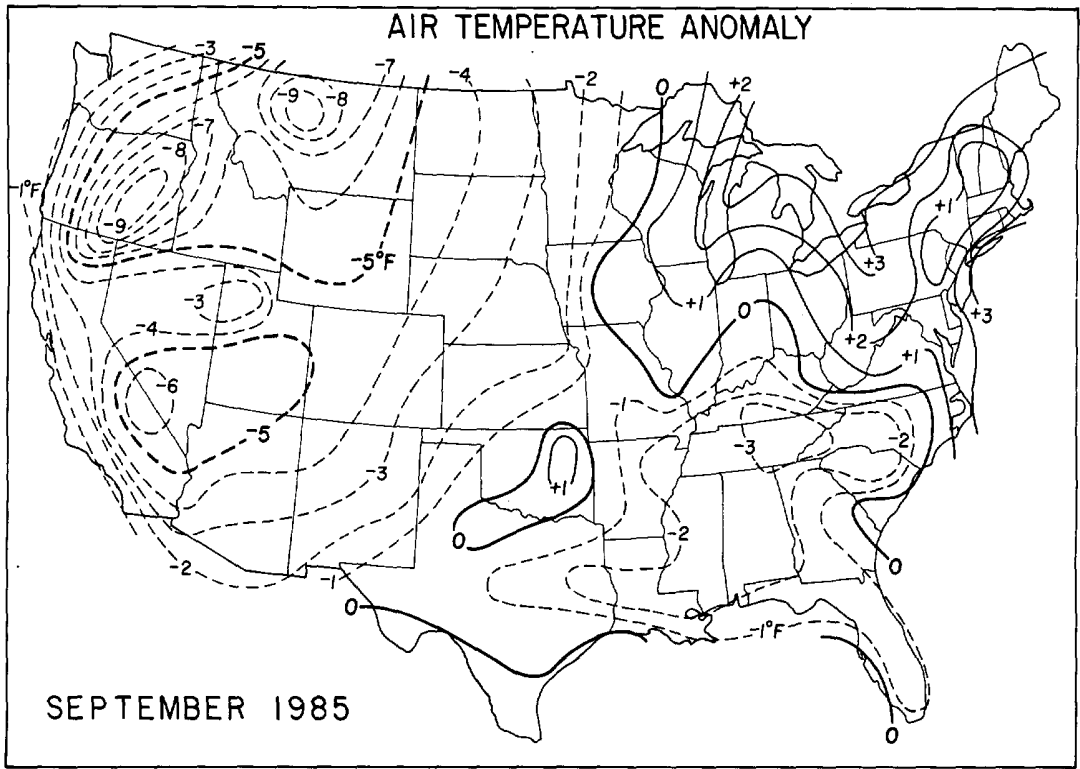
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OUTSTANDING STORMS OF THE MONTH



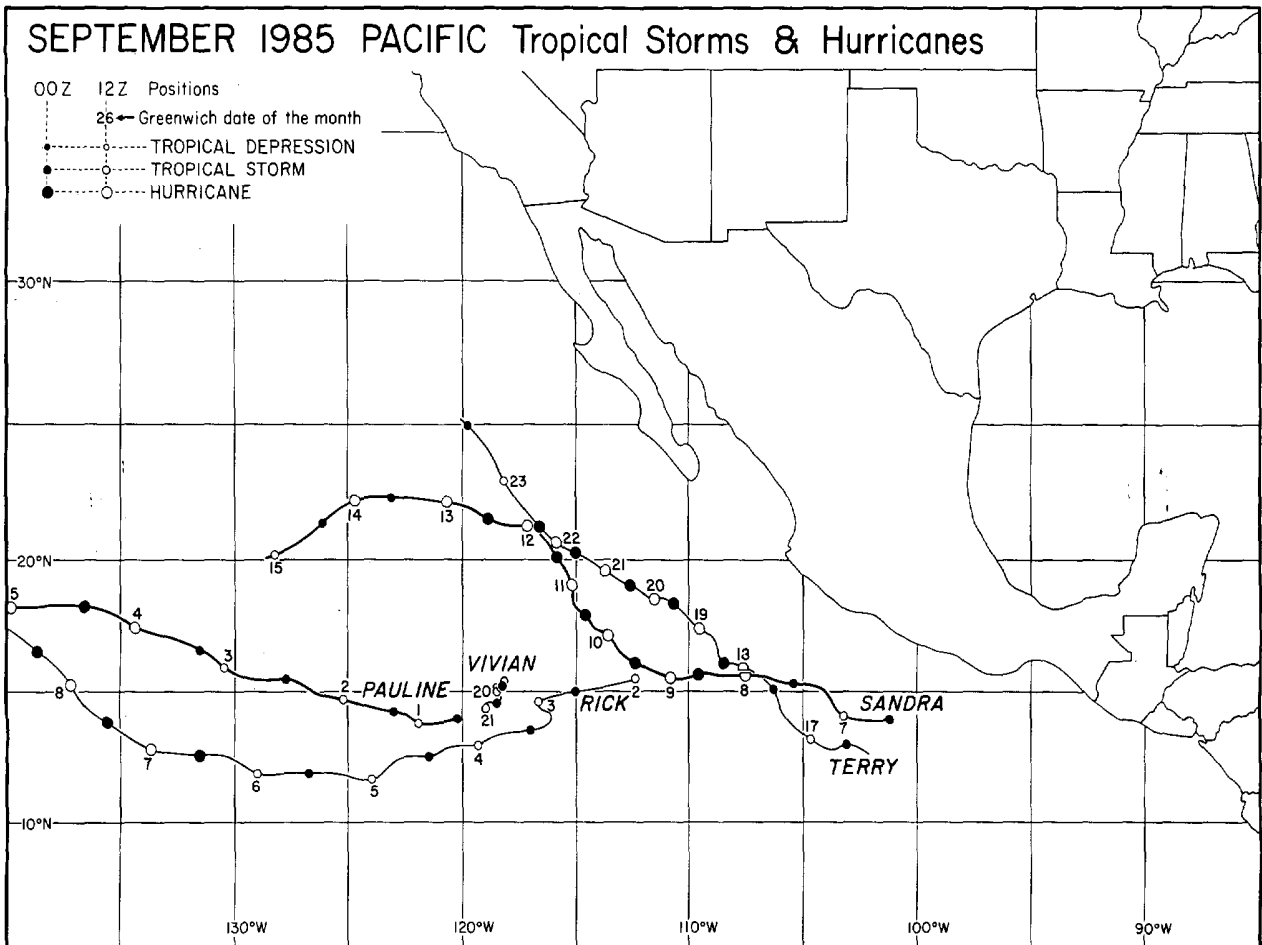
<ul style="list-style-type: none"> ● COMPLETE REPORT RECEIVED ○ PRELIMINARY REPORT RECEIVED ○ REPORT NOT RECEIVED <p>(N) northern (W) western (S) southern (C) central (E) eastern (O) coastal (SE) southeastern</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td>● 1AL</td><td>● 7DE</td><td>● 14KS</td><td>● 21MN</td><td>● 28NJ</td><td>● 33OH</td><td>● 39SD</td><td>● 44VA</td><td>● 49AK(SE)</td> </tr> <tr> <td>● 2AZ</td><td>● 8FL</td><td>● 15KY</td><td>● 22MS</td><td>● 29NM</td><td>● 34OK</td><td>● 40IN</td><td>● 45WA</td><td>● 50HI</td> </tr> <tr> <td>● 3AR</td><td>● 9GA</td><td>● 16LA</td><td>● 23MO</td><td>● 30NY(O)</td><td>● 35OR</td><td>● 41TX(N)</td><td>● 46WV</td><td>● 51PR</td> </tr> <tr> <td>● 4CA(N)</td><td>● 10ID</td><td>○ 17ME</td><td>● 24MT</td><td>● 30NY(C)</td><td>● 36PA(E)</td><td>● 41TX(S)</td><td>● 47WI</td><td>● 52VI</td> </tr> <tr> <td>● 4CA(S)</td><td>● 11IL</td><td>● 18MD</td><td>● 25NE</td><td>● 30NY(W)</td><td>● 36PA(W)</td><td>● 41TX(W)</td><td>● 48WY</td><td>● 53PC</td> </tr> <tr> <td>● 5CO</td><td>● 12IN</td><td>● 19MA</td><td>● 26NV</td><td>● 31NC</td><td>● 37RI</td><td>● 42UT</td><td>○ 49AK(N)</td><td></td> </tr> <tr> <td>● 6CT</td><td>● 13IA</td><td>● 20MI</td><td>○ 27NH</td><td>● 32ND</td><td>● 38SC</td><td>● 43VT</td><td>○ 49AK(S)</td><td></td> </tr> </table>	● 1AL	● 7DE	● 14KS	● 21MN	● 28NJ	● 33OH	● 39SD	● 44VA	● 49AK(SE)	● 2AZ	● 8FL	● 15KY	● 22MS	● 29NM	● 34OK	● 40IN	● 45WA	● 50HI	● 3AR	● 9GA	● 16LA	● 23MO	● 30NY(O)	● 35OR	● 41TX(N)	● 46WV	● 51PR	● 4CA(N)	● 10ID	○ 17ME	● 24MT	● 30NY(C)	● 36PA(E)	● 41TX(S)	● 47WI	● 52VI	● 4CA(S)	● 11IL	● 18MD	● 25NE	● 30NY(W)	● 36PA(W)	● 41TX(W)	● 48WY	● 53PC	● 5CO	● 12IN	● 19MA	● 26NV	● 31NC	● 37RI	● 42UT	○ 49AK(N)		● 6CT	● 13IA	● 20MI	○ 27NH	● 32ND	● 38SC	● 43VT	○ 49AK(S)	
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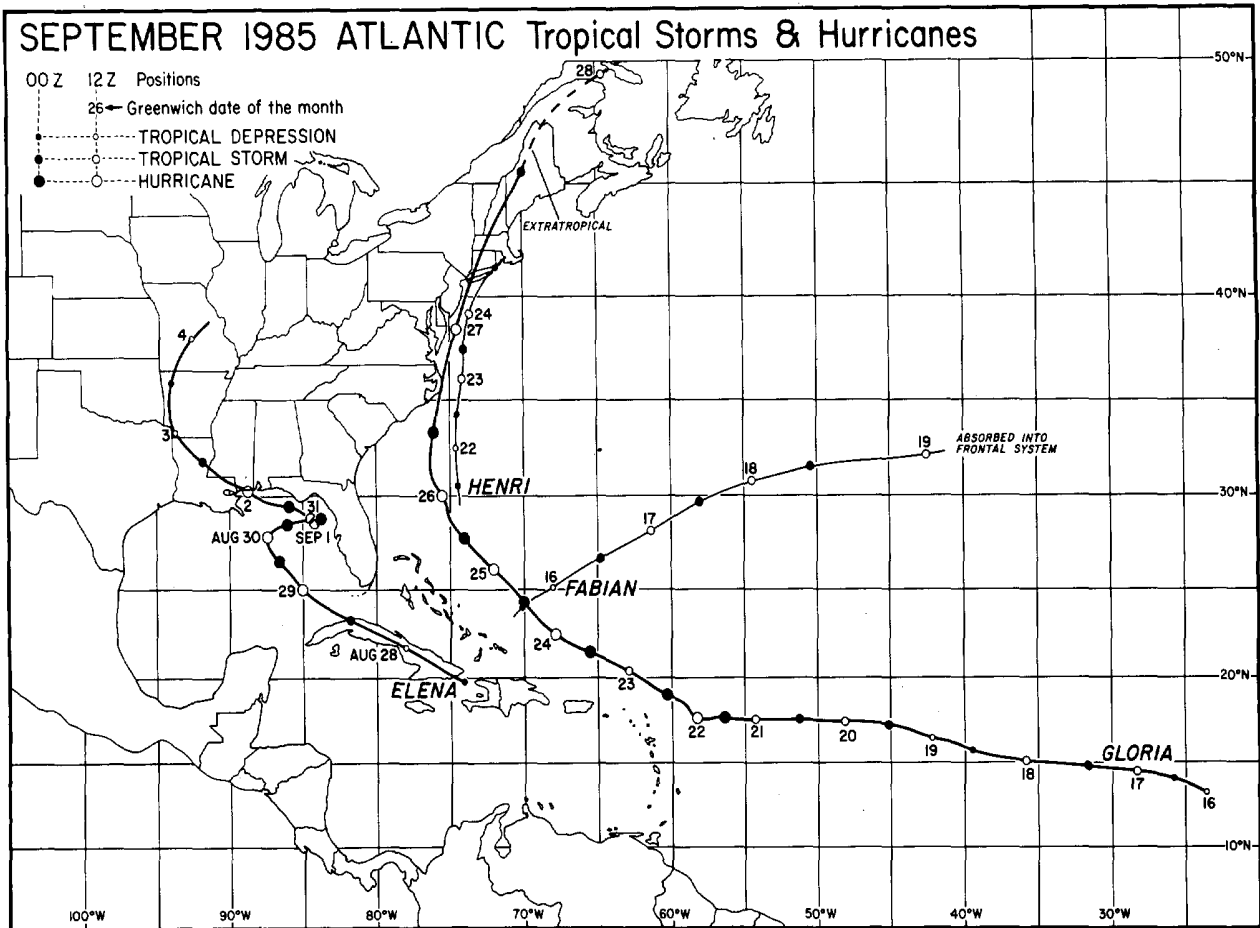
---Data base from NOAA/USDA Joint Agricultural Weather Facility.

TROPICAL STORMS AND HURRICANES



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

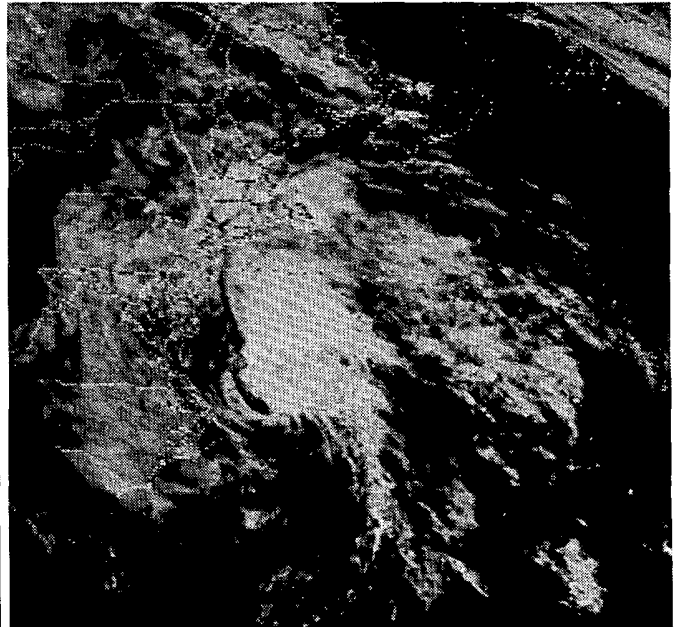
TROPICAL STORMS and HURRICANES ---- continued



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



Tropical Storm FABIAN, centered near 31°N and 53°W at 1601GMT on September 18th. After attaining sustained winds of 55 knots, FABIAN remained consistent in strength and direction (east-north-east), and it never threatened the U.S. Rhode Island border.

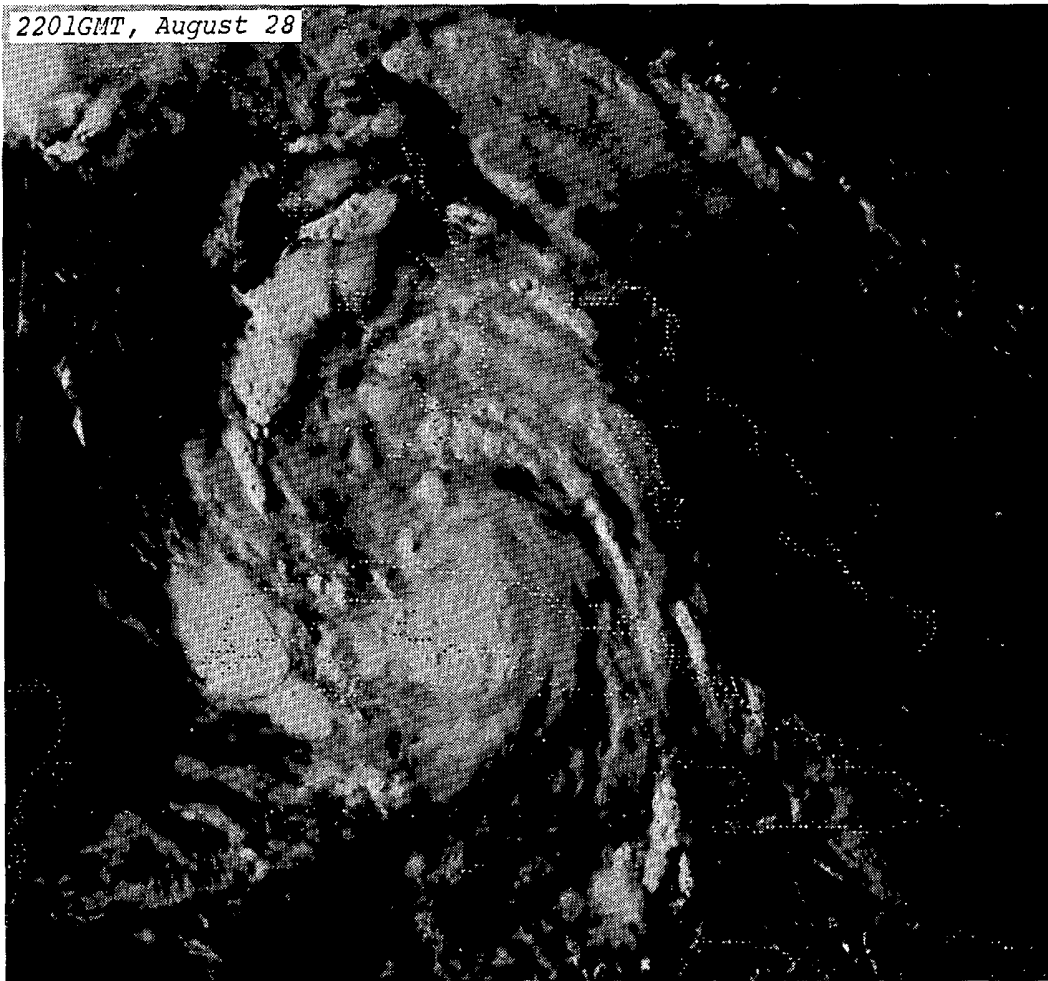


Tropical Storm HENRI near its peak intensity at 1331GMT on September 23rd. HENRI generally weakened as it moved northward off the East Coast toward a landfall on the eastern tip of Long Island and near the Connecticut-Rhode Island border.

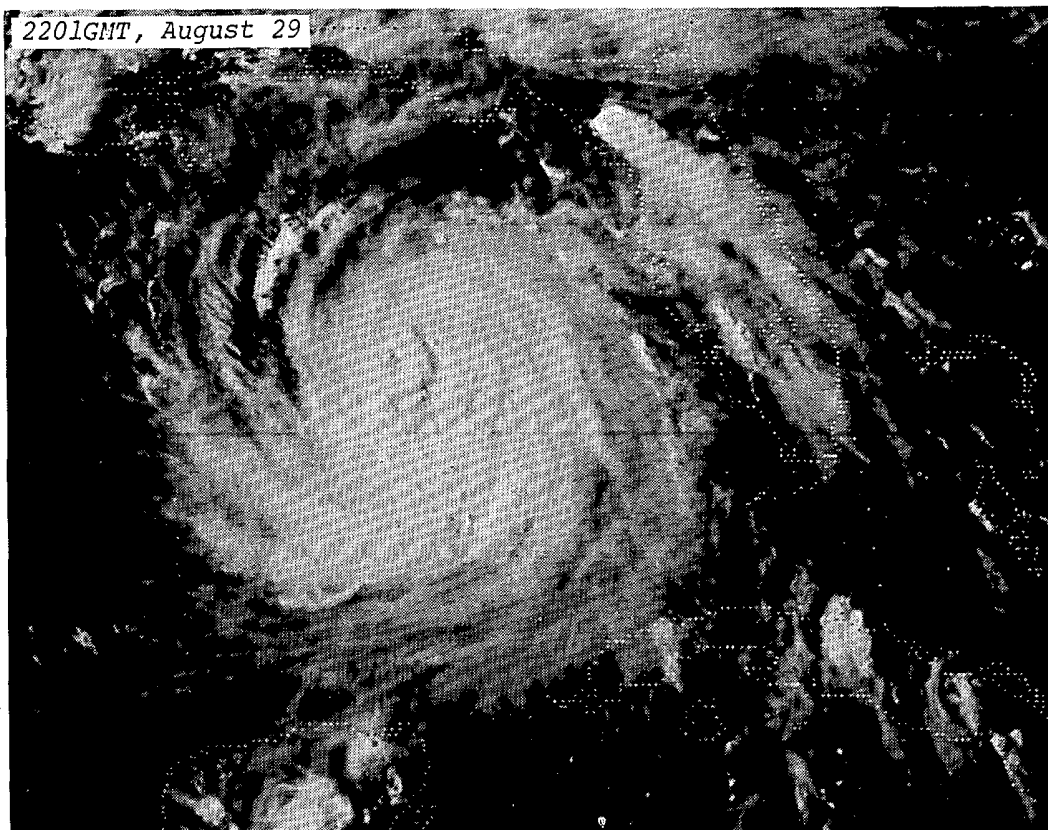
---Both photos from NHC and provided by AOML/HRD, both of Miami, Florida.

HURRICANE ELENA ---- continued

2201GMT, August 28

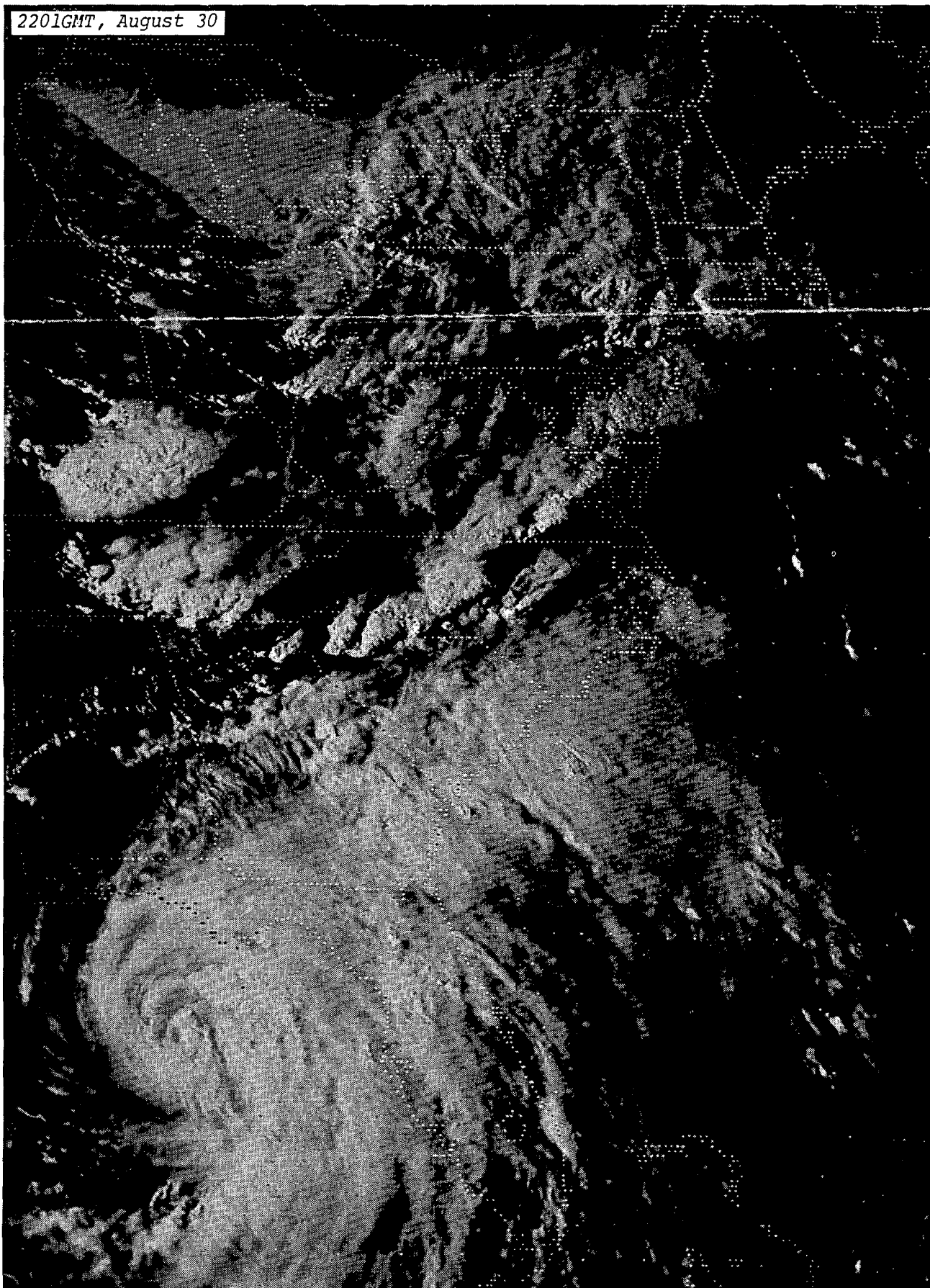


2201GMT, August 29



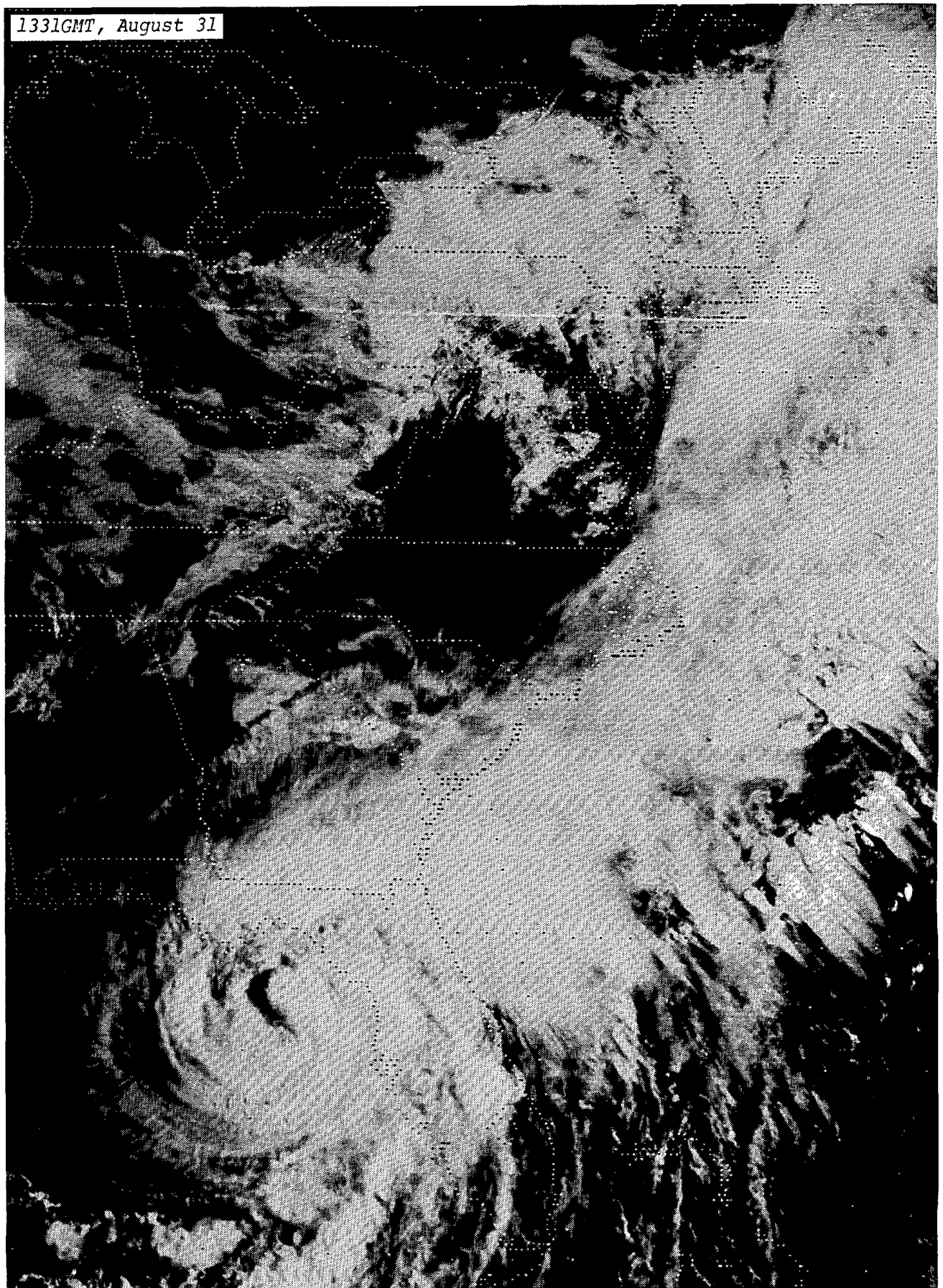
HURRICANE ELENA ---- continued

2201GMT, August 30



On August 30th, ELENA veered off its northwestward course and began heading east toward the northern part of the Florida Peninsula. At the same time, strong convection was breaking out ahead of a south and eastward-moving cold front to the north.

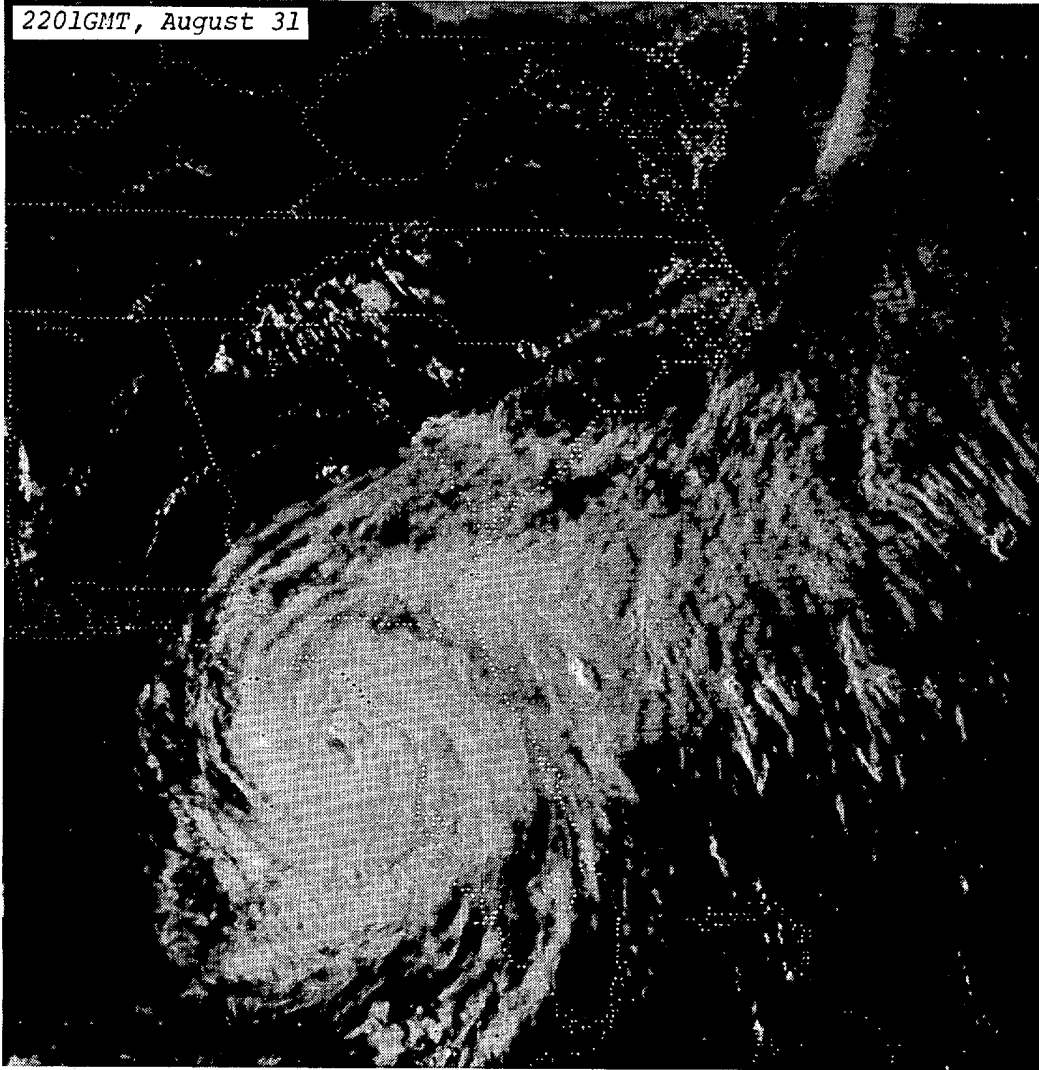
HURRICANE ELENA ---- continued



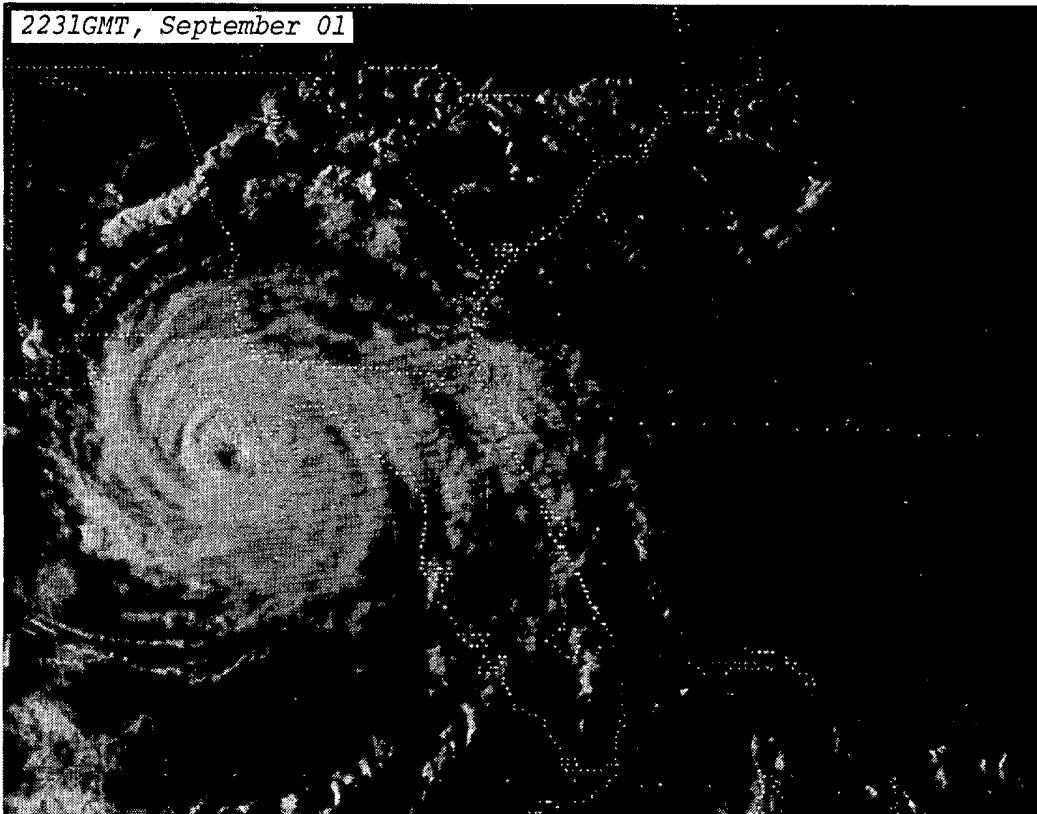
On August 31st as the cold front moved off the Atlantic Coast, Elena began a clockwise loop and turned westward, away from the Florida Peninsula. Note the huge exhaust cloud spiralling out from ELENA's center in this early morning, low sun-angle view.

HURRICANE ELENA ---- continued

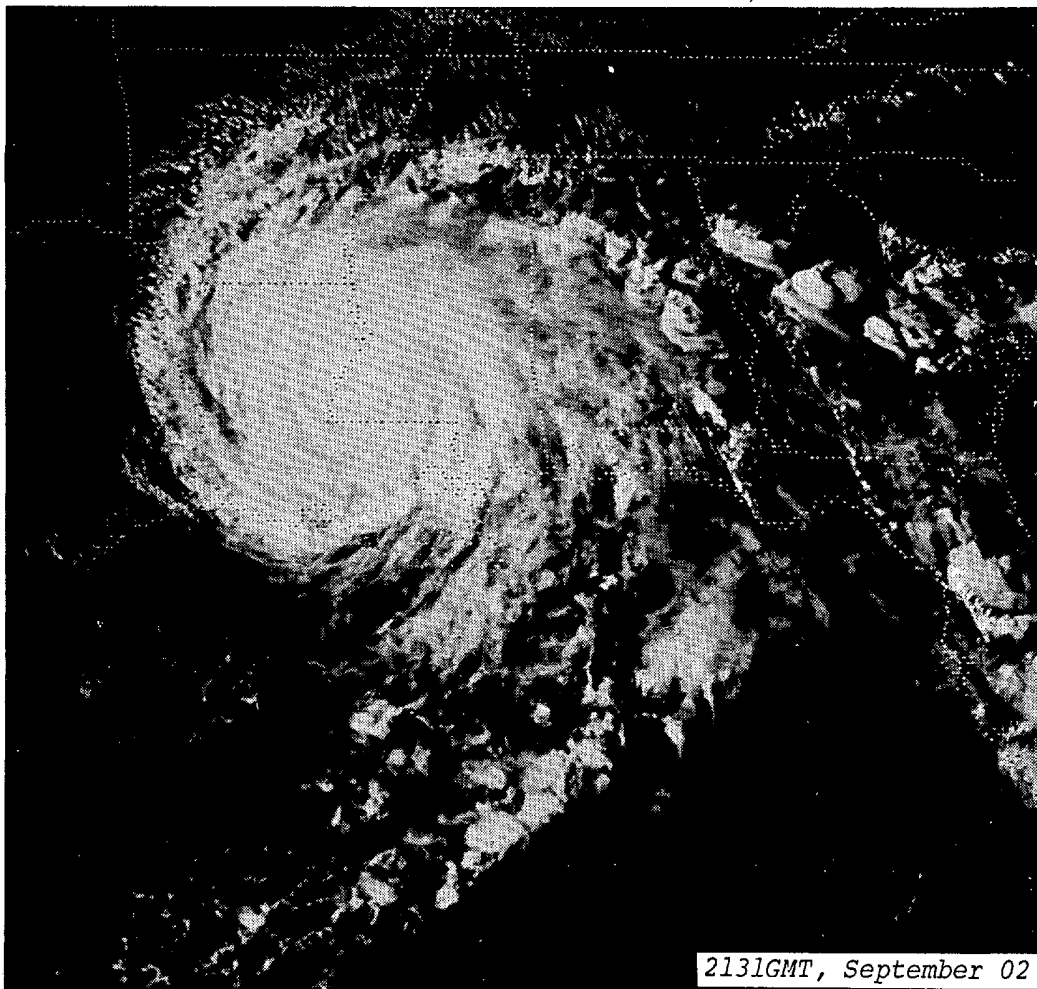
2201GMT, August 31



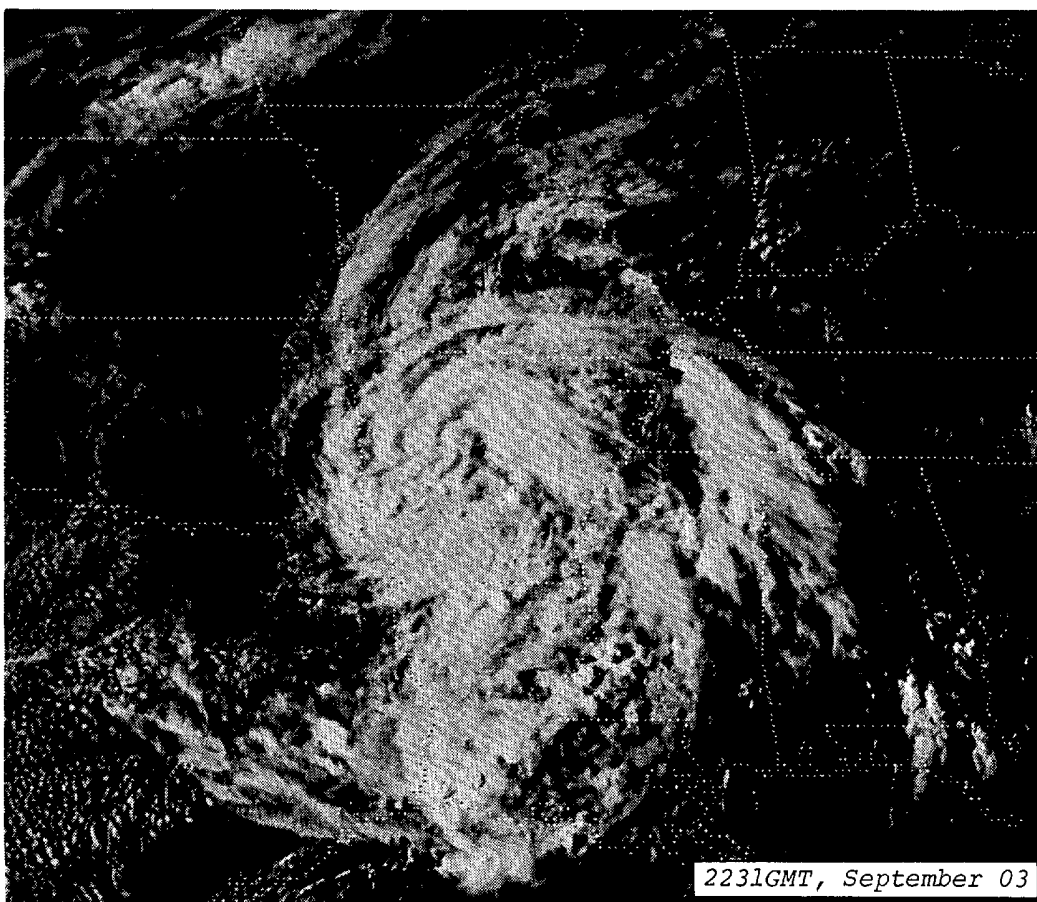
2231GMT, September 01



HURRICANE ELENA ---- continued

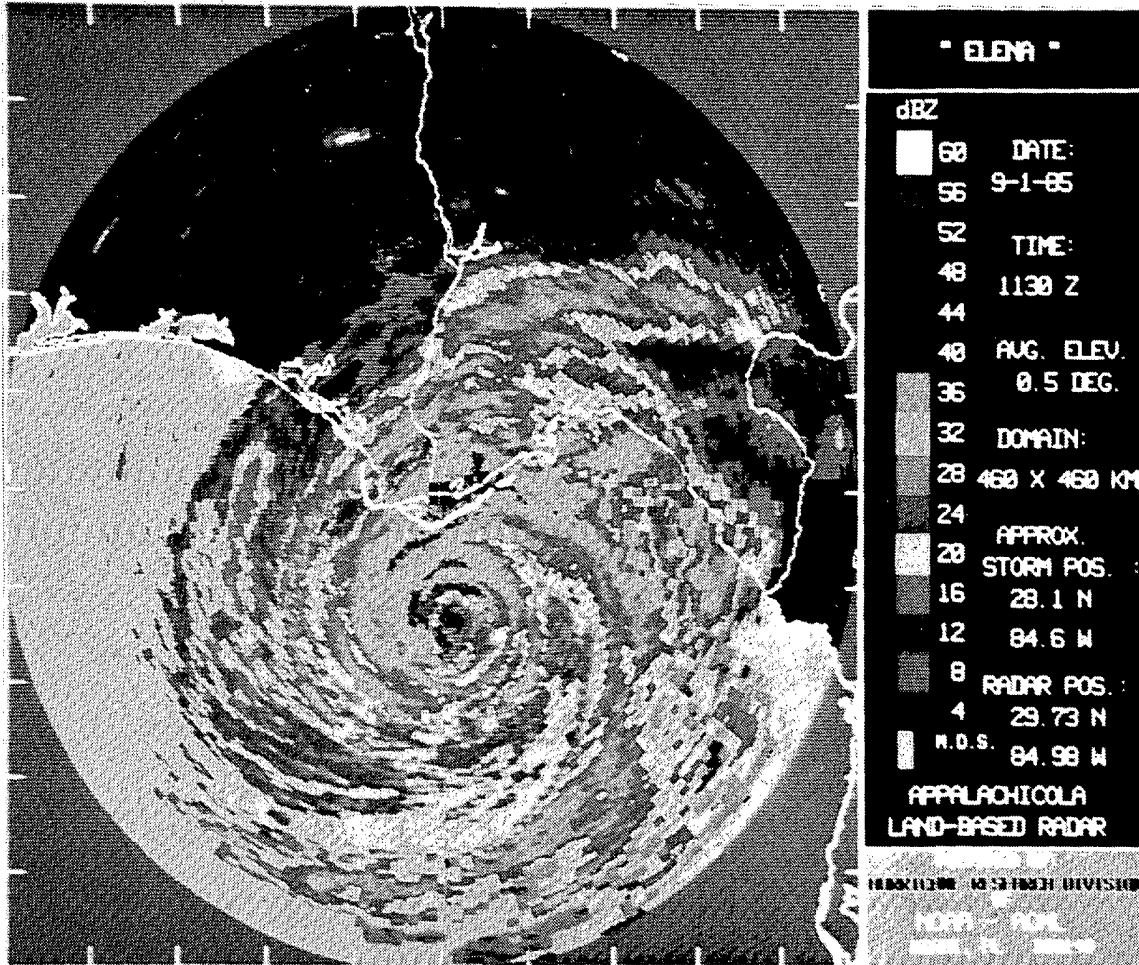


2131GMT, September 02

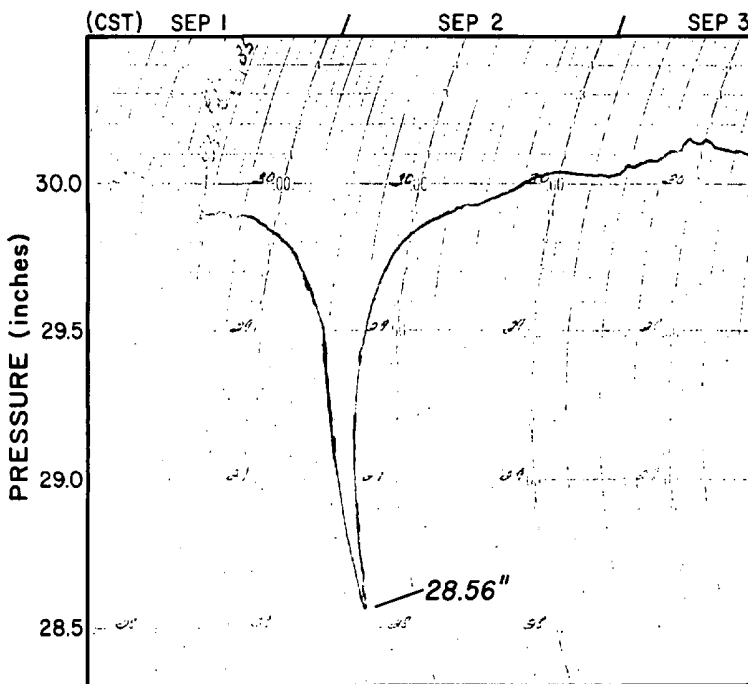


2231GMT, September 03

HURRICANE ELENA ---- continued

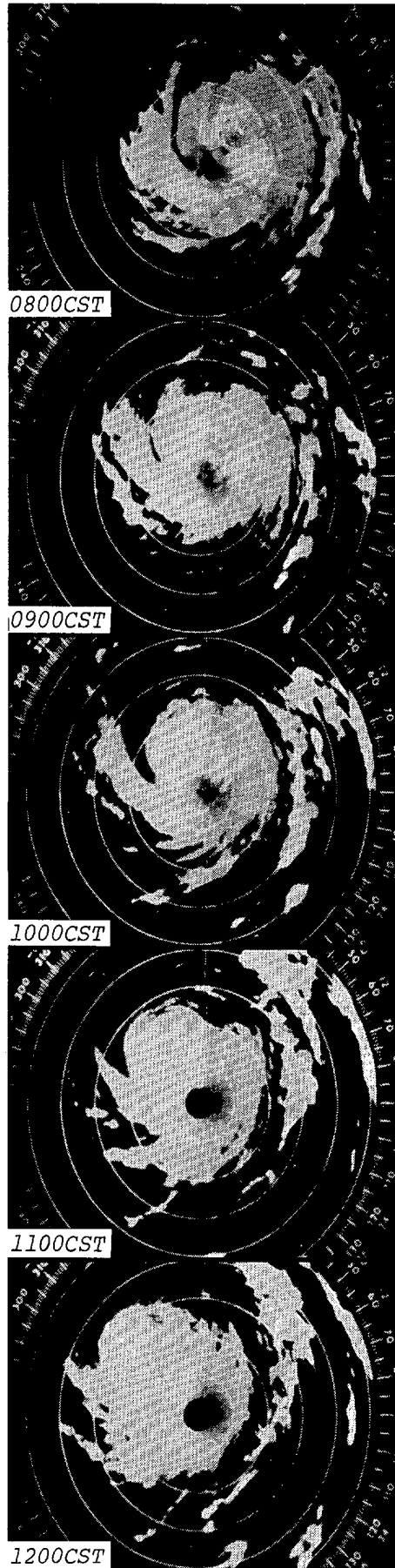
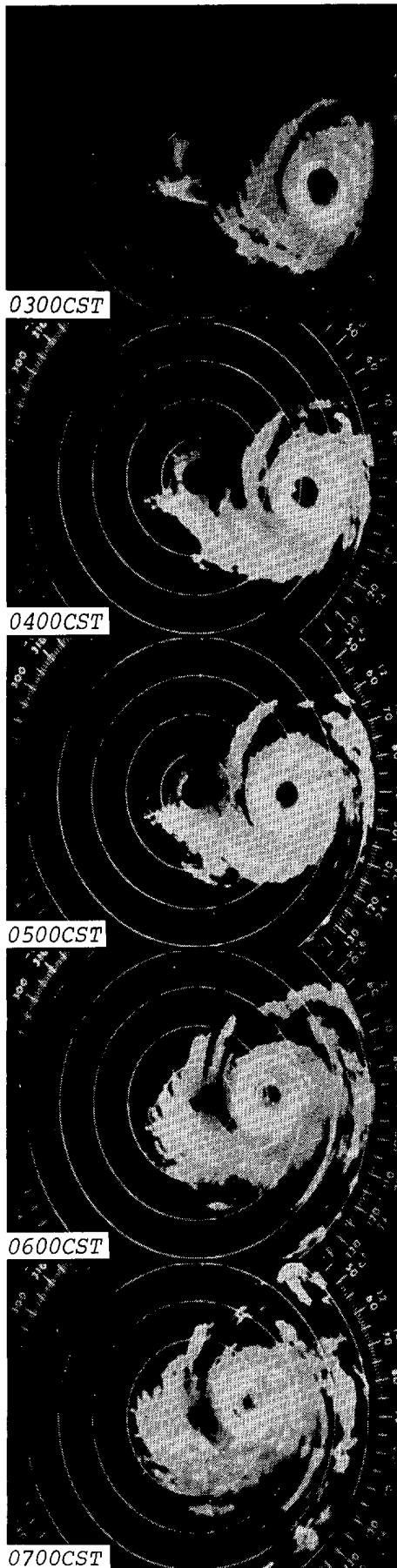


A computer-processed reflectivity scan of ELENA collected at 1130GMT (0630EST) on September 1st by the AOML/Hurricane Research Division's land-based radar team, operating from the NWSO at Apalachicola, Florida (AQQ). The HRD scientists also monitored the storm from the NWS Meteorological Observatory at Pensacola, Florida earlier, and obtained video tapes of concurrent radar displays from both locations. ---Figure from AOML/HRD.



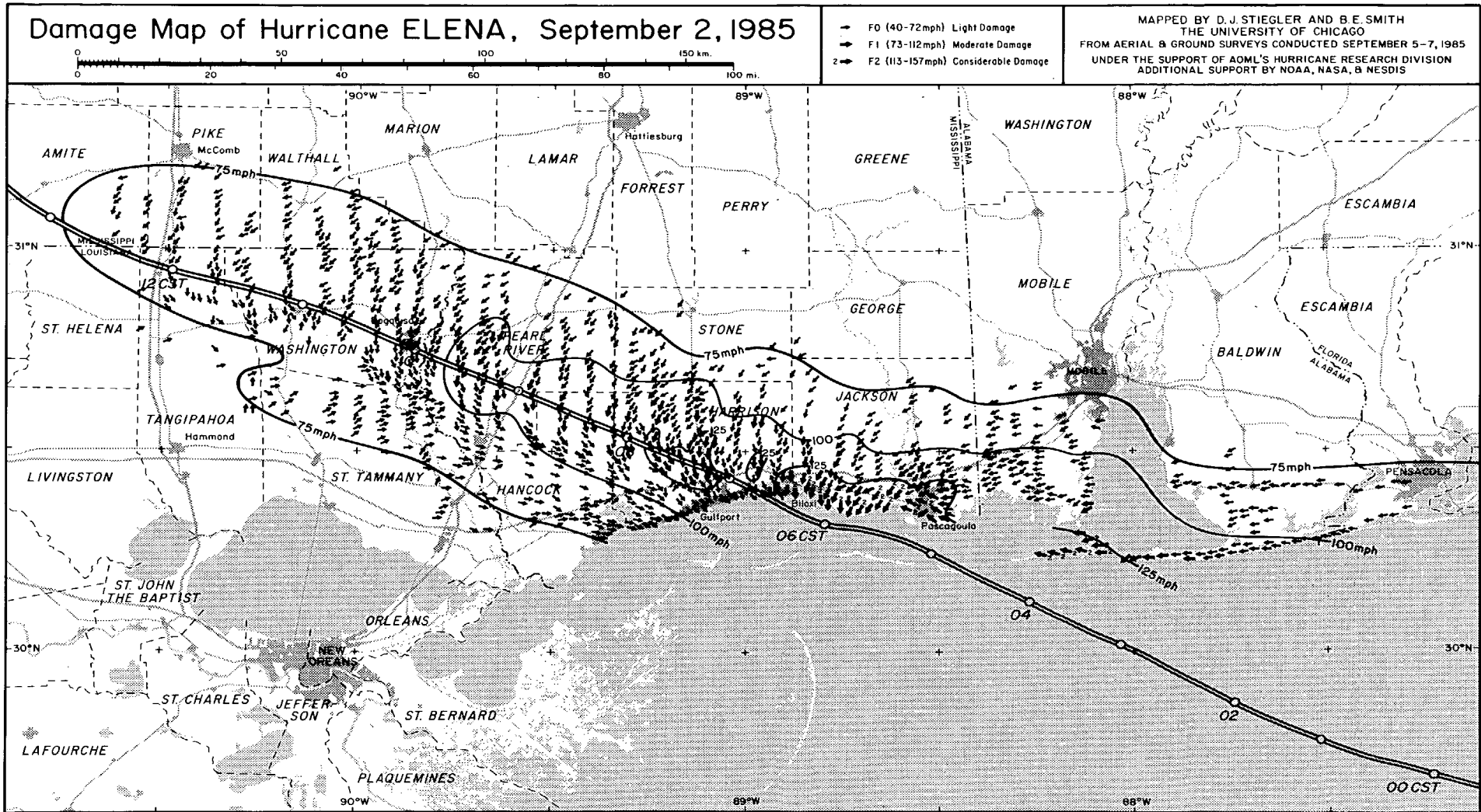
A barograph trace from the Harrison County, Mississippi Civil Defense County, Mississippi in Gulfport, showing a minimum recorded pressure of 28.56 inches as ELENA passed over. ---Trace courtesy of Wade Guice, Harrison County Civil Defense; furnished by the NWSFO at Jackson, Mississippi.

HURRICANE ELENA ---- continued



Hourly PPI-scope images from the NWS, WSR-57 radar at Slidell, Louisiana show the structural deformation of ELENA during landfall on September 2nd. The center moved from south of Mobile Bay (0300CST), made landfall at Biloxi (shortly before 0700CST), and passed south of McComb, Mississippi (1200CST). ---Radar microfilm from NCDC.

HURRICANE ELENA --- continued



Map of ELENA's landfall area containing arrows that indicate the location of surveyed damage and the implied direction and force of the responsible wind. The overall windspeed analysis represents the estimated peak surface gusts, based on damage and instrumented observations. The path and hourly positions of ELENA's center were determined using microfilm from the NWS radar at Slidell, Louisiana. ---Mapped by the University of Chicago.

HURRICANE ELENA ---- continued

This and the following 4 pages (15 through 19) contain damage photos from some of the areas most heavily affected by Hurricane ELENA.



Surge damage to U.S. 98 near East Point, approximately 10 miles east of Apalachicola, Florida.

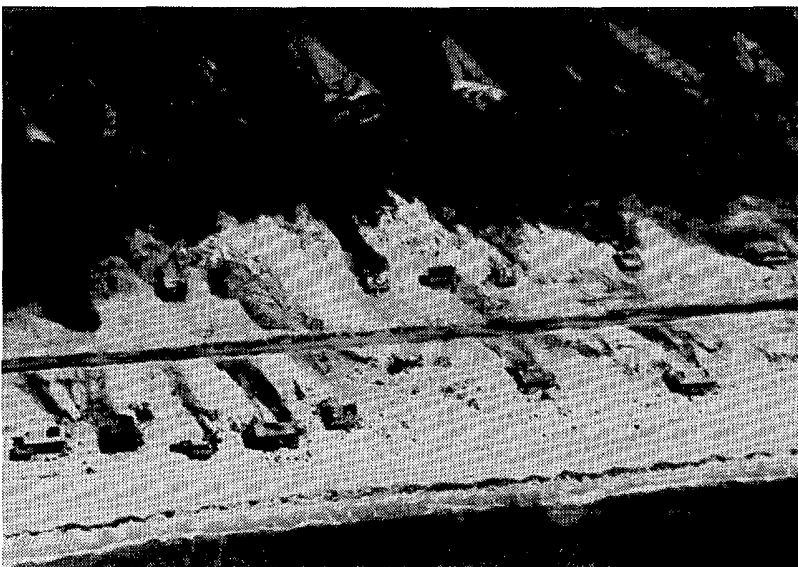


2 large, uprooted trees rest against a home in downtown Apalachicola.



Wind-blown debris obstructs a street in downtown Apalachicola.

---Above three photos by Michael Black, member of AOML/HRD's land-based radar team.



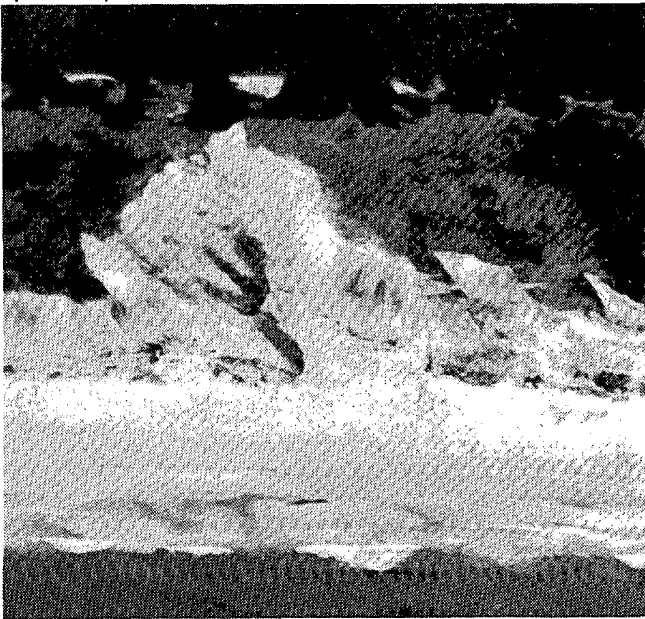
Dauphin Island, Alabama suffered the brunt of the storm, as it did when Hurricane FREDERIC struck there in September, 1979. A 6 to 8 foot storm surge washed beach sand all the way across the width of the island for much of its length, an example of which is shown at left.

---This and the remaining damage photos, mostly of Dauphin Island, were taken by Duane Stiegler (DS) and Brian Smith (BS), The University of Chicago, as indicated.
---(DS).

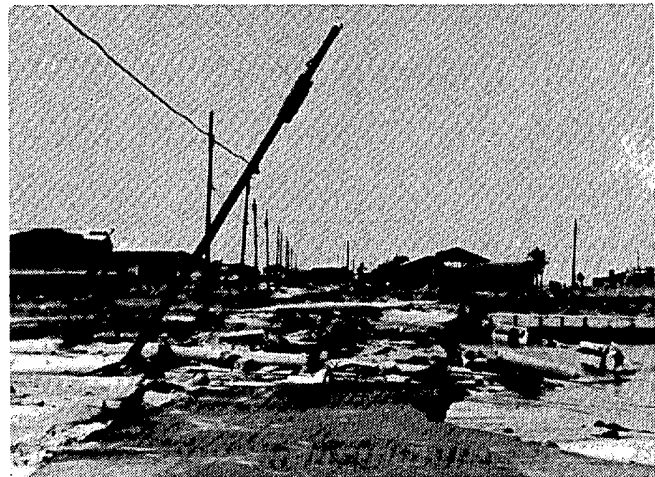
HURRICANE ELENA ---- continued



Additional aerial views of beach sand erosion show how the sand was deposited around homes (above) and across a narrow portion of the west end of the island (below).



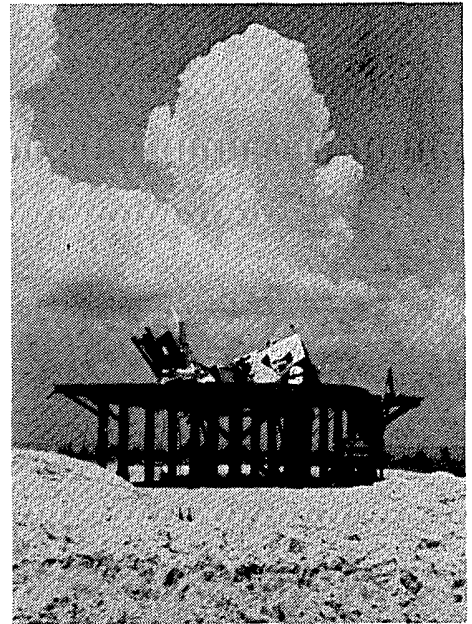
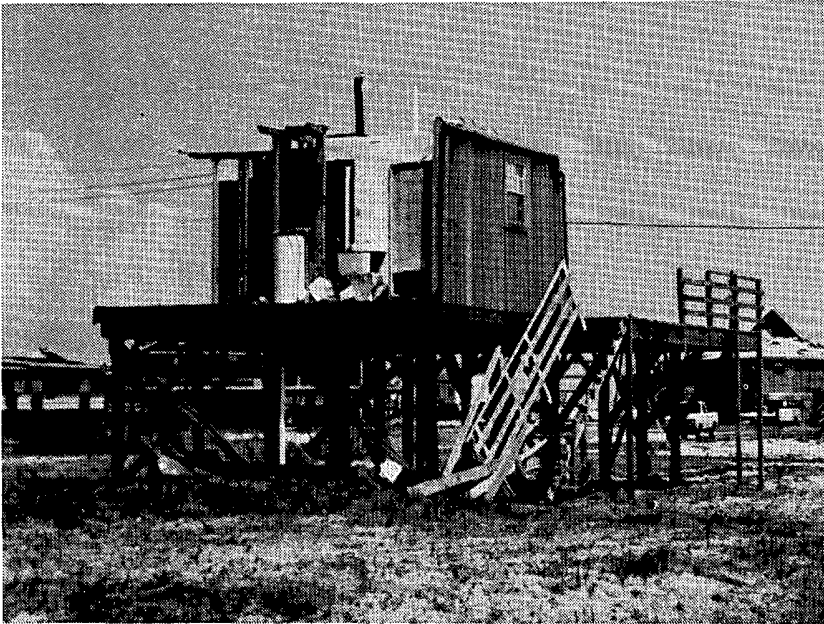
A ground view down the road in the photo at left shows how the sand had to be bulldozed aside to make the road passable.



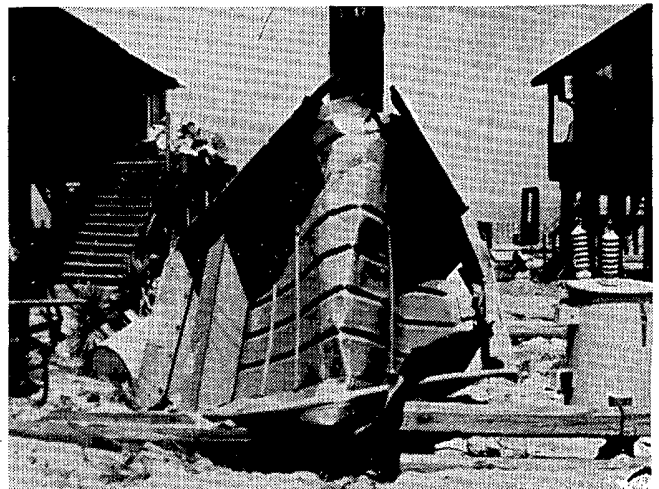
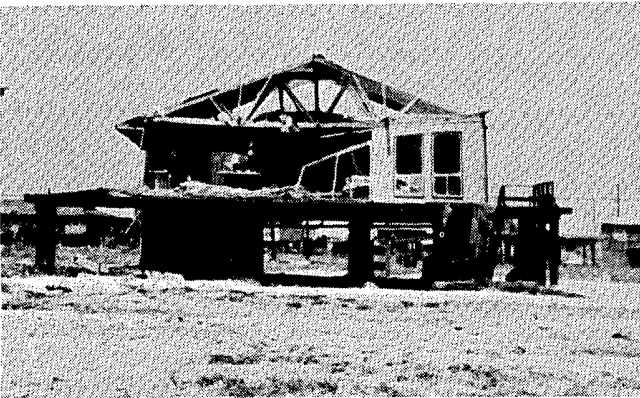
Two locations on Dauphin Island where the storm surge eroded streets, exposing and, in many cases, destroying the underground water and sewer pipelines.

---All photos on this page (DS).

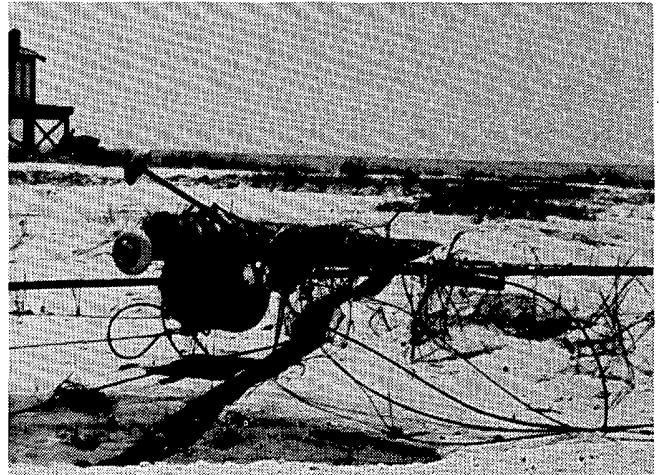
HURRICANE ELENA ---- continued



Two beach homes on Dauphin Island that, although protected from the surge by their stilts, were almost totally blown away by ELENA's winds. ---Both photos (DS).

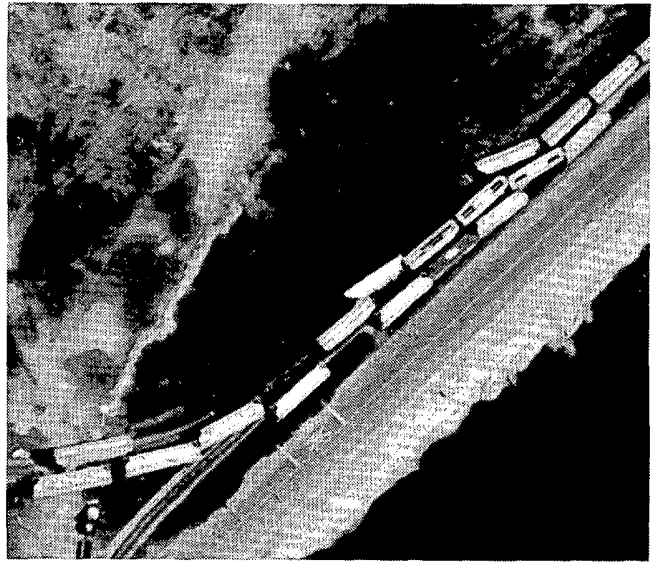
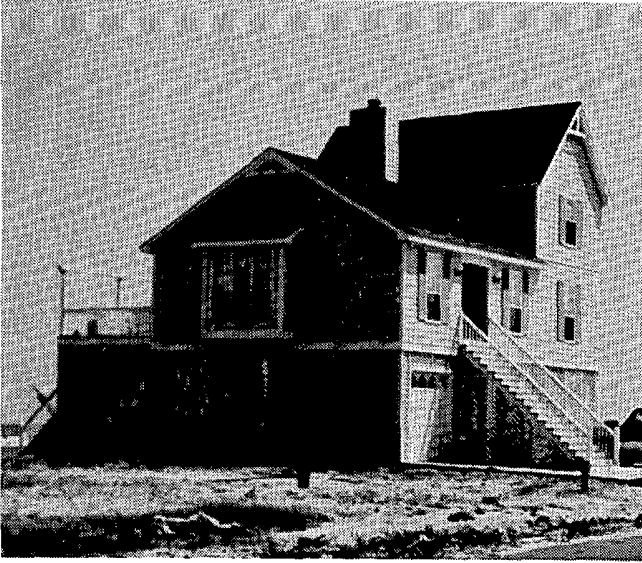


An airborne boat that became wrapped around a utility pole (above) and a pole that sank and toppled in the combination of wind and surge (below). ---Both photos (BS).



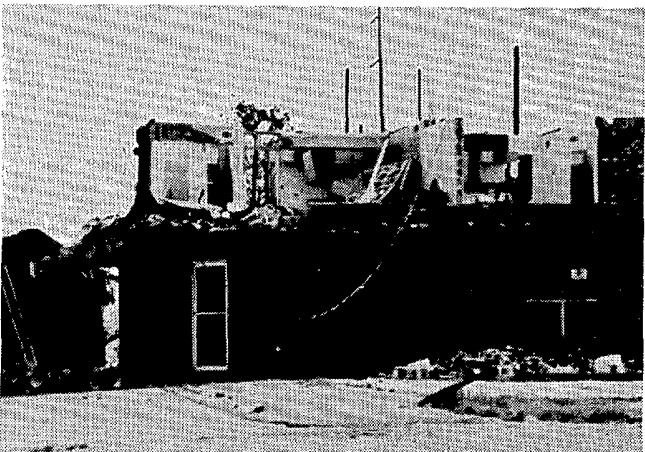
Three more examples of the damage sustained by homes on Dauphin Island. ---(DS), (BS), and (BS); top to bottom.

HURRICANE ELENA ---- continued



Two Dauphin Island homes of the same design and construction, and only about 200 feet apart, experienced widely differing outcomes, as one was completely destroyed while the other was practically unscathed. ---Both photos (DS).

Aerial and ground views of railroad hopper cars that were blown off their tracks at Pascagoula, Mississippi. ---Both photos (DS)



An apartment building in Pascagoula that suffered extensive damage to its second floor. ---(BS).

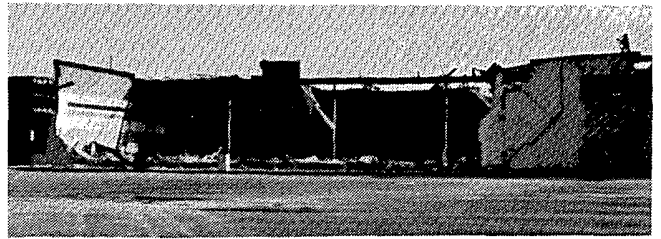


Two cranes that twisted and collapsed around each other at the Ingalls Shipbuilding Yard in Pascagoula. A third, nearby crane survived. ---(DS).

HURRICANE ELENA ---- continued



CLOCKWISE FROM ABOVE: The damaged sheet metal roof of a steel-span structure, (BS); an aerial view of a damaged shopping center between Pascagoula and Ocean Springs, (DS); and three ground views of damaged storefronts at the shopping center, all (DS).



A flipped-over trailer at a mobile home park, 5 miles west of Pascagoula. ---(DS).



A second trailer at the park that was severed by an uprooted tree. A different, snapped-off tree fell over part of the trailer's roof. ---(BS).

2. FLASH FLOODING at PADUCAH, KENTUCKY on September 5, 1985

Paducah, Kentucky received heavy rains of around 8 inches in 7 hours during the early morning of September 5th. The rains, a product of the remnants of Hurricane ELENA, created flash floods throughout a four county area of western Kentucky. Luckily, no one was killed or injured during the deluge, but many people had to evacuate and property damage was extensive. ---Both photos from the Paducah Sun; provided by the NWSO at Paducah and the NWSFO at Louisville.



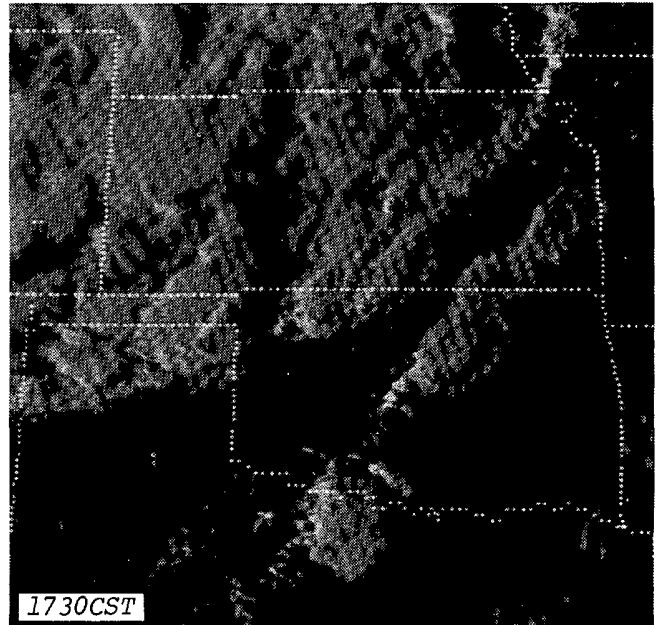
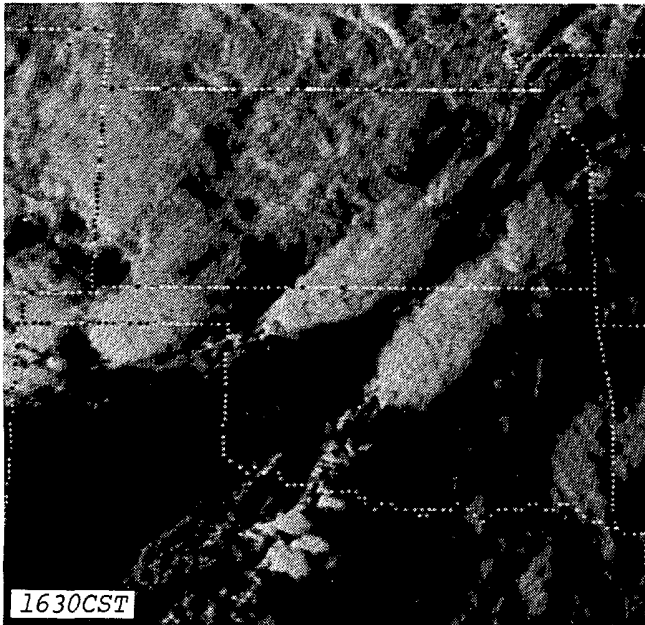
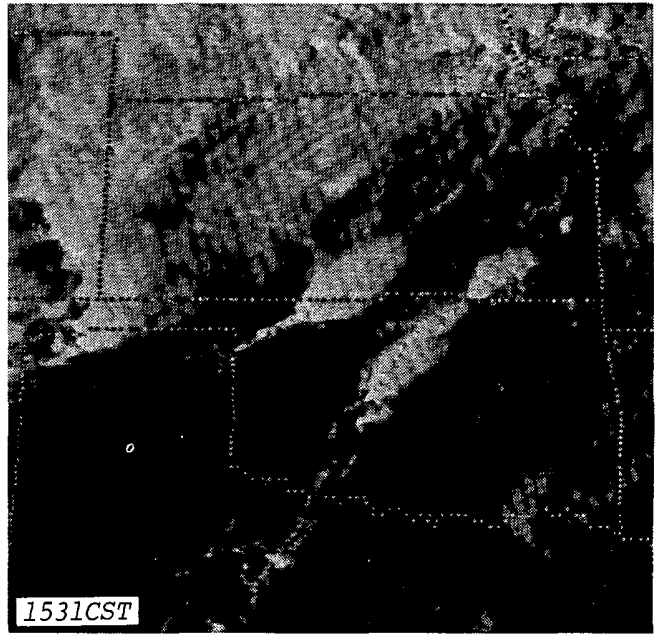
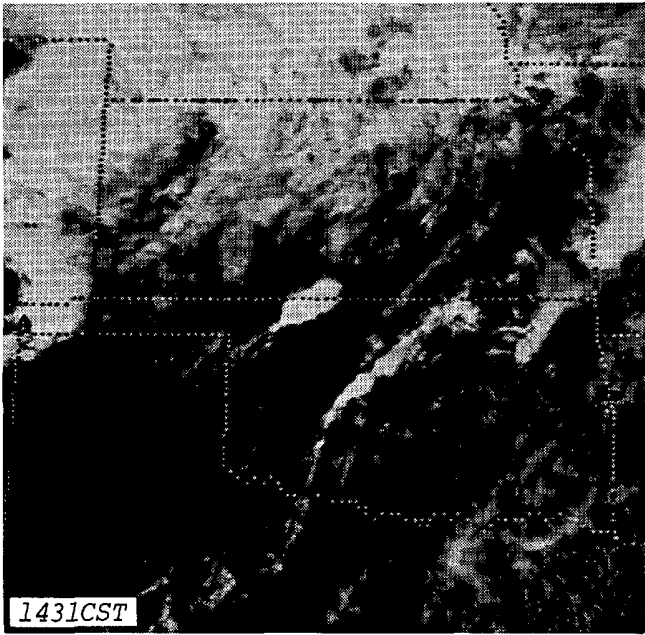
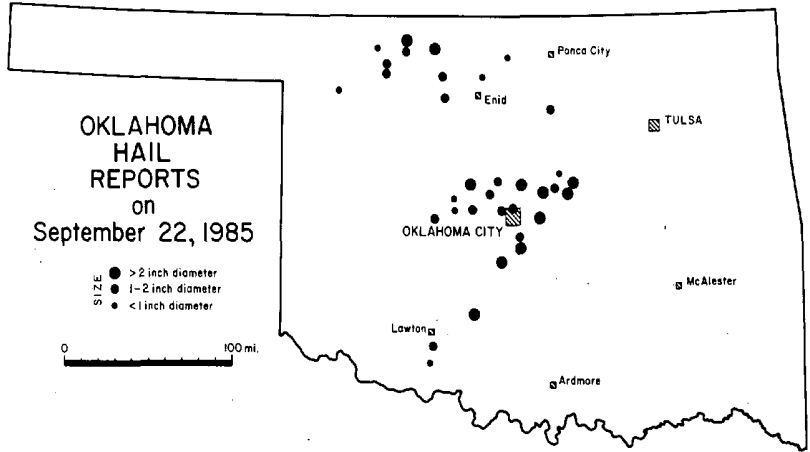
A sea had already formed at the corner of Old Mayfield Road and 21st Street in Paducah, long before the rain had ended.



Customers of a Days Inn motel in Paducah stand on a second floor balcony as they watch fast-moving floodwaters engulf cars, trucks, and the first floor rooms of the motel.

3. LARGE HAIL in OKLAHOMA on September 22, 1985

Late afternoon and evening thunderstorms dropped unusually large hailstones over many locations in Oklahoma on September 22nd. Many spots reported the hail as being baseball-sized, and at one place along I-35 near Edmond, the hail was described as being as large as grapefruits. ---Data from the NWSFO at Oklahoma City, Oklahoma.

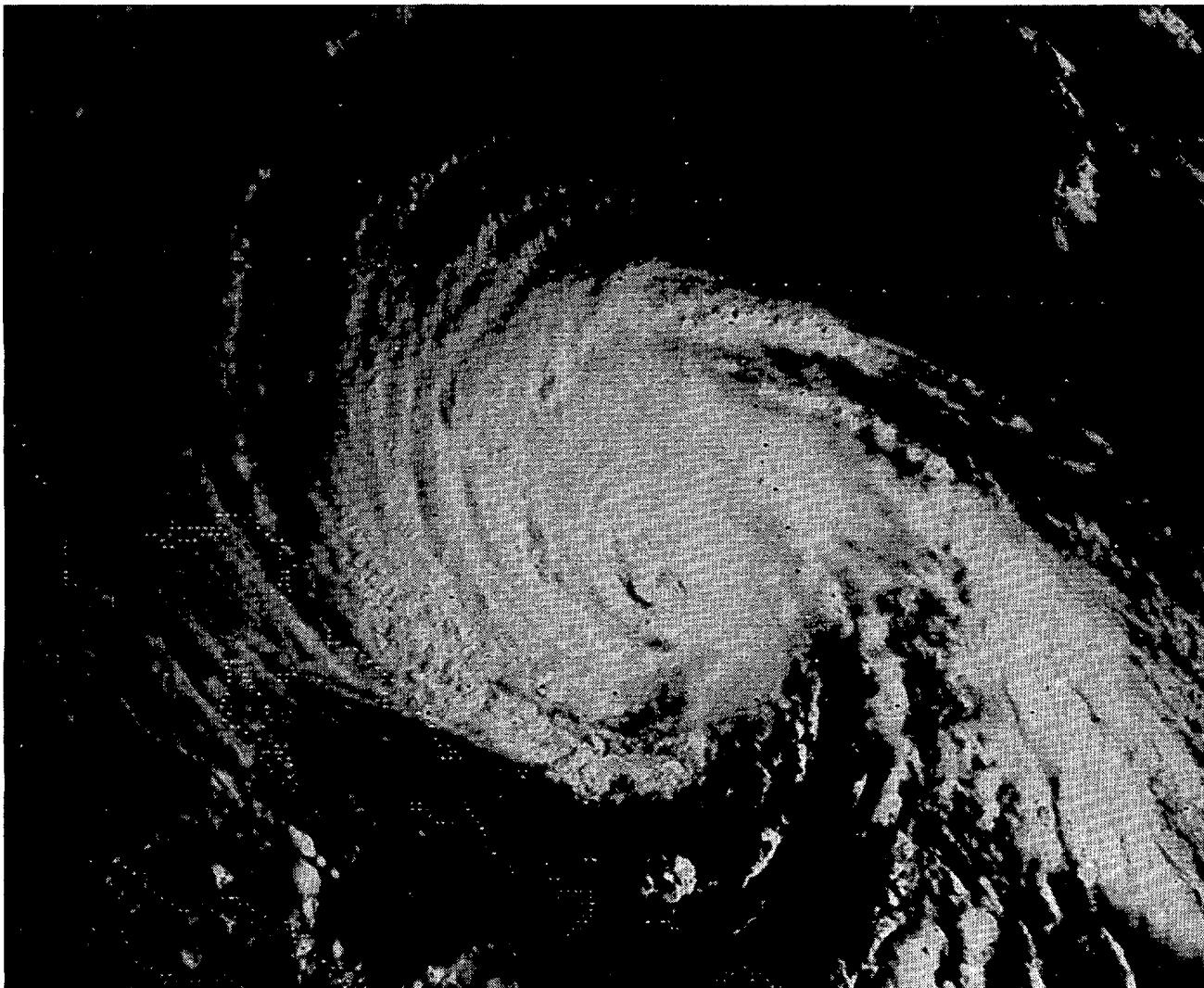
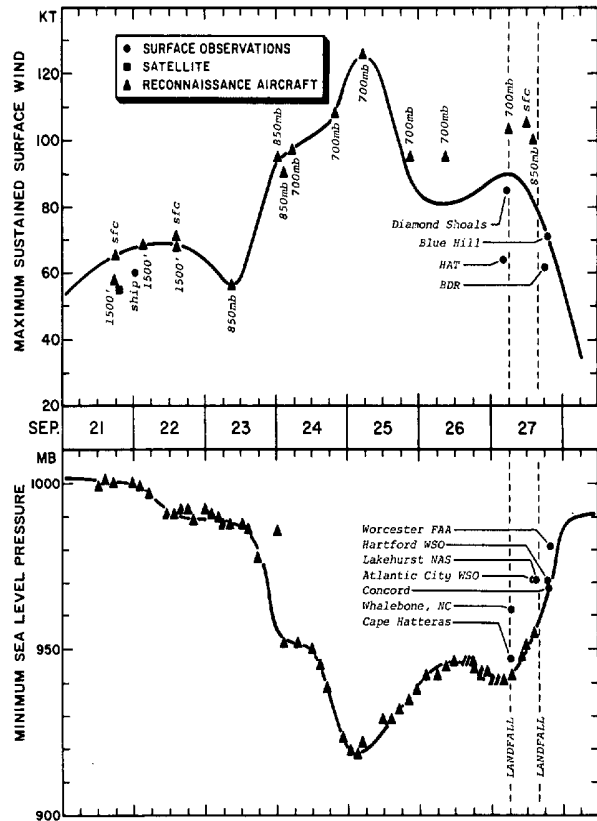


GOES 6 satellite, visible images of the hailstorms as they developed and matured during the late afternoon of September 22nd. The storms continued producing hail for several hours after dusk as well. ---Photos from NESDIS.

4. HURRICANE GLORIA, September 16-27, 1985

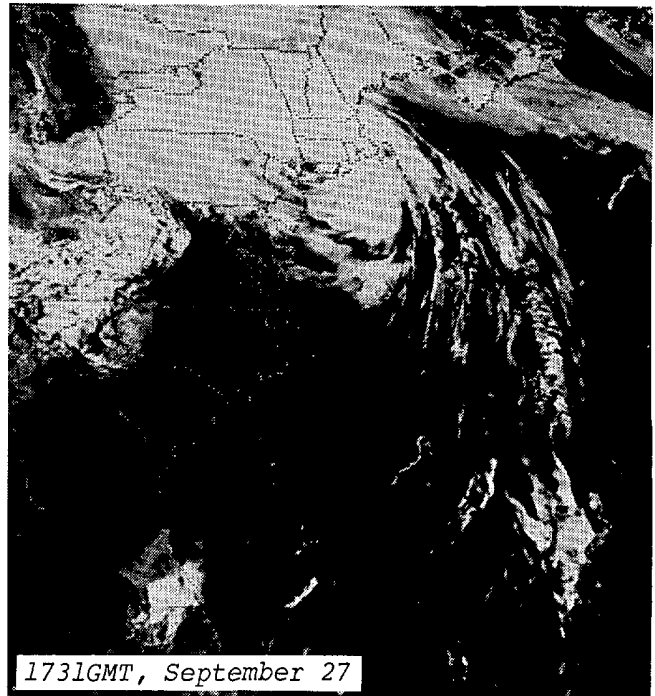
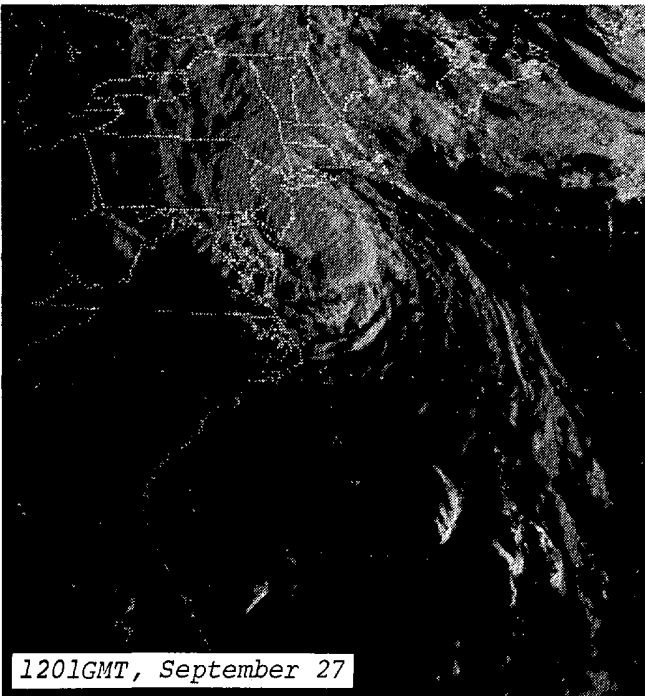
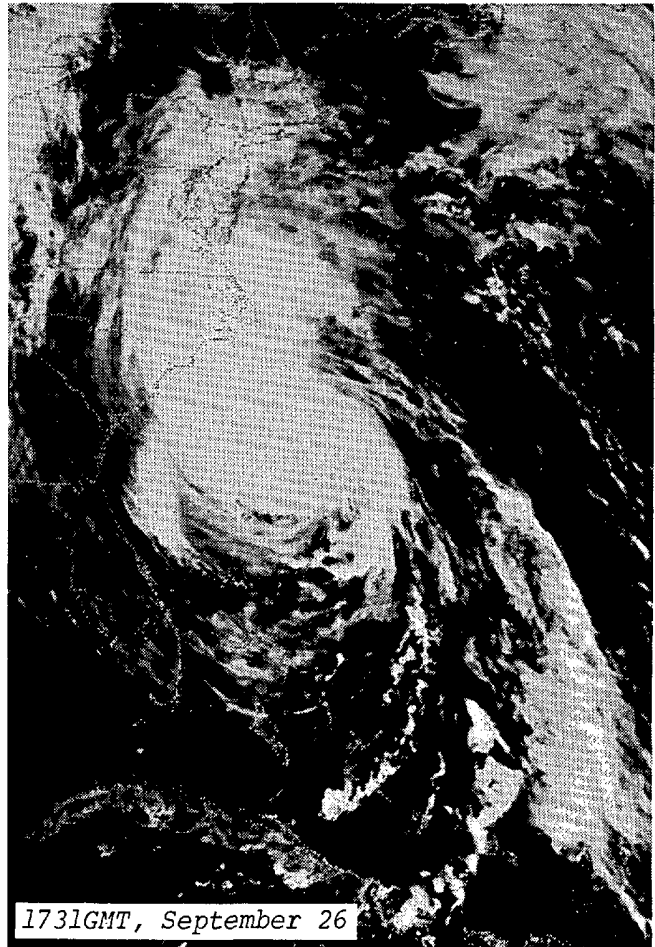
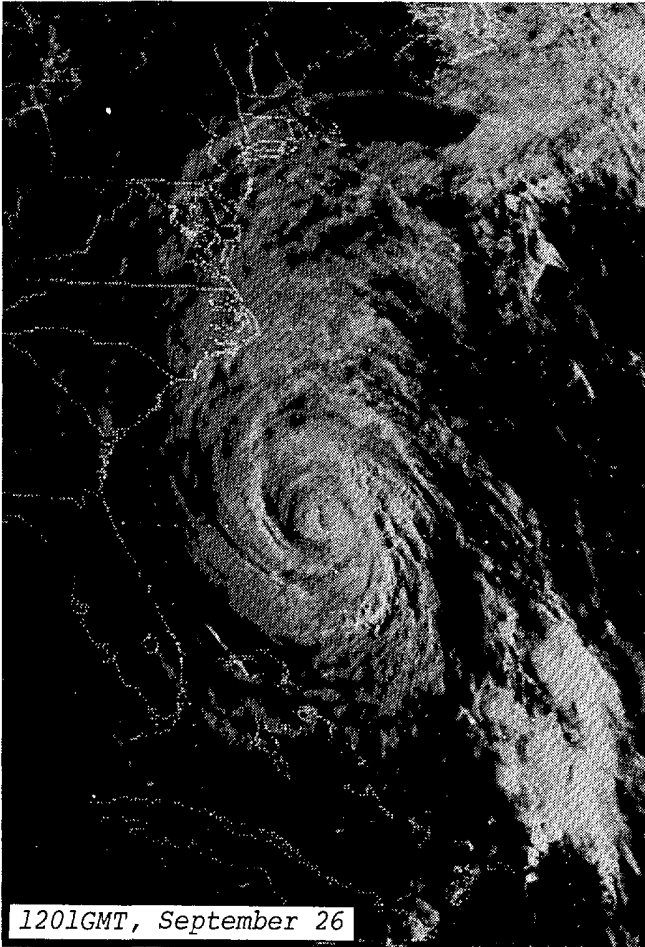
Hurricane GLORIA organized near the Cape Verde Islands off the west coast of Africa and was named on September 16th. The system maintained minimal storm strength as it travelled west-northwest across the Atlantic Ocean, but steadily intensified as it neared the Leeward Islands of the Lesser Antilles, late on the 20th and through the 21st (see path on page 5). Although downgraded while passing northeast of the islands on the 23rd, its winds having dropped below 65 knots for about 12 hours, GLORIA reintensified as it moved northwest toward the Bahamas and the U.S. East Coast. After turning north on the 26th, the hurricane slowly weakened as its translational motion steadily increased. Yet, GLORIA managed to become the second hurricane and fifth storm of tropical origin to make landfall in the U.S. this year. (continued on next page)

RIGHT: Plots of estimated winds and pressure for Hurricane GLORIA. BELOW: A GOES 6 satellite, visible image of GLORIA at 1301GMT on September 25th.



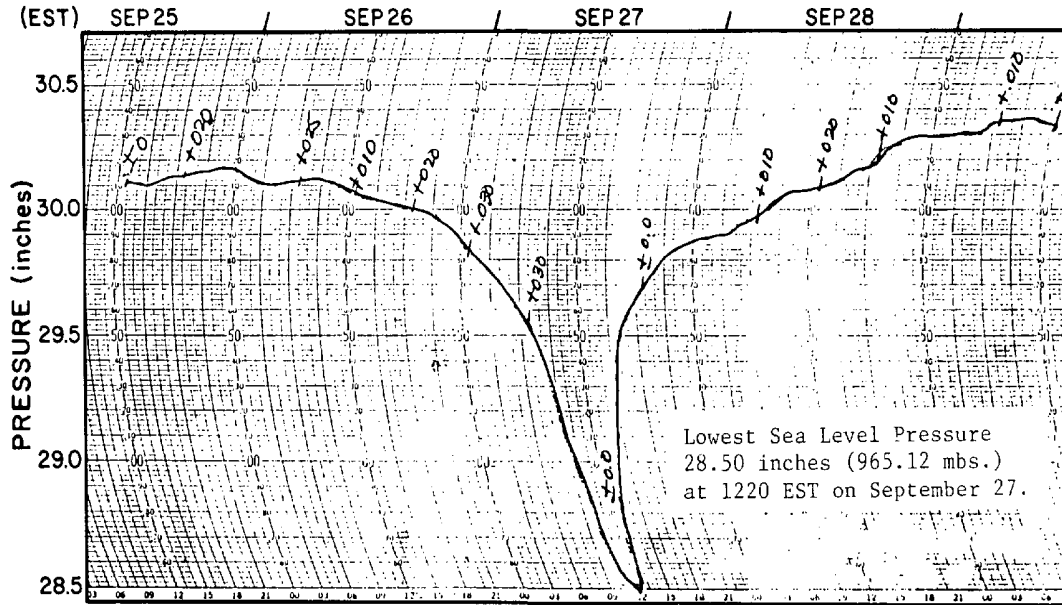
HURRICANE GLORIA ---- continued

GLORIA's center moved across the Outer Banks of North Carolina on the morning of the 27th, bringing peak surface gusts of up to 80 knots on shore, and 104 knots at sea. Later in the day, GLORIA came ashore again, this time over Long Island and Connecticut, only 3 days after Tropical Storm HENRI had done likewise. ---Figure and satellite photo on the previous page courtesy of NHC and AOML/HRD, Miami, Florida.

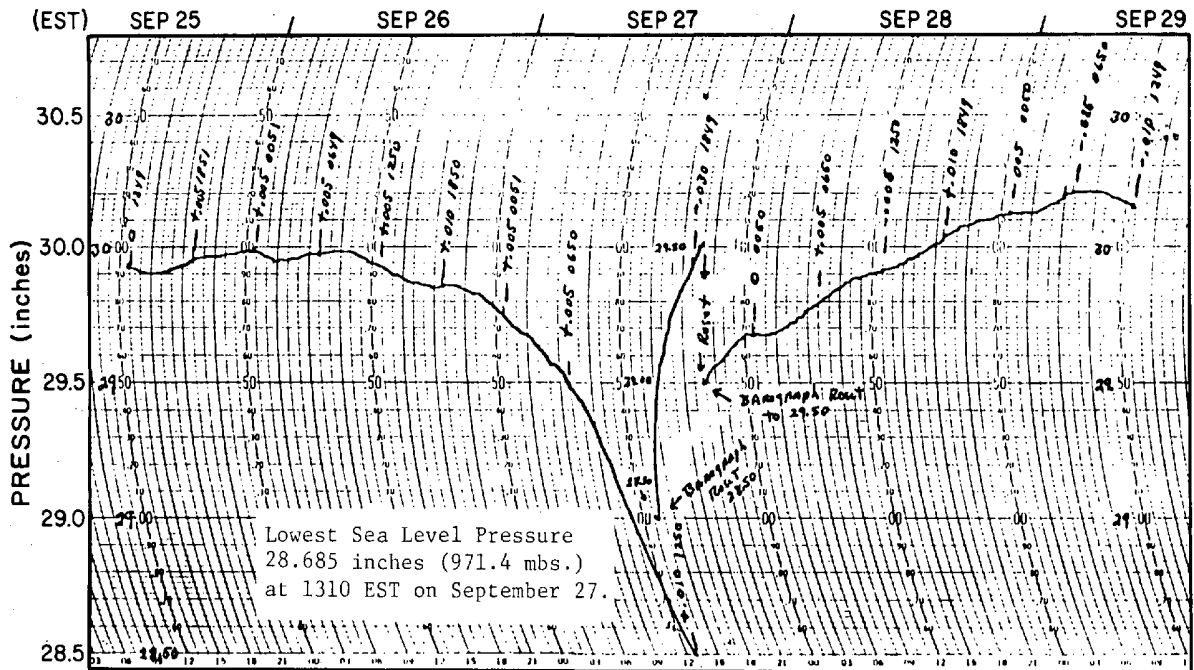


GOES 6 satellite, visible images taken as GLORIA moved northward just off shore of the U.S. East Coast, and later came ashore in New England. ---Photos from NESDIS.

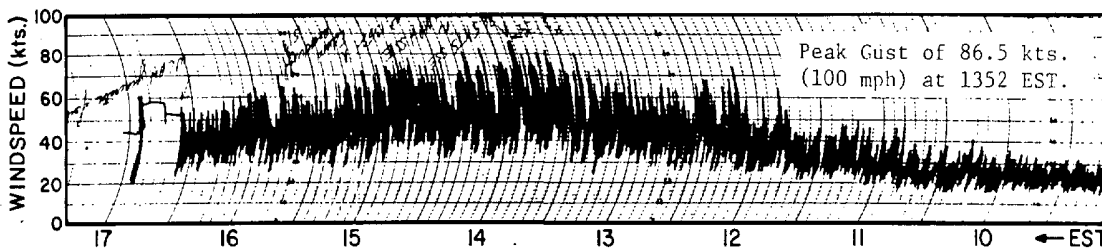
HURRICANE GLORIA ---- continued



A barograph trace from the NWSO at Bridgeport, Connecticut, approximately where GLORIA's center came ashore upon entering New England. Bridgeport also reported a 64 knot wind gust.



A barograph trace from Bradley International Airport at Windsor Locks, Connecticut just north of Hartford. GLORIA's center passed near Hartford about an hour after landfall.

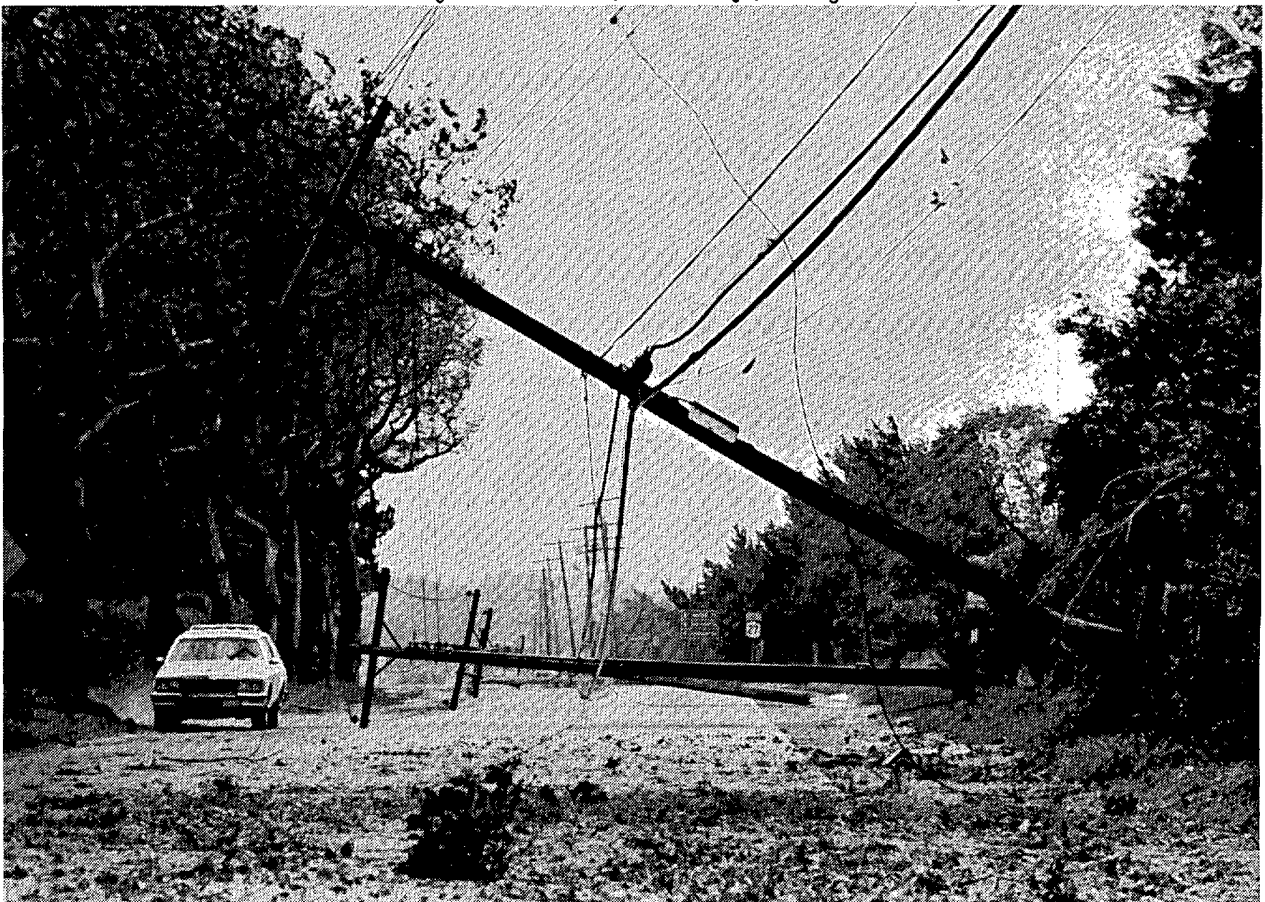


A gust recorder trace from the NWS Blue Hill Observatory at Milton, Massachusetts registered a peak gust of 86.5 knots at 1352EST on September 27th, about 3 hours before the power failed. --All traces supplied by the NWS Blue Hill Observatory, Milton, Massachusetts.

HURRICANE GLORIA ---- continued



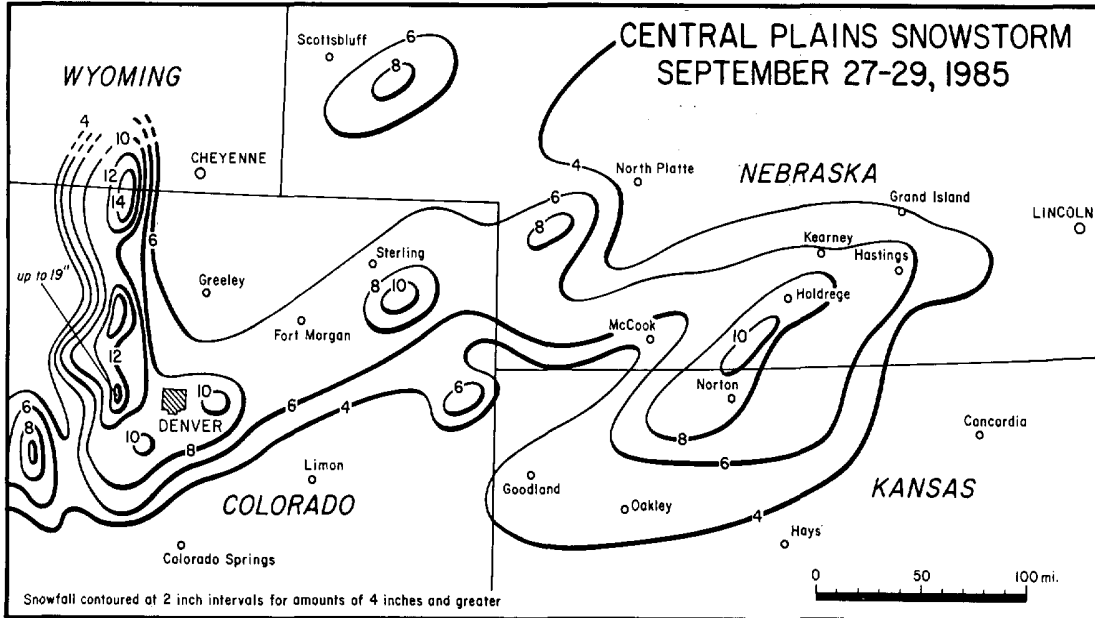
A Long Island resident, engulfed by storm surge water, battles the hurricane force winds of GLORIA. ---Photo by Ari Mintz, Newsday, Long Island, New York.



One of several locations on Long Island where utility poles were toppled, here blocking State Highway 27. ---Photo by J. M. Dombroski, Newsday, Long Island, New York.

5. EARLY-SEASON SNOWSTORM in the CENTRAL PLAINS on September 27-29, 1985

An early-season snowstorm formed over the Rocky Mountains and moved out over the Central Plains from September 27th to the 29th, breaking many earliest-measurable-snowfall records as it left up to 19 inches of snow in the Colorado Front Range and amounts nearing a foot in the plains. The snow was particularly damaging to trees that had not yet lost their foliage, and also menaced farmers in their harvesting. ---Map data provided by the Colorado Climate Center and NWSFOs at Topeka, Kansas; Omaha, Nebraska; and Cheyenne, Wyoming.



Wet, sticky snow blankets a car and trees in Boulder, Colorado at 0705MST on September 29th, after about 13 inches of snow had fallen. ---Photo by Ron Holle, NOAA/ERL/ESG Weather Research Program.

A snow-laden residential area of Cambridge, Nebraska where 6 to 8 inches of snow fell. ---Photo by Allan Gaskill, The Cambridge Clarion.



SNOWSTORM in the CENTRAL PLAINS ---- continued



Additional snowy scenes in Cambridge, Nebraska.
---All photos by Allan Gaskill, The Cambridge Clarion.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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

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

1 ALABAMA

Mobile and Baldwin Counties	02	0030-0700CST			0	0	7	7	Hurricane
<p>Hurricane Elena first threatened the Alabama coast on August 30, but turned eastward after stalling well offshore and only produced coastal flooding. But after leaving shelter areas, coastal residents again faced quick evacuation when the storm turned west-northwest from its position off the west central Florida coast and headed toward the Alabama coast. Some 200,000 people were evacuated, although a few chose to ride out the storm. Dauphin Island was ravaged by Elena during the early morning hours of September 2 when the eye wall passed almost directly over the island. The storm surge cut all the way across some low-lying parts of the island, with severe beach erosion and damage to roads. The storm surge measured 8.4 feet at one point on the Gulf side and 3.5 feet on the Bay side. Damage to buildings was described as worse than that from Hurricane Frederic that hit 6 years earlier, in September 1979. Typical houses were splintered by the hurricane force winds that battered the island for an estimated 3 hours. Wind equipment at Dauphin Island Sea Lab was reported damaged at 0251CST and failed at 0336CST, but not before a peak gust of 122 mph was recorded at 0308CST. Sea Lab officials estimated a gust of 132 mph at 0333CST, using a best fit curve from the available data on the recorded chart. Hurricane force winds were recorded from 0235CST until the equipment failure at 0336CST, and were estimated to have continued until 0535CST. Inland over Mobile County, a peak gust of 84 mph was recorded at the Emergency Operations Center in Mobile at 0121CST, and a peak gust of 60 mph was recorded at 0621CST and the National Weather Service Office at Bates Field. Lowest pressures were 954.6 mb at the Dauphin Island Sea Lab at 0305CST and 979.9 mb at the NWS at Bates Field at 0342CST.</p> <p>Beach erosion was severe along the coasts of Mobile and Baldwin Counties. Most of the damage in Baldwin County was apparently on Pleasure Island and the Ft. Morgan Peninsula. Inland over Mobile and Baldwin Counties, damage was mostly confined to a few downed trees and powerlines, but some buildings were hit by falling trees.</p> <p>The states oyster crop sustained extensive damage, with more than one half of the crop estimated lost. The pecan crop also suffered a major blow and like the oyster beds, pecan groves were just recovering from Hurricane Frederic. In addition to the immediate loss of some 8 million pounds of pecans, many trees that will take several years to replace, were also lost. Other crop losses included an estimated 10 percent of the soybean crop.</p> <p>Estimated damages to buildings were: 300 homes destroyed and 1,345 damaged, 52 multiple units damaged, 15 businesses destroyed and 72 damaged along with the extensive damage to crops, roads and public utilities.</p>									
Jasper area, Walker County	02	1540CST			0	0	2	0	Wind
Thunderstorm winds downed powerlines and trees.									
Loxley, Baldwin County	23	0630CST	0.2	60	0	0	4	0	Tornado (F0)
A tornado that was reported to have "looked like a yo-yo" dipped up and down briefly around the intersection of U.S. 90 and Alabama 59. One truck was overturned and part of the metal roofing was ripped from one building. Some shingles were blown off 3 houses.									
Wagarville to Leroy, Washington County	23	0640-0649CST	7.0	75	0	0	2	0	Tornado (F1)
An apparent tornado followed an intermittent path from across Alabama 36 just west of Wagarville to Leroy. Damage was done mostly to trees.									
3E Loxley, Baldwin County	23	0730CST			0	0	4	0	Lightning
A vacant farm house was destroyed by a fire that was reported to have been ignited by a lightning strike. A mobile home adjacent to the farm house was damaged by the fire.									
4W Castleberry to 1W and 15N Fairview, Conecuh County	23	0930-1010CST	22.0	100	0	4	5	0	Tornado (F2)
<p>A tornado apparently first touched down in the London area about 4W Castleberry and followed an intermittent path NE to 1W Fairview and then a more northerly path to 15N Fairview. Three people were injured in the London area when their homes were destroyed. One elderly couple was in the bedroom of their home when the storm hit. Only the floor of the room and the bed was left, but the man and woman escaped with minor injuries. One lady suffered a head injury from debris after taking cover on the floor of the hallway in her home. The tornado crossed I-65 North of Castleberry where the driver of a tractor trailer rig was injured when an airborne tree slammed into the trailer and the truck wrecked. Other damage included a service station damaged near Fairview and a mobile home and a house damaged at the end of the path, 15N Fairview at 1010CST. Much of the southbound traffic on I-65 had stopped and sought shelter near Evergreen, according to reports from local officials, after motorists spotted the approaching storm.</p>									

ALABAMA

Theodore area, Mobile County	23	1030CST			0	0	2	0	Thunderstorm/Thunderstorm winds downed trees and produced other minor damage.
Citronelle, Mobile County	23	1030CST			0	0	?	0	Flash Flood
Two homes and several roads were damaged by flooding from heavy rains that persisted much of the day. Unofficial rainfall totals of 9 inches were reported during the morning and afternoon. One small dam broke and added to the flooding. Another dam was damaged. Street flooding was reported in other parts of the county. Coastal flooding due to strong south winds and high tides was also reported.									
Loxley area, Baldwin County	23	1130CST			0	0	2	0	Thunderstorm/Thunderstorm winds damaged trees and signs near I-10. Wind
1E Davenport, Montgomery County	23	1220CST			0	0	2	0	Thunderstorm/Thunderstorm winds downed several trees and blew the doors off an outbuilding. Wind
2 ARIZONA									
Greater Phoenix, Maricopa County	01	Early morning			0	0	5	0	Wind, Thundershowers developed before midnight and became very heavy near Buckeye. They moved very slowly through the western portions of the county. About 2 inches of rain in 2 hours produced major street flooding. Several businesses had roof damage, and 4 mobile homes were destroyed in Buckeye. Flash Flooding
Apache Junction, Pinal County	06	1530MST			0	0	3	0	Wind
Downburst winds of 40 to 50 mph and heavy rain of .52 inch in 15 minutes destroyed several buildings under construction. Other damage to roofs and fences occurred.									
Mesa, Maricopa County	18	Morning			0	0	6	0	Flash Flooding
Heavy recurring thunderstorms dumped up to 3.25 inches of rain in the east portions, forcing evacuation of 85 residents of a senior citizens apartment. Thirty five businesses had flooding by water that was 3 feet deep in some areas.									
Yuma, Yuma County	18	1100MST			0	0	4	0	Wind, Funnel Cloud
During a severe thunderstorm, a funnel cloud was seen moving over west-central portions of the city. Strong winds produced structural damage to some homes and at least 1 business. Winds were strong enough to force a 2x4 through a stucco wall.									
El Mirage, Maricopa County	18	1540MST			0	0	3	0	Funnel Cloud
Spotters reported the funnel cloud at 91st Avenue and Northern.									
Greenlee County	19	Nighttime			0	0	4	0	Wind
Series of strong downbursts moved on a northerly path and destroyed 4 to 5 million board-feet of timber. Ponderosa pine, aspen, birch, and Douglas fir were either uprooted or snapped off by the winds.									
Clifton, Greenlee County	19	Afternoon, Evening			0	0	3	0	Flash Flooding
Heavy rains and plugged drains leading into Chase Creek caused 5 houses and several businesses along U.S. 666 to be flooded. Boulders and other debris were washed down, with 9 separate rockslides reported. One bar reported 6 inches of mud on the floor.									
Bisbee, Cochise County	19	1525MST			0	0	0	0	Hail
A heavy thunderstorm dropped hail up to 1 inch in diameter and .48 inch rainfall in a 15 minute period.									
Prescott, Yavapai County	26	2345MST			0	0	0	0	Funnel Cloud
The Sheriff's Office reported a funnel cloud over the city. It lasted 7 or 8 minutes, and moved to the east.									
Southeast Arizona	28	Morning			0	0	?	0	Flash Flooding
A series of very large thunderstorms moved across much of Gila, Pinal, and Pima Counties. Hardest hit was Globe, where a heavy thunderstorm with zero visibility in rain kicked off numerous mud slides. All roads in and out of Globe were closed at around 6 to 8 am. Apache Junction had .91 inch of rain in 30 minutes. Some street flooding and running washes occurred for several hours in the Tucson area.									
Yuma, Yuma County	28	1620MST			0	0	?	?	Flash Flooding, Wind
Two heavy thunderstorms were reported in Yuma and south to San Luis. Very strong winds knocked down several power poles and wires across streets. Some homes in Yuma sustained flooding.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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					KILLED	INJURED	PROPERTY	CROPS	
3 ARKANSAS									
Garland County	04	0115 CST			0	0	?	-	Flash Flooding
The Arkansas State Police Headquarters in Hot Springs reported two feet of water, in downtown Hot Springs, backing up into business buildings as a result of heavy rains.									
Baxter County (Zone 2)	04	0800 - 1100 CST			1	0	4	-	Flash Flooding
Nearly nine inches of rain fell over Baxter County, primarily in Mountain Home, from about 0545 CST until 1100 CST. A 63-year old lady from Mountain Home drowned (about 10:00 CST) after attempting to drive her pickup truck through a flooded, low-water bridge. The body was found 15 yards downstream from the bridge, but the truck was 1/4 mile downstream. A shopping mall in Mountain Home was flooded, as well as some condominiums in the Briarwood East subdivision. Some homes had to be evacuated. Hicks Creek overflowed its banks on the south side of the city along Highway 5. A mobile home park was inundated. A pontoon boat was destroyed as it was tossed about in Hicks Creek for a half mile. A car lot was also flooded by the same creek. Along Highway 62 West, a furniture store was flooded by rising waters from Dodd Creek. Several schools in Mountain Home were flooded, with most of the damage confined to carpeting. Several low water bridges in the area were damaged.									
Van Buren County (Zone 3)	04	0855 CST			0	0	?	-	Flash Flooding
The South Fork of the Little Red River went out of its banks at Scotland. Several places along Highway 95, west of Clinton, were flooded. At Chimes, 8.60 inches of rain were reported, with only 2.37 inches at Clinton.									
Cleburne County (Zone 3)	04	0930 CST			0	0	-	-	Heavy Rain
Heavy rains began around 3 AM over northcentral Arkansas and ended by 9:30 AM. Most of the heavy rainfall stretched east-west over Van Buren and Cleburne Counties. At Chimes, about 10 miles west of Clinton, 8.60 inches of rain fell. Bockingsburg had 2.00 inches, 2.37 at Clinton, and 2.67 at Shirley. In spite of all the rain, no major flooding was reported. Only low-lying areas and a few roadways were flooded at several locations in Cleburne County.									
Union County	04	about 1600 CST			0	0	5	-	Lightning
Two large, petroleum, storage tanks were destroyed by fire after lightning struck one of them. The tanks were located in the Hayes City community, near Smackover.									
Garland County	08	about 1500 CST			0	0	3	-	Wind
High winds from a thunderstorm knocked down trees and power lines in Hot Springs.									
Hot Spring County	08	1620 CST			0	0	3	-	Wind
Thunderstorm winds heavily damaged a mobile home, unroofed a home, and blew down numerous trees and power lines in the Gifford Community. A third home had roof damage from falling trees.									
Faulkner County	08	1622 CST			0	0	-	-	Wind/Hail
Four trees were blown down by thunderstorm gusts just south of the City of Conway. Dime-size hail was reported about the same time, just north of Conway.									
Pulaski County	08	1716 CST			0	0	-	-	Hail
Three-quarter inch hail fell at the Little Rock Forecast Office. Winds gusts were clocked at 44 mph.									
Garland County	09	about 1030 CST			0	0	3	-	Wind
Tree limbs broke power lines and television cables in Hot Springs as a result of thunderstorm gusts.									
Lonoke County	09	1301 CST			0	0	4	-	Severe Thunderstorm
A strong thunderstorm moved east into the Cabot area. One house caught on fire by lightning. A tree fell onto a home, and another fell across a road. Many power outages occurred due to falling tree limbs. Heavy rain over downtown Cabot pushed two inches of water into the Police Department basement. Penny-size hail also fell at the Police Department eight minutes earlier.									
Lonoke County	09	1307 CST			0	0	?	-	Wind
Trees and power lines were blown down in the City of Lonoke as a thunderstorm moved through the county.									
Pulaski County	09	1345 CST			0	0	4	-	Lightning/Wind
A strong thunderstorm moved east through the northern section of the county. Several trees were blown down and two barns were unroofed in the vicinity of Republican and Arlington Roads. Lightning set a Little Rock residence on fire, causing extensive damage.									
Van Buren County	09	1500 CST			0	0	-	-	Hail
Dime-size hail was reported in Alread by a Clinton radio station.									
— ARKANSAS									
Stone County	23	about 0730 CST			0	0	3	-	Lightning
Lightning struck the cross at a church in Mountain View, damaging the electrical wiring and knocking out boards from a wall.									
Independence County	25	1130 CST			0	0	2	-	Lightning
Lightning shorted out circuits and started a minor fire at a residence in Locust Grove.									
Bradley County	25	about 1500 CST	3	50	0	0	4	-	Tornado (P1)
A weak tornado moved northeast at 25 mph from 1 mile west of Sumpter to 2 1/2 miles northeast of Sumpter. It produced intermittent damage to timber along its path. It did manage to take off most of the roof to a residence. Also, it damaged feed bins, a barn door, and the roofs of 3 poultry houses.									
Monroe County	25	about 1630 CST			0	0	3	-	Wind
Thunderstorm winds blew down several large tree limbs across a home in Brinkley. The porch, a window light, and a car were damaged by the limbs.									
HEAT RELATED DEATHS: ARKANSAS, SUMMER OF 1985									
Washington County	JUN 9	An 89-year old, white male died of heat stroke.							
Crawford County	JUL 7	A 90-year old, white male died of heat exhaustion.							
Washington County	JUL 12	A 98-year old, white male died of heat stroke.							
Pulaski County	JUL 15	A 67-year old, black female died of heat stroke.							
Jefferson County	AUG 6	A 7-year old black male died of heat stroke.							
Jefferson County	AUG 31	An 80-year old black male died of heat stroke.							
4 CALIFORNIA, Northern									
Mono County	10	Evening					3		Snow
A weak frontal system picked up some moisture from an upper level low and deposited between 6 and 36 inches of snow on the east side of the Sierra Nevada.									
4 CALIFORNIA, Southern									
North Shore (near the Salton Sea), Riverside County	18	0955PST	?	?	0	0	?	0	Tornado (P0)
A tornado was reported as being on the ground for two minutes. Several roads were washed out.									
5 COLORADO									
Front Range	1	1400-1800MST			0	0	5	0	Severe Thunderstorms
Severe thunderstorms dumped heavy rain and hail at many spots along the Front Range from Denver to Colorado Springs. The southern and eastern suburbs of Denver were especially hard hit; 1 1/2 to 3 inches of rain caused extensive street flooding in Aurora, and two creeks rose out of their banks. Two homes in the city suffered minor lightning damage. Southeast of Denver, almost four inches of rain fell in the Parker area. West of the city in the foothills, hail piled up a foot deep and closed a road in Evergreen.									
In Colorado Springs, heavy rain caused minor flooding. Two homes were struck by lightning, suffering a total of \$31,000 in damage.									
SEVERE WEATHER REPORTS ON SEPTEMBER 1:									
1422 1 inch of rain in 10 minutes between Evergreen and Conifer (central Jefferson County)									
1430 Ping pong ball size hail in Evergreen (N. Jefferson)									
1432 1 inch hail at Genesee Mountain; 1.5 inches of rain in 30 minutes (N. Jefferson)									
1445 1 3/4 inch hail, 8 miles northeast of Deckers (W. Douglas)									
1455 1.5 inches of rain in 30 minutes in southeast Aurora (W. Arapahoe)									
1517 Wind gusts estimated at 65 mph in southeast Aurora (N. Arapahoe)									

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					KILLED	INJURED	PROPERTY	CROPS	

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

Arapahoe County	3 aftn.	0 0 0 0	Heavy Rain	A thunderstorm dumped an inch of rain in 15 minutes at Littleton.					
Weld County	9 1700-1730MST	0 0 0 4	Hail	1 inch hail fell 2 1/2 miles west of Greeley at 1714; at 1719, Gilcrest, just south of Greeley, reported 3/4 inch hail. There was some crop damage in the Eaton/Lucerne area a few miles north of the city.					
Douglas County	10 1403-1415MST	0 0 0 0	Hail	Golfball size hail fell 8 miles east of Parker, and was also reported 10 1/2 miles east of the town.					
El Paso County	11 1900-2030MST	0 0 5 0	Heavy Rain	Up to 2.8 inches of rain fell in 1 1/2 hours in the northern and western part of Colorado Springs, causing street flooding and property damage, primarily in basements.					
Weld County	16 aftn.	0 0 4 0	High Winds	Strong winds in Frederick knocked down the frame of a building under construction.					
Mountains, Eastern Foothills	22	0 0 0 0	Snow, Wind	The first significant snow of the season deposited 3 to 6 inches of powder at many spots in the mountains. Strong winds blew east of the Rockies, gusting to 59 mph at Pueblo at 1459MST.					
Mountains, Northeast	28-29	0 0 5 3	Heavy Snow, Cold	<p>An unusually cold airmass for this time of year settled over Colorado, and 6 to 12 inches of snow piled up in the mountains and also on the plains of northeast Colorado. Some spots in the high country received more. Echo Lake, on the slopes of Mount Evans, was buried by 17 inches of snow; Winter Park and Estes Park had 14 inches. Many mountain highways were closed at times during the storm, including Interstate 70.</p> <p>The Denver-Boulder area had 8 to 12 inches of fall powder; the 8.7 inches that fell at Stapleton Airport constituted the city's heaviest September snowfall since 1971 and caused flight delays of over two hours.</p> <p>Snow-laden tree limbs snapped all over the metro area, causing widespread power outages; 10 thousand people were without electricity for a time in Boulder.</p> <p>The snow extended across the plains all the way to the Nebraska border; 4 to 5 inches fell at Yuma and Wray, and south along the foothills to the New Mexico border. Trinidad received 3 inches. Before the snow hit the plains, lightning damaged a home in Fort Morgan during the afternoon of the 28th.</p> <p>The morning of the 29th saw midwinter temperatures along the Front Range. Denver, Fort Collins, and Longmont all shivered with the lowest temperatures ever recorded in September...17, 16, and 14 degrees, respectively. Some alfalfa in northeast Colorado was damaged by the cold. The coldest temperature noted in the state was a frigid 1 degree below zero at Honholz Ranch, in a mountain valley near the Wyoming border.</p>					

CONNECTICUT

East Windsor, Hartford County; and southern portions of New Haven, Middlesex and New London Counties	05 1530-1730EST	0 0 4 0	Thunderstorm Winds	Scattered severe thunderstorms moved through the area, and the accompanying gusty winds uprooted a number of trees and knocked down power lines. About 5,560 electric customers lost power in Old Saybrook. Other power outages were reported in Clinton, Madison, Killingworth, Stonington, East Windsor, and Canterbury. Property damage was reported to be minor.					
Northern, Central & Coastal area	06 1630-1800EST	0 0 4 0	Thunderstorm Winds	Severe thunderstorms with gusty winds uprooted some trees and resulted in power outages for thousands of electric customers. Outages affecting up to 5,600 customers were reported in Enfield.					
Statewide	27 0800-1700EST	3 2 8 6	Hurricane GLORIA	Hurricane GLORIA made landfall in Westport, after crossing Long Island, at 1215EST. The "eye", or center of the hurricane, then continued on its north-northeastward track, passing near Hartford before exiting the state at Suffield at about 1315EST. Wind gusts of hurricane force ripped through the southern and central, as well as the eastern portion of the state, with the peak gust for the entire state recorded to 92 MPH at Bridgeport. The lowest sea level pressure was 28.50 inches recorded at Bridgeport, while the lowest pressure at Hartford was 28.69 inches, corrected for sea level. Other peak wind gusts included 82 MPH at Hartford, 75 MPH at New Haven, and 66 MPH at Windsor Locks. Thousands of trees were uprooted across the state, taking down miles and miles of electric wires, resulting in power outages affecting up to 727,000 customers. It was the greatest power loss on record for the state for any weather related event, and in many cases, power was not restored for several days up to one week. Along the coast, up to 20,000 people were evacuated from their homes from Greenwich to Stonington and hundreds of small craft were torn from their moorings and damaged or sunk. However, the coastal flooding was at a minimum despite tides of 2 to 4 feet above normal, since GLORIA reached the coast near low tide. At Old Saybrook, 5,000 persons were evacuated from their homes and a number of houses right along the coast were damaged by waves along the beach. Five docks were ripped up in Milford Harbor and about one hundred pleasure craft were torn from their moorings. Several deaths could be directly attributed to the storm,					

CONNECTICUT

Statewide	27 0200-1200EST	0 0 5 4	Hurricane	<p>including a young girl killed by a tree in Middlebury, a young man who went off the road on a moped after being hit by a branch in Chester, and an electric lineman who was killed while repairing downed power lines. Several other deaths that were not directly related to the winds also occurred. The greatest dollar losses from power outages were in Hartford County. In western and northwestern Connecticut, rain in amounts of 2 to 5 inches fell during GLORIA, resulting in some minor flooding. In the eastern half of the state, less than one inch of rain fell. Some injuries due to the storm included a motorist who was hit by a falling tree in East Lyme and man injured by a falling tree in Fairfield. A steeple was knocked off a church in Derby and windows were blown out of buildings in downtown New Haven. Some dollar damage reports by counties included: Hartford County, \$15,337 million; New Haven County, \$11,400 million; Windham County, \$8,108 million; and Tolland County, \$7,195 million. The state total damage was estimated at 91 million dollars with \$6,300 million for crops.</p>					
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DELAWARE

Statewide	27 0200-1200EST	0 0 5 4	Hurricane	<p>Hurricane Gloria passed 25 miles off the Delaware coast early Friday morning, producing serious beach erosion and widespread tidal flooding. A portion of the dune line south of Dewey Beach to Indian River Inlet was forced inland, across Highway 1. Dunes at Fenwick Island were destroyed. A 1200 foot segment of the boardwalk at Bethany Beach and 800 feet at Rehoboth Beach were destroyed. Minor flooding occurred along the coast and washed sand into the ground floors of oceanfront buildings. Tons of sand were left behind on streets in Bethany Beach. Winds as high as 78 mph were recorded in the state as the center of Gloria moved north along the New Jersey coast. Oceanfront condos were damaged by the wind and debris at Bethany Beach and there was minor damage to hotels and to shingles and windows on homes in Rehoboth. Falling trees downed telephone and power lines in beachfront communities. Rainfalls exceeded 5 inches in places; Dover reported a storm total of 5.3 inches. Highways were closed in Kent County due to flooding. Delaware 1 was closed by high water in the morning, then remained blocked by downed power lines later in the day. There was widespread small stream and urban flooding in New Castle County. Most of the damage was in Sussex County, but there was relatively little structural damage anywhere. A state of emergency was declared, closing schools and keeping non-essential state employees home. Coastal and low-lying communities were evacuated, sending thousands to shelters in Kent and Sussex Counties. Corn and soybean crops were damaged by strong winds and heavy rains in Kent and New Castle Counties.</p>					
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FLORIDA

Mayport NAS, Duval Co.	01 1245EST 1.0 20	0 0 3 -	Tornado (F0)	One roof was damaged and 5 sheds were destroyed. (This tornado was also listed in the August, 1985 issue, since it was one of several spawned by Hurricane ELENA. The others occurred in August.)					
Naples (5mi E), Collier Co.	03 1520EST	0 0 1 -	Thunderstorm Wind	High wind blew down several trees.					
Naples, Collier Co.	06 1545EST	0 2 - -	Lightning	Two men working near a crane were injured when lightning struck the crane. It was raining hard at the time. One of the first bolts of lightning from the storm hit the crane.					
Siesta Key, Sarasota Co.	07 UNK	0 2 - -	Lightning	Two people were injured by lightning while they were walking on the beach. The lightning apparently hit the water first.					
Gainesville, Alachua Co.	12 1445EST	0 0 UNK -	Lightning	Lightning caused a fire after it hit a chemical storage tank.					
Beverly Hills, Citrus Co.	12 1515EST 0.5 30	0 0 4 -	Tornado (F0)	A woman saw a tornado which destroyed a barn and a wood fence.					
St. Augustine, St. Johns Co.	16 1300EST	0 0 2 -	Thunderstorm Wind	High wind blew down several trees, some of which were carried 30 to 40 feet by the wind.					

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FLORIDA									
Fort Pierce, St. Lucie Co.	17	0800EST			0	1	-	-	Lightning
									Lightning struck near a 37 year old man who was working on a house. It was raining at the time. The lightning was the only lightning observed from the storm.
Bradenton, Manatee Co.	17	1915EST			0	2	-	-	Lightning
									A 35 year old man was critically injured and his 10 year old daughter was injured when lightning struck their umbrella.
9 GEORGIA ————— NONE REPORTED									
10 IDAHO									
10 miles NW of Rockland, Power Co.	2	1410 MST			0	0	0	0	Funnel
									A funnel cloud, well above the ground, was sighted over Table Mountain for a short period.
Snake River Valley	8	afternoon			0	0	3	5	Hail, Wind
									A line of thundershowers moved eastward through the Snake River Valley of southern Idaho. Mothball-sized hail severely damaged 11,000 commercial tomato plants in the Parma area. Apple, onion, and sugar beet crops were also damaged in the same area. Eighteen large trees were downed in a city park in Twin Falls from thunderstorm winds.
4 miles east-north-east of Twin Falls, Twin Falls Co.	6	1700MST	short	5	0	0	4	4	Tornado (F1)
									A small tornado destroyed a tile roof of a new house and pushed over a willow tree 1-1/2 feet in diameter. Several other roofs lost some shingles. Some beams were scattered from a field and left in trees and on utility poles.
Howe, Butte Co.	9	late afternoon			0	0	0	0	Hail
									1 to 1-1/2 inch in diameter hail fell for a period of five minutes; no damage was reported.
Near Fort Hall, Bingham Co.	21	2030MST			0	0	4	0	Lightning
									A series of lightning strikes hit an 85 ton hauling truck. Three of the truck's tires were blown out, and the right front tire sailed from the vehicle, hitting a nearby pickup truck. The tires represent about a \$9,000 loss; damage to the pickup truck was \$1500.
11 ILLINOIS									
Golconda area, Pope County	05	0530-0630CST			0	0	3	0	Flash Flood
									Heavy rains resulted in minor flooding along Highway 146, just west and north of Golconda.
McHenry, Lake, Kane Du Page, northern Cook Counties	08	1230-1415CST			2	8	4	?	Severe Thunderstorm, Lightning
									Severe thunderstorm moved across the area, accompanied by damaging winds and intense lightning. In Aurora (Kane County), a large tree was blown across and damaged two garages. Widespread minor tree damage occurred across the entire 5-county area. High winds also swamped many small boats in Waukegan Harbor (Lake County). At 140pm CST at the Crystal Woods Golf Course (McHenry County), lightning struck a wooden shelter in which 8 golfers had sought refuge. One golfer was killed and 7 others injured, 2 seriously. At 240pm CST, lightning struck a soccer goal post in Knox Park (McHenry County), and traveled about 25 feet onto the playing field. One soccer player was killed and another injured.
3 W Cisne, Wayne County	09	1935CST	1/8	100	0	0	0	0	Tornado (F0)
									A brief tornado touchdown resulted in several trees toppled and twisted.
Des Plaines, Cook County	25	1330CST			1	0	0	0	Lightning
12 INDIANA									
Lagrange, Lagrange County	08	1735 EST			0	0	3	0	Thunderstorm Wind
									Several large trees were blown down by strong thunderstorm winds just south of Lagrange.
Lake James, Steuben County	08	1750 EST			0	0	3	0	Thunderstorm Wind
									Large tree limb was blown through a window near Lake James.
Big Lake, Whitley County	08	1845 EST			0	0	3	0	Thunderstorm Wind
									Several trees were blown down by strong thunderstorm winds near Big Lake.
Chesterton, Porter County	09	0700 EST			0	0	4	0	Lightning
									Lightning struck the steeple of a church just outside Chesterton and caused a fire.
Columbia City, Whitley County	09	1233 EST			0	0	3	0	Thunderstorm Wind
									Several trees were blown down by strong thunderstorm winds 7 miles north of Columbia City.
Lake James, Lagrange County	09	1236 EST			0	0	3	0	Thunderstorm Wind
									Several trees were blown down by winds estimated to 70 mph. Several ham radio and TV antennas were bent and damaged. Rainfall in a 3-hour period was 3.25 inches.
North Webster, Kosciusko County	09	1240 EST			0	0	4	0	Thunderstorm Wind
									Large tree limbs were reported down on a house trailer and auto in the Chapman Lake area near North Webster.
Fort Wayne, Allen County	09	1306 EST			0	0	3	0	Thunderstorm Wind
									Several trees were blown down in the industrial park area of northern Fort Wayne by strong thunderstorm winds.
9 S. Bluffton, Wells County	09	1555 EST			0	0	0	0	Hail
									Hail 3/4 inch in diameter was reported south of Bluffton.
2 SW. Vera Cruz, Wells County	09	1611 EST			0	0	0	0	Hail
									Hail 3/4 inch in diameter was reported in southeastern Wells County.
South Bend, St. Joseph County	09	1622 EST	1.3	40	0	0	6	0	Tornado (F1)
									A tornado touched down at Foundation Dr. and Boland Dr. in the Airport Industrial Park, a half mile north of WSO South Bend in the north-western portion of the city, damaging 4 businesses, 16 homes, 5 semi-trailers, and 20 cars.
Georgetown/Logansport, Cass County	09	1645 EST			0	0	?	?	Hail/Thunderstorm
									Silver dollar size hail fell in Georgetown. Power outages were reported in Logansport.
Marion, Grant County	09	1815 EST			0	0	4	0	Lightning
									Lightning hit the electrical circuit to a baling machine and burned its motor.
Portland, Jay County	09	1850 EST			0	0	2	0	Thunderstorm Wind
									Thunderstorm winds downed trees just west of Portland.
Indianapolis, Marion County	09	1925 EST			0	0	0	0	Thunderstorm Wind
									Indianapolis Power and Light Company measured a wind gust to 58 mph. No damage was reported.
Noblesville, Hamilton County	09	1929 EST			0	0	2	0	Thunderstorm Wind
									Branches 6 to 8 inches in diameter were blown down by strong thunderstorm winds.
Indianapolis, Marion County	09	1944 EST			0	0	2	0	Thunderstorm Wind
									Tree limbs and power lines were downed by thunderstorm winds. One fallen tree severely damaged an automobile.
Camel, Hamilton County	09	1944 EST			0	0	2	0	Thunderstorm Wind
									Thunderstorm winds downed trees in Camel.
Indianapolis, Marion County	09	2015 EST			0	0	2	0	Thunderstorm Wind
									About 10 trees were downed by strong thunderstorm winds in western Indianapolis.
13 IOWA									
Kossuth County	04	1500 CST			0	0	0	4	Hailstorm
									Hail damaged corn and bean crops west of Corwith in a thunderstorm.
Northern Iowa	04-	Late Aftn.			0	0	4	4	Flooding
		05	Next Mrgn.						Heavy rain in the late afternoon and evening hours, and again after midnight, caused minor street flooding in Mason City; up to 5 inches of rain in Hancock and Kossuth Counties left ponds of water in the fields.
Cerro Gordo County	04	1630 CST			0	0	4	0	Lightning
									Lightning started a fire at Meservey, causing a barn full of hay to burn to the ground.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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

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

IOWA

Northern Iowa	05	Early Mrgng.			0	0	4	0	Lightning
Thunderstorms raging across the state in the pre-dawn hours produced lightning strikes that started a fire in a house in Britt, caused outages at Eldora, cut power to 500 homes in Waterloo, and damaged the communications micro-disc atop the Court House in Decorah.									
Wright County	05	0330 CST			0	0	5	0	Thunderstorm Winds
A 133,000 bushel grain bin worth \$300,000 was destroyed, a few trees were felled and other minor damage occurred in Clarion.									
Fayette an Buchanan Counties	05	0510-0520 CST			0	0	4	3	Thunderstorm Winds
Many trees were felled in an early morning storm on a farm near Fairbanks; and at Oelwein, more than a dozen trees toppled in a City Park and at a private golf course. Winds were clocked at 85 MPH.									
Northern Iowa	08	Evening			0	0	5	5	Thunderstorm Winds and Hail
Thunderstorms rampaged across the countryside in the evening hours. A large grain auger was overturned near Britt [1815 CST]. Three-quarter inch hail was reported at Kensett [1910], St. Ansgar [1941], Osage [2025], and Ossian [2201]. Hail the size of golf balls was later reported in Clayton County [2243].									
Pottawattamie County	19	1730 CST			0	0	4	0	Lightning
Lightning struck power lines and caused several hours of outages for a few hundred customers in Council Bluffs.									
Central and South-Central Iowa	22	Evening			0	0	5	5	Thunderstorm Winds and Hail
Feroocious thunderstorms struck at Winterset [1840], where hail broke windows in a church, at homes and businesses, smashed windshields on cars, and gave some business to the roofers in town. Hail the size of golfballs was also seen east of Indianola [1920-1930], producing mainly crop damage. Winds estimated up to 60 MPH struck the Newton Airport [2015], and power went out for a while on the northwest side of town.									
Ringgold County	22	2020 CST	.5	50	0	1	6	0	Tornado (F2)
A tornado touched down in Humeston, hitting the west part of town and moving into the southeast section. Many trees were felled, and 7 homes, 12 garages, and several cars received substantial damage. One of the homes was completely destroyed, and in two others, the residents had to move elsewhere while repairs were done. Damage amounted to around \$500,000. One man was slightly injured.									

14 KANSAS

Garden City, Finney County	04	1645CST			0	0	4	0	Wind
Thunderstorm wind gusts estimated near 50 mph turned over and ripped apart an unoccupied mobile home west of Garden City. The home was sitting on concrete blocks and not anchored to the ground. Several buildings near the home were not damaged by the storm.									
Winfield and Arkansas City, Cowley County	08	1820-1857CST			0	0	5	0	Wind
A cluster of severe thunderstorms packing 60 to 80 mph winds moved south across southwest Cowley County. The winds uprooted trees, blew down signs, unroofed parts of buildings, toppled power poles and damaged 15 camping trailers in Winfield at 1820CST. A two mile long string of power poles were taken down just west of Arkansas City. Winds were estimated at 60 mph in Arkansas City at 1840CST and 70 mph 2 miles west of Arkansas City at 1857CST.									
Argonia, Sumner County	12	1845CST			0	0	2	0	Wind
Thunderstorm wind gusts estimated at 60 mph caused minor damage at Argonia.									
Sedgwick and Sumner Counties	12-13	Evng-Mrng			0	0	5	5	Heavy Rain, Flood
A north-south line of thunderstorms set up over northwest Sumner and western Sedgwick Counties on the evening of the 12th, and remained in place through the morning of the 13th. Ten inches of rain fell 2.5 miles southwest of Argonia and 7-9 inches soaked the area around Garden Plain.									
A good deal of flooding resulted on the Ninnescah and Chikaskia Rivers. State Roads K-42 and K-44, and several county roads were closed, and at least 3 bridges were damaged. Several cabins and trailers in lowlands near the streams were also damaged by the overflows.									
Rago, Kingman County	17	0913CST			0	1	0	0	Lightning
A Rago man was seriously injured by a lightning strike. He was using an electric drill when the strike hit the building's electrical wiring.									
Atchison and Leavenworth Counties	22-24	Mrng-Mrng			0	0	5	5	Heavy Rain, Flood
Heavy rains of 4-6 inches fell upon the upper Stranger Creek drainage basin. Runoff sent the stream out of its banks from its upper reaches to near Tonganoxie. A good deal of agricultural land was flooded, but the only significant property damage occurred in Easton. Seven homes in the low ground on Easton's east side had water in them and 14 others were surrounded by water for a time. The creek left its banks the morning of the 22nd and receded that evening. The water came up a second time									

KANSAS

Neosho, Wilson and Crawford Counties	22	1700-1830CST			0	0	5	4	Wind, Hail
A line of thunderstorms with large hail and 70-80 mph winds left a trail of damage across the listed counties in southeast Kansas. The storms hit Thayer at 1710CST and ripped the roof from a factory. Four outbuildings and a large hay barn were destroyed 4.5 miles southwest of Thayer. A hay barn, large dairy barn, several metal buildings and fence rows were ripped apart near Neodesha at 1715CST. Golfball size hail and 75 mph winds hit Erie at 1735CST and damaged roofs, windows, cars, campers and trees. Trees and roofs suffered wind and hail damage at Walnut at about 1817CST.									
Kingman, Kingman County	22	1754CST			0	0	3	0	Hail
A thunderstorm dropped hailstones an inch to an inch and a half in diameter in Kingman.									
Eudora, Douglas County	23	0050CST			0	0	4	0	Lightning
Lightning struck and set fire to a home southwest of Eudora. A good deal of fire and smoke damage resulted.									
Northwest Kansas	26-30				0	0	0	6	Freeze
An early season cold spell damaged the milo crop in the northwest corner of Kansas. Freezing temperatures first occurred on the morning of the 26th when Goodland dropped to 31 degrees and Colby, to 27. The freeze hit just 3 weeks earlier than normal, but late plantings in the spring left the crop vulnerable. Goodland also set record lows of 26 degrees on the 28th, 25 on the 29th and 19 on the 30th. Loss on the milo crop was estimated at 70 percent.									
Shawnee, Johnson County	28	1100CST			0	0	4	0	Lightning
Lightning struck and set fire to a home in Shawnee. The fire caused extensive damage to the home's roof and attic.									
Northwest Kansas	28-29	1900-1300CST			0	0	4	0	Heavy Snow
An early season storm dropped 3 to 8 inches of snow on that part of northwest Kansas north of a line from Tribune to Hays and Smith Center. The snow caused some inconvenience but little damage. Weight of the wet snow snapped some tree limbs from Norton to Smith Center. Greatest accumulations of 8 inches were measured at Norton and Oberlin.									

15 KENTUCKY

McCracken, Ballard, Livingston, and Crittenden Counties of Western Kentucky	05	0015-1000CST			0	0	5	6	Flash Flooding
The backwash of Hurricane Elena dumped around 8 inches of rain on Paducah. The Paducah Weather Service Office reported a total of 7.49 inches of rain, and the local television station, WPSD-TV Paducah, reported a total of 8.08 inches. Outlying county areas received from 3 to 4 inches of rain. The torrential rains created flash flooding, extensive property damage, and danger in a thunderous pre-dawn deluge.									
Evacuations were numerous. Guests at the Days Inn motel in Paducah near Interstate 24 gathered in clusters on the second floor of the motel to escape flood waters that flooded the rooms on the first floor. City and county schools were closed when buses could not run through the high waters that flooded streets up to four feet deep, and accumulated up to seven feet deep at underpasses. Paducah Tilghman High School was flooded. Flights were cancelled at Paducah's Barkley Field.									
Water reached window levels on cars in flooded downtown Paducah streets. Some abandoned cars were washed up against utility poles by rushing water.									
Water flooded homes, with up to one foot of water on the main levels. Paducah's midtown area seemed hardest hit by home damage. The Paducah chapter of the American Red Cross opened up shelters to assist those inundated by flood waters.									
Forty homes and numerous businesses fell victim to flood waters in the downtown area of Paducah.									
The local police authorities in Paducah were forced to issue several pleas to motorists to stay off the streets and highways as numerous vehicles were being stranded in the rising waters.									
The Kentucky State Police said the worst flooding was mainly confined to the Paducah and McCracken County area.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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					KILLED	INJURED	PROPERTY	CROPS		
KENTUCKY										
										<p>Kentucky roadways near Kenmar in McCracken County suffered extensive damage. The pressure of water escaping the bulging Kenmar Lake caused a 30 foot section of the road to give way, creating a gulf 25 feet deep that almost drained the lake.</p> <p>A few people had to be evacuated in Ballard County by boat in Bandana. Isolated highway and street flooding was reported in Livingston County.</p> <p>Crittenden County road damage was estimated at \$100,000, as flood waters picked up blacktop on paved county roads and washed out four bridges. Flood waters reached as high as 7 feet over some Crittenden County roads.</p> <p>Agricultural damage to the counties of McCracken, Ballard, Livingston, and Crittenden exceeded 1 million dollars. Most of the damage was done to the crops of soybeans, corn, milo, and tobacco.</p> <p>No injuries were reported; however, a 15 year old McCracken County youth was wading through rushing backwaters of a swollen creek when he was washed away by the current. His companions summoned for help, and he was picked up unharmed nearly two miles downstream. He was found clinging to a cornstalk in a flooded field.</p>
Calloway/Graves County line	05	0430CST			0	0	3	4	Hail	<p>Marble size hail and strong thunderstorm winds to 45MPH, totally destroyed the tobacco crop and blew down a tobacco-housing barn near Farmington.</p>
16 LOUISIANA										
Washington, Tangipahoa, St. Tammany and coastal St. Bernard Parishes	02	0930CST-1230CST			0	1	7	6	Hurricane Elena	<p>Elena was a Saffir-Simpson Category 3 hurricane (winds 111-130 MPH) when she made landfall at Gulfport, MS at 0630CST. Elena weakened to a Category 1 hurricane (winds 74-95 MPH) as she moved west-northwest across south Mississippi at 15 MPH and entered Washington Parish around 0930CST. Heaviest damage from Elena's winds occurred along an axis that extended from Bogalusa to 10 miles southwest of Franklinton in Washington Parish. Hundreds of trees were blown down, blocking numerous roads and disrupting electricity for 15,000 people. About 200 homes were damaged by fallen trees. In particular, 50 homes and 2 businesses sustained major damage; 125 homes and 200 businesses had some minor damage. The majority of these losses occurred in Bogalusa. Damage was less severe in neighboring Tangipahoa Parish where one home had major damage; one home had minor damage and one person was injured. In St. Tammany Parish, two homes received major damage; two homes sustained minor damage. One Slidell home was cut in half by a fallen tree. Overall, total uninsured public and private losses were about \$3,000,000. The Insurance Institute reported \$13,800,000 in private losses. There was about \$500,000 agricultural loss (mostly timber). Hurricane Elena eroded 30 to 40% of the Chandeleur Islands in the St. Bernard Parish coastal waters. The Louisiana Geological Survey said Hurricane Elena cut 30 major channels across these barrier islands. Finally, state and parish authorities estimate up to 400,000 people evacuated southeast Louisiana during the early morning hours because of Hurricane Elena.</p>
St. Charles Parish	03	1200CST			0	0	3	0	SVR TSTM - Wind	<p>A severe thunderstorm ripped off a store's roof and shattered one of its glass doors in Boutte. In addition, the storm broke the windows of a near by parked automobile.</p>
Natchitoches Parish	08	1000CST			0	0	4	0	TSTM - Lightning	<p>A mobile home near Natchitoches was severely damaged by lightning.</p>
Lincoln Parish	09	1238CST			0	0	4	0	TSTM - Lightning	<p>Lightning did approximately \$25,000 damage to a Ruston area home.</p>
Bossier and Caddo Parishes	09	1252CST			0	0	5	0	TSTM - Lightning, Heavy Rain	<p>A lightning discharge did \$300,000 damage to an electrical transformer near Benton. Between 1300-1600CST, 2 to 3 inches of rain fell in the Shreveport area, flooding streets.</p>
Rapides Parish	09	1300CST			0	1	0	0	TSTM - Lightning, Heavy Rain	<p>A Glenmora man was injured when struck by lightning in a shopping mall parking lot. In addition, heavy rains caused some street flooding in Alexandria.</p>
Evangeline Parish	10	1305CST			0	0	4	0	SVR TSTM - Wind	<p>A severe thunderstorm blew down a large tree on top of a van and two parked cars in Ville Platte.</p>
17 MAINE NO REPORT RECEIVED										
Carroll, Howard, Baltimore, and Harford Counties	9	1400-1500EST			0	0	4	0	Thunderstorm	<p>A heavy thunderstorm developed over Carroll County then quickly moved into Howard County, central and eastern Baltimore County, and Harford County, before moving over the Chesapeake Bay and dissipating. Winds in excess of 55 mph felled hundreds of trees onto power lines and peppered aluminum siding with loose debris. Power was interrupted to 43,000 residences and businesses.</p>
District of Columbia, and Prince Georges County	10	1600-1900EST			0	1	5	0	Thunderstorm	<p>A violent thunderstorm formed northwest of Dulles International Airport, about 3 PM EST, then swept southeast across the metro area. Winds gusting up to 60 mph ripped up trees while rains of 2 inches or more flooded roads. Subway service was disrupted for more than an hour while firefighters removed trees from the Red Line tracks. More than 37,000 homes were without electricity. House roofs and car windows were damaged by wind blown debris. The rain cooled air dropped temperatures over 20 degrees in the evening. Hail up to a half inch was reported throughout the area. An 18 year-old Oxon Hill resident survived being struck by lightning and hurled 60 feet in the air.</p>
Calvert, Cecil, Kent, Queen Annes, Talbot, Caroline, Dorchester, Wicomico, Somerset, and Worcester Counties	27	0100-1000EST			0	0	7	0	Hurricane	<p>Hurricane Gloria skirted the Atlantic coast as it accelerated northward early Friday morning about 30 to 60 miles offshore. The storm surge severely eroded the coastline, washing away 4 feet of sand at Ocean City. Fifteen foot waves crashed over the boardwalk and breakwall, tearing apart walkways, knocking down parking meters and ripping telephone booths from their bases. The boardwalk was ripped apart and strewn as far as one block inland. Sand washed into the ground floors of many oceanfront buildings. Many side streets were flooded in Ocean City and others covered by 6 inches of sand. Pavement was broken into chunks by the wave action. Rainfalls of 4 to 6 inches fell during the storm; North East received 6.50 inches. A few homes were flooded in low-lying areas. Northwest winds gusted to 65 mph as the hurricane headed north along the New Jersey coast. Trees and limbs were felled resulting in power outages to 150,000 and damage to roofs, siding and cars. A farm building was destroyed in Eden. Damage was overwhelmingly concentrated in Ocean City; elsewhere less than a half million occurred and that was mostly in Calvert and Somerset Counties. Winds gusting as high as 75 mph restricted traffic on the Bay Bridge. Waves on the Chesapeake Bay were limited by low tide and did not exceed 4 feet at Cove Point Lighthouse and Solomon's Island. A dock was damaged by the waves at Crisfield. A state of emergency was declared and thousands evacuated from coastal locations as well as low-lying areas adjacent to the Bay.</p>
19 MASSACHUSETTS										
Springfield area, Hampden and Hampshire Counties	06	1730-1930EST			0	0	4	0	Lightning and Heavy Rain	<p>A severe thunderstorm moved through the area, causing local street flooding and lightning strikes which damaged a couple of houses in Agawam and Easthampton. Local street flooding was also reported during the accompanying downpours.</p>
Statewide	27	0800-1700EST			0	1	8	7	Hurricane GLORIA	<p>The first major hurricane to strike the state since DONNA in 1960 caused millions of dollars in property damage and great losses of electric power. No deaths and few injuries were recorded as a result of the storm. Thousands of trees were uprooted in the central and particularly the eastern portion of the state, resulting in power losses affecting up to 500,000 electric customers. In parts of Plymouth and Bristol Counties, the outages lasted up to one week in some places and an average of several days for many. Lack of refrigeration caused tremendous losses of food products. Power companies brought in out-of-state help to try to hasten restoration of service; but without electric power, many schools were closed for several days after the storm. The "eye" or center of GLORIA moved north-northeastward up the Connecticut River Valley, passing near Springfield at 1430EST. Just to the west of the track of the storm, heavy rainfall occurred over the eastern slopes of the Berkshires, causing some flooding of streams flowing into the Westfield River. Rainfall amounts of 3 to 5 inches were reported and some amounts are as follows: Becket, 4.01 inches; 4.53 inches at Granville, 3.82 inches at Colrain. Several reports of six inches of rain included 5.95 inches at Knightville Dam, 6.00 inches at Chester, and 6.02 inches at Littleville Dam. In the eastern portion of the state, some wind damage included the toppling of a 440 foot radio station antenna in Framingham, and the breaking off of a 25-foot section of the mast of the USS Constitution in Charlestown. In Lowell, a roof was torn from a building and bricks damaged cars in a nearby parking lot. Along the south coast from Woods Hole on Cape Cod to New Bedford, tides were about 4-5 feet above normal with some minor coastal flooding. The fact that the storm hit near low tide prevented more damaging flooding.</p>

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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					KILLED	INJURED	PROPERTY	CROPS		
MICHIGAN										
		1630-1730								Van Buren: Winds downed trees and damaged buildings at Lawrence. A funnel cloud was seen near Gobles.
		1645-1745								Washtenaw: Winds downed several power lines. A house in Dexter was damaged by lightning.
		1700-1800								Macomb: 3/4 inch diameter hail fell, winds downed power lines, local flooding occurred, and lightning caused minor damage to a house.
		1700-1830								Wayne: 3/4 to 1 3/4 inch diameter hail was reported. Winds downed many trees and power lines, and several houses were damaged. Local flooding also occurred.
		1800-1845								Lenape: Winds downed trees and power lines.
		1800-1900								Livingston: Winds downed many power lines
Southeast Lower Peninsula	09	1745-2000EST								Thunderstorms Events occurred by time (EST) and county as follows: 1745 Shiawassee: A funnel cloud was sighted near Owosso. 1830 Lapeer: A funnel cloud was sighted at Metamora. 1845-1900 Oakland: Wind damage occurred near Oxford. A funnel cloud was seen near Rochester. 1930-2000 Macomb: Winds downed power lines. Minor wind and lightning damage also occurred in Wayne County.
Area south of Menominee, Lathrop, Newberry, and Whitefish Point; and north of Alpena, Gaylord, Reed City, and South Haven	23	1400-2400EST			2		6			Wind 2 persons were injured near Elberta when a tree fell on a moving car. Scattered power outages and minor structural damage occurred throughout the area. There was lake shore flooding along the north shore of Lake Michigan. Damage occurred to waterfront facilities and moored boats in Little Bay de Noc, the lower St. Mary's River, Walloon Lake, Lake Cadillac, and along the Lake Michigan shore. Severe beach erosion threatened a roadway at Grand Haven. Lesser beach erosion occurred along northern Green Bay and elsewhere along Lake Michigan. 30 to 40 mph winds were sustained for 6 to 8 hours. Gusts were measured to 67 mph at Whitefish Point, 55 mph at Cheboygan, 53 at Gaylord, 50 at Traverse City, and 63 at Charlevoix
Montcalm, Kent, Ionia and Barry Counties	23	1800-1900EST								Funnel Clouds 9 separate funnels were reported, 2 in Montcalm County, 1 in Kent, 2 in Ionia, and 4 in Barry.
Northeast Lake Michigan	24	1630-1700EST								Waterspouts At least 3 separate waterspouts were sighted near North Manitou Island and at the entrance to Grand Traverse Bay. A funnel cloud, seen aloft near east Jordan, was probably a dissipating waterspout.
Just north of Frankfort Harbor, Lake Michigan	26	0740EST								Waterspout A waterspout was seen from the Coast Guard Station.
21 MINNESOTA										
Carlton County		2/3 evening through early morning			0	0	5	0		Heavy Rain A band of heavy rain developed across Carlton County and extended eastward into Douglas County of Wisconsin. A maximum of 6.7 inches of rain fell in Carlton County, in Wrenshall just south of Duluth. A mudslide blocked part of a highway in Jay Cooke State Park. Many roads were under water, with several washouts, and numerous basements were flooded.
Carlton County		3 0038CST			0	0	0	0		Wind Thunderstorm winds of 60 to 70 miles per hour occurred 2 miles west of Cloquet.
MINNESOTA										
Northwest and North Central		5 1930-2400CST			0	0	6	0		Wind Thunderstorms with damaging winds crossed the North Dakota border into Clay County at 1930CST. These thunderstorms moved east across Becker, Ottertail, Hubbard, Madena and Cass Counties before weakening in Itasca and Aitkin Counties. Winds knocked down numerous trees, resulting in damage to many homes, and scattered power outages. Trees were snapped off, uprooted and tossed about along a damage path from Island Lake in Becker County to just north of Park Rapids to Walker. Winds of 60 to 65 miles per hour were reported 9 miles northeast of Pelican Rapids at 2120CST, 4 miles north of Park Rapids at 2150CST, and near Walker at 2230CST.
Sabin Area (Clay County)		5 2000CST			0	0	?	?		Hail Hail stones up to 1 1/2 inches in diameter pelted the Sabin area. The hail swath extended east, several miles.
Pine River (Cass County)		5 2240CST			0	0	0	0		Hail Hail 3/4 to 1 inch in diameter was reported in the Pine River area.
Braham (Isanti County)		8 0600CST			0	0	5	0		Lightning A Braham church was destroyed by fire that resulted from a lightning strike.
Frost (Faribault County)		8 1640CST	0.3	10	0	0	4	0		Tornado (F1) A tornado twisted through a farm site 5 miles south of Frost. Windows, mainly on the north side of the farmhouse, were broken and a barn and silo were destroyed. The garage was lifted from its foundation and blown 1/4 mile. A car in the garage was left undamaged, but a pickup truck adjacent to the garage was pushed 50 feet onto a wood pile. A hog shelter was also destroyed and 7 hogs were killed. The tornado went on to uproot trees and cause minor damage to a neighboring farm to the east.
Steele County		8 1725CST			0	0	0	0		Funnel A funnel was observed 10 miles west of Blooming Prairie.
Waseca (Waseca County)		8 1741CST			0	0	0	0		Hail One inch diameter hail was reported at Waseca.
Albert Lea (Freeborn County)		8 1742CST			0	0	0	0		Hail Golfball size hail was reported at Albert Lea.
Stewartville (Olmsted County)		8 1848CST			0	0	4	0		Wind Winds, 70 miles per hour, were reported from Stewartville, and a barn was blown down 2 miles southeast of Stewartville.
Central		8/9 evening through morning			0	0	5	0		Heavy Rain Rainfall amounts in the 4 to 6 inch range fell over central Minnesota, with the greatest concentration in southeast Stearns County and northern Meeker County. Numerous roads were flooded and culverts at some locations were washed out. Eight to ten inches of water covered Highway 55 east of Watkins. The Highway 15 bridge over Trout Creek near Luxenburg was washed out. Flooding occurred in homes around Pearl Lake in southeast Stearns County and docks disappeared under high water.
Douglas County		17 0000CST			0	0	3	0		Wind Thunderstorm winds damaged trailer homes one mile south of the junction of Highways 27 and 114 in south central Douglas County. Tree branches were driven through the trailer homes.
Mora (Kanabec County)		17 0500CST			0	0	4	0		Wind Thunderstorm winds just east of Mora lifted the roof off a barn and dropped it to the ground. The barn was also displaced 2 feet off its foundation.
Itasca County		17 1900CST	1	20	0	0	3	0		Tornado (F1) A tornado touched down 5 miles south-southwest of Grand Rapids near Lake Pokegama. Many trees were uprooted, broken off or twisted. Homes received minor damage and some campers were thrown about.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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

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

Clay County	18 1130CST									Lightning
<p>A farmer and his young son were killed by lightning as they walked down a township road 7 miles north of Moorhead and 8 miles east of Kragens.</p>										
Carlton County	19 1855-2035CST									Hind
<p>Thunderstorm winds struck Cromwell between 1855 and 1923CST. Numerous large trees were knocked down or uprooted at Island Lake, just south of Cromwell. A trailer home was flipped over on its top, several outbuildings were destroyed, and minor damage occurred to a home. Wind damage also occurred 8 miles west of Cloquet at 2035CST.</p>										

22 MISSISSIPPI

Southern Mississippi	2 0400CST-2000CST									Hurricane Elena
<p>After several days of Hurricane Elena causing havoc with the Central and Eastern Gulf Coastal states, the storm finally moved inland near Biloxi, Mississippi at 0658CST. The storm first pounded extreme Southeast Mississippi as the eye passed just south of Pascagoula at 0600CST. The storm system moved to the northwest through southern Mississippi during the day. Elena was downgraded to a tropical storm about 20 miles outwest of McComb, Mississippi at 1300 CST. The storm system exited Mississippi at Natchez around 1700CST.</p> <p>The damage from Elena was most severe in the Pascagoula area. North and northeast parts of the eyewall brought estimated wind gusts of 120-130 mph to this area. Few, if any, buildings escaped some damage. Some buildings were totally demolished. As the eyewall moved into Gulfport, Harrison County Civil Defense recorded a peak gust of 121 mph. The lowest pressure at Gulfport was 28.56 inches. A little farther to the east, the lowest pressure at Ocean Springs was 28.53 inches. Hurricane Elena did not produce unusually large rain amounts in Mississippi due to the rapid northwestward movement of the system. Since the hurricane approached from the east, seas initially were below normal. The system moved so fast westward that seas on the east side of the hurricane were only about 5 to 7 feet above normal. This did not result in any significant flood problems.</p> <p>Other coastal towns from Gautier to Pass Christian were also heavily damaged. Besides the high winds from the hurricane, some locations appeared to be hit by microbursts or small tornadoes. Due to widespread hurricane damage and lack of personal observations of tornadoes however, only 3 tornadoes could be documented. If other tornadoes occurred, they appeared to have contained winds of either equal or weaker speeds than those observed in the hurricane. At 0635CST, very high winds blew down large trees and heavily damaged homes in a portion of Gulfport. At 0900CST, very high winds tore the roof off a cafeteria and band hall at the Poplarville High School.</p> <p>Hurricane Elena caused extensive damage with an estimated dollar value near 1 billion dollars. Nearly 70,000 people evacuated, and this resulted in no fatalities and only a few minor injuries.</p> <p>Nearly 115,000 people were without power the first night after the hurricane struck. For Mississippi Power and Light, Elena caused an estimated 20 million dollars worth of damage. Insured property damage was estimated at 352.4 million dollars. In the three coastal counties of Jackson, Harrison and Hancock, about 200 homes were destroyed, 1,200 heavily damaged and 12,000 received minor damage. Nearly 390 mobile homes were destroyed, 1,190 were heavily damaged. About 2,000 businesses were damaged. Damage was also quite extensive in Pearl River County, with 350 homes and mobile homes damaged. An estimated 1.4 million dollars of damage occurred to public buildings. Lighter damage occurred in southern Mississippi, north of southeast Louisiana. However, many problems occurred due to numerous trees and power lines being knocked down.</p> <p>The pecan crop was devastated, with an estimated 5 to 7 million pounds of pecans lost. Also, thousands of pecan trees were lost to the hurricane. At least half of the soybean crop was destroyed at an estimated cost of 2 million dollars.</p>										
Stone County	2 0630CST	14	60	0	0	0	5	3		Tornado (F1)
<p>A tornado moved northwestward from south of White Crossing to south of Wiggins, and then turned southwestward to south of Stillmore. The damage path indicated the tornado made sporadic touchdowns. Several people saw the tornado, but mainly as a funnel cloud. The tornado was in one of the rain bands associated with Hurricane Elena. One mobile home and 2 barns were destroyed. Damage also included downed trees and power lines. Some homes were damaged due to trees falling on them.</p>										
Harrison County	2 0720CST	.5	40	0	0	?	0	0		Tornado (F1)
<p>On the east eyewall of Hurricane Elena, a tornado touched down briefly on DeBuys Road, which separates the towns of Biloxi and Gulfport. The Brittain apartments were destroyed, but no one was injured as the complex had been evacuated.</p>										

MISSISSIPPI

Harrison County	2 0735CST	.3	40	0	0	?	0	0	0	Tornado (F1)
<p>In the eyewall of Elena, a tornado touched briefly in Gulfport at the West Elementary School. The roof from the school's gymnasium was lifted out. The school was being used as an evacuation shelter, but only a few very minor injuries were reported.</p>										
Harrison County	2 1200CST			0	2	0	0	0		Lightning
<p>Two power-line men were injured when lightning struck their power line repair truck north of Gulfport. The men were working on power lines that had been damaged in Hurricane Elena. Both men sustained minor injuries and were released from the hospital the next day.</p>										
Bolivar and Sunflower Counties	9 1305CST			0	0	0	0	0		Funnel Cloud
<p>A funnel cloud developed near Shaw and moved to near Highway 82 between Indianola and Leland before dissipating.</p>										
Harrison County	23 0600CST-1200CST			0	0	5	?			Flood
<p>Heavy thunderstorms caused nearly 7 inches of rain to fall over portions of the county in a 7 hour period. About 100 residents in low-lying areas of Harrison County had to be evacuated. Many roads were flooded and impassable, except by boat. A total of 50 homes throughout the county reported water damage. Some of the flooding was also attributed to debris left over from Elena, which caused some of the drains to backup.</p>										
Harrison County	23 0325CST	.3	20	0	0	4	0	0		Tornado (F0)
<p>In Gulfport, a tornado touched down briefly on the west side of town. Two mobile homes, 1 boat, 2 cars and a small grocery store sustained damage. Lots of debris from trees littered the ground.</p>										
Harrison County	23 0435CST			0	0	5	0	0		Thunderstorm Winds
<p>In Gulfport, high winds blew temporary repair materials off the county courthouse. Strong winds also blew a soda machine into a van at a service station. In Biloxi, windows were blown out of buildings in downtown. Several homes and mobile homes sustained damage from the high winds throughout the county.</p>										
Harrison County	23 0525CST			0	0	4	0	0		Thunderstorm Winds
<p>A mobile home was blown over in Pass Christian.</p>										
Harrison County	23 0530CST	1	100	0	0	5	0	0		Tornado (F2)
<p>In the Orange Grove Community north of Gulfport, 12 homes were seriously damaged and about 40 sustained minor damage. Fences, brick walls, power lines and trees were blown down in the path of the tornado.</p>										
Harrison County	23 0558CST	.5	60	0	0	5	0	0		Tornado (F1)
<p>A tornado touched down briefly in a residential area of Gulfport. One carport was blown across the road, damaging a neighbor's roof. A boat and a trailer were blown into a tree. Some trees and power lines were downed.</p>										
Harrison County	23 0832CST			0	0	0	0	0		Waterspouts
<p>Several waterspouts were spotted near the Broadwater Beach Motel in Biloxi. The waterspouts died out before reaching the beach.</p>										
George County	23 1000CST			0	0	4	0	0		Thunderstorm Winds
<p>High winds blew a roof off a storage shed in the central area, or about 4 miles West of Lucedale. A number of shingles and limbs were blown down.</p>										
23 MISSOURI										
Pettis County	22 1335CST			0	0	0	0	0		Large Hail
<p>Hail to 3/4 inch diameter fell in Pettis County.</p>										
Cooper County	22 1355CST			0	0	?	0	0		Large Hail and Damaging Wind
<p>Hail to 1 inch diameter and winds to 70 mph were reported in Clifton City.</p>										
Cooper County	22 1405CST			0	0	0	0	0		Large Hail
<p>Hail to 1 3/4 inch diameter fell in Pilot Grove.</p>										
Boone County	22 1440CST			0	0	0	0	0		Large Hail
<p>Hail to 3/4 inch diameter fell at Rocheport.</p>										
Callaway County	22 1630CST			0	0	0	0	0		Large Hail
<p>Hail ranging in size from 1/4 inch to 1 3/4 inch diameter covered the ground in Fulton.</p>										
24 MONTANA ————— NONE REPORTED										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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					KILLED	INJURED	PROPERTY	CROPS		
25 NEBRASKA										
Custer County	02	0830CST			0	0	2	0	Damaging Winds	Strong thunderstorm winds uprooted trees 3 miles southeast of Broken Bow.
Dundy County	02	1800CST	1/4	30	0	0	4	0	Tornado (F1)	A tornado touched down briefly near Benkelman, damaging a house trailer and power poles. FPP101
Custer County	04	1627CST			0	0	5	5	Damaging Winds and Hail	Fifty to seventy m.p.h. thunderstorm winds destroyed roofs and garage doors, and blew down numerous trees. Quarter inch hail and heavy rain with the storm, also damaged crops.
Lincoln County	04	1800CST			0	0	0	4	Hail	One and a half inch hail damaged crops around Maxwell.
Harlan County	04	1930CST			0	0	4	0	Damaging Winds	Thunderstorm winds downed trees and power lines in the Alma area.
Gosper County	04	1935CST	1/4	40	0	0	4	0	Tornado (F1)	A tornado touched down briefly, 15 miles south of Elwood, destroying 3 outbuildings. FPP101
Gosper County	04	1935CST			0	0	3	0	Hail	One and a half inch hail knocked windows out of a farm home 15 miles south of Elwood.
Franklin County	04	2000CST	1/4	40	0	0	5	0	Tornado (F1)	A tornado touched down briefly, 2 miles southeast of Macon, destroying several outbuildings. FPP101
Buffalo County	04	2115CST	1/4	50	0	0	5	0	Tornado (F1)	A tornado destroyed grain bins and outbuildings 7 miles north of Amherst. FPP101
Buffalo County	04	2120CST			0	0	4	0	Damaging Winds	Thunderstorm winds destroyed grain bins 2 miles south of Amherst.
Hall County	04	2154CST	1/4	40	0	0	4	0	Tornado (F1)	A small tornado blew windows out of a house and destroyed grain bins 2 miles northeast of Prosser. FPP101
Colfax and Boone Counties	05	0000CST -0100CST			0	0	4	0	Damaging Winds	Sixty to seventy m.p.h. thunderstorm winds blew down a number of trees and power lines in Schuyler. The wind also blew down a building under construction on a farm 7 miles southeast of Albion.
Hooker County	07	1820CST			0	0	0	0	Funnel Cloud	A funnel cloud was reported by the sheriff just west of Mullen.
Hooker County	07	1829CST	1/8	25	0	0	0	0	Tornado (FO)	Tornado touched down briefly in open pasture 13 miles west of Mullen, with no reported damage. FPP001
Grant County	07	1922CST	1/8	25	0	0	0	0	Tornado (FO)	A tornado touched down briefly in open pasture 3 miles northeast of Whitman. FPP001
Sheridan County	07	2200CST			0	0	2	0	Damaging Winds	Thunderstorm winds blew down 3 large haystacks about 10 miles east of Alliance.
Buffalo County	12	1800CST -13 -0400CST			0	0	4	4	Flash Flood	Four to four and a half inches of rain between Kearney and Riverdale forced a number of small creeks, including the Wood River, out of banks. The Wood River seeped into lowlands between Gibbon and Aloa, flooding some roads and homes.
Holt County	16	0030CST			0	0	4	0	Damaging Winds	Winds in thunderstorms, gusting to 85 m.p.h. at Ewing, blew a building down along with tree branches and power lines.
Panhandle, North Central, Southwest and South Central Nebraska	27	Night to 29 Afternoon			0	1	6	5	Heavy Snow	Record-setting, early season, heavy snow fell in a band about 90 miles wide, centered from just south of Scottsbluff to Valentine, on the night of the 27th to Monday on the 28th. Snowfall of 4 inches or more was common in this area. Heavier snows occurred inside this area, with 10 inches at Valentine, 8 inches at Bridgeport, and 7 inches near Crawford. The snow area weakened some and spread southeast before increasing in intensity and dumping additional record-setting, early heavy snow over southwest and south-central Nebraska, the evening of the 28th into early afternoon of the 29th. This area of snow where 4 inches or more was common was to the south of a line from Grant to St. Paul to Geneva to Guide Rock. Inside this area, a 20 mile width of snow in excess of 8 inches fell from near Beaver City to Minden, with Beaver City reporting 11 inches, Atlanta and Wilcox 10 inches, and Holdrege 9 inches. Besides the amounts, the snow was the earliest measurable at many locations in southwest and south central Nebraska, including Grand Island. Weighed down by the
NEBRASKA										
										heavy wet snow, numerous trees, still with leaves on, suffered broken limbs and branches, damaging power lines, buildings, and vehicles as they fell. One man in Kearney was injured by a falling limb. Besides being broken by tree branches, numerous power lines snapped just from the weight of the wet snow. Numerous towns, particularly in south-central Nebraska, were without power for an extended period of time. Crops still to be harvested also were damaged by the snow.
26 NEVADA										
Stead, Washoe County	03	1810PST			1	0	4	0	Thunderstorm Winds	A free-standing trailer rig was blown over with the victim crushed to death as a result of strong thunderstorm winds. The victim and three other people ducked under the trailer rig to avoid the gusty winds and blowing dust.
Sparks, Washoe County	03	2100PST			0	0	6	0	Lightning	A lightning strike produced a fire in a warehouse. The situation was complicated by erratic winds and a ruptured container of cyanide which, during the fire, produced hydrogen cyanide. As many as 80 people were evacuated from the surrounding area as result.
Lake Mead, Clark County	27	1530PST			2	0	3	0	Thunderstorm Winds	A small boat overturned in strong thunderstorm winds. Two elderly men onboard were both found drowned. Winds were estimated at 50 mph.
27 NEW HAMPSHIRE ————— NO REPORT RECEIVED										
28 NEW JERSEY, Northern										
Essex, Morris, Bergen, Hunterdon, Passic, Somerset, and Middlesex Counties	08	1200-1300EST			0	0	?	?	Severe Thunderstorm	A severe thunderstorm passed through northern New Jersey during mid day. The storm downed power lines and trees. Several cars were damaged or destroyed, and a home was damaged by falling trees.
Northern New Jersey	27	1100EST			1	0	?	?	Hurricane GLORIA	Hurricane GLORIA passed just offshore of New Jersey. Landfall occurred at Fire Island, on Long Island in New York, at around 1100EST. Strong winds and heavy rain (3 to 6 inches) was reported over northern New Jersey. Major beach erosion occurred in Middlesex and Monmouth Counties. Trees and power lines were downed throughout the area. Homes and cars were damaged or destroyed by falling trees and flooding. One death was reported when a Long Branch man was electrocuted as he tried to move a downed power line. No injuries were reported.
28 NEW JERSEY, Southern										
Southern New Jersey	09	1200 to 1500 EST			0	0	4	0	Wind, Lightning	Thunderstorms moving across southern New Jersey were accompanied by gusty winds and lightning. Wind gusts downed some trees and utility lines and damaged some signs. Cape May airport reported wind gusts to 90 MPH at 2:10 PM EST. The thunderstorms also moved across Delaware Bay and at 2 PM EST, Lewes, Delaware had wind gusts to 64 MPH. The wind gusts and lightning strikes caused power outages to several thousand customers. Lightning strikes caused fires in a house in Manchester Township, Ocean County, in a Del Monte Plant at Swedesboro, Gloucester County, and in an apartment building in East Windsor, Mercer County.

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NEW JERSEY, Southern

Southern New Jersey	26- 1500 EST- 27 1600 EST					0	0	7	0	Hurricane Gloria
<p>Hurricane Gloria moved north with the center 35 to 40 miles off the coast. Highest sustained winds at Ocean City were 81 MPH with the highest gust, 100 MPH. Severe beach erosion occurred at many locations along the coast, and severe damage occurred to boardwalks in many shore communities. Tidal flooding occurred in many shore communities. Many structures received minor wind damage, and in some locations, severe damage occurred. Further inland, many trees were downed, with some falling on houses, automobiles or utility lines. Heavy rain of 3 to 6 inches caused drainage flooding in some areas.</p>										
Ocean City, Cape May County	27 1015 EST	?	?			0	0	2	0	Tornado (F0)
<p>During Hurricane Gloria, a tornado was observed moving across Asbury Ave., ripping the porch off a house and knocking down several large trees.</p>										

29 NEW MEXICO

Albuquerque, Bernalillo County	20 1425MST	2	25	0	0	5	0	Tornado (F0)		
<p>A tornado, reported by the NWS and the public, skipped along a path from the southeast to the northeast heights of Albuquerque. Trees were uprooted and some damage was reported to cars and buildings. Damage estimates were near \$100,000.</p>										
Clovis, Curry County	28 Night					4	4	Flash Flood		
<p>Rains of one to two inches in a short time in the Clovis area caused flash flooding in the city and crop damage in the area.</p>										

30 NEW YORK, Coastal

Extreme Southeastern New York, including Long Island	27 1100EST	4	14	?	?	Hurricane GLORIA				
<p>Hurricane GLORIA made landfall at Fire Island, Long Island at around 1100EST. Hundreds of thousands of people evacuated prior to the landfall. Winds gusted to 100 mph, mainly to the east of the eye over Suffolk County. Thousands of trees were downed, hundreds of streets flooded, major beach erosion occurred, hundreds of homes and businesses were damaged or destroyed, and several boats and aircraft were also damaged or destroyed. An estimated 1.5 million homes and businesses were blacked-out in one of the worst power outages ever. Thousands were still without power weeks later. The electrical system of Long Island Lighting Company (LILCO) suffered widespread devastation, leaving 2/3 of its customers without power. Four storm related deaths were reported, two from heart attacks and two from being struck by falling trees. Fourteen injuries, mainly from falling trees, were reported. One woman on Long Island suffered burns when she touched a downed power line.</p>										

30 NEW YORK, Central

Albany County	04 1003EST	0	0	3	0	Thunderstorm				
<p>A brief thunderstorm resulted in downburst winds on Grant Street in the City of Albany (2SE ALB). Siding was torn from two homes. A squall line passed WFO Albany at 0957EST with wind gusts of 27 mph.</p>										
Sullivan County	05 1700EST					0	0	4	0	Lightning
<p>Lightning struck a barn in Roscoe and resulted in a fire which damaged a milking shed. Both husband and wife, who were milking cows at the time, were affected as an electrical surge went through the milking equipment. No injuries were suffered, but both felt a tingling sensation after the event. Heavy rain also accompanied the lightning.</p>										
Area-Wide	27 AM					2	57	7	5	Hurricane
<p>Hurricane Gloria struck the lower Hudson Valley and Catskills of New York during the early morning hours. States of emergency were declared in several lower Hudson Valley counties. Thousands lost power for as long as thirty hours. Several hundred trees were felled from Gloria's winds. Local shipping and boating suffered as ships were ripped from docks and crashed into rocks along the Hudson River shoreline.</p>										

NEW YORK, Central

										<p>Flooding was reported along smaller streams, mainly in the Catskills. Cooperative observers reported over six inches of rain in some portions of southeastern New York.</p> <p>This rain did help to push New York City water supplies up over the 50% capacity level, thereby easing the drought emergency.</p> <p>One person was killed as the result of a motor vehicle accident which local police blamed on local weather conditions. A plane crash in Herkimer County was also blamed on Hurricane Gloria.</p> <p>M-18-Motor Vehicle Accident-Highland Falls-Orange County M-60-Crushed By Tree-Cornwall-Orange County</p>
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30 NEW YORK, Western

Geneva, Ontario County	05 0140 EST					-	4	-	Lightning	
<p>A lightning bolt struck and destroyed power lines to 730 homes. They were without electricity for about 4 hours.</p>										
Parts of Genesee and Monroe Counties	08 0500 EST to 0645 EST					-	4	-	Lightning and Rain	
<p>Lightning strikes from localized thunderstorms snapped power lines and trees in Pembroke, Batavia, Alexander, and Pavilion, all in Genesee County. A house in Pembroke was set on fire by one of the lightning bolts. There were cases of street and backyard flooding.</p> <p>At the Monroe County Airport in Rochester, runway lights were knocked out by lightning. It caused a small fire at the tower's control board. Power lines to nearby homes were severed. Two homes were struck by lightning. It bore a large hole in the roof of one home. Shingles were torn off another. Thunderstorms also caused power outages of about 4 hours to the nearby towns of Pittsford and Henrietta.</p>										
Parts of Lewis and Jefferson Counties	27						3		Rain	
<p>Hurricane Gloria spun off 3 to 4.5 inches of rain over the area as it skirted the eastern seaboard from the Carolinas to New England. Many small streams spilled their banks and caused minor flooding.</p>										

31 NORTH CAROLINA

Hendersonville, Henderson County	08 1440EST-1515EST	0	1	3	4	Thunderstorm Winds, Lightning				
<p>A large, slow-moving severe thunderstorm moved across the county, blowing down several large trees. Trees blown onto power lines caused some power outages, and one man was struck and slightly injured by lightning.</p>										
Franklin, Macon County	08 PM					0	0	3	0	Lightning
<p>Seven cows were struck and killed.</p>										
Oakdale Area, Northwestern Columbus County	11 1830EST-1900EST					0	0	?	?	Thunderstorm Winds
<p>Several large trees were blown down and two buildings were damaged. One tobacco field was stripped by wind and water. A total of 6.3 inches of rain fell, 5 inches in a half-hour period.</p>										
Coastal North Carolina	26- Late PM to 27 Early AM					1	0	7	6	Hurricane Gloria
<p>Fringes of the storm affected the southeast coast, and the eye passed directly over the Outer Banks. Spotty, severe beach erosion occurred and several new inlets were created. Property losses (excluding public property damage) are estimated at \$5.7 million, and agricultural losses are estimated at \$2.4 million. One man was killed when a falling tree crushed his mobile home 8 miles north of Havelock in Craven County. Many homes along the Outer Banks suffered severe water damage from surge and sound side flooding, substantial damage to trees and some structures from high winds was reported 20 to 30 miles inland.</p>										

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32 NORTH DAKOTA									
Jamestown 3SW (Stutsman County)	05	1715CST	Short 5-15	0	0	0	0	0	Tornado (FO)
			A tornado briefly touched down. No damage was reported.						
Jamestown 12SW (Stutsman County)	05	1718CST		0	0	3	3		Hail
			Hail 3/4 of an inch in diameter caused some crop damage.						
Jamestown (Stutsman County)	05	1735CST		0	0	3	3		Hail
			Hail 3/4 of an inch in diameter caused some crop damage.						
Kulm 5NW (LaMoure County)	05	1800CST	Short 5-15	0	0	0	0	0	Tornado (FO)
			A brief tornado touchdown was reported by the Chief of Police. No damage was reported.						
Litchville 10NW (Barnes County)	05	1800CST							Funnel Cloud
			A funnel cloud was reported by a cooperative observer.						
Fingal (Barnes County)	05	1820CST		0	0	4	4		Hail
			Hail 3/4 of an inch in diameter occurred. The hail was accompanied by two inches of rain. This combination damaged flax and corn fields and delayed harvesting.						
Dickey 2S (LaMoure County)	05	1920CST		0	0	3	3		Hail
			Hail one inch in diameter occurred. The hail was accompanied by 1.65 inches of rain.						
Mapleton (Cass County)	05	1930CST		0	0	3	3		Hail
			Hail 3/4 of an inch in diameter occurred.						
Fargo 5S (Cass County)	05	2018CST		0	0	3	3		Hail
			Hail 3/4 of an inch in diameter occurred.						
33 OHIO									
Putnam County	08	1430 EST		0	0	4	0		High Wind
			A severe thunderstorm with strong winds downed trees and utility poles three miles east of Ottawa.						
Paulding County	09	1403 EST		0	0	4	0		High Wind
			Thunderstorm winds downed trees and did minor structural damage in Antwerp.						
Mercer County	09	1525 EST		0	0	4	0		Funnel Cloud, High Wind
			A funnel cloud was observed over the city of Celina as a thunderstorm moved through. Winds estimated at 65 mph or higher downed trees and caused minor structural damage.						
34 OKLAHOMA									
Keystone Lake, Creek County	07	1500CST		0	0	?	?		Wind
			A thunderstorm produced 80 mph winds which overturned a 43-foot long house boat. Two people were aboard, but not injured.						
Kaw City, Kay County	07	1610CST		0	0	?	?		Hail
			3/4 inch size hail fell 2 1/2 miles north of Kaw City.						
Sayre, Beckham County	08	1700CST		0	0	5	?		Wind
			A thunderstorm produced strong winds which destroyed a barn and a shed. Damage also occurred to several roofs. Damage estimated at \$100,000 occurred.						
Clinton, Custer County	08	1800CST		0	1	5	?		Wind/Heavy Rain
			A thunderstorm produced winds estimated up to 90 mph. The Clinton airport recorded 88 mph. Two possible funnel clouds were reported with this storm. The winds blew two railroad cars off of a track, destroyed several mobile homes, and unroofed several buildings. Many trees and power poles were downed. One woman was injured when cut by flying glass. Three to four inches of rain fell after the wind, causing more damage. Damage estimated at \$200,000 occurred.						
OKLAHOMA									
Newkirk, Kay County	08	1927CST		0	0	?	?		Wind
			A thunderstorm produced 80 to 85 mph winds 8 miles northeast of Newkirk. Trees and power lines were downed.						
Washunga Bay, Kay County	08	1952CST		0	0	?	?		Wind
			A thunderstorm produced winds up to 60 mph at Washunga Bay near Kaw City.						
Ringwood, Major County	09	1615CST		0	0	?	?		Hail/Wind
			Penny size hail and 50 to 60 mph winds occurred 4 miles south of Ringwood. Three inches of rain also fell in a short time.						
Henryetta, Okmulgee County	10	1610CST		0	0	4	?		Wind
			A thunderstorm produced winds up to 70 mph which downed trees and power lines, destroyed a carport, and damaged one store. Damage estimated at \$15,000 occurred.						
Perry, Noble County	10	1630CST		0	0	?	?		Wind
			A thunderstorm produced strong winds which downed several large trees.						
El Reno, Canadian County	10	1730CST		0	0	?	?		Hail/Winds
			Hail the size of nickels and 50 to 60 mph winds occurred 3 miles north of El Reno.						
Cedardale, Major County	10	1745CST		0	0	?	?		Hail
			Hail the size of quarters fell 6 miles northeast of Cedardale.						
Cedardale, Woodward County	10	1800CST		0	0	?	?		Hail/Wind
			Penny size hail and 50 to 60 mph winds occurred four miles north of Cedardale.						
Okarche, Kingfisher County	10	1800CST		0	0	?	?		Wind
			A thunderstorm produced 60 to 70 mph winds which downed several power poles and trees.						
Calumet, Canadian County	10	1800CST		0	0	?	?		Wind
			Thunderstorms winds up to 60 mph occurred.						
Muskogee, Muskogee County	10	1845CST		0	4	?	?		Wind
			A thunderstorm produced winds over 60 mph hitting a National Guard camp. Fifty tents were blown over. Three men were treated and released while one received a punctured lung. All but one tent was destroyed.						
Shattuck, Ellis County	11	0000-0300CST		0	0	?	?		Flash Flood
			A cloudburst of 5 to 7 inches of rain fell in a few hours, causing a flash flood along 25-Mile Creek. The flood washed out fences, roads, and several bridges. Ten to 20 head of cattle were lost. One resident recorded the roar of water up to 12 feet deep flowing down a normally dry creek.						
Guymon, Texas County	11	evening		0	0	4	?		Lightning
			Lightning caused a house to burn 8 miles west of Guymon. Damage estimated at \$40,000 occurred.						
Altus, Jackson County	13	1645CST		0	0	?	?		Wind/Heavy Rain
			A thunderstorm produced winds up to 63 mph along with 2-inch rains in one hour. Several roofs were damaged and many trees and powerlines were downed.						
Avard, Woods County	22	1440CST	Short Narrow	0	0	0	0		Tornado (FO)
			A tornado briefly set down 3 miles southwest of Avard. No significant damage occurred.						
Calumet, Canadian County	22	1450CST		0	0	?	?		Hail
			Penny size hail fell 3 miles northwest of Calumet.						
Freedom, Woods County	22	1500CST		0	0	?	?		Hail
			Penny size hail fell 7 miles east of Freedom.						
Hopetown, Woods County	22	1515CST	Short Narrow	0	0	0	0		Tornado (FO)
			A tornado set down one mile west of Hopetown, doing little damage.						

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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

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

OKLAHOMA

El Reno, Canadian County	22	1516CST			0	0	?	?	Hail
		3/4 inch size hail fell on I-40, ten miles west of El Reno.							
Okarche, Kingfisher County	22	1517CST			0	0	5	?	Hail
		Baseball size hail fell causing \$75,000 damage.							
Alva, Woods County	22	1550CST			0	0	?	?	Hail
		Golfball to hen egg size hail fell 3 miles south of Alva.							
Cashion, Kingfisher County	22	1612CST			0	0	?	?	Hail
		Golfball size hail fell 4 miles south of Cashion.							
Alva, Woods County	22	1620CST			0	0	?	?	Hail
		Baseball size hail fell.							
Piedmont, Canadian County	22	1620CST			0	0	5	?	Hail/Wind
		Golfball size hail fell, and 50 to 60 mph winds occurred. Damage estimated at \$200,000 occurred.							
Oklahoma City, Oklahoma County	22	1630CST			0	0	?	?	Funnel Cloud
		A funnel cloud was observed over the city.							
Morrison, Noble County	22	1635CST			0	0	?	?	Hail
		Golfball size hail fell 5 miles west of Morrison.							
Bethany, Oklahoma County	22	1642CST			0	0	?	?	Hail
		Hail up to 1 1/2 inches in diameter fell.							
Edmond, Oklahoma and Logan Counties	22	1646CST			0	0	?	?	Hail/Wind
		Hail up to grapefruit size fell, accompanied by 65 mph winds, on I-35 north and south of the county line.							
Waynoka, Woods County	22	1800CST			0	0	?	?	Hail
		Golfball size hail fell in and north of Waynoka.							
Chandler, Lincoln County	22	1800CST			0	0	?	?	Hail
		Golfball to tennis ball size hail fell on I-44, 2 miles north of Chandler.							
Geronimo, Comanche County	22	1821CST			0	0	?	?	Hail
		Golfball size hail fell.							
Chandler, Lincoln County	22	1825CST			0	0	?	?	Hail
		Golfball to baseball size hail fell 1 to 2 miles west of Chandler.							
Woodward, Woodward County	22	1826CST			0	0	?	?	Hail
		3/4 inch size hail fell.							
Helena, Alfalfa County	22	1700CST			0	0	?	?	Hail
		Golfball size hail fell.							
Cherokee, Alfalfa County	22	1715- 1730CST	4	500	0	0	5	?	Tornado (F2)/ Hail
		A tornado set down 2 1/2 miles southwest of Cherokee and traveled 3 1/2 miles in an east-northeasterly direction to a point one mile southeast of Cherokee. Hail as large as softballs fell in Cherokee. The tornado destroyed several barns. Damage from the hail in Cherokee was extensive, with total damage estimated at \$500,000.							
Waynoka, Woods County	22	1730CST			0	0	?	?	Hail
		Hail up to golfball size fell.							
Carney, Lincoln County	22	1732CST			0	0	?	?	Hail
		3/4 inch size hail fell.							

OKLAHOMA

Luther, Oklahoma County	22	1735- 1745CST			0	0	?	?	Hail
		Golfball to baseball size hail fell.							
Wellston, Lincoln County	22	1745CST			0	0	?	?	Hail
		1 1/2 inch size hail fell.							
Walter, Cotton County	22	1828CST			0	0	?	?	Wind/Hail
		A thunderstorm produced 80 to 90 mph winds and 3/4 inch size hail 6 miles west of Walters.							
Geronimo, Comanche County	22	1835CST			0	0	?	?	Wind
		A thunderstorm produced winds which rolled one mobile home several times, damaged 6 others, damaged one roof and carport, and broke out many windows.							
Rush Springs, Grady County	22	1900CST			0	0	?	?	Hail
		Golfball to baseball size hail fell 2 1/2 miles south of Rush Springs.							
Blanchard, McCain County	22	1900CST			0	0	?	?	Hail
		Golfball to baseball size hail fell.							
Norman, Cleveland County	22	1915CST			0	0	?	?	Hail/Wind
		Hail as large as baseballs and 50 to 60 mph winds occurred in northern sections of Norman.							
Moore, Cleveland County	22	1925CST			0	0	?	?	Hail
		Golfball size hail fell just east of Moore.							
Choctaw, Oklahoma County	22	1939CST			0	0	?	?	Hail
		Golfball to baseball size hail fell from 3 miles south of Choctaw to Choctaw.							
Kremlin, Garfield County	22	1940- 2000CST			0	0	?	?	Hail
		Hail up to the size of nickels fell for 20 minutes.							
Lamont, Grant County	22	2000CST			0	0	?	?	Hail
		Hail up to 3/4 inch size fell.							
Ringwood, Major County	22	2015CST			0	0	?	?	Hail
		Hail up to golfball size fell near Ringwood.							
Dacoma, Woods County	22	Evening			0	0	?	?	Flash Flooding
		Four to six inches of rain caused Turkey Creek and Eagle Chief Creek to go out of their banks. Water reached heights of four feet in sections of Dacoma. A total of 31 homes were flooded. Six persons had to be evacuated.							
Waynoka, Woods County	22	Evening			0	0	?	?	Flash Flood
		Three to five inches of rain caused Dog Creek to spill out of its banks, flooding Waynoka. Thirty homes were flooded. Four people had to be evacuated as water 3 to 4 feet deep rose in sections of town.							
Hinton, Caddo County	22	2025- 2029CST			0	0	?	?	Hail
		Hail ranging from quarters to golfball size fell.							
El Reno, Canadian County	22	2100CST			0	0	?	?	Hail
		Golfball size hail fell.							
Orlando, Logan County	22	2105CST			0	0	?	?	Wind
		Thunderstorm winds of 60 mph occurred.							
El Reno, Canadian County	22	2126CST			0	1	?	?	Wind
		Thunderstorm winds blew two semi-trailer trucks off of the road on the west side of El Reno. One driver received minor injuries.							
Oklahoma City, Oklahoma County	22	2136- 2150CST			0	0	?	?	Hail/Wind
		Hail ranging from 3/4 inch to golfball size fell across northern portions of the city. Winds over 85 mph were estimated by a local T.V. station. Their recorder only went to 75 mph and the gust went off of the chart.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (FAROS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
OKLAHOMA									
Mangum, Greer County	28	1415CST			0	0	?	?	Wind
		A thunderstorm produced 60 mph winds 10 miles south of Mangum.							
Frederick, Tillman County	28	1622CST			0	0	?	?	Hail
		Hail the size of pennies fell.							
Frederick, Tillman County	28	1645CST			0	0	?	?	Hail/Heavy Rain
		Hail the size of quarters fell 4 miles west of Frederick and heavy rain of 4 to 6 inches fell causing some flooding in southern sections of Frederick. Two stores and six houses received minor flooding.							
Duncan, Stephens County	29	0530CST			0	0	?	?	Wind
		A thunderstorm produced strong winds which uprooted trees, downed power poles, and took part of a barn roof off, 5 miles west of Duncan.							
35 OREGON									
Milton-Freewater, Umatilla County	05				0	0	0	5	Wind
		Winds gusting to 35 mph devastated young apple orchards. Some growers lost up to 35 percent of their crop to windfall.							
Jackson County	10	2000PST			0	0	2	0	Lightning
		A thunderstorm dumped a quarter of an inch of rain in 15 minutes, and lightning knocked out telephone service to 10,000 customers in the northern part of the county for about an hour.							
36 PENNSYLVANIA, Eastern									
Luzerne and Carbon Counties	08	1000 EST			0	0	4	0	Lightning
		Lightning caused fires in several homes in Luzerne County and damaged several chimneys in Carbon County.							
Philadelphia and Delaware Counties	08	1112 EST			0	0	0	0	Funnel Clouds
		Numerous funnel clouds were observed in the vicinity of Philadelphia International Airport, none of which reached the ground.							
Berks, Bucks, Chester, Delaware, Montgomery and Philadelphia Counties	09	1200 to 1330 EST			0	0	4	0	Wind, Lightning
		Thunderstorms moving across the area were accompanied by wind gusts and lightning which moved trees, tree limbs and utility lines. Over 14,000 customers experienced power outages. A severe thunderstorm hit Unionville in Chester County, about 1:11 PM EST, downing many trees and utility lines.							
Eastern Pennsylvania	26-27	1600 EST 1500 EST			0	4	7	0	Hurricane Gloria
		Hurricane Gloria moved north off the New Jersey coast. Strong winds brought down many trees throughout the area. Trees and limbs fell on houses, automobiles and utility lines. The strong winds and falling trees caused power interruptions for several hundred thousand customers. The highest wind gusts reported were 56 MPH at Allentown and 52 MPH at Philadelphia. Heavy rain caused widespread drainage flooding, closing many roads. There also was considerable flooding on many streams. The worst of the flooding was over northeast sections, particularly in the Wilkes-Barre-Scranton area where the Lackawanna River flooded extensively. Rainfall amounts of 5 to 9 inches fell over much of Eastern Pennsylvania. Close to two thousand							
PENNSYLVANIA, Eastern									
		people had to be evacuated and about three thousand structures were flooded. Railroads and highways were damaged or washed out, and covered by mud slides in some areas. Huge washouts occurred on many properties. Bridges were washed out and some buildings washed away. A few people sustained minor injuries when trapped in cars or buildings by the flooding.							
36 PENNSYLVANIA, Western									
Bellwood (Blair County)	08	2330EST			0	0	4	0	Lightning
		Lightning struck a garage and followed electrical lines to a house, causing \$10,000 in damage to the house and appliances. The storm also caused power outages.							
37 RHODE ISLAND									
Foster, Providence County	07	Early evening			0	1	0	0	Lightning
		A bolt of lightning struck at the local fire station, injuring a firefighter who happened to touch a fire truck which was struck by the lightning bolt.							
Statewide	27	0800-1700EST			2	2	7	6	Hurricane GLORIA
		Hurricane GLORIA was the first hurricane to strike the state since DONNA in 1960. The state was well prepared with plenty of warning of the storm's approach. GLORIA's path to the west of Rhode Island caused gale force winds with gusts to hurricane force from the south. Most fortunately, the storm arrived at the time of near low tide, greatly reducing the effects of tidal flooding. The most serious tidal flooding struck in the Misquamicut section of Westerly where scattered structural damage to houses occurred along the beach. Tides in Narragansett Bay ran about 6 feet above normal and hundreds of small craft were damaged or destroyed around the bay. Structural damage to buildings caused directly by the winds included 20,000 square feet of roof ripped off the executive offices of Blackstone Valley Electric in Lincoln, with damage estimated at about \$100,000. Roofs were ripped off a restaurant in Westerly and in Warren. A motel lost its roof in Middletown and a hotel under construction in Newport collapsed. Many piers were damaged along the south coast to Westerly. Thousands of trees were uprooted statewide, damaging houses and autos and knocking out electric power to 300,000 customers. It was the greatest power loss for the state since the Northeast Blackout in 1965. Power was out for several days in many places and even longer in others. The power losses caused thousand of dollars in losses to food products due to lack of refrigeration. There were two fatalities in the state, including a Scituate man who was killed by a falling tree during the storm and a man attempting to moor his boat in Bristol who was hit and killed when the boom came around in the wind. A Wyoming woman was knocked down by the wind and fractured an arm. Another injury included a Hope Valley man that was hurt trying to secure a door on his barn. Peak wind gusts across the state were from the south and included, 91 MPH at Westerly, 81 MPH at Providence, and 76 MPH at Block Island. Winds in gusts of over 80 MPH were reported from Newport and North Foster. Seven thousand, three hundred people were evacuated from their homes. Rainfall accompanying the storm was very light, with only 0.10 inch at Providence and 0.05 of an inch at Block Island. Total damages, including power losses and clean-up, was estimated at 20 million dollars.							
38 SOUTH CAROLINA									
Statewide	1-12								Heat Wave
		Unusually hot humid weather caused schools without air conditioning to close.							
Conway, Horry County	10	p.m.			0	0	4	0	Lightning
		Lightning destroyed the steeple of Jamestown Baptist Church in Conway.							
Grey Court, Laurens County	11	1515EST			1	0	0	0	Lightning
		Lightning struck and killed a man driving a farm tractor.							
Cowards Community, Florence County	11	1800EST			0	0	3	0	Wind
		Thunderstorm winds cut tops of trees and left a path across a cornfield.							
Sumter, Sumter County	11	2000EST			0	0	4	0	Lightning
		Lightning caused widespread power outages.							
Statewide	13-15								Low Temperatures
		An outbreak of cool air established record low temperatures at many locations.							

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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					KILLED	INJURED	PROPERTY	CROPS	

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

39 SOUTH DAKOTA

Miner County	01	Early Morning			0	0	?	0	Lightning
Lightning struck a transformer in Howard, knocking out power in town for six hours.									
Eastern South Dakota	02	Early Morning			0	0	3	?	Hail, Heavy Rain, Lightning
Intense thunderstorms moved through parts of eastern South Dakota, producing one and three quarters inch hail at 0345 CST in Dell Rapids (Minnehaha). Large hail caused extensive damage to crops in the area, as well as breaking windows and damaging vehicles. Two inches of rain fell in a short period of time in Plankington (Aurora), and Castlewood (Hamlin) received two and one half inches. Minor flooding occurred around Castlewood. Lightning set several hay bales on fire near Plankington.									
South-Central and Eastern South Dakota	02	Evening			0	0	5	3	High Winds, Hail, Rain, Lightning
Intense thunderstorms moved from south-central South Dakota to north-east South Dakota during the evening. Thunderstorm winds gusted from 60-70 mph over the area. Southwest of Presho (Lyman), three small buildings were destroyed and barns, powerlines and other personal property was damaged near Vayland and Miller (Hand), Wessington and Wolsey (Beadle), Kimball (Brule), White Lake (Aurora), Armour (Douglas) and Castlewood (Hamlin). One and three-quarter inch hail fell at Pickstown (Charles Mix) at 1731 CST and three-quarters inch hail was reported at Gregory (Gregory) at 1830 CST. Hail caused considerable damage to crops. Up to two inches of rain fell between Vayland and Wolsey and three inches of rain fell east of Castlewood, causing minor flooding.									
Gregory County	04	1738-1750 CST	3	50	0	0	3	0	Tornado (F1)
A tornado touched down eight miles east of Bonesteel and moved east three miles. A roof was torn off a hog shed and ended up three miles east.									
Southcentral and Eastern South Dakota	04	Evening			0	0	3	?	Rain, Flooding, Lightning, Hail
Thunderstorms produced heavy rainfall over the area. Rainfall amounts were generally one to three inches. Urban flooding was reported in Mitchell (Davison) at 2000 CST and many cars were stalled in the street.									
Douglas County	04	1900 CST	.2	30	0	0	3	0	Tornado (F0)
A tornado touched down on the north side of Armour, causing minor damage to buildings and trees.									
East-Central South Dakota	08	Morning			0	0	0	?	Heavy Rain, Hail, Flooding
Thunderstorms produced heavy rains and hail up to one and three quarters inch. The heaviest rains fell in Hamlin and Kingsbury Counties where up to five inches of rain were reported. In this area, six to eight inches of water stood on some roads at 0900 CST. Widespread crop damage was reported in Codrington, Hamlin, Deuel, Hand and Spink Counties.									
Pennington County	15	1056-1117 CST			0	0	?	0	High Winds
Thunderstorm winds gusted to 70 mph at the Rapid City Airport at 1056 CST. A car and trailer were overturned by the strong winds near New Underwood at 1117 CST.									
Extreme Northeast South Dakota	16	2230-2310 CST			0	0	0	?	Hail, Heavy Rain
Thunderstorms produced three-quarters inch hail and heavy rain in Marshall and Roberts Counties.									
Northern Black Hills	22-23	Evening- Early PM			0	0	0	0	Snow
Snow fell over the Black Hills, with up to ten inches reported at O'Neil and Terry Peak in Lawrence County. Many homes were without electricity for a time, as snowfall broke transmission lines.									
Southcentral South Dakota	27-28	Evening- Early PM			0	0	0	?	Snow
The first significant snowfall of the season in the plains resulted in three to five inches of snow, with up to 18 inches reported around Winner (Tripp County). Some snowfall amounts included five inches at Martin (Bennett County); six inches in Winner; five inches at Burke (Gregory); eight to twelve inches around Gregory (Gregory); and approximately ten inches around Burke. The snowfall caused no major travel problems, but will hamper crop harvest in the area.									

40 TENNESSEE

Watauga, Carter County	08	1630EST					2	0	Lightning, and High Wind
Lightning struck the smoke stack at an old and non-functioning power plant. A 20 foot section of the 100 foot high, brick smoke stack was knocked out of the landmark. Several trees were blown down in Watauga by the gusty thunderstorm winds, and a store roof was rolled back about 12 feet, but the damage was minor.									
Shelby County	25	1500CST					3	0	High Wind
Strong winds from a thunderstorm knocked over a tree into a barn in the Kerrville community in northern Shelby County, heavily damaging the tin roof and wood frame on one side.									
Tipton County	25	After-noon					3	0	High Wind
Minor roof damage occurred at a house in the Mt. Lebanon community. Many trees were downed throughout the community by the gusty thunderstorm winds.									
Selmer, McNairy County	25	1630-1700CST					6	?	Hail
Hail ranging up to the size of golf balls fell for nearly 30 minutes in downtown Selmer during a thunderstorm. Nearly \$2.5 million worth of damage occurred as every downtown business and many homes within the city limits were damaged. Most building damage occurred to roofs. Vehicles sustained broken windshields and dented sheetmetal. A local newspaper survey of insurance agents indicated that around 1300 claims were filed. Reports revealed that hail hit from the North Y on U.S. Highway 45, south to Highway 142, and east and west of downtown Selmer about 2 miles each way.									
Mt. Juliet, Wilson County	25	2300CST					4	0	Lightning, and High Wind
Lightning apparently struck a small, self-service car wash on Highway 70, and the building and equipment were extensively burned. High thunderstorm winds broke numerous power poles, disrupting electricity to over 5000 customers.									
Smyrna, Rutherford County	25	2300CST					4		Lightning
Lightning apparently struck a garage on Longview Drive, destroying the building and its contents in the ensuing fire.									

41 TEXAS, Northern

Van Zandt County	9	1658CST			0	0	4	?	Thunderstorm Winds
Thunderstorm winds damaged a mobile home and several storage buildings about 4 miles north of Eustace.									
McLennan County	9	2388CST			0	0	4	?	Thunderstorm Winds
An intense thunderstorm struck the airport in Robinson, destroying two aircraft and heavily damaging a hangar. Several nearby utility buildings were destroyed and numerous trees were uprooted.									
Haskell County	18	1438CST			0	0	4	?	Thunderstorm Winds
Thunderstorm winds damaged several out-buildings and downed power lines one mile south of the city of Haskell.									
Wichita County	22	1758CST			0	0	?	?	Thunderstorm Winds
Winds gusted to 60 mph at the Wichita Falls Airport.									
Taylor County	22	1938CST			0	0	4	?	Thunderstorm Winds
Thunderstorm winds blew the side from a barn and removed the roofs from several buildings in the View community, about 12 miles southwest of Abilene.									
Clay County	22	2028CST			0	0	?	?	Hail
Hail to 1 3/4 inches in diameter was reported in Henrietta.									
Coeancho County	29	0438CST			0	0	4	?	Thunderstorm Winds
Thunderstorm winds caused heavy damage to a church and a home in De Leon. Numerous other homes sustained roof damage, and a number of trees were uprooted.									

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					KILLED	INJURED	PROPERTY	CROPS		
41 TEXAS, Southern										
Jasper County	01	1630CST			0	0	?	0	Wind	10 miles west of Kirbyville, thunderstorm winds downed at least 7 large trees, several small ones, and did damage to power lines, barns and sheds. There was minor damage to some homes in the area.
Galveston County	09	2240CST			0	4	?	0	Wind	Thunderstorm winds rolled a camper trailer which was parked on the beach side of Galveston State Park. 4 occupants of the trailer were injured. The high winds also turned over two other camper trailers in the area.
Bee County	10	1256CST			0	0	4	0	Wind	Thunderstorm winds severely damaged 2 homes and downed trees and power lines near the town of Tuleta. 3 garages were also partially damaged.
Kinney County	28	1300CST			0	0	0	0	Flash Flood	Flash flooding occurred over portions of the southern part of the county in and around the town of Spofford, where near 7 inches of rain fell. At least one highway was closed due to high water according to the sheriffs department. Several low water crossings were flooded.
McMullen and LaSalle Counties	28	2000CST			0	0	?	0	Flash Flooding	Flash flooding occurred as a result of 6-10 inches of rain north and west of Tilden. The Frio River, San Miguel Creek and other streams in the area got out of their banks. The resulting inflow into Choke Canyon Reservoir caused the lake to rise 5 feet. The heavy rains extended westward into LaSalle County where Fowlerston reported 6 inches. 3 miles east of Fowlerston, an observer reported 9 inches. There was one ten inch report from 10 miles west of Tilden. Cross, north of Tilden, had 3.32" and 10 miles northwest of Tilden an official 6.50" was measured.
Bexar County	29	0930CST			2	0	0	0	Flash Flooding	Flash flooding occurred over the western and northern sections of the City of San Antonio as 4-5 inches of rain fell over a very short period of time. Many low water crossings in the city were flooded and were barricaded. Creeks got out of their banks and numerous streets were flooded. Two young men, twin brothers, lost their lives when they tried to ride a make shift raft down a swollen creek (Alazan). The raft capsized and their bodies were found 5 miles downstream on the morning of Oct 3.
Liberty County	29	1430-1515CST			0	0	0	0	Wind	Thunderstorm winds damaged a roof of a lumber yard in Ames, which is just east of the town of Liberty. Signs were blown over, roofs were damaged on some homes and there was power outages in the town of Liberty.
Val Verde County	29	1640CST			0	0	0	0	Wind	Thunderstorm winds gusted to near 75 MPH at the Diablo East Marina on Lake Amistad. Small hail also fell. Damage was not reported.
Hidalgo and Cameron Counties	30	0300CST			0	0	6	0	Flooding	4-9 inches of rain fell over portions of the two county area, with the heaviest rainfall and flooding centered around the two towns of Welasco and Mercedes. Streets and highways were flooded in the area, as well as many homes, businesses and at least one school. Many families had to be evacuated from the high water. An estimated 300 homes had water in them up to depths of two feet. In Mercedes, one building collapsed from the weight of water on its roof. Street flooding occurred in the city of Harlingen, also. Rainfall reports in the area included: Santa Rosa 7.3", Adams Garden 4.75", Raymondville 4.27" and Los Fresnos 3.70".
41 TEXAS, Western										
Midland County	04	2056CST			0	0	0	0	Hail, Wind	A thunderstorm dropped 3/4-inch sized hail and wind gusts to 58 mph 16 miles east of Midland.
Brewster County	16	1730CST			0	0	0	0	Wind	Wind gusts to 62 mph hit Alpine.
Ochiltree County	18	1930CST	short	10	0	0	0	?	Tornado (FO)	A small tornado touched down briefly about 8 miles south of Perryton.
— TEXAS, Western										
Sherman County	19	0740CST			1	0	4	0	Flash Flood	After heavy rain and a Flash Flood Warning, a male (23 years old) drowned while attempting to ford a creek swollen by the heavy rain. He left his pickup and attempted to cross the creek on foot, and was washed away. This occurred just south of Stratford.
Hansford County	22	1640CST			0	0	4	?	Hail	A storm moved from west of Grover to just south of Spearman, dropping golfball-sized hail. The hail broke windshields and downed trees.
Motley County	28	Afternoon			0	0	0	0	Flash Flood	Flash flooding occurred in parts of Motley County, including Matador, due to 2 to 4 inch rains.
Parmer County	28	2000CST			0	0	0	0	Hail	3/4-inch sized hail fell near Friona.
Midland County	28	2056CST			0	0	?	0	Wind	A severe thunderstorm hit the Midland Airport with 82 mph wind, causing little or no damage.
42 UTAH										
Tooele County	4	1600MST			0	0	1	0	Thunderstorm Winds	A thunderstorm wind gust exceeded 65 mph at the Wendover AUTOB shortly after 5 p.m. MDT. No damage was reported.
Carbon County	15	1700MST			0	0	3	0	Hail	One inch diameter hail stripped vegetation and broke windows in East Carbon City on this Tuesday afternoon. The town also received .97 inches of rain in 15 minutes.
San Juan County	20	1605MST			0	0	0	0	Funnel Cloud	A funnel cloud was observed south-southeast of Blanding by the Weather Service observer. It lasted for about 2 minutes.
43 VERMONT										
Windham, Bennington, and Rutland Counties	07	0900EST			0	0	4	0	Flood	Heavy rain of over four inches caused minor to moderate flooding in southwestern Vermont. Rain fell at the rate of almost two inches in two hours between 8:00 and 10:00 A.M. East Wallingford reported small brooks out of their banks. Urban flooding was reported in Bellows Falls, and washouts of secondary roads were reported near Shaftsbury.
44 VIRGINIA										
Loudoun, Fairfax and Prince William Counties	10	1600-1900EST			1	5	4	0	Wind, Lightning	A strong line of thunderstorms swept through the northern Virginia area with high winds and widespread lightning. A 19 year old soldier at Ft. Belvoir was killed and 5 others injured when lightning struck them in an open field at 530 PM. Lightning struck dozens of houses, causing numerous minor fires. Falling trees and broken branches damaged houses, buildings, cars and electric wires throughout the area. One house at Gainesville in Prince William County was demolished, with the back wall of the house blown out and pushed down a hill.
Eastern Virginia	27	0300-0900 EST			0	0	6	3	Hurricane, Wind, Flood	Hurricane Gloria brushed Cape Hatteras and moved NNE to off the Virginia Capes in the early morning hours of the 27th. Gusty winds across eastern Virginia, Chesapeake Bay and the Delmarva Peninsula were sustained from 35 to 45 knots with higher gusts. Higher winds occurred across the Chesapeake Bay and offshore. A fishing pier at Virginia Beach was heavily damaged, with a 30 foot section on the end destroyed. 5 to 6 inches of rain fell across the entire area, causing minor flooding. The storm surge from Gloria was minor, with 4.1 feet recorded at Sewells Point at 5 AM.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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	
— VIRGINIA									
									<p>Minor tidal and urban flooding occurred mainly in the Norfolk-Hampton Roads area. Numerous branches and trees were blown down, with widespread minor damage occurring to roofs, signs and buildings. Highest winds at ORF were sustained at 40 knots from the northwest, with a peak gust of 58 knots. The highest winds at the South Island of the Chesapeake Bay Bridge Tunnel were northwesterly at 80 knots, with a gust to 90 knots. Wallops Island had highest winds of 62 knots from the west-northwest. The lowest pressure at ORF was 981.4 mbs.</p>
45 WASHINGTON									
King County	6	all day			0	0	?	0	Wind
									<p>A persistent low pressure center moved slowly northward along the Washington Coast and caused strong winds. Although sustained winds were mostly 20-30 mph, higher gusts reached near 50 mph. Small boats capsized in Lake Washington and Puget Sound. A tree caught fire from downed power lines.</p>
Ephrata, Grant County	17	1730 PST			0	?	?	?	Hail
									<p>An unstable, showery air mass moved into Washington and spawned several thunderstorms. One passed through Ephrata during the late afternoon and produced 3/4" hail. Winds remained below 20 knots.</p>
46 WEST VIRGINIA — NONE REPORTED									
47 WISCONSIN									
Douglas, Bayfield, and Ashland Counties	02-03	2000CST-0400CST			0	0	6	4	Flooding
									<p>Heavy rainfall from 4 to 7 inches fell over extreme northwest Wisconsin. In Bayfield County, \$2 million in damage occurred, with \$1.5 million in damage done to several county roads which were washed out, as well as portions of State Highway 13 east and west of Port Wing, which isolated the town. A bridge 4W of Port Wing also was washed away. 3 huge culvert pipes were stood upright between Washburn and Ashland. The earthen portion of the Orienta Falls Dam near Port Wing was washed away, damaging the power house. Also \$500,000 in residential and business damage resulted mainly in Port Wing itself. \$1,865,000 in damage took place in Douglas County near Superior, with \$1,125,000 to roads; \$500,000 to homes; \$120,000 to small businesses; \$75,000 to utilities; \$35,000 to crops; and \$10,000 to government buildings. Throughout Superior, many basements were flooded, streets and sidewalks caved in, and power lines toppled. In Ashland County, the rain washed out several stretches of the main line of the Soo Railroad south of Ashland.</p>
Juneau County	03	2235CST			0	0	4	0	Thunderstorm Winds
									<p>Intense thunderstorm winds blew down a couple of barns 3SW of Mauston.</p>
Columbia County	03	2250CST			0	0	3	?	Thunderstorm Winds
									<p>Strong thunderstorm winds uprooted many trees, one of which fell on a car, 3E of Wisconsin Dells.</p>
Florence County	06	1950CST			0	0	0	0	Hail
									<p>Hail up to the size of golf balls fell from a severe thunderstorm at Aurora.</p>
Price County	07	1008CST			0	0	0	0	Hail
									<p>A severe thunderstorm deposited hail up to 1 inch in diameter at Park Falls.</p>
Washburn and Barron Counties	07-08	2230CST-0900CST			0	0	4	4	Flooding
									<p>Between 3 and 8 inches of rain washed out several roads and flooded acres of cropland with water as high as the ears on the corn around Rice Lake. On the east side of Long Lake (Washburn County) at the Marawarden Resort, more than a dozen boats sank after being filled with rainwater and some cabins received extensive water damage.</p>
— WISCONSIN									
Dane County	08	2350CST			0	0	0	0	Thunderstorm Winds
									<p>Winds gusting up to 64 mph from a severe thunderstorm were reported at Madison.</p>
Dodge County	09	0010CST			0	0	0	0	Thunderstorm Winds
									<p>Strong thunderstorm winds toppled several trees and power lines in Beaver Dam.</p>
Waukesha County	09	0115CST			0	0	5	3	Lightning
									<p>Lightning caused a fire which destroyed a barn and killed 20 pigs, 10 calves, and a horse near Merton.</p>
Walworth County	09	0130CST			0	0	4	0	Thunderstorm Winds
									<p>Gusty thunderstorm winds felled several large trees, one of which crushed a camper near East Troy.</p>
Brown County	17	0500CST			0	0	5	3	Lightning
									<p>Lightning ignited a fire which destroyed a barn and its contents of hay and straw near Denmark.</p>
48 WYOMING									
Uinta County	02	Afternoon			1	0	4	0	High Wind
									<p>High wind caused a man to lose control of his vehicle and an attached trailer, 18 miles east of Evanston. The trailer disconnected and the vehicle overturned end over end, ejecting and killing the man.</p>
Gillette, Campbell County	12	0800MST			0	0	0	0	High Wind
									<p>Winds gusting to 56 mph caused a blackout at Gillette for 45 minutes.</p>
Albany, Laramie Counties	27-28	Overnight/Morning			0	0	0	6	Heavy Snow
									<p>Heavy snow hit the southeast corner of the state. Twelve inches of snow was reported near Granite Reservoir in extreme east Albany County, followed by 8 inches at Esterbrook. In Laramie County, a maximum of 7 inches was reported about 25 miles west of Cheyenne. Near zero temperatures on the morning following the storm devastated the potato crop in east Laramie County.</p>
49 ALASKA, Northern — NO REPORT RECEIVED									
49 ALASKA, Southern — NO REPORT RECEIVED									
49 ALASKA, Southeastern — NONE REPORTED									
50 HAWAII									
Oahu	14	0715HST			0	0	0	0	Waterspout
									<p>A waterspout was reported at 5 miles south of Koko Head by a pilot.</p>
Oahu	15	1540HST			0	0	0	0	Waterspout
									<p>A waterspout was reported at 6 miles south of Honolulu International Airport by a pilot. At the same time, heavy thundershowers were occurring over central Oahu and on the island of Kauai.</p>
Oahu	23	1338HST			0	0	0	0	Waterspout
									<p>A pilot reported a waterspout at 3 miles west of Kahe Point.</p>
Oahu	23	1400-1700HST			0	0	5	0	Flash Flooding
									<p>Heavy afternoon thunderstorms developed along the south shore of Oahu and later moved into the Koolaus. There were many reports of minor flooding of streets, warehouses, stores, restaurants and homes from Pearl City to Waikiki.</p>
Kauai	25	1228HST			0	0	0	0	Waterspout
									<p>A waterspout was observed 7 miles west-southwest of Barking Sands.</p>

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1985

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

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	KILLED	INJURED	PROPERTY	CROPS	CHARACTER OF STORM
HAWAII									
Hawaii	25	2000HST			0	0	3	0	Flash Flooding
Heavy evening thunderstorms in the Volcano area caused minor flash flooding.									
Kauai	26	1155HST			0	0	0	0	Waterspout
A waterspout was reported by the public at 1 mile southeast of Poipu and off Kipu Kai.									
Oahu	26	1345HST	?	?	0	0	0	0	Waterspout/ Tornado (FO)
A waterspout, reported off Punaluu, moved on shore and became a short-lived tornado.									
Maui	26	1400HST			0	0	0	0	Waterspout
A pilot observed a waterspout 5 miles north of Kahului.									
Hawaii	29	1400- 1800HST			0	0	3	0	Flash Flooding
Minor flash flooding resulted from heavy showers over the Kona slopes at Captain Cook and Kealakekua.									
51 PUERTO RICO ————— NONE REPORTED									
52 VIRGIN ISLANDS ————— NONE REPORTED									
53 PACIFIC ————— NONE REPORTED									

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	KILLED	INJURED	PROPERTY	CROPS	CHARACTER OF STORM

STORM SUMMARY

SEPTEMBER 1985

STATE	TORNADOES					HAILSTORMS			WINDSTORMS				LIGHTNING				FLOODING				HEAVY SNOWSTORMS AND BLIZZARDS				ICE STORMS				ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	DAMAGE	DEATHS	INJURIES	DAMAGE		DEATHS	INJURIES	DAMAGE		DEATHS	INJURIES	DAMAGE		DEATHS	INJURIES	DAMAGE		DEATHS	INJURIES	DAMAGE		DEATHS	INJURIES	DAMAGE				
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			
Alabama	3	1		4	5						2	5			4		?	?										7	7			
Arizona											5						6															
Arkansas	1	1		4							4	?			5		4	?														
California	1	1		?																												
Colorado								4			4				5		5				3	5		3								
Connecticut									3	2	8	6			4																	
Delaware																												5	4			
Florida	2	1		4							2			7																		
Georgia																																
Idaho	1	1		4				3	5						4																	
Illinois	1	1									4	?	3	8	3		3															
Indiana	1	1			6						4				4																	
Iowa	1	1		1	6			5	5		5	4			5	4																
Kansas								4	4		5			1	5														6			
Kentucky								4	4		3				5						4											
Louisiana										1	7	6		1	5	?																
Maine																																
Maryland & DC											5			1															7			
Massachusetts											8	7			4																	
Michigan	2	1		3				2	6		2	6			4		8	o/c										4				
Minnesota	2	2		4							6		2	5			5															
Mississippi	6	2		5							5			2	5		5	?								3	9	7				
Missouri											?																					
Montana																																
Nebraska	7	3		5				3	4		6	4			4	4			1	6		5										
Nevada										3	4				6																	
New Hampshire																																
New Jersey	1	1		2							7	?			4		7									1		?	?			
New Mexico	1	1		5											4	4																
New York											3				4		3									6	71	8	5			
North Carolina																																
North Dakota	2	1									4	4	1		3	4												7	6			
Ohio											4																					
Oklahoma	3	1		5						6	5	?			4	?																
Oregon											5				2																	
Pennsylvania											5				4																	
Rhode Island										2	2	7	6		1		4	7														
South Carolina											3			1	4																	
South Dakota	2	1		3							5	3			3						?											
Tennessee											6	?			4																	
Texas	1	1									4	?		5	?																	
Utah											3				1		6															
Vermont											3				1		3															
Virginia											6	3	1	5	4		5	3														
Washington											?	?	?																			
West Virginia																																
Wisconsin											5	?			5	4																
Wyoming										1	4																		6			
Alaska																																
Hawaii	1	1															5															
Puerto Rico																																
Virgin Islands																																
Pacific																																

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*

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