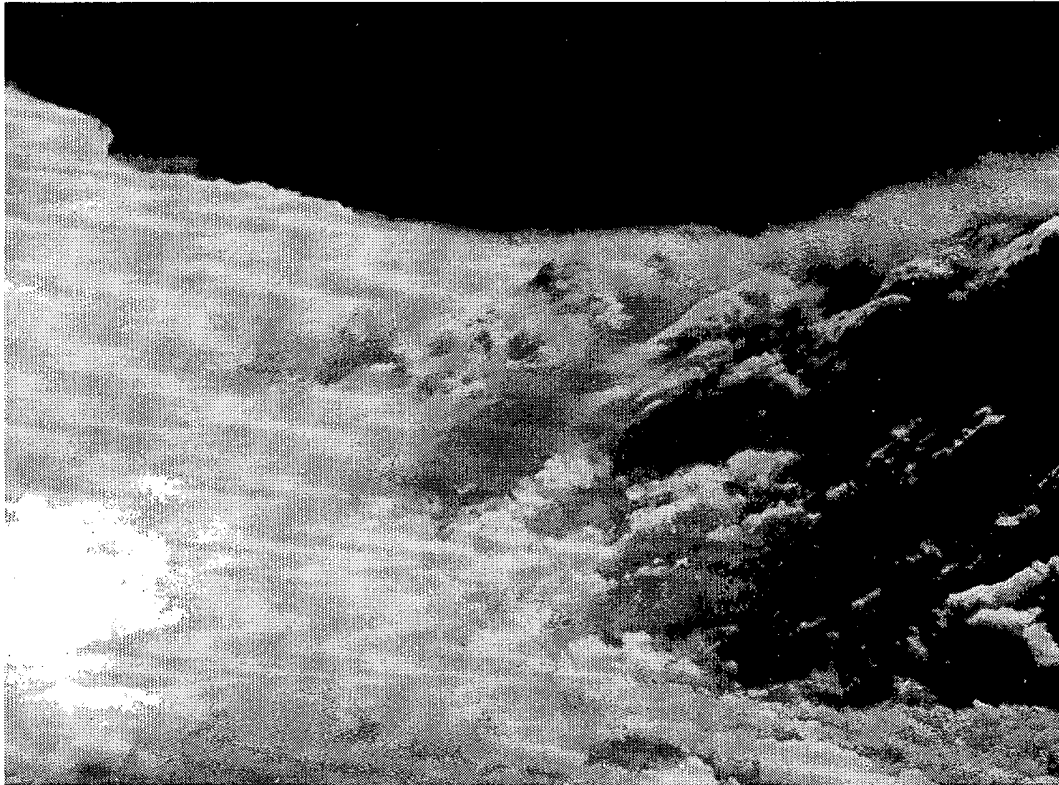


SEPTEMBER 1984

VOLUME 26

NUMBER 9

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. Hadlee

DIRECTOR
NATIONAL CLIMATIC DATA CENTER

noaa

NATIONAL OCEANIC AND
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NATIONAL ENVIRONMENTAL SATELLITE,
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NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, N.C.

C O N T E N T S

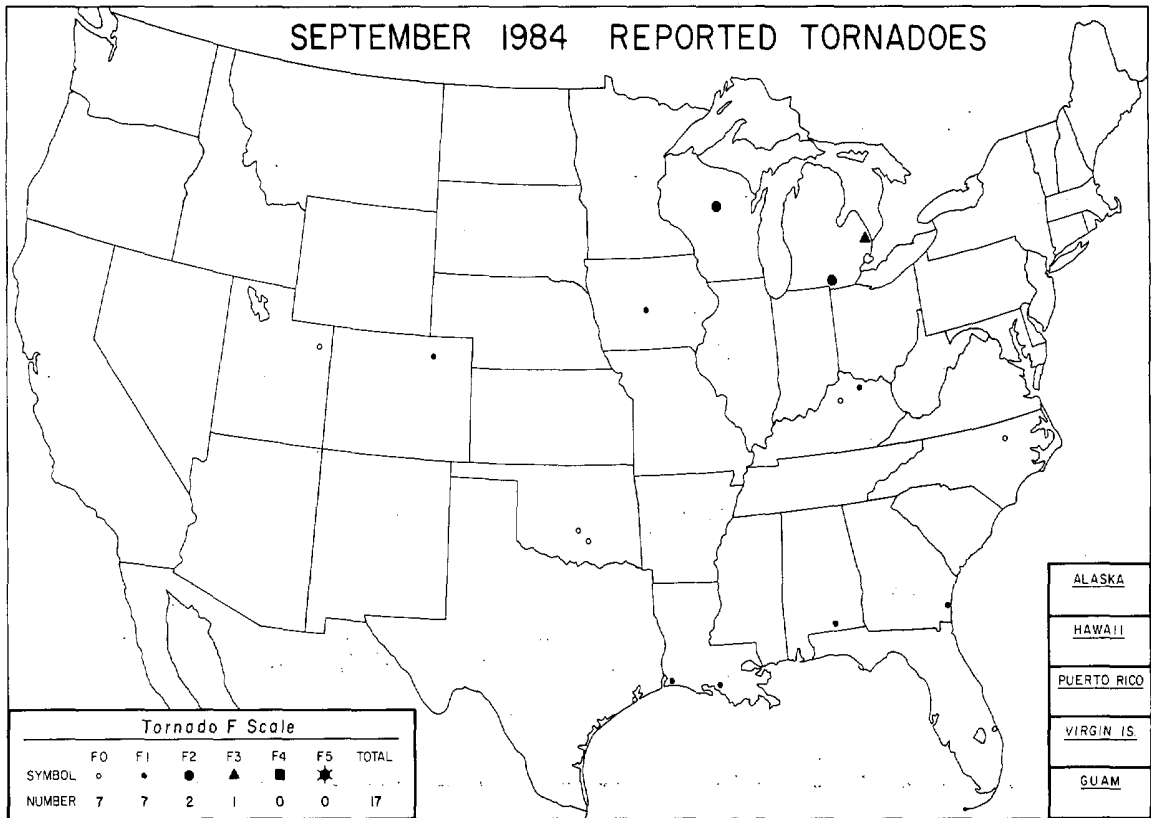
	<u>Page</u>
Outstanding Storms of the Month.....	3
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Storm Summary.....	34
Reference Notes.....	35
"F" Scale Definitions.....	35

Cover: The eyewall of Hurricane DIANA as seen from the Office of Aircraft Operations' NOAA 42 Aircraft during a flythrough at an altitude of 1500 feet. At the time of the photo, approximately 1207 EST on September 11, 1984, the estimated surface pressure was 954-955 mb, and the maximum flight level winds were 60 m/s (134 mph). ---Photo by Dr. Howard B. Bluestein, University of Oklahoma (currently on leave at NCAR), taken while on sabbatical leave at NOAA/AOML/Hurricane Research Division.

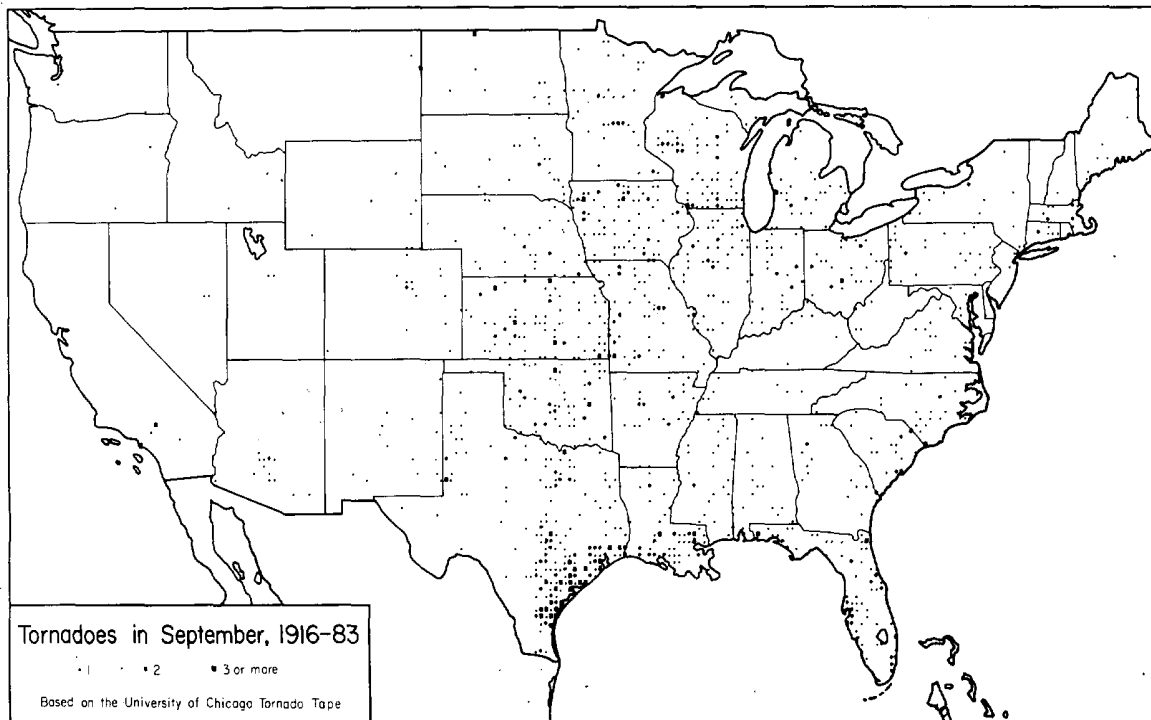
NOTE: The section on Outstanding Storms of the Month is prepared by Professor T. Theodore Fujita, editor, and Duane J. Stiegler, associate editor, University of Chicago. The narrative descriptions of Storms by State and Summaries of Hurricanes and Tropical Storms are prepared by the National Weather 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.

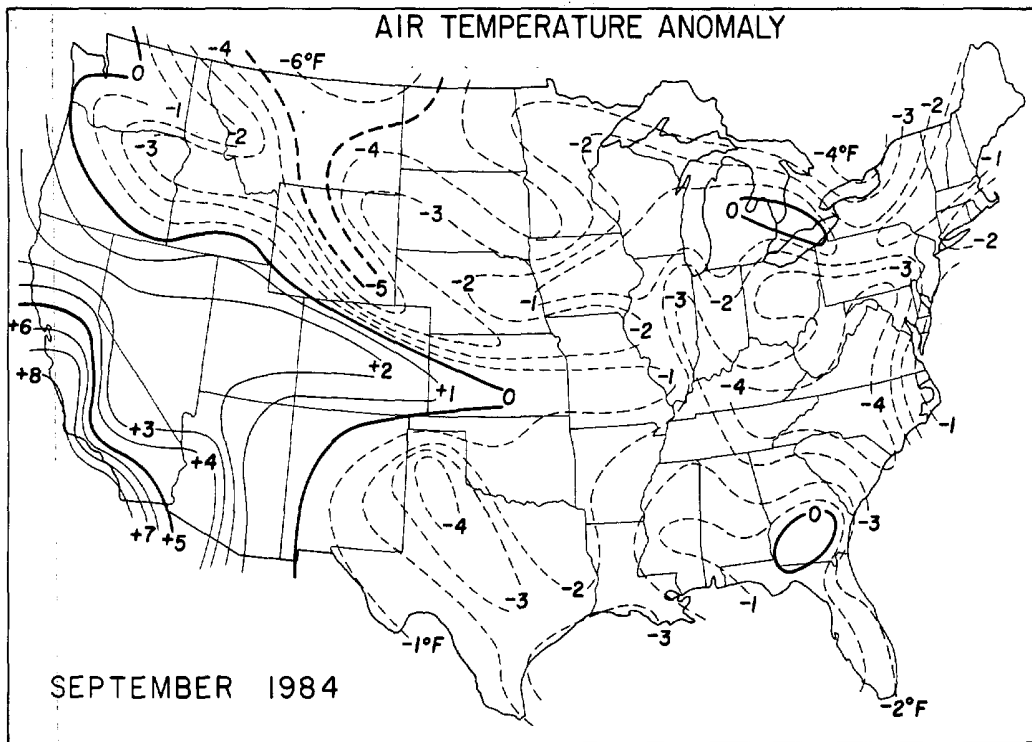
STORM DATA - (ISSN 0039-1972) is published monthly. Subscription, pricing, and ordering information is available from:
National Climatic Data Center, National Environmental Satellite, Data, and Information Service, NOAA, Federal Building, Asheville, NC 28801-2696.

OUTSTANDING STORMS OF THE MONTH



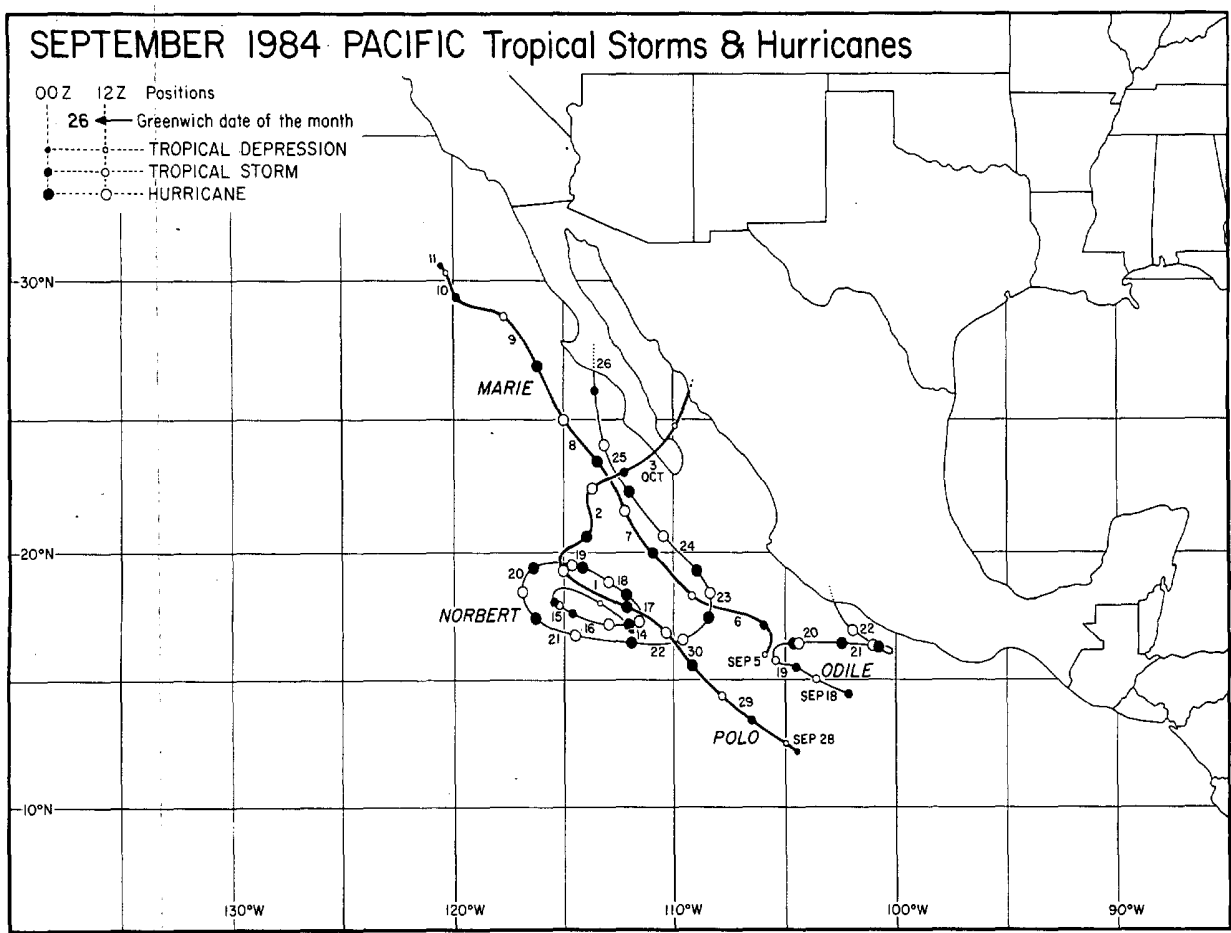
● COMPLETE REPORT RECEIVED	● 1AL	● 7DE	● 14KS	● 21MN	● 28NJ	● 33OH	● 39SD	● 44VA	● 49AK(SE)
○ PRELIMINARY REPORT RECEIVED	● 2AZ	● 8FL	● 15KY	● 22MS	● 29NM	● 34OK	● 40TN	● 45WA	● 50HI
○ REPORT NOT RECEIVED	● 3AR	● 9GA	● 16LA	● 23MO	● 30NY(O)	● 35OR	● 41TX(N)	● 46WV	○ 51PR
(N) northern (W) western	● 4CA(N)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





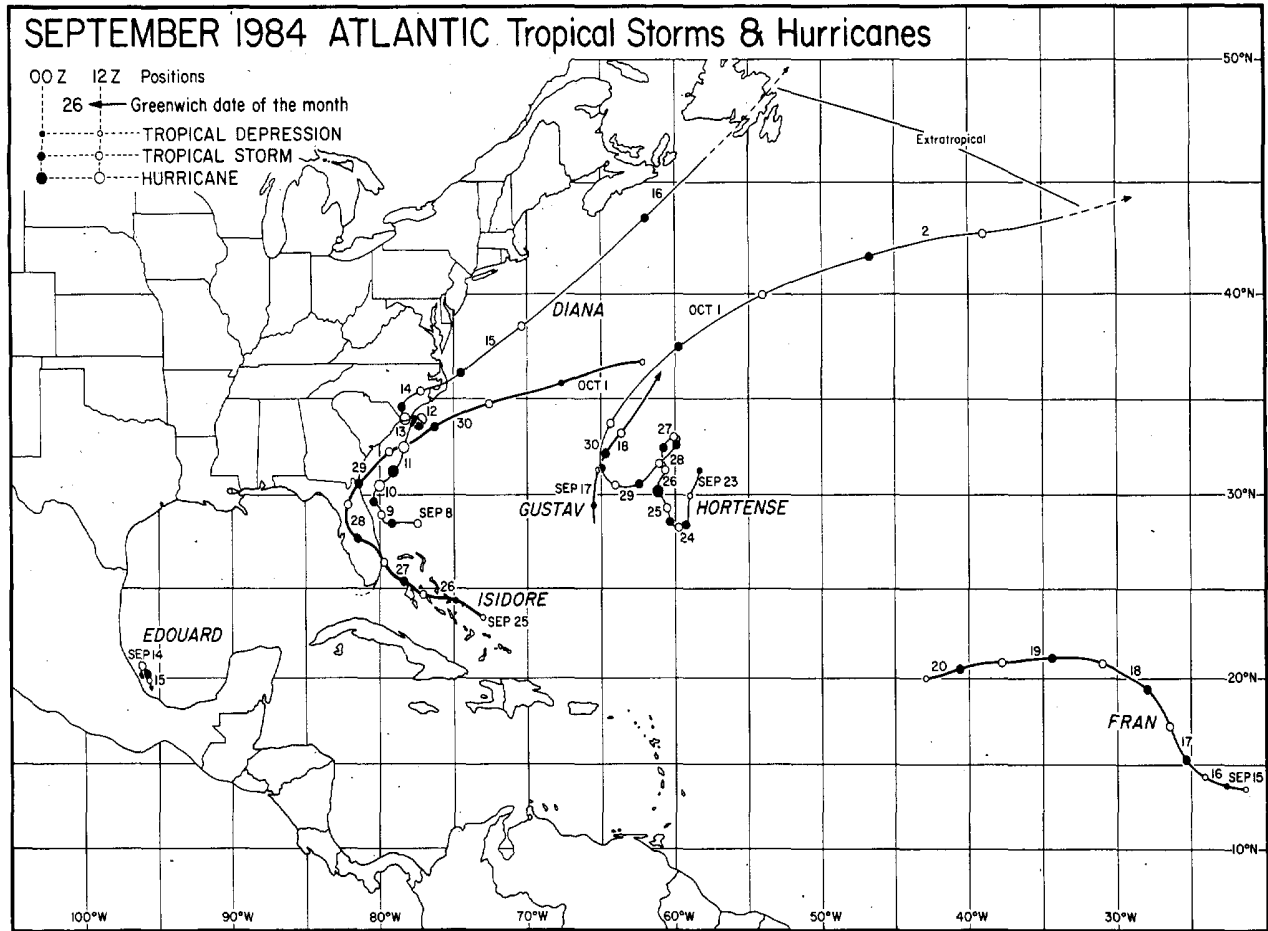
---Data base from NOAA/USDA Joint Agricultural Weather Facility.

TROPICAL STORMS AND HURRICANES

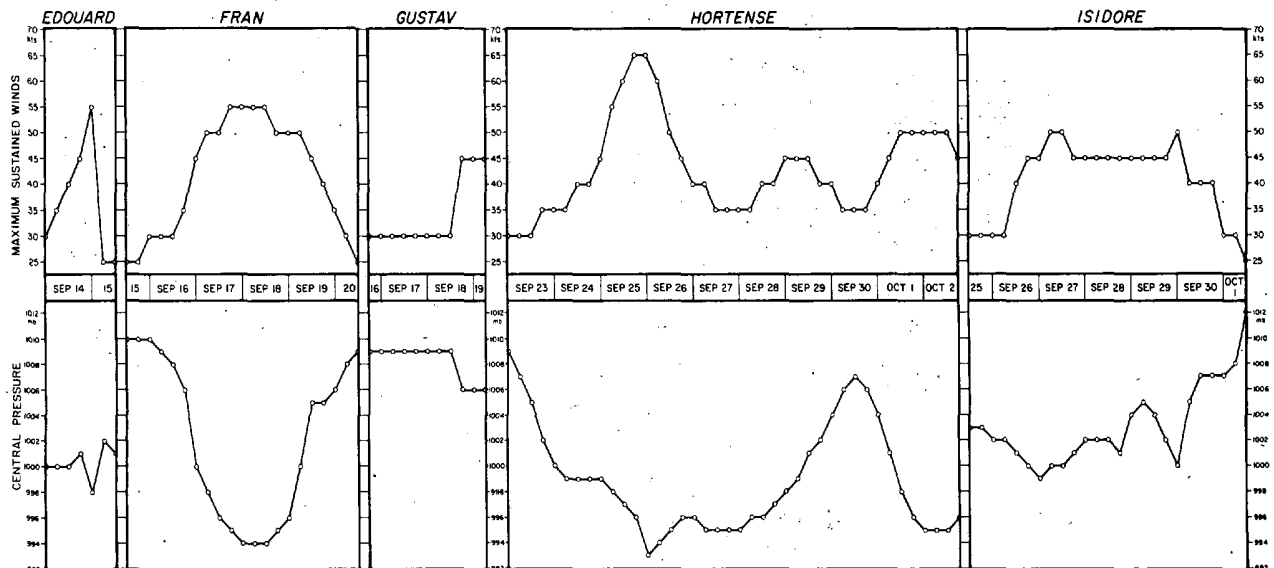


---Best track data from NWSFO San Francisco, California.

TROPICAL STORMS and HURRICANES ----continued

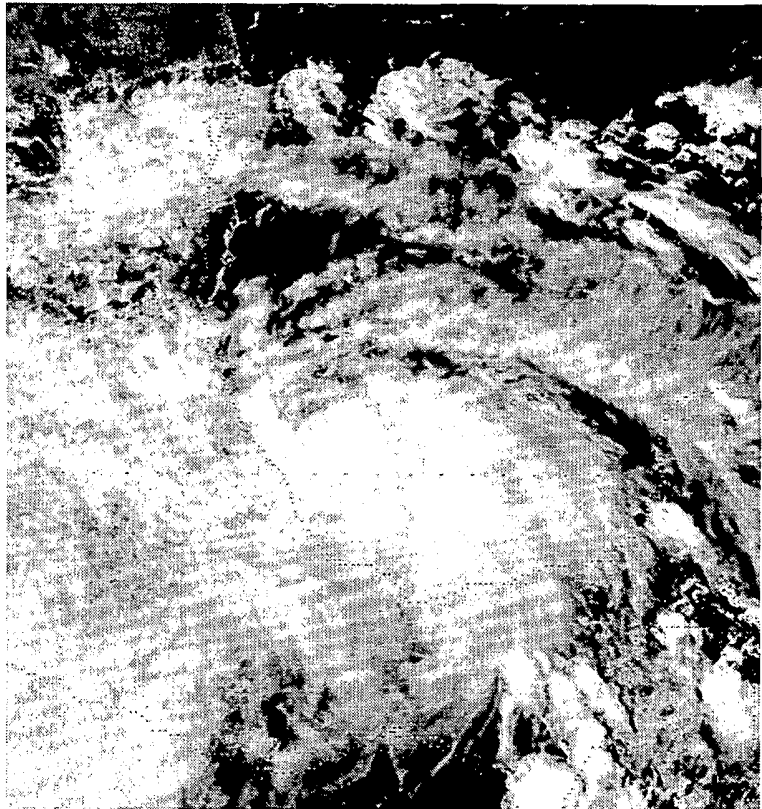
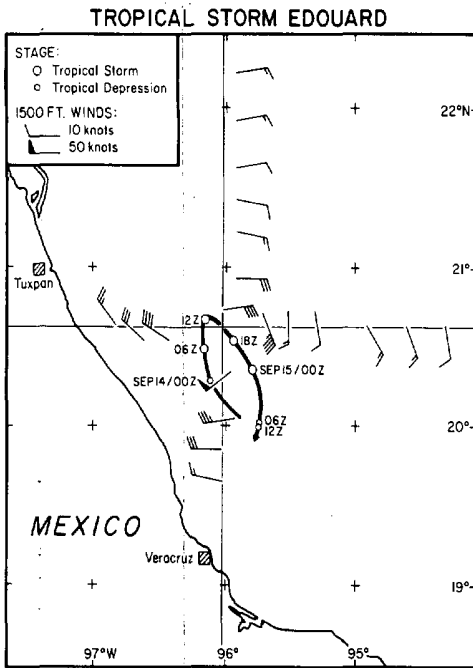


---Best track data from the National Hurricane Center, Miami, Florida.



Estimated maximum sustained winds and minimum central pressures for the life-times of 5 Atlantic Hurricanes and Tropical Storms (excluding DIANA, see page 8) that occurred during September, 1984. ---Data from the National Hurricane Center, Miami, Florida.

TROPICAL STORMS and HURRICANES ----continued

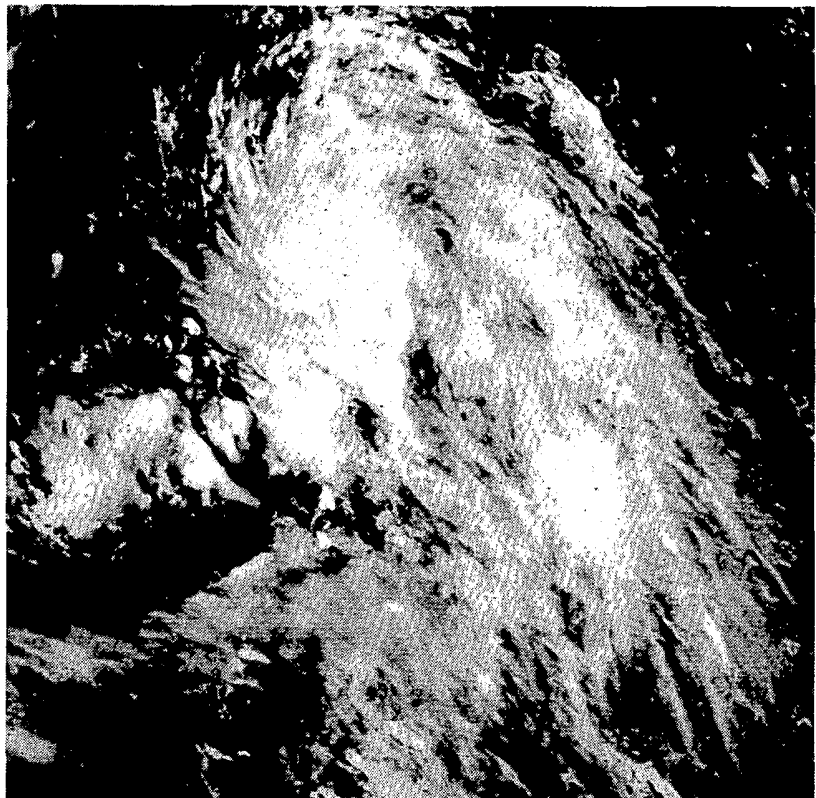


T.S. EDOUARD's path, and its 1500 ft. winds as estimated from aircraft during fly-throughs conducted by the Office of Aircraft Operations, NOAA/AOML/Hurricane Research Division. Wind data was collected from 1405-1655 GMT, September 14th, and is centered on the 1530 GMT storm position.

T.S. EDOUARD over the Bay of Campeche near the coast of Mexico at 2100 GMT on September 14th.

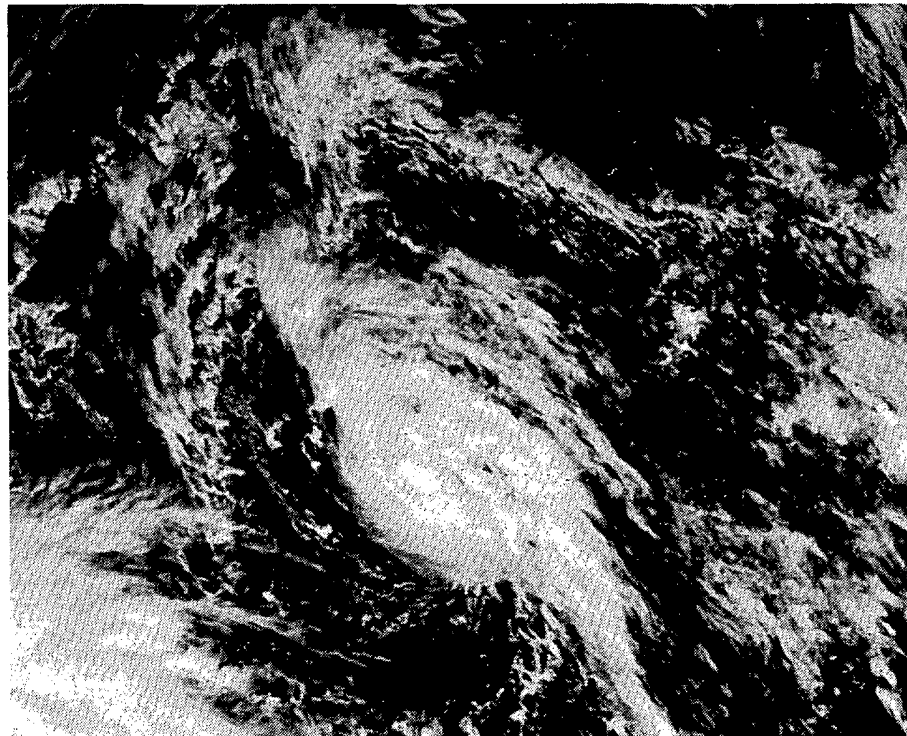


An oblique view of T.S. Fran near 21°N, 32°W at 1530 GMT on September 18th.

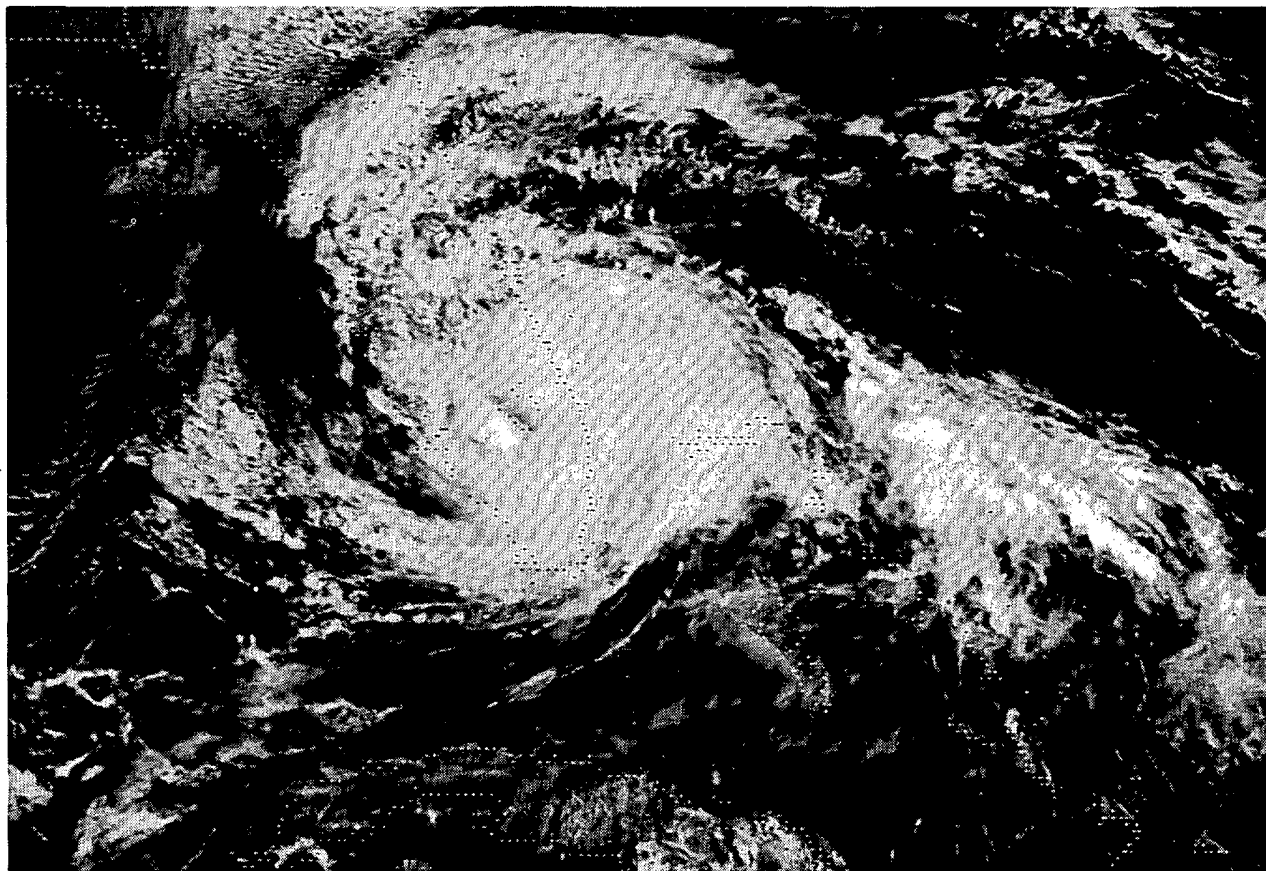


T.S. Gustav in its formation stage near 28°N, 65°W at 1330 GMT on September 16th.

TROPICAL STORMS and HURRICANES ----continued



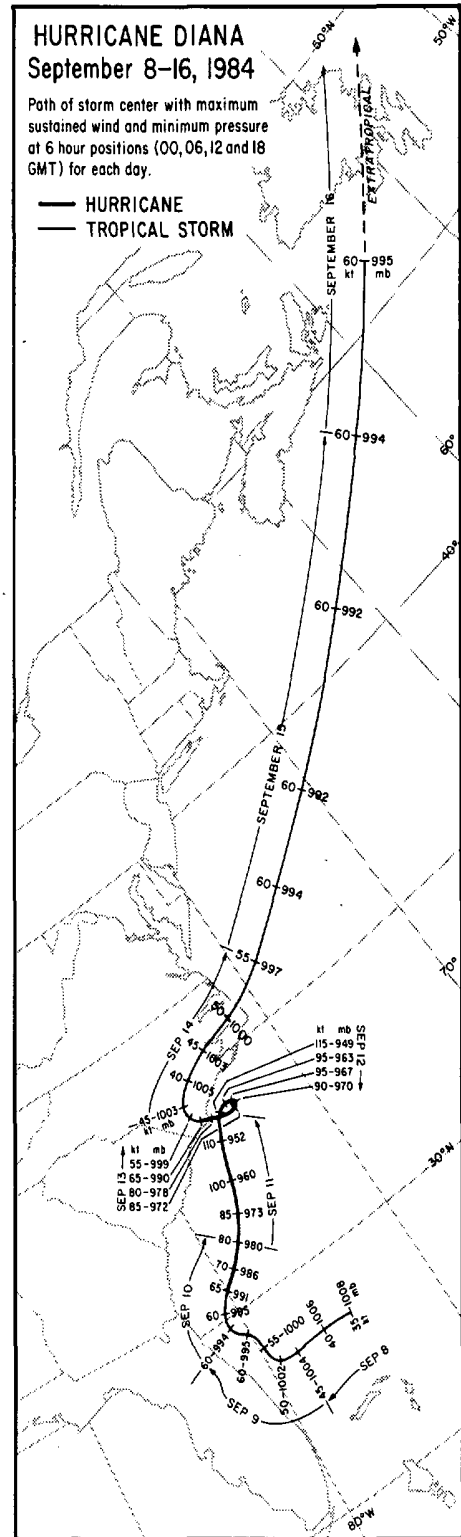
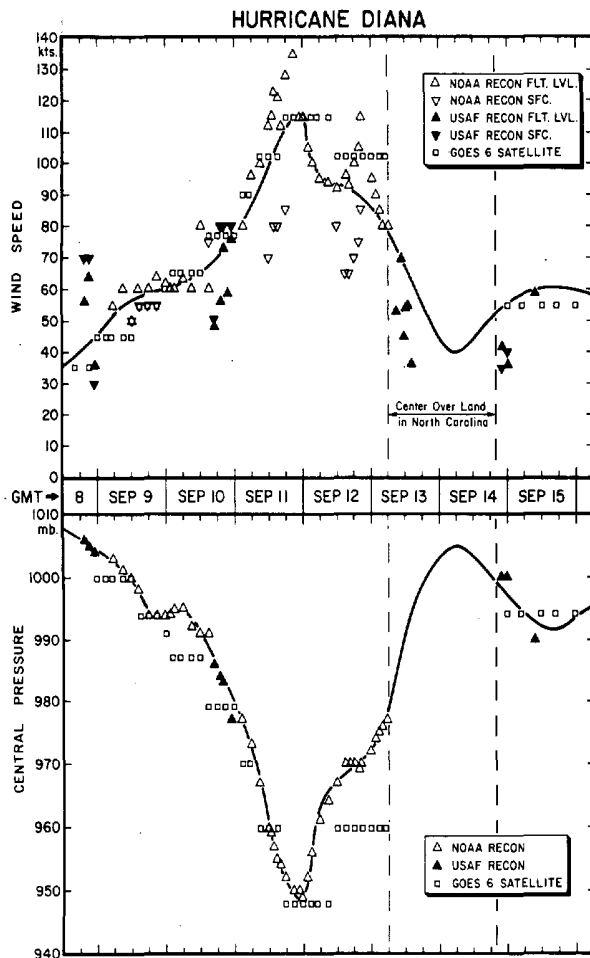
Hurricane HORTENSE near 30°N, 60°W at 1500 GMT on September 25th, just prior to attaining hurricane status.



Tropical Storm ISIDORE at 1600 GMT on September 27th, as it made landfall in eastern Florida. As ISIDORE crossed Florida, the highest observed surface gusts reached 73 mph at Camachee Cove near St. Augustine, and the heaviest rains ranged from 5 to 7 inches in northern Florida. ---All satellite photos on pages 6 and 7 are GOES East, visible images supplied by the National Hurricane Center, Miami, Florida.

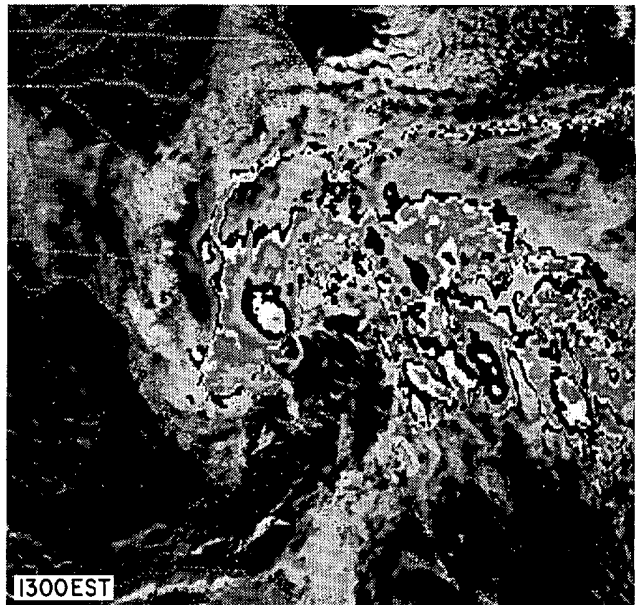
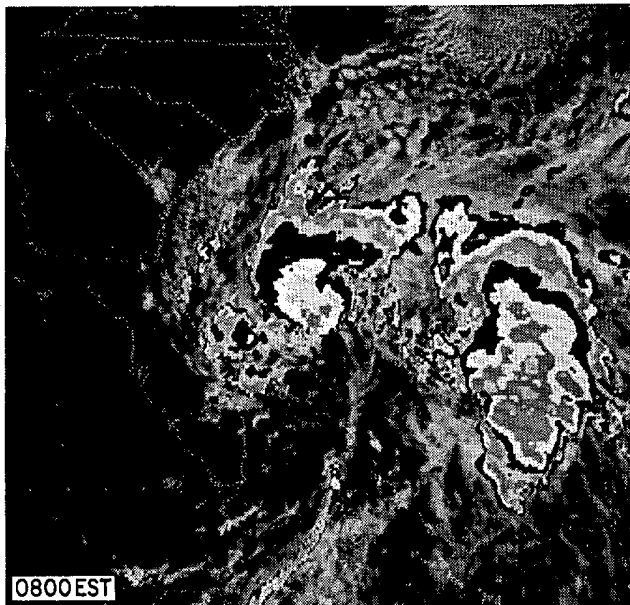
1. HURRICANE DIANA on September 8-16, 1984

Hurricane DIANA will long be remembered for its erratic and unpredictable course, and its landfall in North Carolina. DIANA began organizing and became a tropical storm north of the Bahamas on September 8th. On the 9th, as the storm approached the midsection of Florida's east coast, DIANA suddenly veered northward on a meandering course about 50 miles off of and parallel to the coast. The storm then turned north-east as it passed near St. Augustine on the 10th, and intensified to hurricane strength as it headed toward North Carolina. As DIANA approached Cape Fear on the 11th, 115mph sustained winds were recorded at the Oak Island Coast Guard Station. However, the storm made a slow looping path offshore on the 12th, during which it weakened before making landfall in North Carolina on the 13th with estimated 92mph winds. Still, DIANA produced \$78 million worth of damage in North Carolina before it weakened and again turned northeast, exiting land on the 14th. Again over the Atlantic, DIANA reintensified and sped off to Newfoundland where it became extratropical on September 16th. ---Map and figure data supplied by the National Hurricane Center and the Atlantic Oceanographic and Meteorological Laboratory / Hurricane Research Division, both of Miami, Florida.

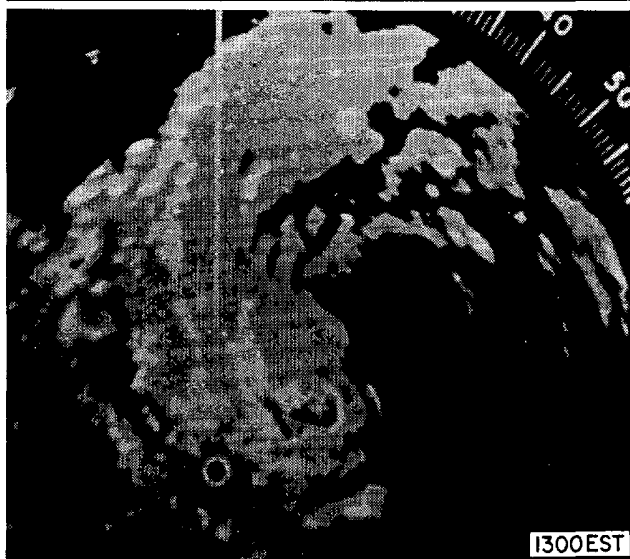
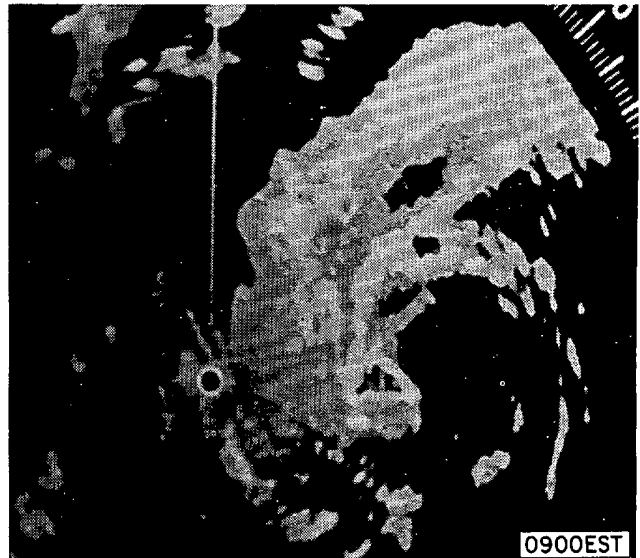
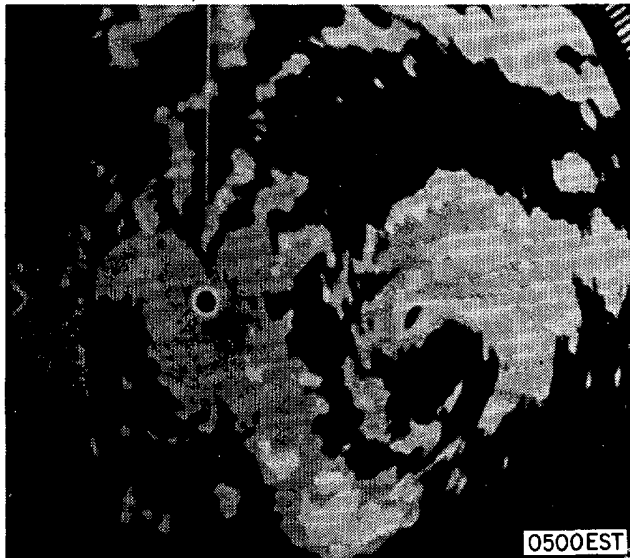


---PAGES 9, 10, 11, 13 and 14: All satellite photos are GOES East images from the National Environmental Satellite Data and Information Service, Washington, DC; and all radar photos are from microfilm from the National Climatic Data Center, Asheville, NC.

HURRICANE DIANA ----continued

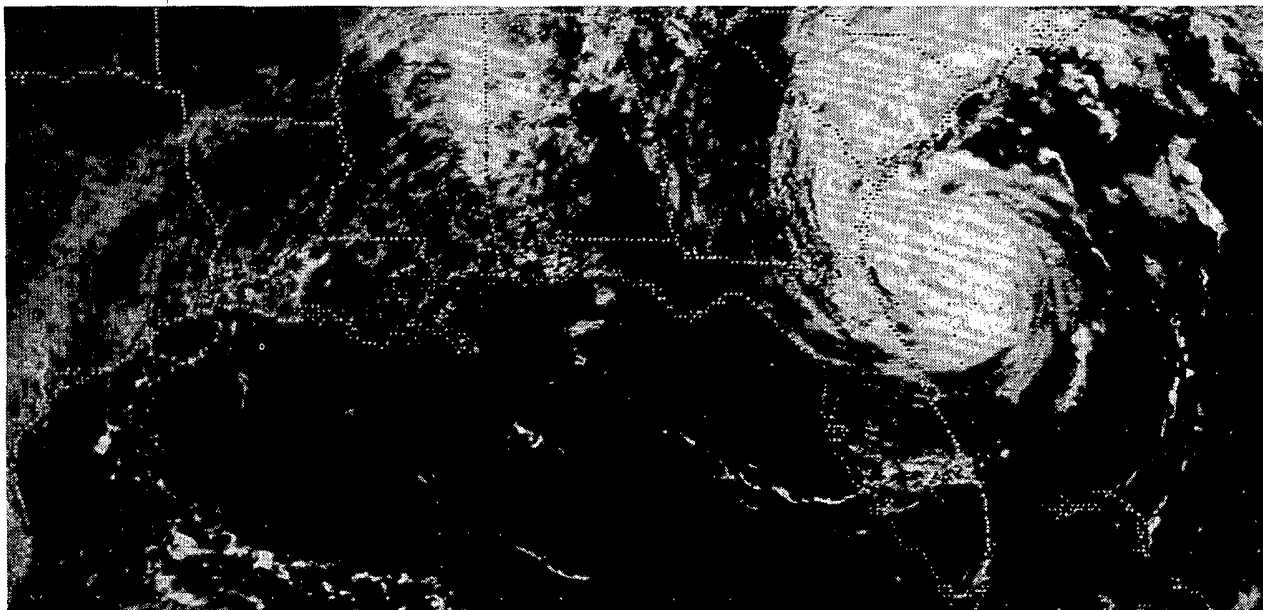


Combined visible and infrared imagery of DIANA after having attained tropical storm status on September 8th.



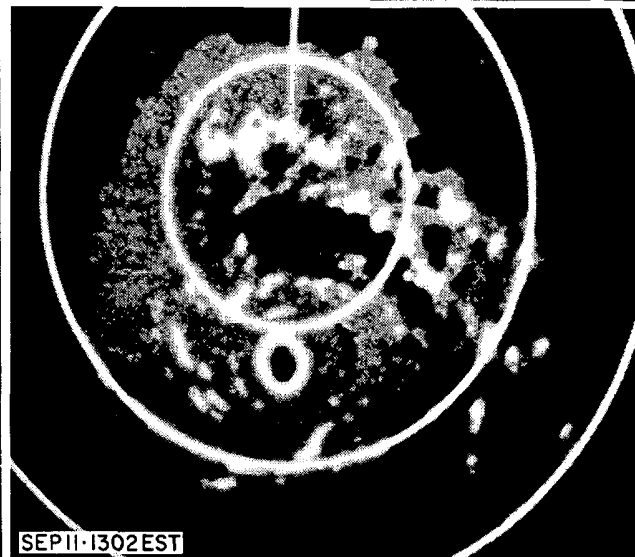
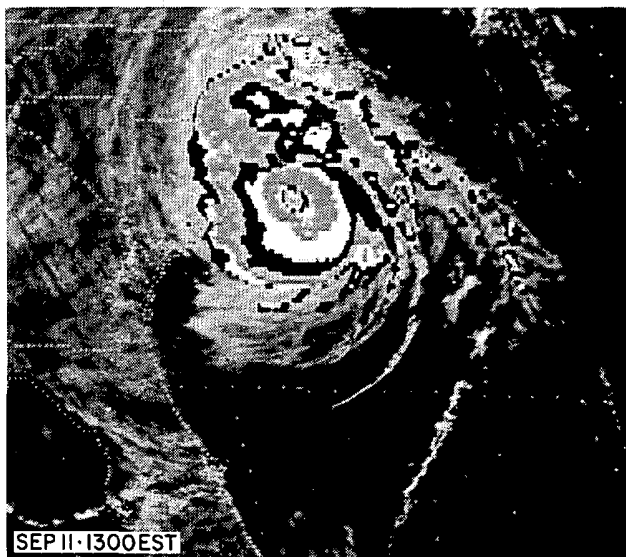
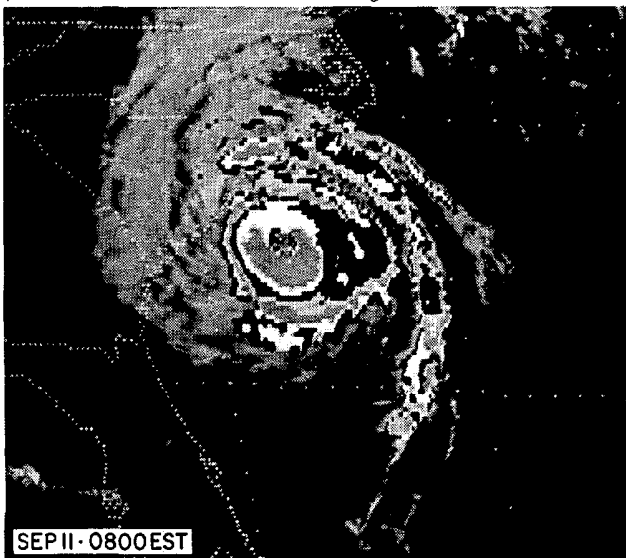
DIANA, as detected by NWS Daytona Beach radar, is shown approaching Florida from the east and turning northward along the coast on September 9th.

HURRICANE DIANA ----continued

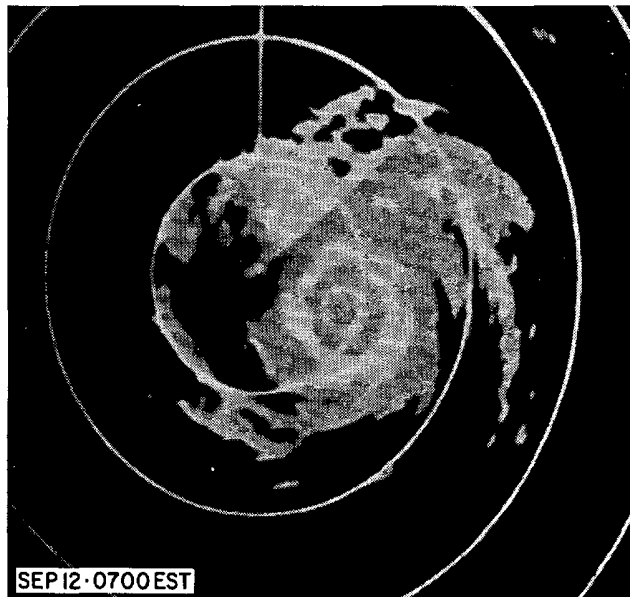
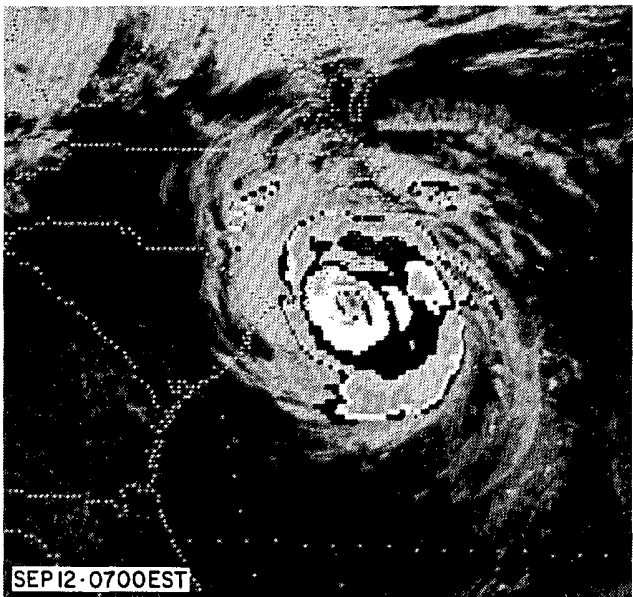
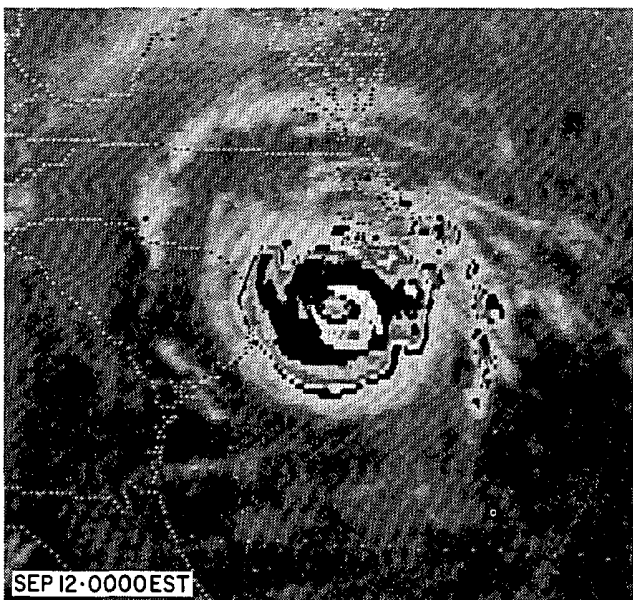
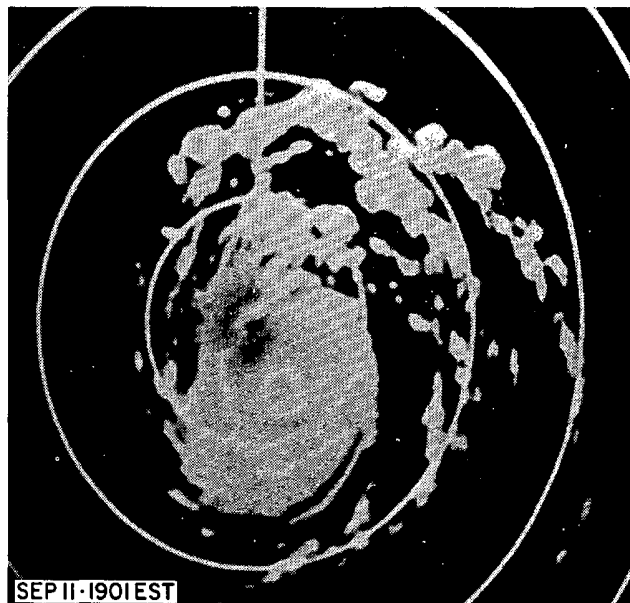
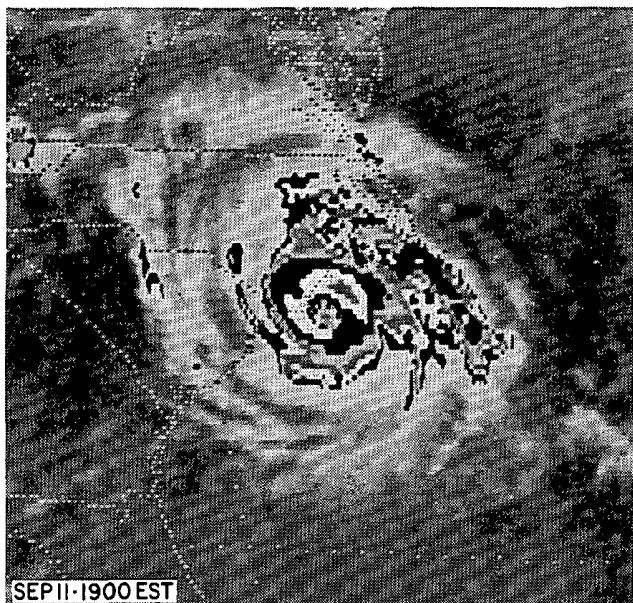


Arcing cloud streets in a tropical flow over the Gulf States, and DIANA in hurricane stage at 1300 EST on September 10th.

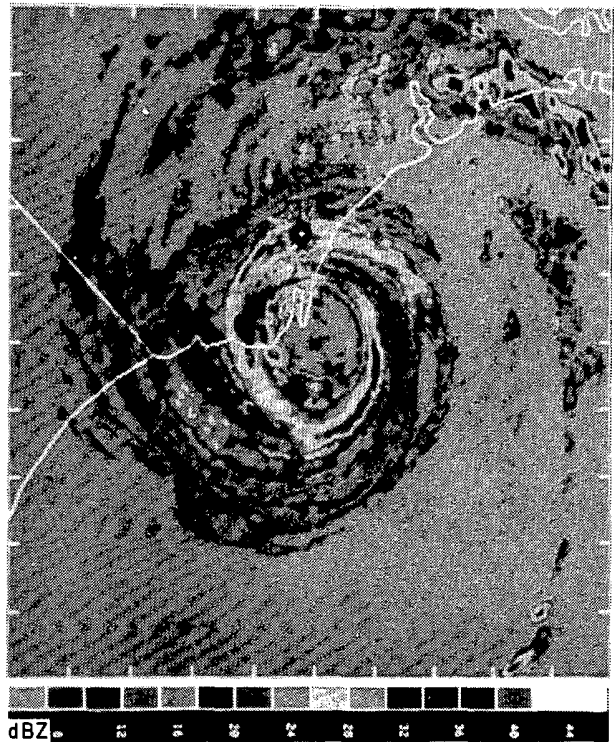
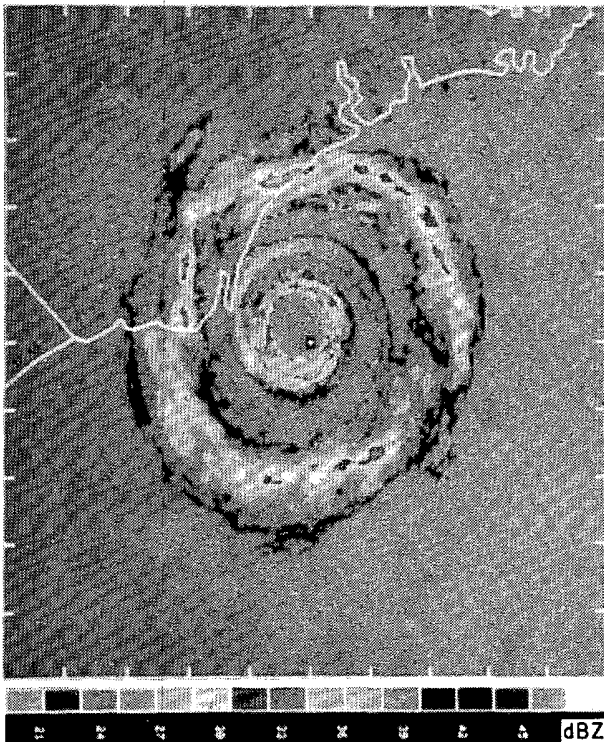
Below and on the following page, corresponding satellite and NWS Wilmington radar photos show DIANA as it grazed the coast of the Carolinas on September 11th and 12th.



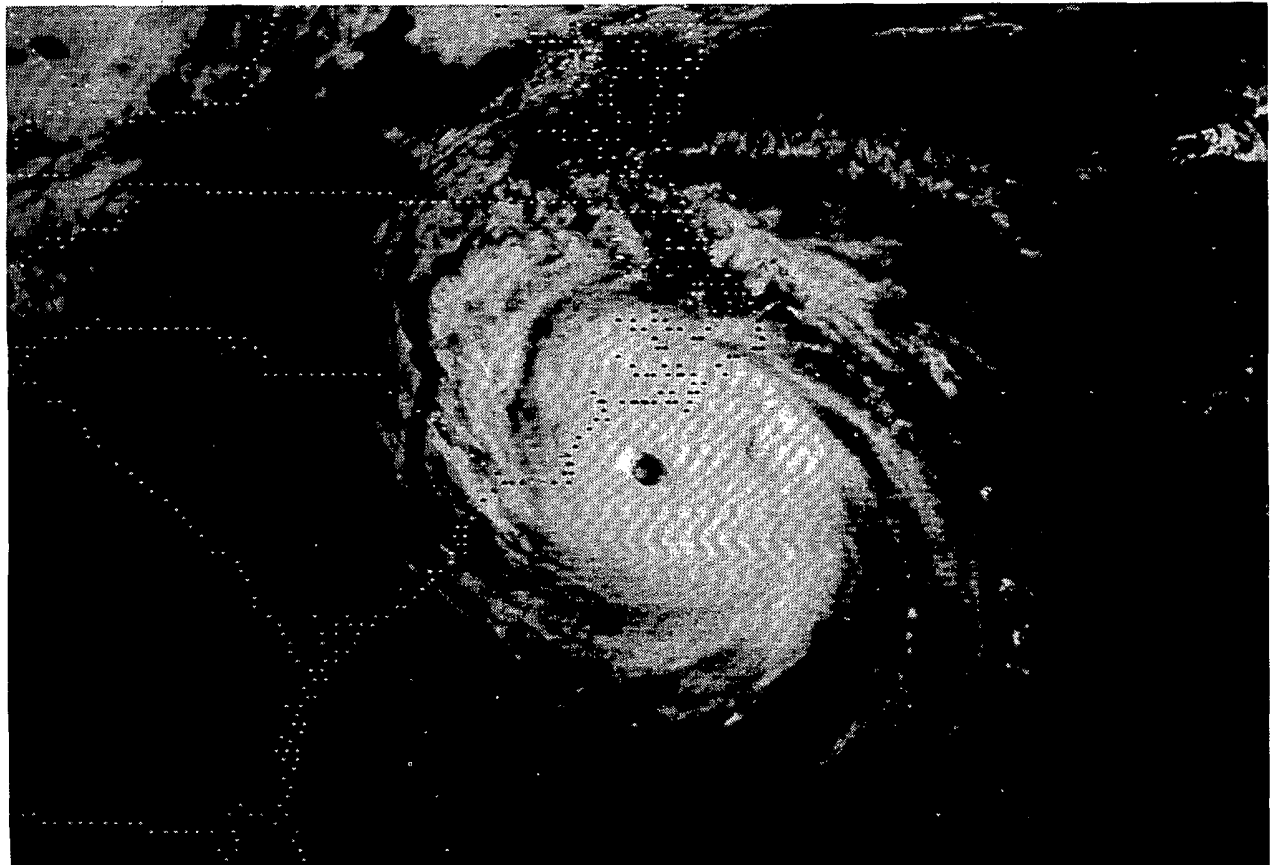
HURRICANE DIANA ----continued



HURRICANE DIANA ----continued

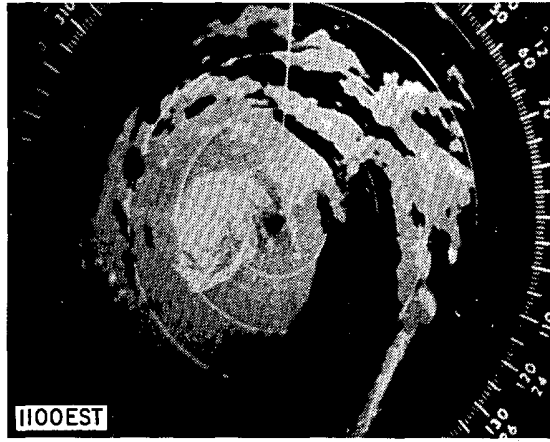
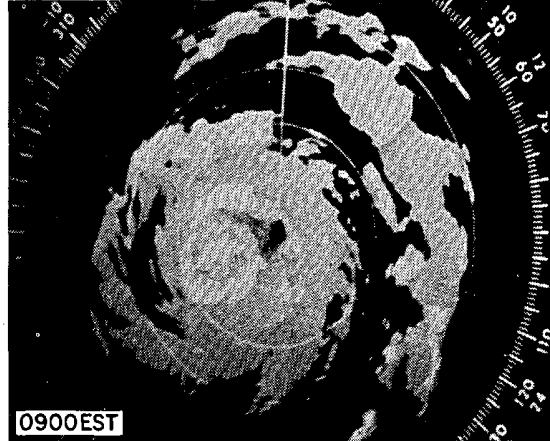
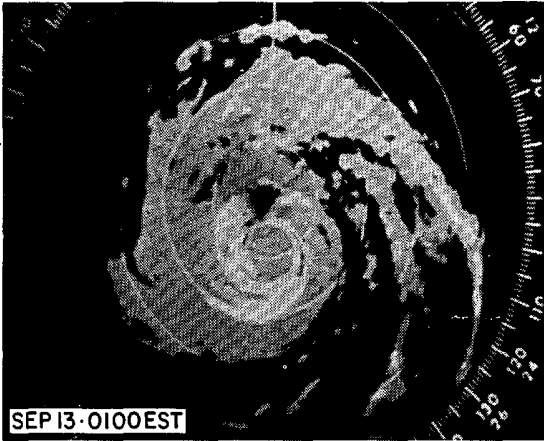
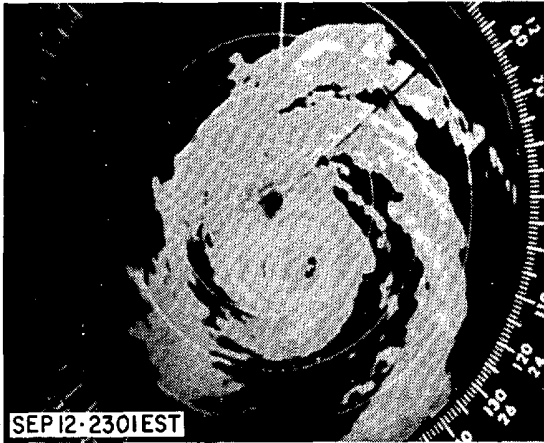


Two computer-produced photos of DIANA on 240 x 240 km grids, one (left) from the lower fuselage radar of the NOAA/WP-3D aircraft at 1500 meters altitude during a storm monitoring flythrough at 1853 EST on September 11th, and the other (right) from a land-based system linked to the NWS/WSR-57 radar at Wilmington at 0043 EST on September 13th. ---Both photos from the AOML/Hurricane Research Division, Miami, Florida.



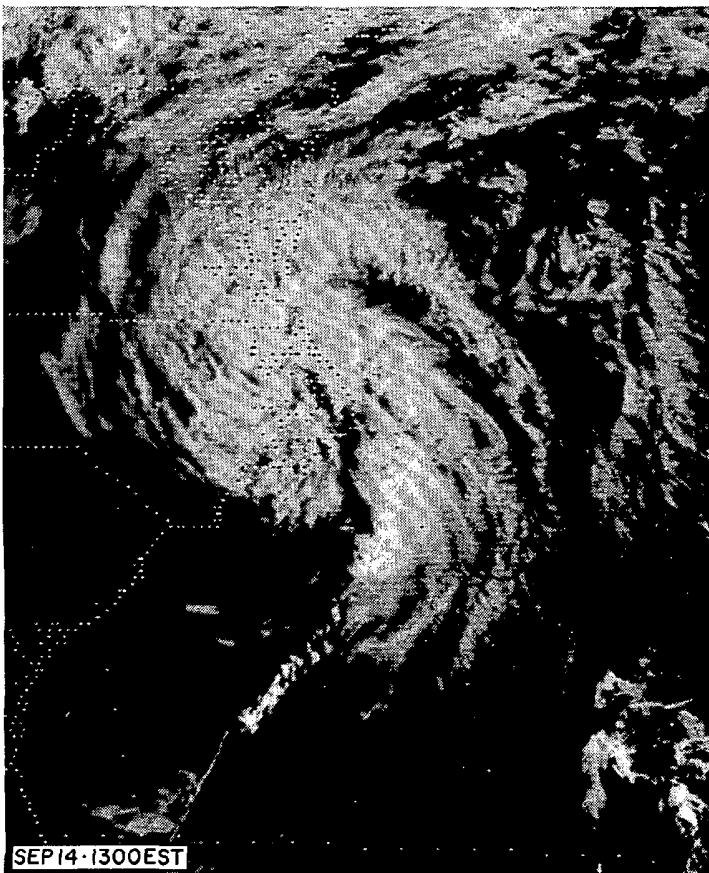
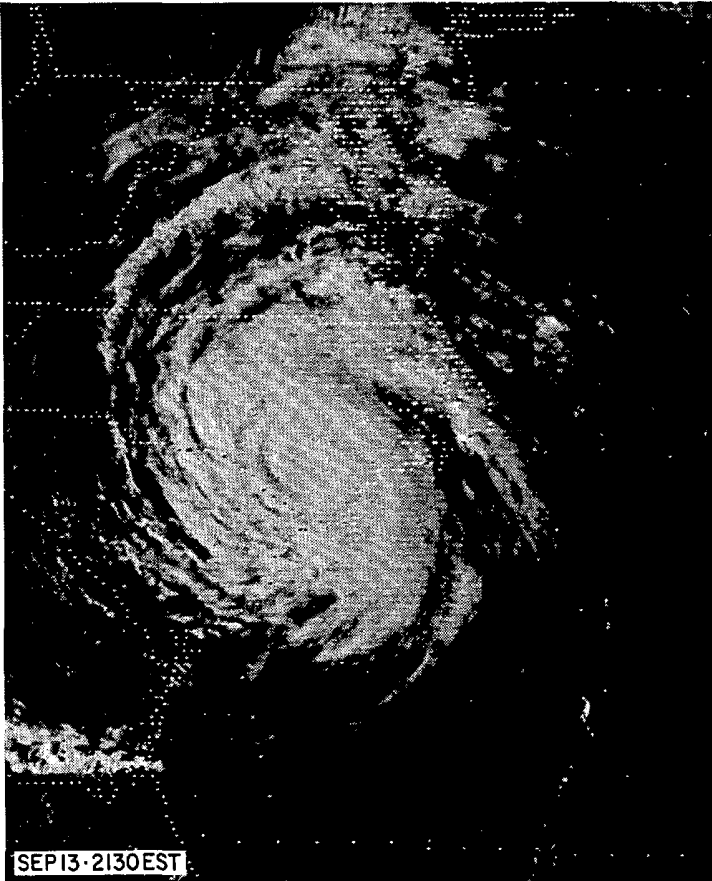
A GOES East satellite, visible image of DIANA at 0830 EST on September 12th, showing the well-defined eye and beautifully spiraling structure of the storm prior to land-fall. ---Photo from the National Hurricane Center.

HURRICANE DIANA ----continued



A sequence of NWS Wilmington radar photos at 2-hour intervals reveals changes in DIANA's configuration during landfall in southeastern North Carolina on September 13th. The circulation center moved ashore shortly after 0100 EST.

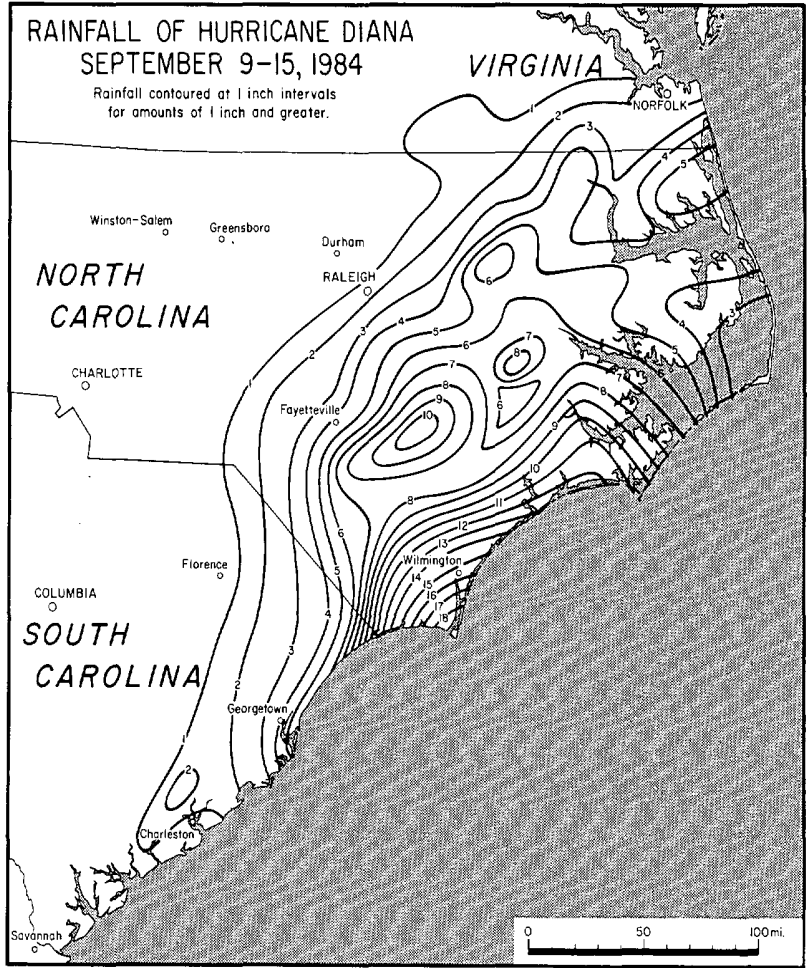
HURRICANE DIANA ----continued



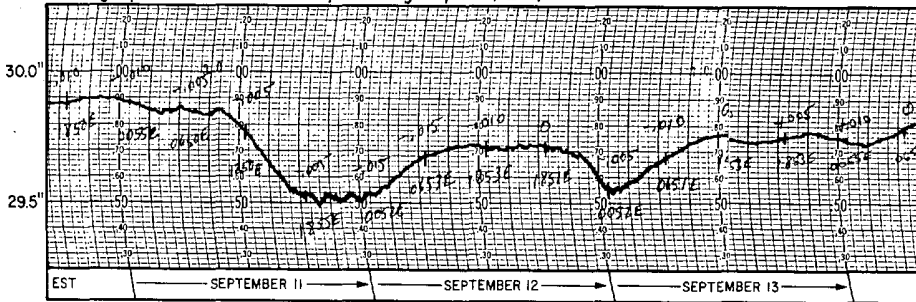
Corresponding satellite and NWS radar (Wilmington, top right; Cape Hatteras, bottom right) photos show a weakened DIANA in North Carolina, before it returned to the Atlantic and reintensified.

HURRICANE DIANA ----continued

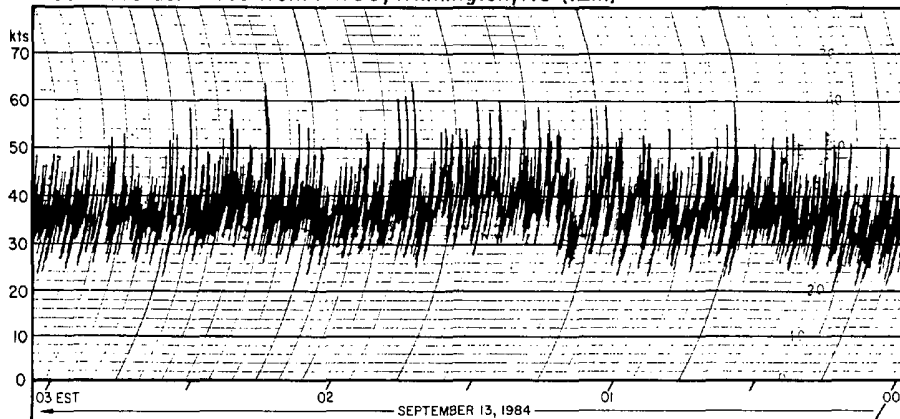
Mapped at right, DIANA's storm-total rainfall was heavy in eastern North Carolina, especially in the Wilmington area which was under DIANA's influence for an extensive period of time due to the storm's slow and looping course. The Cape Fear area was hardest hit with over 18 inches of rain, while the official NWSO total at New Hanover County Airport north of Wilmington was 13.72 inches. The NWSO set a new rainfall record for September 11th when 6.92 inches of rain fell on that day. Within Wilmington, unofficial storm totals were in the area of 15.5 inches. ---Mapped by the University of Chicago; data from cooperative observer reports supplied by the National Climatic Data Center



Barograph Trace from NWSO, Wilmington, NC (ILM)



Gust Recorder Trace from NWSO, Wilmington, NC (ILM)



A double dip was recorded in the barograph trace at the Wilmington NWSO during DIANA's passage. The first, with a minimum sea-level pressure of 29.525 inches (999.83mb) at 1950 EST on September 11th, occurred as DIANA brushed by the coast and turned east. The second dip, with a minimum of 29.565 inches (1001.19mb) at 0500 EST on the 13th, occurred during landfall after DIANA had weakened. It was during the second dip in pressure (landfall) that the highest winds occurred at Wilmington. Two peak, easterly gusts of 64 kts (74mph) were recorded at 0155 and 0226 EST on the 13th. ---Barograph and gust recorder traces supplied by NCDC.

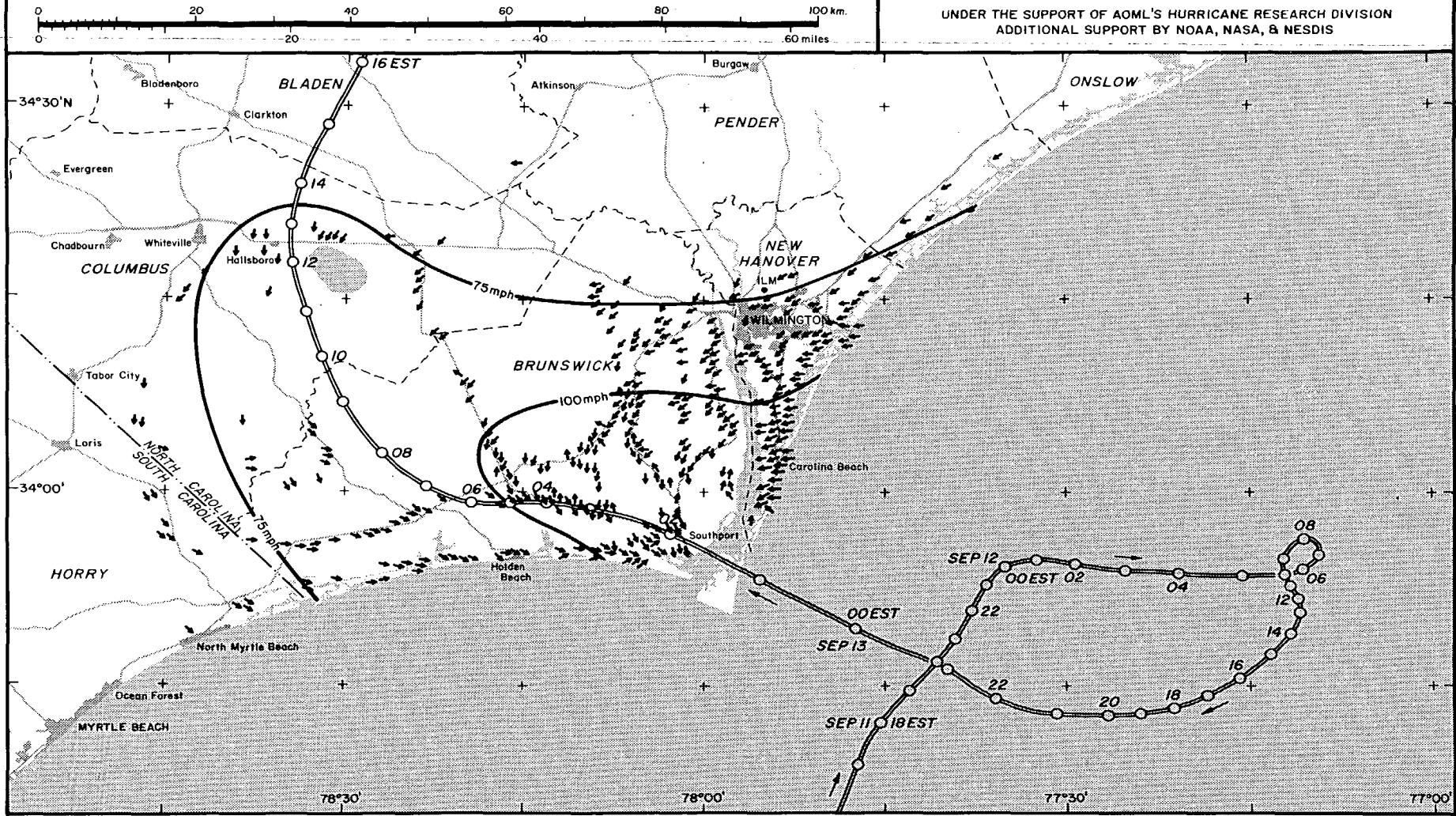
Damage Map of Hurricane DIANA

SEPTEMBER 11-13, 1984

← FO (40-72mph) LIGHT DAMAGE
 ← FI (73-112mph) MODERATE DAMAGE

MAPPED BY D. J. STIEGLER, THE UNIVERSITY OF CHICAGO
 FROM AERIAL & GROUND SURVEYS CONDUCTED SEPTEMBER 18-19, 1984
 UNDER THE SUPPORT OF AOML'S HURRICANE RESEARCH DIVISION
 ADDITIONAL SUPPORT BY NOAA, NASA, & NESDIS

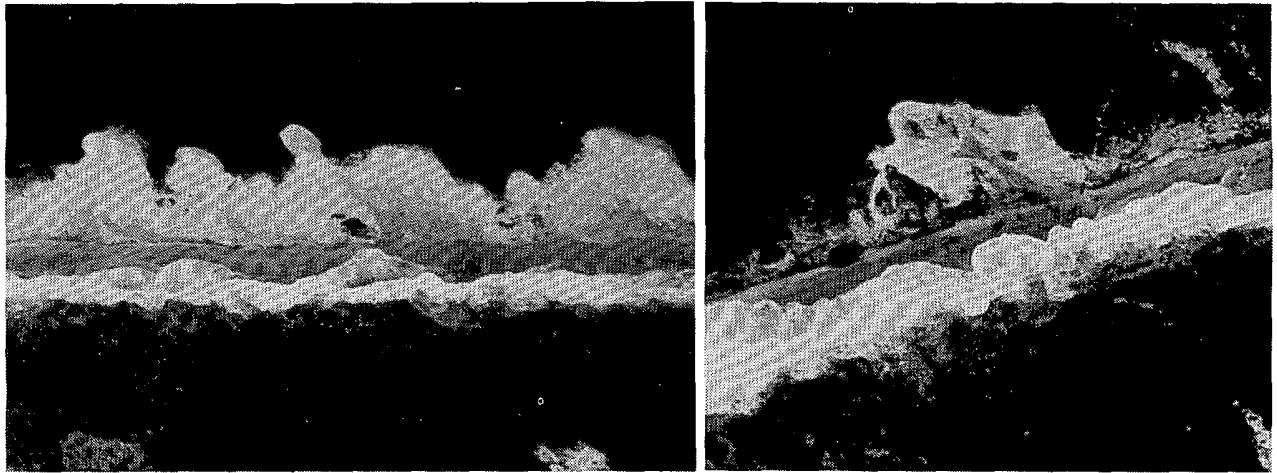
HURRICANE DIANA ---- continued



This map can be obtained by sending postage to: Atlantic Oceanographic and Meteorological Laboratory, Hurricane Research Division, 4301 Rickenbacker Causeway, Miami, Florida 33149

Map of the landfall area with arrows indicating the location of surveyed damage and the implied direction and force of the responsible wind. The overall windspeed analysis is of estimated peak gusts, based on damage and instrumented observations. The path and hourly positions of DIANA's center were determined from NWS Wilmington radar microfilm. ---Mapped by the University of Chicago.

HURRICANE DIANA ----continued

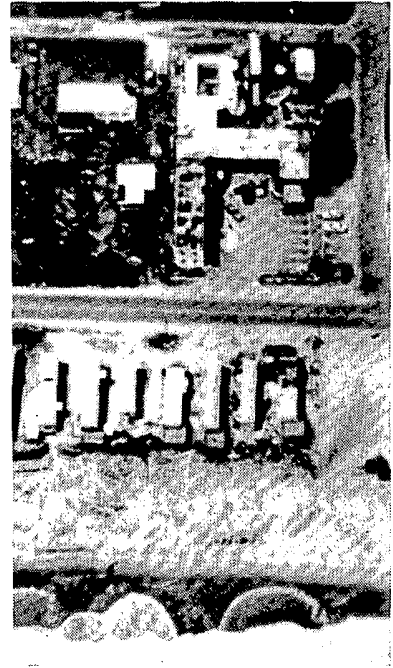
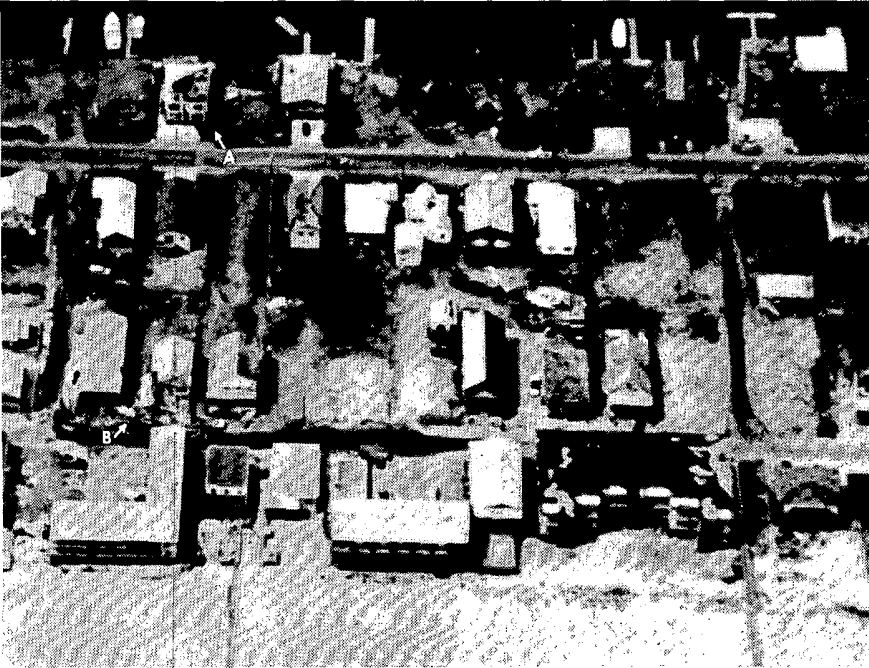


Examples of beach erosion and berm overwash produced by the high tides, about 5 feet above normal, between Wrightsville Beach and Carolina Beach.



Damage to beach homes and motels in northern Carolina Beach (looking east). Most of the structures received minor roof damage and some water damage. Wind and overwash sent eroded beach sand into homes and streets of the area. The black arrow indicates the view of the photo below, showing a collapsed building that was under construction.





Structural damage near central Carolina Beach (looking east). The buildings indicated by white arrows are also shown below.

A partially unroofed motel in Wilmington Beach, just south of Carolina Beach.



Stagnation pressure, which built up within the portico of this structure in the face of Diana's easterly winds, forced a hole through the overhang, causing a large portion of the roof to be pelted off.



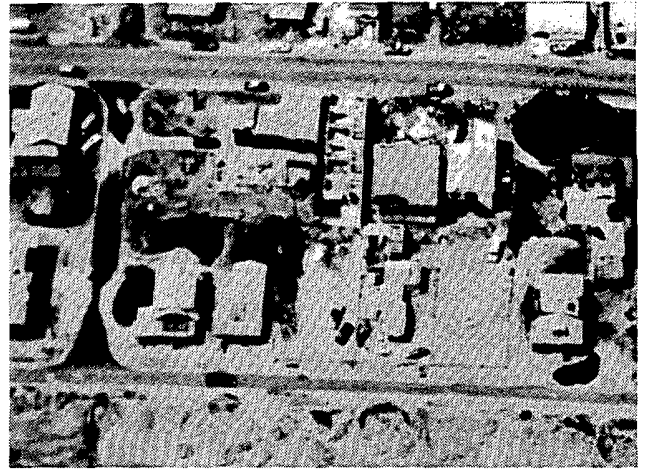
A collapsed porch roof amid debris that was cleared from the street

A man tends the damaged roof of a home in Carolina Beach.

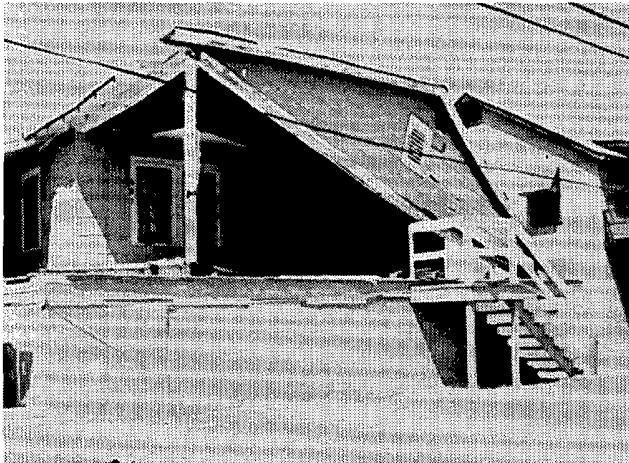
HURRICANE DIANA ----continued



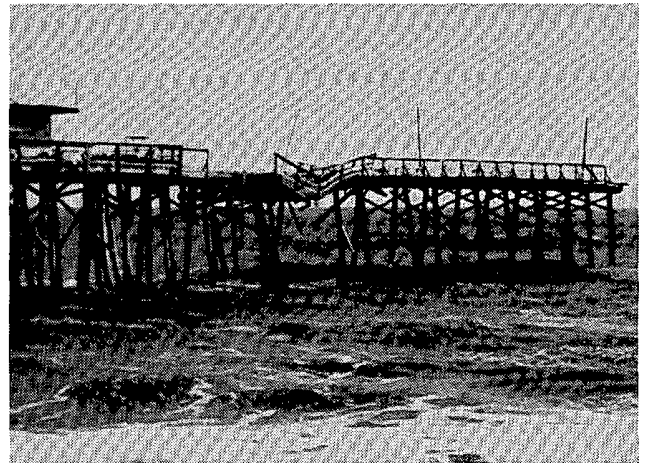
A partially unroofed home and damaged mobile homes in Wilmington Beach.



An unroofed motel in Kure Beach. Diana's center passed within 5 miles to the south of this location.



A roof, although intact, leans off its supporting structure in Carolina Beach after the winds had dislodged it from a front porch column.



A portion of deck of a fishing pier in Carolina Beach sags after supports gave way to heavy seas produced by Diana.

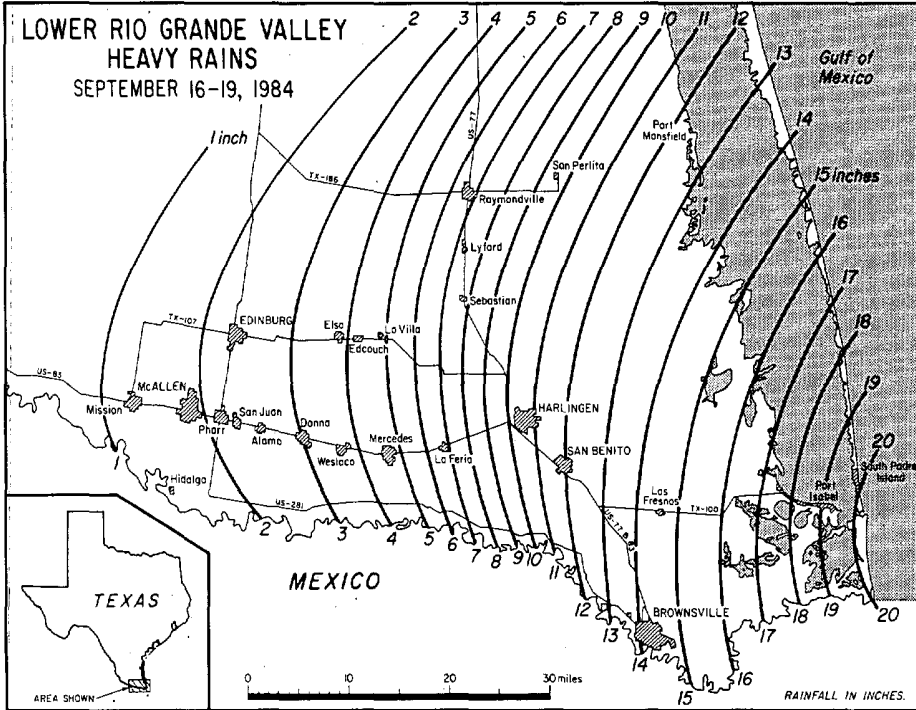


A large billboard sign that was blown down onto parked cars on the south side of downtown Wilmington.

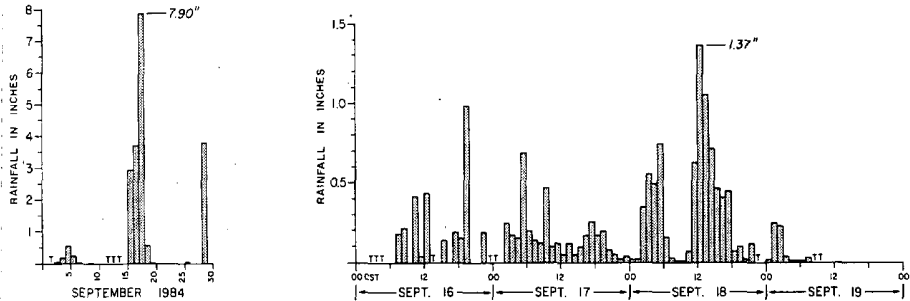
---All photos on pages 17-19 by Duane Stiegler, University of Chicago, from aerial and ground surveys conducted September 18-19, 1984.

2. HEAVY RAIN and FLOODING in SOUTHERN TEXAS on September 16-19, 1984

Heavy rains, with some amounts in excess of 20 inches, drenched the lower Rio Grande Valley of extreme southern Texas from September 16th to the 19th, resulting in the worst flooding in that area since Hurricane Beulah in 1967. The rains emanated from the remains of T.S. EDOUARD (see pages 5 and 6) which persisted as a tropical disturbance in the Gulf of Mexico throughout the period. ---Rainfall data from NCDC.



PRECIPITATION AT BROWNSVILLE, TEXAS INTERNATIONAL AIRPORT



Daily (left) and hourly (right) rainfall totals for Brownsville. ---Data from NCDC.

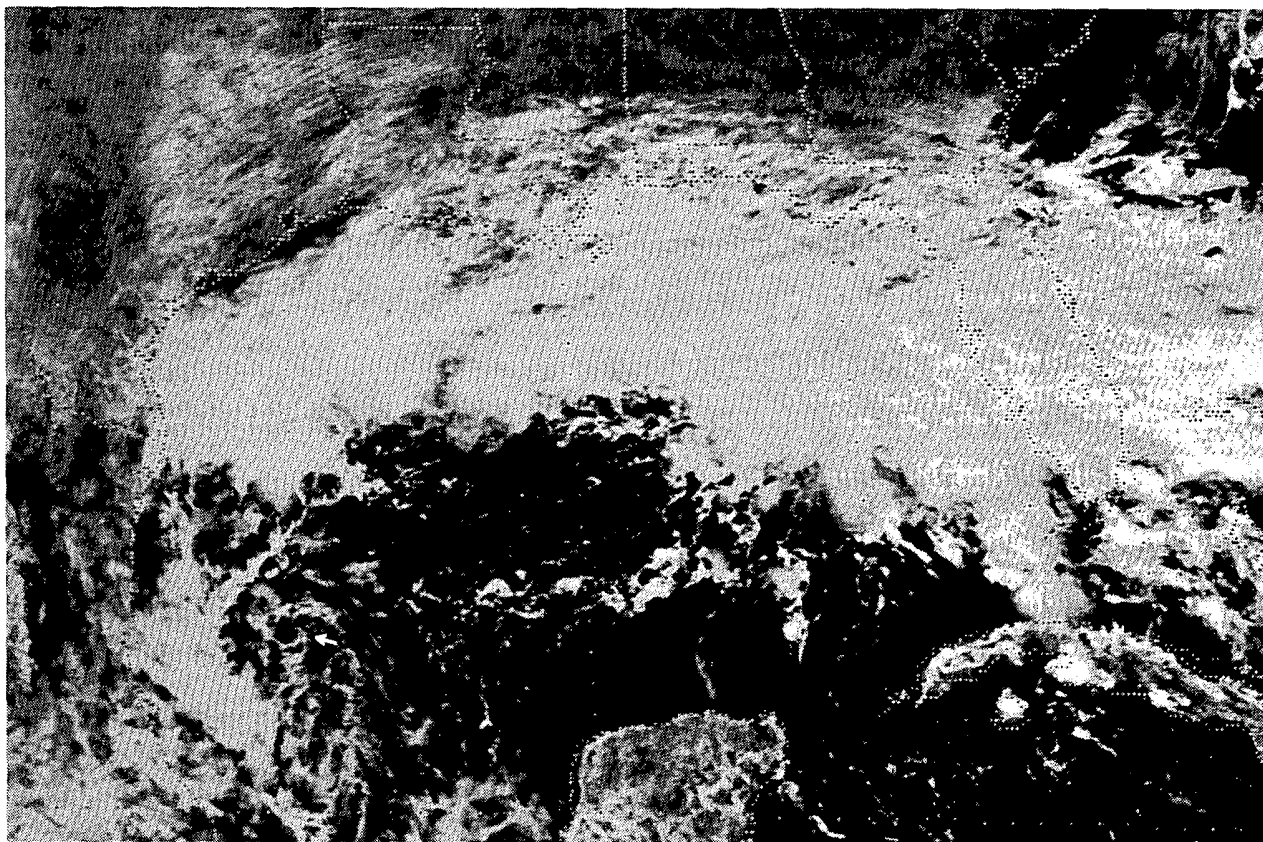
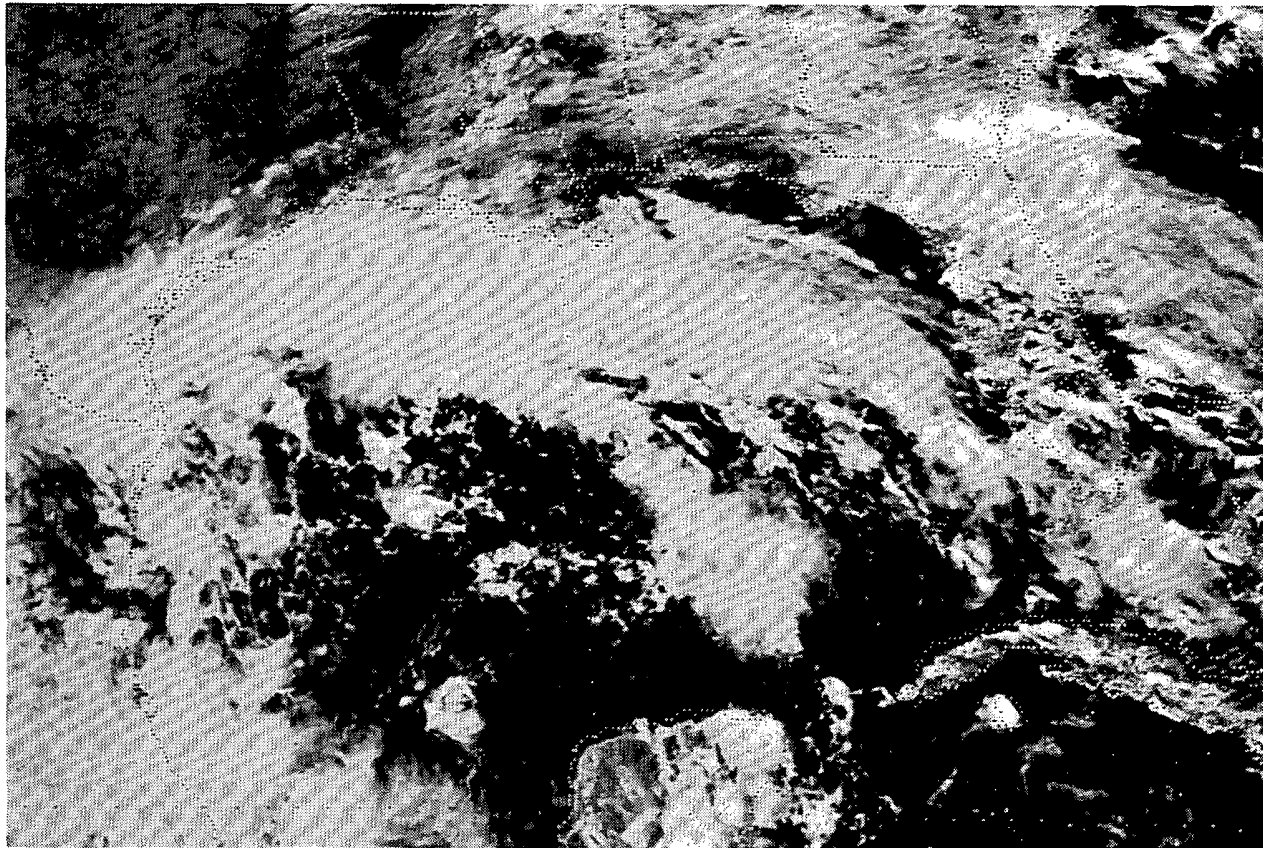


A surveyor for the American National Red Cross inspects flood damage in Brownsville. ---Photo by Erich Schlegel, The Brownsville Herald.



Nearly submerged cars in Brownsville's Lincoln Park. ---Photo by Brad Doherty, The Brownsville Herald.

HEAVY RAIN and FLOODING in SOUTHERN TEXAS ----continued



Two GOES East satellite, visible images of the tropical disturbance over the Gulf of Mexico at 1230 CST on September 18th (top), the time of heaviest hourly rainfall at Brownsville, and at 1200 CST on September 19th (bottom), when rains had finally subsided in the Brownsville area. Note the circulation center of the system (white arrow) in the bottom photo. ---Both photos from NESDIS.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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

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

1 ALABAMA

Helena, Shelby County	11	1700CST	0	0	4	0	0	0	0	0	Wind
<p>One small house was reported to have been demolished by a falling tree as thunderstorm winds downed trees in the area. Other damage included the top blown off a silo.</p>											
Gulf Shores, Baldwin County	14	0810CST									Funnel Cloud
<p>Police reported a funnel cloud over the Gulf just south of the beach.</p>											
Opp, Covington County	15	1510CST									Lightning
<p>One person was slightly injured by a lightning strike. The lightning struck a tree behind the person and then struck the victim who was standing on a saw horse and wearing rubber sole shoes. The victim spent the weekend in the hospital for observation. He reported that every hair on his body was singed and that he was sore and stiff in almost every joint of his body.</p>											
Opp, Covington County	15	1515CST	2	100	0	0	4	0	0	0	Tornado (F1)
<p>An apparent small tornado first touched down in the SW part of Opp and followed an intermittent path NE to near U.S. 331. Damage was mainly to trees, utility lines and outbuildings although some homes were damaged by falling trees. About 2 1/2 inches of rain fell in a 45 minute period during the storm.</p>											

2 ARIZONA

Tucson, Pima County	01	1600MST	0	0	0	0	0	0	0	0	Flash Flooding, Hail
<p>During a thunderstorm, rains of 1 to 2 inches caused considerable street flooding especially in the eastern and northern sections. Hail, some up to 3/4 inch in diameter, fell in scattered areas.</p>											
Greater Phoenix Area, Maricopa County	01	2130-2300MST									Flash Flooding, Lightning, Wind
<p>Violent thunderstorms with damaging winds and lightning strikes together with very heavy rain and flash flooding moved across the area from north to south. Sections of major streets and highways and some houses and commercial buildings were flooded as 1 to 2 inches of rain fell in about an hour. Three houses and a high school were hit by lightning, but with only minor damage. There was wind damage to roofs, trees and signs. An older couple had to be rescued when their car was caught by rising water and swept three blocks down a drainage canal. A pilot received minor injuries and his single-engine plane destroyed when a strong gust of wind flipped the plane upside-down while landing.</p>											
Greater Phoenix Area, Maricopa County	10	1630-1830MST									Flash Flooding, Lightning, Wind
<p>Thunderstorms, spawned by moist air brought into the area by tropical storm, Marie, produced extremely heavy rain of up to 2 inches in an hour. The blinding rain and flash flooding of one to three feet brought rush-hour traffic to a crawl in many sections. A double-tanker truck carrying 8600 gallons of gasoline overturned in a four vehicle accident and caught fire, killing one driver and closing I-17 for over 12 hours. Heavy rain and wind collapsed a long 15 ft. wide canopy in front of seven stores, injuring two people. Many homes and some commercial buildings were flooded with over a foot of water. Lightning strikes caused power outages over the area.</p>											
Tucson, Pima County	21	1745MST									Lightning
<p>A bolt of lightning during a severe thunderstorm killed one man and injured two others. A fourth member of the group, a woman, was critically injured and died 10 days later. All four were huddled beneath a tree in a city park when the bolt hit the tree 6 to 7 feet above the ground.</p>											

3 ARKANSAS

Lonoke County	05	1930CST	0	0	4	-	-	-	-	-	Wind
<p>Strong winds blew throughout Cabot as a thunderstorm moved through the city. Trees, tree limbs, and utility poles were blown down. One home had roof damage and a carport was knocked down at another house. Cable television service was also interrupted.</p>											
Jefferson County	14	Unknown									Lightning
<p>Lightning struck a television antenna on a Pine Bluff home. A small fire caused roof damage. The television set was also damaged.</p>											

ARKANSAS

Faulkner County	14	about 1830CST	0	0	?	-	-	-	-	-	Flash Flooding
<p>Urban flooding in Vilonia resulted from a 30-minute downpour of 0.90 inch of rain. The main area flooded was the high school parking lot. Water came up to door level on the vehicles that were parked for the football game. The parking lot was full, but no estimate of damages was made.</p>											
White County	14	1830CST									Wind
<p>Strong gusts from nearby thunderstorms blew down trees, tree limbs, fences, antennas, and unroofed a barn in Beebe.</p>											
Benton County	15	0100CST									Wind
<p>Thunderstorm gusts blew down the roof of the old Pea Ridge Gymnasium in Pea Ridge. The 55 year old structure was in such weak condition that the remaining walls were torn down to prevent further collapse.</p>											
Clay County	23	0500CST									Lightning
<p>Lightning struck a home in Corning, without starting a fire. However, damage was done to their 50-foot outside antenna, the CB radio, the dishwasher, television set, water heater, and to the glass in some of the windows.</p>											
Jefferson County	23	0700-0830CST									Flash Flooding
<p>Heavy rains fell over the central portions of the county around White Hall, Dollarway, and Pine Bluff. Unofficial rain reports stated that up to eight inches of rain fell at Watson Chapel. The official rainfall report was only 4.10 inches; however, the rain fell between 6:30 and 9:00 a.m. CST. Flash flooding occurred between 7 and 8:30 a.m. CST. Sixty different areas of street flooding were confirmed. Forty persons had to be rescued by boat. Twenty two homes had major damage. Six homes had minor damage. Forty one apartments, ten businesses, and three schools were flooded. In White Hall, two bridges were washed away. The Pine Bluff City Hall Complex received extensive, major damage. Both the Police and Fire Department Headquarters were flooded, with up to four feet of water inside the jail. Communications systems for both departments were damaged. The Art Center Auditorium had water up to seven feet deep. The area around Hestand Stadium also flooded, delaying by one day the official opening of the Southeast Arkansas Livestock Show. Countless vehicles were flooded! Civil Defense, the Salvation Army, and the Red Cross set up a shelter for those flooded out of their homes. Fortunately, a flash flood warning was issued for the area at 6:33 a.m. CST, and there were no injuries or fatalities.</p>											
Carroll County	25	Unknown									Lightning
<p>Lightning struck a Berryville home. It damaged the telephone and electrical wiring, besides opening a hole on the roof and scattering debris inside the house. No one was home at the time of the strike and no fire resulted.</p>											

4 CALIFORNIA, Northern

Lake Isabella, Kern County	19	1800PST	-	-	5	4	-	-	-	-	Flash Flood
<p>Heavy rain of over 1 inch in 45 minutes washed out 1/4 mile of Walker Road. Flooding also destroyed 2 mobile homes. Mud covered some roads.</p>											

4 CALIFORNIA, Southern — NONE REPORTED

5 COLORADO

Garfield County	1	0930MST	0	0	4	?	-	-	-	-	Hail
<p>Golfball size hail fell near Glenwood Springs: 21 windows were broken, and many cars sustained minor damage. There was some crop damage nearby. Hail piled up 3 to 4 inches deep in some places.</p>											
La Plata County	1	aftn.									Heavy Rain
<p>Heavy rain caused mudslides just north of Durango. Mud flowed into a barn, causing \$10,000 damage to electronic equipment. Roads were blocked, and several homes and businesses were flooded.</p>											
Morgan County	21	1500MST	0.1	15	0	0	3	0	0	0	Tornado (F1)
<p>A tornado touched down briefly near Fort Morgan. It ripped up a hog shed and a chicken coop, and damaged a fence and two pickup trucks. FPP100</p>											

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1964

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	

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	

COLORADO										
Northern Colorado	24-25				0	0	0	0	0	Snow An early snowstorm hit parts of northern Colorado. 8 inches fell on the ski slopes above Vail. Wind whipped the snow into 5 foot drifts on Trail Ridge Road in Rocky Mountain National Park. 5 inches of snow fell at Wellington in Larimer County. 2 inches dusted Fort Collins, Craig in northwestern Colorado, and the Denver suburb of Littleton. There were power outages in Craig and Fort Collins, caused by snow laden tree limbs falling on power lines.
Northeast Colorado	27-28				0	0	5	0	0	Snow Snow fell over most of northeastern Colorado and the adjacent foothills. Amounts ranged from 2 to 5 inches on the plains, but up to a foot fell at higher elevations on the east slopes of the Rockies. The main problems caused by the storm were thousands of power outages, caused when snow laden tree limbs snapped and fell onto power lines. Over 15,000 homes lost power in the Denver Metropolitan Area. There were also some cars damaged by falling trees and limbs. The snow caused some delays in flights at Denver's Stapleton Airport.
6 CONNECTICUT										
Plymouth	03	0300EST			0	0	0	0	0	Thunderstorm Downburst Wind A small area of trees in woodlands near Fall Mountain Lake was effected by what was likely downburst winds accompanying a brief, early morning thunderstorm. Several trees were uprooted and others had their tops sheared off. No property damage to buildings was reported.
Southwest Corner	03				0	0	3	0	0	Thunderstorm Winds, Lightning, Heavy Rain About 1700 electric customers lost power in New Caanan for up to several hours after a late afternoon thunderstorm. A number of large trees and tree limbs were knocked down. Another 1600 customers lost power in Stamford, Westport, Wilton, and Weston.
7 DELAWARE										
NONE REPORTED										
8 FLORIDA										
Marco, Collier Co.	03	1400EST			0	0	3	-	0	Thunderstorm wind Six mobile homes were damaged by high wind. Most damage was to screened enclosures attached to the homes.
Port St. Lucie, St. Lucie Co.	05	1740EST	0.5	10	0	0	1	-	0	Tornado (F0) A tornado briefly touched down and damaged several trees.
Miami, Dade Co.	05	1430EST			0	4	0	-	0	Lightning Lightning hit a crane and injured four men loading containers on to a freighter. Only a light drizzle had started when the lightning occurred.
Cape Coral, Lee Co.	16	1400EST			0	0	3	0	0	Thunderstorm wind A large plate glass window was broken by high wind. A pool screen enclosure was destroyed by high wind.
9 GEORGIA										
Emanuel County	15	1725EST			0	0	2	0	0	Wind Thunderstorm winds downed a few trees in the northeast part of Swainsboro.
Glynn County	28	1300-1330EST	1.0	35	0	0	5	0	0	Tornado (F1) Tropical Storm Isidore spawned a tornado as it moved close to the Georgia coast. The tornado touched down on the north side of Brunswick where it damaged the roof of a metal building at a steel plant, damaged 10 cars and the roof of a garage at an automobile dealership, and destroyed a metal hut at the National Guard Armory. The tornado downed several trees and caused some power outages. Tropical Storm Isidore also caused some beach erosion along the Georgia coast.
Liberty County	28	1635EST			0	0	3	0	0	Wind Thunderstorm winds downed at least one large tree in Hinesville and caused some power outages.

10 IDAHO										
NONE REPORTED										
11 ILLINOIS										
Hancock, Adams, Morgan counties	10	1600-1705 CST			0	0	4	4	0	Thunderstorm winds As late afternoon thunderstorms moved across west central Illinois some strong winds and damage were noted with the storms. At about 5pm CDT, wind gusts were estimated at 60 miles an hour at Quincy. Shortly after 5pm, wind caused extensive crop and property damage in areas south of Bowen, along the Hancock-Adams county line. Two silos were brought down in rubble, grain bins and small barns were damaged and trees uprooted. An area about 1 1/2 miles south of Bowen and along a line from Augusta to West Point had serious damage to corn fields. At 605pm CDT, wind gusts greater than 55 miles an hour were reported in Jacksonville, Morgan county.
Belleville, St. Clair county	10	2050 CST								Thunderstorm wind Thunderstorm winds gusted to 55mph at Belleville about 950pm CDT.
nr Biggsville, Henderson county	24	2035 CST								Hail At 1135pm CDT, golf ball size hail fell about 12 miles southwest of Monmouth, near Biggsville.
12 INDIANA										
Knox, Starke County	02	1600EST			0	0	2	0	0	Thunderstorm Winds Some trees were blown down and a few windows were blown out by strong thunderstorm winds.
2N North Liberty, St. Joseph County	02	1630EST			0	4	4	0	0	Thunderstorm Winds 25 pop-up camper trailers were overturned at Potato Creek State Park. Four people received minor injuries.
Pine Village, Warren County	02	1645EST			0	0	0	0	0	Thunderstorm Winds Tree limbs were blown down by strong thunderstorm winds.
Flora, Clinton County	02	1720EST			0	0	2	0	0	Thunderstorm Winds A few trees were uprooted by strong thunderstorm winds.
Yeoman, Carroll County	02	1730EST			1	0	0	0	0	Lightning One fatality occurred from a lightning strike. The person was caught in the open when the storm approached.
Howard County	02	1810EST			0	0	3	0	0	Thunderstorm Winds Strong thunderstorm winds uprooted trees throughout the county. Over 100 of the trees were 14 inches in diameter.
Swayzee, Grant County	02	1905EST			0	0	2	0	0	Thunderstorm Winds Several trees were downed by strong thunderstorm winds. Several of the trees were 14 inches in diameter.
Indianapolis, Marion County	02	2000EST			0	0	2	0	0	Thunderstorm Winds Strong thunderstorm winds uprooted trees in the northwest section of the city near 6000 North Moller Street.
Indianapolis, Marion County	02	2011EST			0	0	2	0	0	Thunderstorm Winds Strong thunderstorm winds uprooted a large tree in the northern part of the city.
Zionsville, Boone County	02	2020EST			0	0	2	0	0	Thunderstorm Winds Strong thunderstorm winds uprooted trees which blocked some roads.
Auburn, DeKalb County	04	1547EST			0	3	4	0	0	Thunderstorm Winds Strong thunderstorm winds uprooted an old tree which fell on a late model car, injuring 3 people. The injuries were minor but the car was totalled. Also, numerous trees were downed on the northeast side of town.
Huntingburg, Dubois County	14	1330EST			0	0	0	0	0	Hail One inch diameter hail was reported near the Town of Huntingburg.
Ligonier, Noble County	25	1526EST			0	0	4	0	0	Thunderstorm Winds Strong thunderstorm winds downed numerous trees and power lines. Three vehicles were demolished when trees fell on them.
Avilla, Noble County	25	1545EST			0	0	2	0	0	Thunderstorm Winds Strong thunderstorm winds uprooted several large trees.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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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 DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

13 IOWA									
BREMER COUNTY	01	1630 CST			0	0	4	0	Thunderstorm with Winds and Hail
Strong winds in a thunderstorm leveled a cattle shed at one farm. At another a barn was blown down, damaging hay and killing several head of cattle. A third farm lost a garage; at yet another farm a grain elevator was blown over and trees were felled. A one-inch rain accompanied the hail.									
PAGE COUNTY	01	2220-2250 CST			0	0	3	0	Thunderstorm Winds
Thunderstorm winds caused numerous tree limbs to fall in Clarinda. Extensive damage occurred to the body of an automobile.									
SHELBY COUNTY	02	0030 CST			0	0	4	0	Lightning
A bolt of lightning struck a power substation in Harlan. A fire started, and more than \$15,000 damage ensued. A power outage in town lasted more than 4 hours.									
SOUTHEAST and EAST CENTRAL IOWA	04	Evening			0	0	4	0	Thunderstorm Winds
Winds gusted up to 60 MPH at Pella and 3/4-inch hail was reported in Earlville as thunderstorms rumbled through.									
STATEWIDE	07	All Day			0	0	4	0	Strong Winds
Strong and gusty southerly winds blew all day and made for perilous boating on Iowa lakes and the loss of tree limbs and small trees. The worst damage was at Eagle Grove in Wright County - a building frame with siding on the north and west sides was toppled. It was about a \$1,000 loss for the materials alone (1110 CST).									
POLK COUNTY	09	1614-1615 CST	2	50	0	0	4	3	Tornado (F1)
A tornado touched down and caused damage in and near Polk City. A garage was leveled, and part of a roof was lifted off one house. Another house had some roof and chimney damage, and numerous trees and power lines were felled. Some parts of the town remained without power for six hours.									
POLK, JASPER, MARION and MAHASKA COUNTIES	09	1625-1900 CST			0	0	4	5	Thunderstorm with Winds and Hail
The thunderstorm that had produced a tornado at Polk City continued to wreak havoc in Central Iowa. Trees and power lines came down and windows in homes were broken by hail. One farmer lost 90-100 percent of his soybean crop in a 10-minute hailstorm.									
SOUTHERN IOWA	10	1206-1230 CST			0	0	3	4	Thunderstorm with Hail
One to two-inch size hail fell in Ringgold and Decatur Counties in a thunderstorm.									
LEE COUNTY	10	1515 CST			0	0	4	0	Thunderstorm Winds
Strong winds in a thunderstorm destroyed a projection screen at a drive-in theater in Keokuk. Winds were clocked at 60 MPH in the storm.									
EAST CENTRAL and SOUTHEAST IOWA	24	1700-2100 CST			0	0	3	4	Thunderstorm Winds and Hail
Thunderstorms quickly developed in the late afternoon along a pronounced cold front. Hail the size of golf balls was observed 3 miles west of Vinton in Benton County (1702 CST) and baseball sized hail fell 3 miles north of Vinton (1718 CST). Three-quarter inch hail was reported at Rowley in Buchanan County (1735 CST). Strong winds at the Ottumwa Airport in Wapello County gusted to 58 MPH (1844 CST). One-inch hail fell near Fairfield in Jefferson County at 2047 CST. Because of the maturity of the crop, there was relatively little damage to the corn and soy beans.									
STATEWIDE	26	Morning			0	0	0	7	Freeze
Below freezing temperatures were recorded over almost the entire state. Lows of 24 degrees were observed at Atlantic and Spencer, and 9 stations tied or broke minimum temperature records for the day. Most of the crop damage was to soybeans in Western Iowa, which were planted late or replanted due to flooding in late Spring. Although a frost had already occurred on the 16th, it was this freeze that really caused significant agricultural losses.									

14 KANSAS									
Sherman County	01	1730CST			0	0	0	6	Hail, Wind
A strong thunderstorm with hail and high winds caused heavy crop damage in a strip 4 miles wide and 18 miles long.									
South Central Kansas	06-07	Morning-Evening			0	0	6	7	Wind
Winds gusted to near 50 miles an hour over south central Kansas on the 6th and to more than 55 on the 7th. Vegetation was extremely dry and fires that started were fanned by the strong winds. Firefighters found it difficult to contain the fires and more than 50,000 acres burned in 10 south central Kansas counties. More than 40,000 acres and the bulk of the damage occurred in Butler County.									

KANSAS									
Brown and Doniphan Counties	10	0300-0430CST			0	0	5	5	Hail
A thunderstorm dropped hail the size of golfballs in a path 1-2 miles wide from Reserve in northern Brown County to northeast of Doniphan in southeast Doniphan County. The worst damage occurred around Bendena and northeast of Doniphan. Windows were broken and roofs and vehicles damaged. Trees and crops were stripped as well.									
SPECIAL HAIL SUMMARY									
Kansas-Oklahoma Hail Loss Service reports indicate hail was especially damaging to crops on the following dates in the listed counties.									
10 Brown, Doniphan									
15 KENTUCKY									
Monticello, Wayne County	03	UNK			0	0	3	0	Lightning
Lightning struck a mobile home resulting in a fire that caused considerable damage.									
Western, North-Central and Northeast Kentucky	14	Late Aftn and Early Eve							Severe Thunderstorms
Severe thunderstorms formed over southern Indiana between Evansville and Louisville during the early afternoon. The storms developed further as they moved southeast into Kentucky forming a line that reached nearly across the entire state from west to east. The storms finally weakened around sunset but not before reaching into the southern part of the state.									
Crop damage was extensive. Hardest hit were tobacco and corn fields. Power outages were widespread. Numerous houses, mobile homes, farms and businesses were damaged either partially or totally. Hail fell in many areas ranging from pea to golf ball size. Reports of wind were estimated at 60 MPH or higher. A gust of 69 MPH was measured at Madisonville in Hopkins County. Hundreds of trees were uprooted. Many over three feet in diameter. Miraculously, there were no serious injuries or deaths from this late summer outbreak of storms.									
Franklin County	14	1530EST	0.1	20-40	0	0	4	0	Tornado (F0)
A mini tornado damaged houses and buildings as well as knocking down several trees in Frankfort.									
Fleming County	14	1530EST	2.0	30-50	0	0	5	4	Tornado (F1)
A small tornado destroyed five trailers and several barns in Ewing. Windows were blown out and trees fell on several cars and trucks.									
Fayette and Jessamine Counties	14	1610EST			0	0	0	0	Funnel Cloud
A funnel cloud was sighted 10 miles south of Lexington on the Fayette and Jessamine County Line.									

16 LOUISIANA									
Vermillion Parish	04	1530CST							Funnel Cloud
A funnel cloud was observed and photographed just east of Kaplan.									
St. Mary Parish	12	1805CST	?	?			4		Tornado (F1)
A tornado touched down briefly at the Country Club in Berwick. Several buildings sustained considerable damage.									
Calcasieu Parish	14	1600CST					3	4	SVR TSTM
A severe thunderstorm struck Lake Charles, causing tree and roof damage. A plate glass window blew in at a store, injuring 3 persons.									
Cameron Parish	21	1305CST	?	?			5		Tornado (F1)
A tornado touched down at Johnson's Bayou destroying two mobile homes. No injuries reported.									
Calcasieu Parish	21	1400CST					4		SVR TSTM
A severe thunderstorm struck Lake Charles. Wind damage was reported at the Lake Charles Airport and at a private club.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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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 DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	

LOUISIANA

Coastal Parishes of Louisiana | 21-22 | | | | 5 | Coastal Storm

A strong low pressure system over the northern Gulf along with a strong ridge of high pressure over Louisiana produced a situation that caused strong winds in the Coastal Waters of Louisiana. Sustained winds of 40-45 mph with gusts to 60 mph were recorded at numerous oil rigs off the Louisiana Coast during the two day period. Tides of 2 to 4 feet above normal caused minor lowland flooding in the coastal parishes of the state. Several major roads were closed due to high water and a few dwellings received water damage.

17 MAINE

Rumford-Oxford-Turner-Farmington, Oxford, Androscoggin, & Franklin Counties | 20 | | | 0 | 0 | 4 | 0 | Thunderstorms

A cold front that swept through Maine late Thursday afternoon generated a few strong thunderstorms. These thunderstorms were accompanied by lightning and high winds. Gusts to 46 mph were reported by the Rumford cooperative weather observer. The lightning and winds downed numerous trees, which blocked roads, and knocked out power lines. Hardest hit was the area bounded by a Rumford to Farmington line in the north, and an Oxford to Turner line in the south. This region had the most power failures which lasted for several hours and also reports of damage to several vehicles by the felled trees.

18 MARYLAND and D.C.

District of Columbia, Baltimore City and central Maryland counties of: Frederick, Carroll, Baltimore, Harford, Montgomery, Howard and Anne Arundel | 03 1400-1815 EST | | | 0 | 0 | 4 | 0 | Thunderstorm winds

A series of heavy thunderstorms moved east across central Maryland and the District of Columbia in advance of a strong cold front. Wind gusts to 51 mph were measured in the South Carroll area at 5 PM and in the Georgetown section of the District of Columbia at 5:30 PM. Marble size hail was reported at Hyattstown in Montgomery county at 3:20 PM. Strong winds and lightning felled limbs and several trees downing power lines and causing at least 1 brush fire. There were several lightning strikes, numerous minor car accidents and scattered power outages.

19 MASSACHUSETTS — NONE REPORTED

20 MICHIGAN

St. Joseph, Berrien County | 01 Afternoon | | | 2 | 3 | Wind

Part of a building under construction collapsed, injuring 2 workers.

East Central Lower Peninsula | 02 1330-1830EST | | | 5 | C | Thunderstorms

Events occurred by time and county as follows:

1330 Montcalm 1 3/4 inch hail fell in the Edmore-Six Lakes area.
 1345 Gratiot 1 3/4 inch hail fell at St. Louis.
 1400 Bay A church was severely damaged by lightning at Bay City.
 1415-1500 Saginaw 250 vehicles were damaged by hail on the west side of Saginaw. 3 1/2 inch hailstones fell at Bridgeport. Some power lines were blown down. I-75 was blocked by flooding east of Saginaw.
 1450-1600 Tuscola Large hail fell at Vassar and Richville. A power outage occurred. Several persons were injured in auto accidents during heavy rain near Caro.
 1530-1700 Sanilac (See tornado below). 2 inch hail fell at Snover.
 1700 1 3/4 inch hail damaged 200 cars near Marlette.
 1615-1715 Lapeer 2 1/2 inch hail fell at Clifford and North Branch. A funnel cloud was spotted north of Inlay City at 1635 EST.
St. Clair (See tornado below).
 1730-1800 Oakland 3/4 inch hail fell at Troy.
 1745-1830 Macomb 3/4 inch hail fell at Sterling Heights.

2 NW Roseburg, Sanilac County to Lakeport, St. Clair County | 02 1640EST 15.6 400 | 0 | 1 | 6 | C | Tornado (F3)

The first 2 miles of the track had only light, intermittent damage. It was followed by an 8 by 1/4 mile area of continuous damage, much of it through open fields. One house was destroyed, and another was unroofed. 8 other houses and many outbuildings were damaged. A boy in the unroofed house, just inside Sanilac County, was slightly injured by falling debris.

The latter part of the track was broader and intermittent, and had lighter damage. Many trees were downed and camping equipment destroyed in Lakeport State Park. The tornado may have continued out into Lake Huron.

MICHIGAN

Near Adrian, Lenawee County | 02 1815EST | | | | | Hail

1 3/4 inch hailstones fell.

Eastern Upper Peninsula and Northern Lower Peninsula | 24 2100-2400EST | | | 1 | 3 | Thunderstorms

A woman was injured by lightning at Sault Ste. Marie while using a telephone. Minor lightning damage occurred at Stephenson and Houghton Lake. There were 7 foot waves on the Straits of Mackinac, power outages in Chippewa County, and 50 MPH gusts at Pellston Airport.

7 ESE North Adams to 2 SW Addison, Hillsdale County | 25 1620EST 2.1 90 | 0 | 2 | 5 | Tornado (F2)

2 persons were injured in a mobile home that was rolled over and crushed. The heaviest damage occurred near the beginning of the track. A house had its south wall blown out, and its east wall was blown outward. 2 heavy vehicles were rolled over and destroyed. Several other houses, outbuildings, and small aircraft received minor damage.

21 MINNESOTA

Starbuck (Pope County) | 23 1700CST | | | 0 | 1 | 0 | 0 | Lightning

A bolt of lightning ran through an electric line of a home in rural Starbuck. The lightning went through the kitchen stove and jumped to a metal counter where it injured a woman.

22 MISSISSIPPI — NONE REPORTED

23 MISSOURI

Franklin County | 8 1715CST | | | 0 | 0 | 4 | 0 | Damaging Wind

Widespread damage reports of mostly downed tree limbs and power lines were received.

Jefferson County | 8 1730CST | | | 0 | 0 | 4 | 0 | Damaging Wind

Wind downed some large tree limbs and broke some windows across the county.

Washington County | 8 1740CST | | | 0 | 0 | 4 | 0 | Damaging Wind

Trees were downed and power outages were reported across the county.

Jefferson County | 10 1050CST | | | 0 | 0 | ? | ? | Large Hail

Hail up to golf ball size was reported at Antonio.

Sullivan County | 10 1345CST | | | 0 | 0 | 6 | 6 | Large Hail and Damaging Wind

Hail that ranged from quarter to 3 inch diameter produced extensive damage to the Green City area. The hail accumulated to several inches deep and remained on the ground into the next day. Home and church windows were broken. Winds up to 75 mph were reported with the storm.

Adair and Macon Counties | 10 1400CST | | | 0 | 0 | 6 | 7 | Large Hail

A severe thunderstorm produced very damaging hail to a large area around Gifford which is on the County Line about 10 miles southwest of Kirksville. Local residents called the storm the worst in 75 years. The hail was generally around an inch in diameter and accumulated one to two feet in low lying areas. The hail damaged many windows and roofs. It stripped trees of their leaves and produced widespread damage to soybean crops.

Macon County | 10 1400-1500CST | | | 0 | 0 | 6 | 7 | Large Hail

Considerable hail damage was reported over about 3/4 of the county. Most damage was around La Plata. Most north windows in some areas were broken. Trees were stripped and a number of chickens were killed. School was cancelled in La Plata the next day due to hail damage. The hail was up to 2 inches in diameter.

Adair County | 10 1415CST | | | 0 | 0 | 3 | 0 | Damaging Wind

Power lines were downed at Novinger.

Schuyler County | 10 1420CST | | | 0 | 0 | 3 | 0 | High Wind

Wind up to 60 mph occurred at Lancaster.

Adair County | 10 1420CST | | | 0 | 0 | 0 | 0 | Large Hail

Hail up to 3/4 inch diameter fell at Kirksville Airport.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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	
MISSOURI									
Knox County	10	1430-1445CST			0	0	4	0	Damaging Wind and Lightning
									Outbuildings were damaged and some limbs were downed in and around Knox City. Limbs downed near Memphis damaged a porch. A barn burned after being struck by lightning. Radio Station KNEM reported winds up to 51 mph.
Macon County	10	1440CST			0	0	4	0	Damaging Wind
									Wind blew down a barn 1.5 miles south of Eomer.
Macon County	10	1506CST			0	0	?	?	Large Hail
									Hail up to golf ball size fell near Macon.
Macon County	10	1506CST			0	0	?	?	Large Hail
									Hail up to 3/4 inch diameter covered the ground 5 miles north of Macon.
Shelby County	10	1515-1530CST			0	0	5	5	Large Hail
									Hail damaged mobile homes, roofs and crops across the county. No specific size of the largest hailstones was given.
Marian County	10	1548CST			0	0	?	?	High Wind
									Wind gusts were estimated to 60 to 70 mph 2 miles north of Hannibal.
Marian County	10	1610CST			0	0	?	?	High Wind
									Winds were estimated to 60 mph in Hannibal.
Ralls County	10	1630CST			0	0	?	?	Large Hail
									Hail up to baseball size was reported at Perry.
Randolph County	10	1655CST			0	0	?	?	Large Hail
									Hail up to golf ball size was reported at Huntsville.
Randolph County	10	1701CST			0	0	0	0	Large Hail
									Hail up to 3/4 inch diameter was reported at Moberly.
Randolph County	10	1716CST			0	0	0	0	Large Hail
									Additional hail up to 3/4 inch diameter fell in Moberly.
Pike County	10	1730CST			0	0	?	?	Large Hail
									Hail up to golf ball size fell at Eolia which is near the Lincoln County Line.
Saline County	10	1740CST			0	0	?	?	Large Hail
									Hail up to golf ball size fell at Waverly.
Audrain County	10	1745CST			0	0	?	?	Large Hail
									Hail up to golf ball size fell at Mexico.
Saline County	10	1745CST			0	0	?	?	Large Hail
									Hail up to golf ball size fell at Malta Bend.
Boone County	10	1810CST			0	0	?	?	Large Hail
									Hail up to golf ball size fell at Centralia.
Montgomery County	10	1830CST			0	0	0	0	Large Hail
									Hail up to 3/4 inch diameter fell at New Florence.
St. Charles County	10	2000CST			(0)	0	2	0	Lightning
									Lightning damaged a house near Cottleville. A man was killed in a fall after the storm while trying to repair the roof.
Dunklin County	11	0400-0430CST			(0)	0	?	?	Thunderstorm
									Judge Harrison was killed when his car ran into a tree which had just fallen in a thunderstorm. The crash occurred four miles north of Caldwell.
24 MONTANA	NONE REPORTED								
25 NEBRASKA									
York County	01	1800CST			0	0	6	6	Damaging Winds and Hail
									Strong winds likely over 100 m.p.h. and 1 1/2 inch hail were produced by a thunderstorm that produced extensive damage to crops and farm buildings along a 4 mile wide path that began near the Bradshaw I-80 interchange to the York/Seward County Line. Up to sixty sections of crops received considerable damage as well as outbuildings and trees. The heaviest damage occurred just south of York to Waco. The Super 8 Motel and the Village Inn in the south part of York received extensive roof damage. Debris was blown into the windows on the north side of the Village Inn, causing considerable damage to the interior.
Seward County	01	1830CST			0	0	6	6	Damaging Winds and Hail
									Winds estimated to 80 m.p.h. and 1 1/2 inch hail moved through central Seward County, including the city of Seward. Many houses were damaged and power lines downed. The main damage was in a path about 4 miles wide starting just south of Utica to near Garland. Many crops had 100% loss.
Gage County	01	1900CST			0	0	4	0	Damaging Winds
									Thunderstorm winds, estimated over 60 m.p.h. near and in Filley, damaged a grocery store and farm outbuildings. Trees were uprooted and many large branches broken off.
Washington County	01	1900CST			0	0	4	0	Lightning
									Fire started by lightning heavily damaged a home in Blair.
Sheridan County	05	Night			0	0	0	4	Lightning
									Up to 16 grass fires started by lightning were reported in the south part of Sheridan County.
Arthur, McPherson, and Keith Counties	06	Afternoon to Night			0	0	3	5	Lightning
									Lightning started many prairie grass fires in the counties through the two day period. Some hay stacks and fences were destroyed but luckily no buildings were damaged. Some of the larger fires were reported around Tryon, Arthur and north of Keystone and Paxton.
Richardson County	10	0915CST			0	0	4	0	Damaging Winds
									Thunderstorm wind gusts broke tree limbs at Falls City. Some vehicles and a mobile home along with utility lines were damaged by the fallen limbs.
Lancaster County	18	0330CST			0	0	4	0	Lightning
									Fire started by lightning damaged a Lincoln home.
Saunders County	24	2030CST			0	0	3	0	Damaging Winds
									Thunderstorm winds broke tree limbs at Wahoo.
25 NEVADA									
Clark County	10	1620PST			5	0	6	?	Flash Flood
									3.25 inches of rain fell in a half hour at Boulder Beach during a strong thunderstorm. The Las Vegas Airport reported only .44 inches. A four to six foot "wall of water" moved down Blue Diamond Valley. Five persons were killed when they tried to cross a flooded roadway in a pickup truck. 95% of the roads in the Las Vegas area were either closed or washed out.
White Pine County	10	2330PST			0	0	4	?	Flash Flood
									The same thunderstorm complex which moved through Southern Nevada later that evening moved across White Pine County, producing 1.63 inches of rain in 2 hours at the Ely Airport. Highway 93, 25 miles east of Ely, was washed out during heavy thunderstorms.
Esmeralda County	19	1400PST			0	0	?	?	Flash Flood
									Highway 264 was washed out during heavy thunderstorms north of Dyer.
Lincoln County	20	unknown			0	0	5	?	Flash Flood
									Heavy thunderstorms produced flash flooding at Kershaw Ryan State Park near Caliente sometime on the 20th. It caused a half million dollars damage to roadways and private property.
27 NEW HAMPSHIRE									
Moultonboro & The Chocorua-Center Conway Area, Carroll County	20	1600EST			0	0	4	0	Thunderstorms
									A cold front swept through New Hampshire Thursday afternoon generating a few strong thunderstorms. These thunderstorms were accompanied by lightning and high winds with gusts estimated near 50 mph. The wind and lightning downed numerous trees, which blocked roads, and knocked out power lines. Hardest hit was the Chocorua-Center Conway area where over 3200 customers were without electricity for several hours. Also, a small summer cottage on Long Island in Moultonboro was declared a total loss due to a fire that was started by a lightning strike.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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		
28 NEW JERSEY										
Statewide	3	1800 - 2300EST			2	2	?	0	Severe Thunderstorm	
<p>Heavy rain, strong winds and thunderstorms swept through the state. Scattered power outages, caused by lightning having struck high voltage transformers and wind-blown trees having fouled power lines, left thousands of customers without electricity. Thunderstorms caused havoc in the Middlesex County area, Cranbury and Sayeville by triggering burglar alarms. A heavy downpour accompanied by lightning and flash flooding hit the North Jersey area, creating unpleasant and dangerous conditions for motorists. Blackouts were reported in Oakland, Wanauque and West Paterson. Flooding was reported in sections of Hawthorne and New Milford, forcing road closures. The speed limit on the New Jersey Turnpike was reduced to 45 MPH for the duration of the storm.</p> <p>In Pequannock Township, four golfers were struck by lightning during a very heavy rain. The men had two umbrellas (two men under each) and were standing under some large trees, waiting for the rain to subside. Two of the men were killed, and the other two survived. The survivors said they had lit a cigarette, and that that was the last thing they could remember.</p> <p>In Oakland, a tree struck a large propane storage tank, knocking a valve off of the top and causing the highly volatile gas to leak from the tank. Firefighters cooled the tank to avert a possible explosion.</p>										
29 NEW MEXICO — NONE REPORTED										
30 NEW YORK, Coastal										
Extreme SE Nassau County, Suffolk County, New York City, and Westchester	3	1800-2300EST			0	1	?	0	Thunderstorms	
<p>Thunderstorms hit the metropolitan area, causing delays of up to two and a half hours at Kennedy Airport and up to ninety minutes at LaGuardia Airport. Wind gusts knocked a 10 foot, glass panel from an office building in Midtown Manhattan. The storm was so powerful in parts of northern Westchester County that 50 trees were knocked down in New Castle, and several 100-200 year-old maples were downed more than five miles away in Bedford Village. A woman was struck by lightning while she was in a rowboat on Mohansic Lake. She was struck on the throat where she was wearing a metal necklace. She suffered burns to her abdomen, lower legs and back. State Park Police remarked that they know of no other time that lightning had struck a boater at FDR.</p>										
30 NEW YORK, Central — NONE REPORTED										
30 NEW YORK, Western										
Parts of Erie, Chautauque, Cattaraugus, Allegany, Chemung and other Counties of Western New York	02	Evening			-	-	5	-	Wind & Lightning	
<p>Strong thunderstorm winds accompanied by heavy rains and occasional lightning whipped the area. Trees were downed. A few cars and homes were damaged. Electric lines snapped loose. Scattered power outages lasted up to 6 hours.</p> <p>A lightning bolt leveled a barn in the town of Richmond, Ontario County. Another barn in Orchard Park, Erie County was gutted by fire, also started by lightning.</p>										
Seneca Falls, Seneca County	11	Afternoon			-	1	5	-	Wind	
<p>A severe thunderstorm with high winds knocked down trees and power lines. The power outage lasted several hours. A few homes were damaged by falling trees.</p> <p>During the height of the storm, a motorist pulled off a street and parked near a tree. The tree was blown down and crushed the car's roof. One passenger was injured.</p>										
Parts of Niagara, Orleans, Ontario, Genesee, Monroe, Wyoming, Livingston, and other parts of Western and Central New York	13	Evening			-	2	5	-	Wind, Rain, & Lightning	
<p>Thunderstorms with damaging winds, heavy rains, and lightning inflicted damage to parts of Western and Central New York.</p> <p>A few streets, particularly in Medina, Orleans County, were inundated. There, a house was struck by a lightning bolt which damaged the house, 2 TV sets, and a stereo. Automatic alarms tripped on by lightning sent police and firemen to the field.</p> <p>In Canandaigua, Ontario County, two construction workers were struck by a lightning bolt. They were hospitalized. Here, two houses sustained light damage from lightning.</p>										
NEW YORK, Western										
In Youngstown and Ransomville, Niagara County, a home and a barn respectively, sustained heavy fire damage caused by lightning.										
Trees were felled by the strong winds. Electric lines were severed. Power outages to thousands of customers lasted several hours.										
Parts of Orleans, Ontario, Onondaga, Steuben, and other parts of Western and Central New York	25- 26	Late evening- Early morning			-	-	4	-	Lightning & Wind	
<p>A cold front passed across Western and Central New York. It brought along some thunderstorms with heavy rains, lightning, and high winds.</p> <p>Tall trees were felled. Some fell on cars and power lines. Power outages to thousands of homes and businesses lasted several hours.</p> <p>Lightning caused a fire in a General Electric facility in Dewitt, near Syracuse.</p>										
31 NORTH CAROLINA										
Dare County	04	1445EST			0	0	0	0	Thunderstorm Winds	
Gusts to 53 knots were observed at Manteo Airport.										
Near Warsaw	04	1515EST			0	0	?	?	Hail	
Duplin County	One and three-quarter inch hail was reported during a severe thunderstorm, windows were broken, metal buildings and cars were dented.									
Robeson County	04	1515-1535EST			0	0	?	?	Thunderstorm Winds Hail	
<p>A severe thunderstorm developed over southern Robeson County and produced 3/4 inch hail at McDonalds, North Carolina. The storm then moved northeast along I-95 to Lumberton where trees were blown down and one inch to 1 3/4 inch hail was reported.</p>										
Eastern North Carolina	11-14				3	3	8	7	Hurricane Diana	
<p>The total damage in New Hanover, Pender, Brunswick, Columbus and Bladen County was estimated at 73 million dollars. In all of southeast North Carolina the losses were estimated at 78 million dollars. Of this figure 26.5 million were agricultural losses.</p> <p>There were three deaths related to the hurricane. One resulted from a heart attack while making hurricane preparations and the others were the result of automobile accidents. The three injuries occurred during an automobile accident.</p> <p>A total of 13.72 inches of rain fell at Wilmington's New Hanover County Airport between 0400 EST on 9-11 and 0615 EST on 9-14. Unofficial reports of 15 1/2 inches of rain were observed in the greater Wilmington area. A new maximum rainfall record was set on 9-11 when 6.92 inches of rain fell that day at the National Weather Service Office. The old record was 6.08 inches and set in 1960.</p> <p>Widespread fresh water flooding occurred throughout eastern North Carolina as a result of Hurricane Diana. The flooding occurred in Brunswick, New Hanover, Columbus, Pender, Sampson, Duplin, Pitt, Onslow, Jones, Carteret, Craven, Pamlico, and Beaufort Counties. Within this area the Wilmington District of the Corps of Engineers estimated that flood levels reached the one in one hundred year return interval for southern Sampson County, Duplin County, and northwest Pender County. About 23 people were stranded for a time in Pitt County due to flooding.</p> <p>On the lower Cape Fear River the water got to 1.6 feet above normal at Southport around 0900EST on 9-13. In Wilmington on the Cape Fear River the water got to 1.8 feet above normal around 11:30EST on 9-13. This was mainly due to excessive fresh water runoff. During the period of time prior to the hurricane making landfall the Cape Fear River in Wilmington got to about 2 feet below normal due to the high winds blowing down river.</p> <p>The highest tidal departure recorded was at the Carolina Inlet Marina in southern New Hanover County. Here the tide got to about 5 1/2 feet higher than that which would have occurred without the effects of the hurricane. This departure occurred around midnight on 9-13 and just north of where the center of Diana moved ashore. In contrast the tide was about 2 feet higher than normal at Holden Beach in Brunswick County around 0900 EST on 9-13.</p>										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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					KILLED	INJURED	PROPERTY	CROPS	

NORTH CAROLINA

<p>A total of 12 counties in southeast North Carolina opened shelters during hurricane Diana. In all 56 shelters were opened that housed a total of 13,000 persons at peak occupancy. This was from the evening of the 11th to the morning of the 13th.</p>									
Brunswick County	11-13				1	0	7	7	Hurricane Diana
<p>The highest winds experienced with Diana occurred at the Oak Island Coast Guard Station, located at Caswell Beach. Between 1835 and 1845EST on September 11, Coast Guard personnel observed the wind being from the north sustained at 104 MPH with gusts in excess of 115 MPH. During this time the wind held at 115 MPH for more than a minute. This speed was the upper limit of the wind indicator.</p> <p>At the Carolina Power and Light Nuclear facility in Southport there was no damage to any permanent facility at the plant. However, a mobile home unit, being used as an office, was blown off its foundation and declared a total loss. A fabrication shed was also destroyed. Wind equipment at the site recorded gusts to 74 MPH at 1715EST on 9-11 from the north and a gust to 97 MPH from the south-southwest at 1715EST on 9-13.</p> <p>The eastern end of the county was the area which bore the brunt of Diana's impact. Long Beach, Youpon Beach, Caswell Beach, and Southport were the hardest hit. Holden Beach was also hard hit. A number of homes in these areas suffered total roof failure, however, on most of the buildings damaged the loss was confined to porches etc. Some new townhouses that were under construction at Long Beach were totally destroyed. Near the Oak Island Coast Guard Station at Caswell Beach, a piece of slate roof tile was driven more than 6 inches into the piling of a nearby building. Shingle and roof damage was experienced as far west in the county as Sunset Beach.</p> <p>Very heavy rain caused widespread flooding in the county that resulted in washing out many roadways and caused the dam to fail at Boiling Springs Lake. As the ground became saturated the high winds blew over many trees that caused widespread property losses and powerline failures.</p>									
New Hanover County	11-13				1	0	7	7	Hurricane Diana
<p>The southern part of the county experienced the greatest amount of damage. In particular the hardest hit was from Carolina Beach south through Kure Beach and on to Fort Fisher. At Carolina Beach the roof of a hotel was torn off and an empty 100,000 gallon water tank was blown over. There were several buildings under construction that experienced severe wind damage. Extensive fresh water flooding occurred in much of Carolina Beach around the lake.</p> <p>The highest winds experienced at Wilmington's New Hanover County Airport occurred at 0226EST on 9-13 when a gust to 74 MPH came from the east. At the time the sustained wind was from the east-northeast at 46 MPH.</p> <p>Due to the heavy rain soaking the ground and the high winds many trees were uprooted or broken off around the county. This caused considerable property damage and power lines to be knocked down. At Wrightsville Beach about 10 to 20 feet of berm was eroded.</p>									
Near Sharpsburg Nash County	13 0915EST	Short			10	0	0	0	? Tornado (FO)
<p>A very small tornado touched down briefly in a cornfield with no significant damage reported. The storm moved from East to West and was in a rain squall associated with hurricane Diana.</p>									
Pender County	11-13				0	0	7	6	Hurricane Diana
<p>Erosion was especially bad on the south end of Topsail Beach. This comprised most of the property losses. There was also about \$60,000 in damages to power lines. In total, property damages amounted to about 5 million dollars while the agricultural community experienced losses of about 3.8 million to crops that could not be harvested or were destroyed. Flooding in the Holly Shelter Area, about 8 miles east of Burgaw, on the northeast Cape Fear River caused the evacuation of 27 families.</p>									

NORTH CAROLINA

Sampson County	11-14				1	3	?	?	Hurricane Diana
<p>One person was killed the evening of September 13, southwest of Clinton, when they drove their car into a concrete abutment at a bridge that was flooded. Three other persons were also injured in another automobile wreck, 6 miles south of Clinton, when they lost control of the car on flooded roads. In addition to these flooding problems, as a result of the hurricane, a dam also failed at Roseboro.</p>									
Columbus County	11-14				0	0	6	7	Hurricane Diana
<p>As a result of the high winds and soaking rains many trees were blown over, especially in the eastern part of the county. This all resulted in about \$520,000 in property damage. In addition, 5.5 million dollars were lost by the agricultural community as a result of the wind and rain destroying crops that were ready to be harvested.</p>									
Bladen County	11-14				0	0	5	6	Hurricane Diana
<p>There was about \$94,000 in losses to property in the county as a result of fallen trees. In addition, the agricultural community experienced losses of about 4.1 million dollars as a result of the wind and rain destroying crops that were ready for harvest. About 10 inches of rain fell in the county as a result of Diana.</p>									
Onslow County	11-13				0	0	?	?	Hurricane Diana
<p>There was some damage to the ends of the fishing piers at West Onslow Beach. The heavy rain also destroyed about 1000 acres of soybeans and 50 acres of sweet potatoes.</p>									
Carteret County	11-15				0	0	4	6	Hurricane Diana
<p>About 40 feet of a fishing pier at Emerald Isle was destroyed. In addition losses to agriculture amounted to 1.7 million dollars because of the heavy rain and high winds destroying crops that were ready for harvest.</p>									
Dundarrach Hoke County	15 1545EST				0	0	3	?	Thunderstorm Winds
<p>Some tin roofs were torn off and trees were blown down.</p>									
Near Roseboro Sampson County	15 1645EST				0	0	0	0	Thunderstorm Winds
<p>Several large trees were uprooted and fell across highway 24.</p>									
Rockfish to Wallace Duplin County	15 1645-1745EST				0	0	3	4	Thunderstorm Winds, Hail
<p>One and three-quarter inch hail fell for thirty minutes at Rockfish. Damage to soybeans was estimated at \$7,000 on one farm. In rural Wallace, golfball size hail and high winds damaged a residence around 1645EST. At 1700EST large trees were damaged by gusts in excess of 60MPH near Teachey.</p>									
Dublin Bladen County	15 1715EST				0	0	?	?	Hail
<p>Hail 3/4 inch and larger covered the ground.</p>									
Jacksonville Onslow County	15 1800-1806EST				0	0	4	5	Thunderstorm Winds, Hail, Rain
<p>Gusts to 65MPH and one inch hail damaged crops and property around Jacksonville. Several cars were filled with water up to the windows, and some mobile homes were damaged by falling trees. Gusts to 65MPH were reported at the New River Air Station at 1806EST and around the same time a pilot estimated 60MPH gusts at Verona.</p>									
Harlowe Carteret County	15 1835EST				0	0	?	?	Hail
<p>One and three-quarter inch hail was observed.</p>									
Carteret County	15 1930EST				0	1	4	?	Thunderstorm Winds, Hail, Lightning
<p>Lightning struck the console at county communications headquarters slightly injuring the dispatcher. Golfball size hail was widespread over the county--reported eight miles North of Morehead City, in Otway, Williston, and Smyrna, breaking windows and windshields, damaging roofs and denting cars. Some trees were blown down during the storm.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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					KILLED	INJURED	PROPERTY	CROPS	

32 NORTH DAKOTA

Southwest	24 and 25					0	0	0	0	Heavy Snow
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An unusually early, heavy snow storm struck the southwest part of the state. Snow amounts up to 12 inches at Pretty Rock in Grant County, 8 inches at Richardton in Stark County, 8 inches at Mott in Hettinger County, 8 inches at Reeder in Adams County and 7 inches at Marshall in Dunn County were recorded. One person was injured on the morning of the 25th when their car rolled over on a slick road north of Mott. In addition, 5 inches of snow fell at Bismarck (Burleigh County) which set a record for total September snowfall and the most snow in a single September snow storm.

33 OHIO

Fulton County	02 1755EST					0	0	4	0	High Wind
Thunderstorm winds downed several trees in Delta. Minor structural damage occurred to some farm outbuildings.										
Defiance County	02 1800EST					0	0	4	0	High Wind
A thunderstorm with damaging winds moved through Sherwood. The storm downed trees and utility lines and blew out several windows.										
Williams County	02 1800EST					0	0	4	0	High Wind
A thunderstorm with winds estimated at 65mph damaged buildings and downed trees and utility lines in Montpelier.										
Putnam County	02 1916EST					0	0	4	0	High Wind
Strong winds from a thunderstorm downed trees in the northwest part of the county.										
Putnam County	12 1625EST					0	0	3	0	Hail
A thunderstorm produced one inch diameter hail two miles east of Ottawa. The hail did minor structural damage.										
Wyandot County	13 1655EST					0	0	3	0	Hail
A thunderstorm produced hail up to 3/4 inch in diameter in the Carey area.										
Hancock County	13 1700EST					0	0	4	0	High Wind
Thunderstorm winds downed trees and utility lines in Findlay. Minor structural damage occurred to some buildings on the south side of the city.										
Huron County	13 1730EST					1	0	0	0	Lightning
Lightning struck and killed a 31 year old golfer in Plymouth. The golfer was killed while walking on a fairway.										
Wyandot County	13 1730EST					0	0	4	0	High Wind
A thunderstorm produced 65 mph wind in the Upper Sandusky area. The wind downed trees and utility lines and damaged some farm buildings.										
Champaign County	13 2220EST					0	0	4	0	High Wind
Thunderstorm winds downed trees and blew off roofs near St. Paris. A mobile home was blown off its foundation and overturned.										
Clark County	13 2315EST					0	0	4	0	High Wind
A thunderstorm with damaging winds moved through the north side of Springfield. The high winds downed trees and utility lines and blew out windows.										

34 OKLAHOMA

Choctaw, Oklahoma County	08 1638CST					0	0	?	?	Hail
3/4 inch size hail fell.										
Harrah, Oklahoma County	08 1655CST					0	0	?	?	Hail
3/4 inch size hail fell.										
Jones, Oklahoma County	08 1710CST					0	0	?	?	Hail
Golfball size hail fell five miles south of Jones.										
Noble, Cleveland County	08 1720CST					0	0	?	?	Hail
One inch size hail fell.										

OKLAHOMA

Harrah, Oklahoma County	08 1722CST					0	0	?	?	Hail
Three inch size hail fell three miles south of Harrah.										
McCloud, Pottawatomie County	08 1725CST					0	0	?	?	Hail
Golfball size hail fell.										
Noble, Cleveland County	08 1748CST					0	0	?	?	Hail
Hail the size of quarters fell.										
Lexington, Cleveland County	08 1830CST					0	0	?	?	Hail/Wind
2 1/2 inch size hail fell and winds around 50 mph occurred.										
Eason, Pottawatomie County	08 1850CST					0	0	?	?	Hail
Hail the size of golfballs fell.										
Maysville, Garvin County	08 1900CST	Short Narrow	0	0	?	?	?	?	?	Tornado (FO)
A tornado was reported between Maysville and Paoli, touching down occasionally. No significant damage occurred.										
Byars, McClain County	08 1903CST					0	0	?	?	Hail
3/4 inch size hail fell.										
Paoli, Garvin County	08 1915-1930CST					0	0	5	?	Hail/Wind
Winds up to 80 mph destroyed 6 barns around Paoli. Hail the size of baseballs also fell. The winds also blew a semi-tractor trailer off of the road. Damage estimated at \$200,000.										
Byars, McClain County	08 1920CST					0	0	?	?	Hail
One inch size hail fell.										
Pauls Valley, Garvin County	08 1930CST					0	0	?	?	Funnel Cloud
A funnel cloud was reported just southeast of Pauls Valley.										
Fryor, Mayes County	08 1930CST					0	0	?	?	Wind
Strong winds downed trees and power lines and took the roofs off of several buildings and trailers.										
Catoosa, Wagoner County	08 1930CST					0	0	4	?	Wind
Strong winds destroyed a building and deroofed a barn. Damage estimated at \$30,000.										
Stratford, Garvin County	08 1937CST					0	0	?	?	Hail
Hail the size of pennies fell.										
Paoli, Garvin County	08 1943 CST					0	0	?	?	Hail
Golfball to baseball size hail fell 6 miles east of Paoli.										
Wynnewood, Garvin County	08 1947CST					0	0	?	?	Hail
3/4 to one inch size hail fell.										
Sulphur, Murray County	08 1948CST	Short Narrow	0	0	?	?	?	?	?	Tornado (FO)
A tornado touched down with no damage occurring 6 miles north of Sulphur.										
Bristow, Creek County	08 2000CST					0	0	?	?	Hail
Golfball size hail fell.										
Tulsa, Tulsa County	08 2000CST					0	0	4	0	Lightning
Lightning struck a house causing it to burn. Damage set at \$40,000.										
Rosedale, McClain County	08 2000CST					0	0	5	?	Wind/Hail
Winds up to 80 mph occurred and hail the size of baseballs and softballs fell. The north and east windows were blown out of most homes. Damage estimated at \$100,000.										

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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

Newby, Creek County	08	2100CST			0	0	?	?	Wind
									Strong wind destroyed a barn and damaged many outbuildings. A mobile home was also overturned.
Muskogee, Muskogee County	08	2145CST			0	0	?	?	Wind
									Strong winds uprooted several large trees and downed many power lines.
Okemah, Okfuskee County	08	2200CST			0	0	4	?	Wind
									Winds of 60 to 70 mph blew two mobile homes over and several outbuildings were heavily damaged. Damage estimated at \$20,000.
Seminole, Seminole County	08	2300CST			0	0	?	?	Winds
									80 mph winds overturned two autos 2 miles east of Seminole.
Wewoka, Seminole County	08	2300-2315CST			0	0	5	?	Wind/Hail
									70 mph winds occurred and hail the size of golfballs fell. Damage estimated at \$150,000.
McAlester, Pittsburg County	08	2300CST			0	0	5	?	Lightning
									Lightning caused a home to burn. Damage set at \$70,000.
McAlester, Pittsburg County	08	2327CST			0	0	?	?	Wind
									50 to 60 mph winds occurred.
Holdenville, Hughes County	08	2330CST			0	0	?	?	Hail
									3/4 inch size hail fell.
Lehigh, Coal County	09	0045CST			0	0	5	?	Wind
									Strong winds destroyed a garage and several outbuildings. Damage is estimated at \$50,000.
Lane, Atoka County	09	0130CST			0	0	?	?	Wind
									Strong winds uprooted large trees and downed power lines.
Tahlequah, Cherokee County	24	1000CST			0	0	5	?	Lightning
									Lightning caused a house to burn down. Damage estimated at \$50,000.

35 OREGON

Umatilla County	05				0	0	3	0	Wind
									Sustained winds of 30-40 mph with gusts to 56 whipped through the Pendleton area, causing power outages. Blowing dust made travel difficult, reducing visibilities to less than 1 mile.
Baker County	6-7				0	0	4	2	Heavy Rain
									Heavy rain showers fell over the Elkhorn mountain country (4.1 inches near Hereford). Baker Valley Irrigation District suffered erosion damage to dams. Baker City streets were flooded.
Jackson County	19				0	0	0	2	Lightning
									Thunderstorms caused power outages in many areas of the Rogue Valley. A few small lightning-caused fires existed with limited damage.
Klamath County	19				0	0	3	0	Thunderstorm
									Numerous lightning strikes caused widespread power outages in the area. Lightning strikes also caused several fires in forests in southern Oregon. All of the fires were reported to be less than quarter of an acre in area.
Malheur County	22				0	2	4	0	Blowing Dust
									Blowing dust reduced visibilities to near zero on Highway 20 between Ontario and Vale. Poor visibilities caused numerous accidents involving eight vehicles and 22 persons.

36 PENNSYLVANIA, Eastern

Southern Half of Eastern Pennsylvania	3	1500-2000EST			0	4	4	0	Wind, Lightning
									Thunderstorms, rumbling across the state with lightning and wind gusts, brought down trees, limbs and utility lines. At least two automobiles and a garage were damaged by the falling trees and limbs. Electric service was interrupted to almost 75,000 customers. In the Reading area, wind gusts tore roofs off two houses, pushed in the wall and took off the porch roof on another, and tore off many awnings. In this area, a blown-in window caused injury to a woman. Some high wind gusts reported were: 50 mph at Harrisburg, 55 mph at Mechanicsburg and 63 mph in Lancaster County. These wind gusts occurred between 5 PM and 5:30 PM EST. Although little flooding occurred from heavy rain with the thunderstorms, two automobiles were submerged in a flooded underpass in Reading. Small hail was also reported at Pottstown and a few other spots. One man was critically injured by a lightning strike in Harrisburg. Two others received only minor injuries when lightning struck near each of them. Lightning struck at least a dozen houses with damage being minor, except for considerable damage to one basement. Although little damage was reported over the north portion of Eastern Pennsylvania, a lightning-induced fire caused considerable damage to a house in the village of Orange, Franklin Township, Luzerne County.
West Goshen Township, Chester County	14	1630EST			1	25	1	0	Lightning
									A single lightning bolt hit a playing field while a soccer game was in progress. A total of 26 people were injured including players, coaches, officials and spectators. Four of the injured were hospitalized with one in critical condition. The critically injured person died 5 days later in the hospital.

36 PENNSYLVANIA, Western

Erie County	2	0445EST			0	0	4	0	Strong Winds
									A trailer in Waterford Township was tossed about 20 feet from its foundation and almost destroyed.

37 RHODE ISLAND ————— NONE REPORTED

38 SOUTH CAROLINA

Western South Carolina	3	p.m.			0	0	4	0	Lightning and Wind
									Scattered thunderstorms caused considerable minor damage including: <u>Clinton, Laurens County, 2045 EST--</u> Winds felled several trees, causing minor damage to roofs and utilities. <u>Greenwood, Greenwood County, 2050 EST--</u> Lighting damaged phone installations, causing outages of phone service. <u>Newberry, Newberry County, 2100 EST--</u> Lighting damaged the Nance Street Substation, interrupting electrical service to a substantial portion of the city.
Maryville, Georgetown County	5	1230EST			0	0	3	0	Wind
									Thunderstorm winds blew down several large trees, causing roof damage to several homes.
South Carolina Coast	9-13				0	0	6	4	Hurricane Diana
									Tropical Storm Diana developed off the east coast of Florida on the 8th, and slowly moved north gaining hurricane strength. On the 10th, Hurricane Diana was off the coast of Georgia, and by the 11th was off the SC coast. Diana stalled off Wilmington and Little River, then turned westward and entered the North Carolina Coast about halfway between Wilmington and Little River. After landfall, she again curved to the northeast and passed back out to sea along the middle North Carolina coast. Damage in SC included considerable beach erosion in Horry County. Damage was reported to 90 homes, 8 mobile homes, 40 multi-unit dwellings and to a few businesses in the Grand Strand area. The hardest hit area was in northeastern Horry County where heavy rains fell. Crescent Beach reported a maximum wind of 45 mph, and a low pressure of 29.71 inches at 10:50 EST on the 13th. The tide in the Charleston Harbor reached 6.8 feet Mean Low Water or 1.1 above normal high tide.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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	
— SOUTH CAROLINA									
Myrtle Beach, Horry County	15	2200EST			0	0	3	0	Lightning
									Lightning damaged several apartments at Pine Lake townhouses.
Charleston, Charleston County	15	2200EST			0	0	4	0	Lightning
									Lightning set a large church on fire in the Goose Creek area.
Lower SC Coast	27-29								Tropical Storm Isidore
									Tropical Storm Isidore formed off the east coast of Florida and moved northwest then northward. The storm passed over north central Florida before moving eastward out to sea, and hence, continued to move offshore until finally dissipating. Effects on the SC coast were mainly in the form of erosion, especially from Folly Beach southward. Several locations along the south coast received in excess of 2 inches of rainfall. The highest tide at Charleston was 7 feet Mean Low Water or 1.3 feet above normal high tide at 10:00 EST on September 28, 1984.
39 SOUTH DAKOTA									
Beadle County	03	1708 CST			0	0	0	0	Hail
									Three-quarters inch diameter hail was reported three miles southeast of Huron with no known damage.
Butte, Custer and Lawrence Counties	06	1630-1700 CST			0	0	3	0	Wind
									Strong winds gusted to an estimated 100 mph at Mt. Coolidge (Custer County), southeast of Custer and to 70-75 mph over the northern Black Hills and adjoining plains area. Winds downed many tree branches, some as large as six inches in diameter. Winds also caused extensive brief power outages and damaged roofs, buildings and signs. The strong winds lifted the overhang of a bank in Belle Fourche (Butte County) and damaged a hotel sign in Spearfish (Lawrence County). A small fire was caused by arcing wires in Belle Fourche (Butte County) but was quickly extinguished by rain. A camper trailer was overturned by strong winds near Belle Fourche.
Harding County	06	1706 CST			0	0	0	0	Wind
									Thunderstorm winds gusted to 67 mph at Redig.
Bennett County	06	1900 CST			0	0	3	0	Wind, Lightning
									In the Martin area, strong thunderstorm winds, estimated at 90 mph, destroyed some trees and small buildings. The winds also caused a power outage that lasted from one-half hour to an hour and a half west of Martin. Visibility in the area was greatly reduced by blowing dust. The winds snapped transmission lines which contributed to a fire in a canyon north of Martin. A lightning-related fire which burned an area one mile long, was also reported seven miles south of Martin.
Todd County	06-07	2030-0100 CST			0	0	?	?	Lightning
									Lightning spawned fourteen range fires in the Mission area. They were all quenched by rain. Extent of land burned was not known.
Shannon County	06-07				0	0	2	0	Wind, Lightning
									Two fires burned a total of 4,000 acres of grazing land and 400 tons of hay. The first fire was lightning-related and started at 2100 on the 6th on a ranch in Shannon County. This fire was extinguished but was rekindled by high winds on the afternoon of the 7th.
Minnehaha County	12-13	2315-0015 CST			0	0	3	0	Lightning, Rain
									Intense lightning damaged a church steeple in Sioux Falls. Lightning also caused brief power outages to many sections of town and tripped burglar alarms. Eleven minor fires were started by lightning. A fire on a farm east of Sioux Falls took thirty volunteers an hour to extinguish. The storm was also accompanied by brief heavy rain of .91 in an hour in Sioux Falls. This caused brief street flooding (up to one foot) in places.
Codington County	21	Afternoon			0	0	2	0	Wind
									Winds, gusting to 45 mph, knocked over several trees and damaged parade floats in Watertown.
Lincoln County	21	Afternoon			0	0	1	0	Wind
									High winds damaged homecoming floats at Lennox. An electrical wire was also downed causing a power outage of 45 minutes in a two-block area in downtown Lennox.
— SOUTH DAKOTA									
Northwest Counties	23	Early a.m. - Late Eve			0	0	0	0	Snow
									An early season snowstorm brought more than a foot of snow to some locations in the northwest. Camp Crook (Harding County) reported the largest amount with fourteen inches. Amounts between six and twelve inches were common over Harding and Perkins Counties as well as parts of Meade and Butte Counties. Roads in these areas were covered with slush and the bridges were icy. This was the first snow of the season and the warm ground helped to keep snow depths down and roads drivable. The snow covered most of the remainder of the west third of the state with depths generally one inch or less.
Codington and Grant Counties	23	Afternoon - Evening			0	0	0	0	Lightning
									Lightning caused several 25-minute power outages. A two hour outage occurred at 4 p.m. CST near Big Stone City (Grant County).
40 TENNESSEE									
Rockwood, Roane County	3	1150cst					3		Lightning
									Lightning struck some electrical wires leading to the fuse box of a house. The overload caused a small fire in the fuse box which did minor damage to the floor.
Greene County	3	afn				1	4	3	Lightning, hail
									A man was injured when lightning struck a tree near where he was standing. The man was treated and released. During the same thunderstorm, lightning struck another tree killing 14 Holstein heifers standing beneath it. Hail, reported as marble size, damaged some tobacco fields near Camp Creek which is about 6 miles southeast of Greeneville.
Washington and Sullivan Counties	3	afn				?	?		Wind
									A thunderstorm produced strong wind which downed trees and caused power outages which affected about 20,000 homes. About three-quarters of an inch of rain fell in 20 minutes. Rain was blown into Gray Elementary School in Washington County causing some water damage.
41 TEXAS, Northern									
Upshur County	1	1630CST			0	0	?	?	Thunderstorm Winds
									Thunderstorm winds downed tree limbs and power lines in the Holly Lake Area.
Camp County	1	1700CST			0	0	?	?	Thunderstorm Winds
									Tree limbs and power lines were downed by thunderstorm winds in Pittsburg.
Wood County	1	1700CST			0	0	?	?	Thunderstorm Winds
									Thunderstorm winds downed trees, power lines, and a transformer on Highway 2869 near Hawkins.
Titus County	1	1710CST			0	0	?	?	Thunderstorm Winds
									Numberous tree limbs and power lines were downed by thunderstorm winds in the Mt. Pleasant area.
Franklin County	1	1710CST			0	0	?	?	Thunderstorm Winds
									Mt. Vernon Police reported scattered damage to trees and power lines in the city from high thunderstorm winds.
Clay County	8	1923CST-2030CST			0	0	4	?	Thunderstorm Winds, Hail, and Lightning
									Intense thunderstorms moved through the county during the hour causing damage to several homes and numerous power lines. The most extensive damage was an oil storage tank south of Lake Arrowhead that burned after being struck by lightning at about 2015CST. Hail to tennis ball size fell in western sections of the county at 2010CST.
									Spotters estimated winds to 60 MPH in Henrietta at 1923CST and 12 SW of the city at 2030CST.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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					KILLED	INJURED	PROPERTY	CROPS	
41 TEXAS, Southern									
Cameron and Willacy Counties	16-20				0	0	7	5	Flooding
<p>A tropical wave or disturbance formed along a stationary front in the Gulf of Mexico just east of Brownsville and caused extensive flooding. Over a four day span from the 16 to the 20th, very heavy rains fell over Cameron and Willacy counties with Port Isabel receiving over 21 inches of rain. It was the worst flooding in the area in 17 years or since hurricane Beulah hit the area in 1967. It was estimated that over 50% of the eastern half of Cameron county was under water. Over 300 persons were forced to leave their homes from high water. Damage was in the excess of 30 million dollars. The worst flooding took place just east of Los Fresnos in the community of Del Mar Heights where 100 persons had to be evacuated on the 18th. The main street of South Padre Island was under 3 to 4 feet of water and the island was closed to all but emergency traffic. Flood waters isolated the town of Arroyo City and partially isolated Los Fresnos, Rio Rondo and Port Isabel. In San Benito, businesses along US Hwy 77 were closed due to high water. In Brownsville, the International Airport was covered with water and the airport was closed for 4 days as all flights were cancelled. Over 700 rural homes in Brownsville suffered damage. Schools were closed in the area because buses could not make their runs. Across the Rio Grand River in Matamoros over 1500 persons were relocated.</p> <p>4 day rainfall totals include: Brownsville Airport 15.19 (7.90 fell on the 18th).. Port Isabel 21.27.. Port Mansfield 19.92.. Laguna Atascosa Wildlife Refuge 18.30.. South Padre Island 15.3.. Los Fresnos 12.84.. Harlingen 11.47.. Raymondville 7.12.. Westaco 5.84.. Mission 2.93.. McAllen 2.44 and Rio Grand City 0.10.</p>									
Texas Coast	18-22				0	0	5	5	Coastal Flooding
<p>As the above described low pressure system moved northeast up the Texas Coast there was widespread coastal flooding of inland bays, barrier islands, and inland waterways. Winds to near gale force and high astronomical tides contributed to general coastal flooding of water heights 2 to 4 feet above normal. Near Corpus Christi, Padre Island National Seashore and Mustang Island State Park vacationers and campers were asked to leave and get off the beaches because of high water that reached into the dunes. Farther north, roads in Kemah and Seabrook near Galveston were covered with water. Galveston State Park was closed because of the high water and wind driven tides. Sea Rim State Park and portions of State Hwy 87 were flooded at times from the high water.</p>									
Hardin County	21 1620 CST				0	0	4	0	Wind
<p>Thunderstorm winds downed power lines and poles over sections of northern Beaumont near Hwy 69. Automobiles were damaged from the high winds. Trees were also blown over near Silabee on Hwy 327.</p>									
Galveston County	21 1700 CST				0	0	4	0	Waterspout/ Tornado (FO)
<p>A waterspout moved onshore on the eastern end of Galveston Island and flipped over a small camping trailer.</p>									
Cameron County	29 0730 CST				0	0	4	0	Flooding
<p>Heavy rains fell again over Cameron County, twice within an eleven day period. General 4 inch rains caused more flooding in Arroyo City, Rio Rondo, Harlingen and Los Fresnos, including Del Mar Heights. Water was up to headlights on automobiles in Los Fresnos.</p>									
41 TEXAS, Western ————— NONE REPORTED									
42 UTAH									
Garfield and Washington Counties	10 1815 MST				0	0	1		Heavy rain and hail
<p>Heavy rain and hail to 3/8 inches in diameter, produced by heavy thunderstorms, caused little damage on this Monday evening. A small bridge was covered with water and campers were evacuated from portions of Zion National Park. 2.02 inches of rain fell in 90 minutes in the park.</p>									
Duchesne County	11 1445 MST short	narrow			0	0	2		Tornado (FO)
<p>A tornado touched down about 10 miles south of Roosevelt. The tornado was observed by a woman to pick up a car which it carried about 30 feet. The twister then destroyed a pig pen, letting all the pigs loose. It also knocked over an outhouse and some trees and scattered some irrigation pipe.</p>									
Kane County	15 1800 MST				0	0	2		High winds
<p>Thunderstorm downburst winds sank several boats at the Wahweap Marina. Winds were estimated to be greater than 60 miles per hour by persons on the scene.</p>									
Beaver County	23 1200 MST				0	0	1		High winds
<p>Winds gusting to 58 mph were recorded at Milford.</p>									
43 VERMONT ————— NONE REPORTED									
44 VIRGINIA									
Northern Virginia Counties of...	03 1535-1730EST				0	0	?	?	Wind, Hail
<p>Shenandoah, Page Rappahannock, Fairfax Fauquier, Madison Loudoun and Prince William</p> <p>Heavy thunderstorms developed ahead of a sharp cold front during the afternoon of the 3rd. The thunderstorms developed rapidly along the lee side of the Shenandoah Mountains. Golf ball-sized hail was reported by a local radio station and the manager was unable to give a wind report because his anemometer was swept away by a wind gust. The thunderstorms moved eastward into Page and Rappahannock Counties. Wind gusts of 52 mph were reported from Sperryville at 1630EST. The thunderstorms maintained their intensity as they moved eastward into Fauquier, Prince William and Fairfax Counties. Pea sized hail with 40 mph winds were reported in Centerville in western Fairfax County at 1700EST, and several reports of winds of 40 knots and above were reported as the storm moved east.</p>									
Grayson County	03 1530-1730EST				0	0	?	4	Wind, Hail
<p>Thunderstorms with high winds and hail to 3/4 inch severely damaged tobacco and corn crops near the New River and along the North Carolina border.</p>									
Potomac River near Colonial Beach	08 1700EST				2	2	3	0	Wind
<p>A retired couple drowned in the Potomac River as their 19 foot outboard boat capsized in very turbulent seas at the mouth of Monroe Creek. A strong, onshore southeast wind developed during the day as the pressure gradient increased from high pressure off the North Atlantic Coast and the developing Tropical Storm Diana off the northeast Florida coast. A steady southeast wind of 10 to 15 knots with gusts to over 20 knots developed and, with a long fetch up the river, waves of 3 to 4 feet were reported. As the tide ebbed during the afternoon, the waves increased with some reported up to 6 feet. The boaters attempted a return from the Maryland side of the river against advice not to make a crossing. The boat lost power, broached in the turbulent seas, took water and capsized within 300 yards of shore. Two passengers aboard the vessel were rescued.</p>									
Chesapeake Bay near the mouth of the James River	26 1400-1500EST				1	2	5	0	Wind
<p>A cold front swept across the Chesapeake Bay during the afternoon with strong north to northeast winds. The winds were gusting to well over 30 knots right behind the front, and rapidly developed a heavy sea. The 55 foot tugboat EASTERN STAR went down about 2 1/2 miles northeast of Old Point Comfort near the mouth of the James River at 3PM EDT as high winds tossed "freakish waves" against the stern of the EASTERN STAR. The crew of two was forced to abandon ship and swim and drift for seven hours before making it to the beach. At 3:50PM EDT the oyster boat RUTH ANN capsized in strong winds and heavy seas 2 miles northeast of the Hampton Roads Tunnel, or just east of the James River. One man was trapped on board and drown. Two other crewmen were rescued. A peak gust of 33 knots was recorded at Norfolk International Airport at 1357EST.</p>									
45 WASHINGTON ————— NONE REPORTED									
46 WEST VIRGINIA									
Kanawha County	14 1900-2000EST				0	0	0	0	Thunderstorm Hail
<p>Thunderstorms produced golf ball size hail in Pinch and 1/2 inch hail at Elkview in Kanawha County.</p>									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1984

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					KILLED	INJURED	PROPERTY	CROPS	
47 WISCONSIN									
Clark County	01	0345CST			0	0	5	4	Lightning
									Lightning ignited a fire which destroyed a barn and killed 17 head of livestock 7N of Loyal.
Richland County	01	1715-1745CST			0	0	4	4	Thunderstorm Winds, Hail
									A cluster of severe thunderstorms dropped 3/4 inch hail at Viola and golfball size hail 25W of Cazenovia. Gusty thunderstorm winds demolished an unoccupied mobile home 1S of Boaz and uprooted several trees. Some residential damage occurred 1E of Sextonville.
Columbia County	01	1836CST			0	0	0	0	Hail
									A severe thunderstorm produced 3/4 inch hail at Lodi.
Winnebago County	01	1930CST			0	0	0	0	Hail
									3/4 inch hail from a severe thunderstorm fell over Oshkosh.
Southern & Central Wisconsin	24	Middle Afternoon Hours through 25 Early Morning Hours							Severe Thunderstorms
									A line of severe thunderstorms developed during the afternoon hours along the Mississippi River and raced across the state by the early morning hours of the 25th. The hardest hit areas were the central and southwest sections of the state where residential and crop damage estimates were placed over \$4 million.
Trempealeau County	24	1500CST			0	0	0	?	Hail
									Golf ball size hail fell from a severe thunderstorm 5SE of Ettrick.
LaCrosse County	24	1510CST			0	0	6	5	Hail
									A severe thunderstorm dropped hail up to 3 inches in diameter across the southern portion of Lacrosse. Over \$1 million in damage occurred mainly to dented autos, carports, aluminum siding and crops.
Jackson County	24	1515CST			0	0	0	?	Hail
									Golfball size hail was reported at Melrose during an intense thunderstorm.
Vernon & Crawford Counties	24	1640-1700CST			0	0	4	?	Hail
									A severe thunderstorm deposited hail up to baseball size at Readstown (Vernon County) and Soldiers Grove (Crawford County). Several vehicles received numerous dents and cracked windshields.
Marathon County	24	1650-1710CST	12	150	0	0	6	4	Tornado F2, Hail
									A tornado touched down 13.5 WSW of Mausau at 1S of Hwy P and 1W of Hwy 107, skipped east-northeast before lifting on the east side of the Wisconsin River. The tornado caused \$2.2 million in damage in the townships of Emmet, Mosinee, Marathon, and Rib Mountain. 3 homes were destroyed, 8 sustained major damage, several barns and sheds were leveled and numerous trees were downed. Baseball size hail was reported 1NE of Rothschild.
Richland County	24	1710CST			0	0	6	4	Thunderstorm Winds
									Gusty thunderstorm winds struck the Richland County Fairgrounds 1N of Richland Center. The entire roof of the grandstand was blown off, side and supports for the grandstand were broken off; the cattle barn was severely damaged, a wing of the Art Hall was destroyed as well as several other stands and sheds.
Sauk County	24	1750CST			0	0	6	5	Thunderstorm Winds, Hail
									Downburst thunderstorm winds to 70 mph cut a swath of at least \$1.1 million in damage from the junction of Hwys 12 & 60 to Sauk City and Prairie du Sac. \$400,000 damage was done to the Tri-County Co-op where 10 of 13 corn bins were either ripped from their footings or badly damaged. Other areas of major damage occurred at the Maplewood Nursing Home, Sauk Prairie Middle & High schools, and a Sauk County highway shop. At the Sauk County Airport, 5 hangers were blown down and 11 planes wrecked, including one which was tossed 1500 feet. Numerous residences, trees, crops, and farm buildings were damaged. 1 inch diameter hail also fell in Sauk City.
Shawano County	24	1820CST			0	0	4	0	Thunderstorm Winds
									Winds from an intense thunderstorm damaged 3 sheds, lifted a garage from its foundation and downed trees in the Wolf Heights area 1S of Shawano.
WISCONSIN									
Winnebago County	24	1930CST			0	0	0	0	Hail
									3/4 inch diameter hail fell from a violent thunderstorm over the northwest section of Oshkosh.
Manitowoc County	24	2330CST			0	0	5	0	Thunderstorm Winds
									a 100X100 foot storage barn containing 2 cars and a 22 foot boat was blown over by strong thunderstorm winds 3W of Two Rivers.
48 WYOMING									
North Central and Northeast Wyoming	6	Afternoon			0	0	4	4	High Wind
									Wind gusts to 61 mph were logged at Worland Airport in Washakie County. They occurred as a strong cold front moved through early in the afternoon. A double-wide trailer was tipped over. Slight crop damage also occurred. Later in the afternoon, roof damage in Natrona County and tree and building damage in Crook County was reported.
Sheridan, Fremont, Park, & Washakie Counties	23-24	All Most			0	0	3	?	Snow
									Sheridan, Sheridan County, received 15 inches of snow on the 23rd through the early evening on the 24th. This broke Sheridan's record of snowfall for September. The 12.9 inches received on the 23rd broke Sheridan's record of snowfall for a 24-hour period. Other heavy amounts were 21 inches at Dubois in Fremont County, the most reported, and 17 inches at Cody in Park County. Worland, Washakie County, reported 9 inches of snow from the storm. The heavy, wet snow caused considerable damage to leaf-laden trees and resulted in widespread power outages.
49 ALASKA, Northern									
Kotzebue Sound	19	1000-1800 AST			0	0	3	0	High Tides and Surf
									A cold front moved east through Kotzebue Sound on the afternoon of Sept. 18. A mesoscale area of brisk west to northwest winds developed over Kotzebue Sound on the morning of Sept. 19. Lunar tides were not particularly high, but the airmass was quite unstable: the air temperature 39°F and the sea surface temperature 43°F. West winds increased to 30 miles an hour over the Sound on the late morning of Sept. 19, turned northwest that afternoon, and then diminished that evening. The surf was estimated to be 5 feet and the static rise in water level near Kotzebue as much as 3 feet. While there was no coastal flooding, several boats pulled up on the beach at Kotzebue were swamped, and 3 men were temporarily cut off on a part of the Baldwin Peninsula just southeast of Cape Blossom, 13 miles southeast of Kotzebue, by the elevated sea and surf. They returned to Kotzebue on Sept. 20.
Eastern Arctic Coast	29-02				0	0	?	0	High Winds
									Strong high pressure built over the area just north of Alaska's Arctic coast, while a series of northward-moving weather fronts lowered pressure over the Interior of Alaska, on Sept. 29. The pressure gradient on the coast increased. By noon, AST Sept. 29, high winds were blowing and there was blowing dust at Prudhoe Bay. The wind increased on the night of Sept. 29-30, reaching its peak on the late morning of Sept. 30. The peak wind reported was 57 knots at Prudhoe Bay. Offshore oil drilling rigs in the Beaufort Sea reported seas up to 12 feet east of Camden Bay on Sept. 29, accompanied by blowing spray. Temperatures ranged from 24 to 34°F. Aircraft on the Arctic coast from Barrow east reported strong wind shear and light to moderate mixed icing on the 30th. A 140 foot seismic exploration vessel was torn from its moorings early on the morning of Sept. 30. Peak winds dropped below 50 miles an hour just after 2AM AST Oct. 2. All stations on the coast east of Lonely had peak winds above 50 miles an hour during the storm. This windstorm was the only real storm in Northern Alaska in September, which was remarkably quiet with respect to high impact weather.
49 ALASKA, Southern	NO REPORT RECEIVED								
49 ALASKA, Southeastern	NONE REPORTED								
50 HAWAII	NONE REPORTED								
51 PUERTO RICO	NO REPORT RECEIVED								
52 VIRGIN ISLANDS	NONE REPORTED								
53 PACIFIC	NONE REPORTED								

STORM SUMMARY

September 1984

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	1	1			4						4	3		1	?	?																
Arizona											3	5	2	2	4	4																
Arkansas											5																					
California																																
Colorado	1	1			3			4	?																							
Connecticut												3																				
Delaware																																
Florida	1	1			1							3			4																	
Georgia	1	1			5							3																				
Idaho																																
Illinois												4	4																			
Indiana											7	5	1																			
Iowa	1	1			4			4	5			4			4														7			
Kansas								5	6			6	7																			
Kentucky	2	1			5			4	4			6	4			4																
Louisiana	2	2			5						3	4																	5			
Maine												4			?																	
Maryland & DC												4																				
Massachusetts																																
Michigan	2	2			3	6		?			2	3			1	?										1	4	C				
Minnesota															1																	
Mississippi																																
Missouri								6	7			6	6			4																
Montana																																
Nebraska								5	6			6	5			5	5															
Nevada																	5		6	?												
New Hampshire												?			4																	
New Jersey												?			2	2			?													
New Mexico																																
New York											1	5			3	4																
North Carolina	1	1						3	4			7			1	3		3	3	6	7						7	6				
North Dakota																																
Ohio								4				5			1																	
Oklahoma	2	1						?	?			5	?		5	?																
Oregon											2	5	4			5	4			4	2											
Pennsylvania											1	4			1	28																
Rhode Island																																
South Carolina												3				4												6	4			
South Dakota								?	?			3				3																
Tennessee								?	?			?	?		1																	
Texas	1	1			4			?	?			4	?			4			7	5												
Utah	1	1			2							2							1													
Vermont																																
Virginia								?	4	3	4	5																				
Washington																																
West Virginia																																
Wisconsin	1	1			6			6	6			6	5		5	4																
Wyoming												4	4																			
Alaska																																
Hawaii																																
Pacific																																
Puerto Rico																																
Virgin Islands																																

REFERENCE NOTES

- † Storm damage categories are from 1 to 9 as follows:
- 1 Less than \$50
 - 2 \$50 to \$500
 - 3 \$500 to \$5,000
 - 4 \$5,000 to \$50,000
 - 5 \$50,000 to \$500,000
 - 6 \$500,000 to \$5 Million
 - 7 \$5 Million to \$50 Million
 - 8 \$50 Million to \$500 Million
 - 9 \$500 Million to \$5 Billion

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

Definition of Fujita Tornado Scale (F scale)

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

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

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

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

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

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

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

(F0+F1) *Weak Tornado*
(F2+F3) *Strong Tornado*
(F4+F5) *Violent Tornado*

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



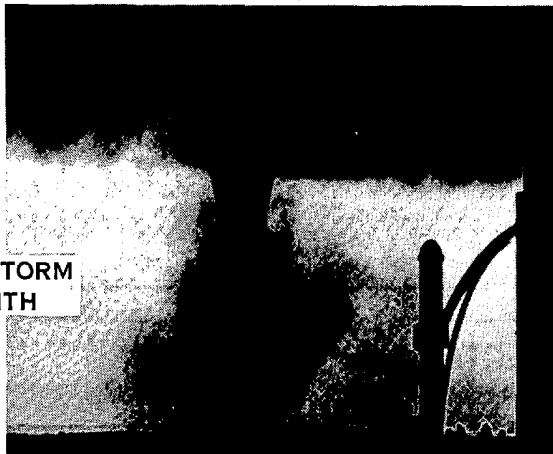
USCOMM-NOAA-ASHEVILLE, NC 1984-2500

STORM DATA

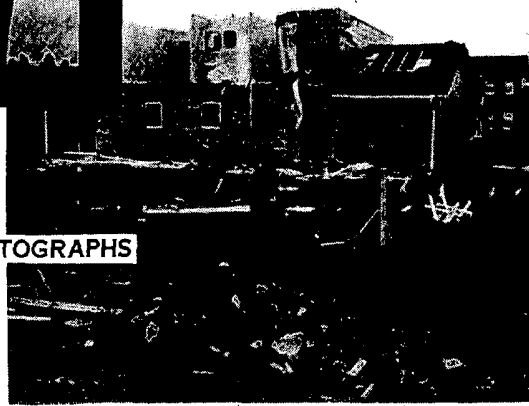
A MONTHLY PUBLICATION FROM
THE NATIONS CLIMATE EXPERTS



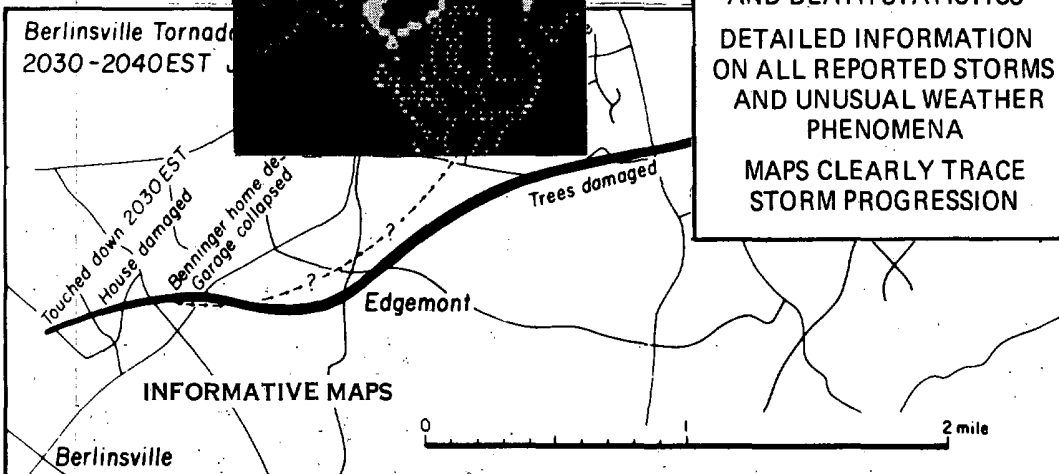
OUTSTANDING STORM
OF THE MONTH



DESCRIPTIVE PHOTOGRAPHS



SATELLITE PHOTOGRAPHS



STATE BY STATE SUMMARY
OF DAMAGE, INJURY
AND DEATH STATISTICS

DETAILED INFORMATION
ON ALL REPORTED STORMS
AND UNUSUAL WEATHER
PHENOMENA

MAPS CLEARLY TRACE
STORM PROGRESSION

INFORMATIVE MAPS

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CHECK THE EXTENT OF STORM DETAILS OFFERED IN STATE-BY-STATE TABLES...

STORM DATA AND UNUSUAL WEATHER PHENOMENA

AUGUST 1984

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

NEBRASKA

Cherry County 4 1400-1530 CST 0 0 4 5 Hall and Damaging Winds
One and a half inch hail covered the ground a 20 mile swath through the Sparks area damaging hay and some corn crops. High winds with thunderstorm downed trees and damaged a building 3 1/2 miles northeast of Valentine.

NEBRASKA

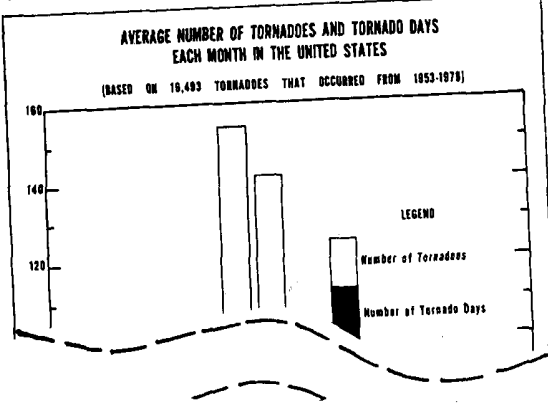
Lincoln County 6 0400 CST From 8 miles northwest of ...
County ...

Cherry County 4

STORM SUMMARY

AUGUST 1984

STATE	TORNADOES				HAILSTORMS			WINDSTORMS			LIGHTNING			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



NUMBER OF TORNADOES, TORNADO DAYS, AND DEATHS BY STATES, 1953-79

STATE	TORNADOES					DAYS					DEATHS				
	TOTAL	AVER. AGE	GREAT EST	YEAR	PER # 10,000 SQ. MI.	TOTAL	AVER. AGE	TOTAL	AVER. AGE	PER # 10,000 SQ. MI.	TOTAL	AVER. AGE	TOTAL	AVER. AGE	PER # 10,000 SQ. MI.
Alabama	536	20	0	45	1973*	5	1956	3.85	291	11	202	7	36	0	0
Alaska	1	0	1	1959	0	1979*	-0.00	1	0	0	0	0	0	0	0
Arizona	99	6	17	1972	0	1965*	.32	82	3	3	0	0	0	0	0
Arkansas	549	20	50	1973	2	1969	3.83	278	10	121	4	23	0	0	0
California	88	3	13	1978	0	1960*	.21	64	2	0	0	0	0	0	0
Colorado	435	16	42	1976	1	1959	1.55	284	11	2	0	0	0	0	0
Connecticut	41	2	8	1973	0	1978*	4.68	24	1	0	0	0	0	0	0
Delaware	26	1	5	1975	0	1978*	4.00	24	1	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	1978*	4.00	24	1	0	0	0	0	0	0
Florida	1095	41	97	1975	10	1956	6.93	697	26	51	2	9	0	0	0
Georgia	562	21	46	1971*	7	1960	3.54	326	12	72	3	12	0	0	0
Hawaii	16	1	4	1971	0	1978*	4.00	24	1	0	0	0	0	0	0
Idaho	36	1	5	1967	0	1978*	4.00	24	1	0	0	0	0	0	0
Illinois	736	27	107	1974	4	1953	4.82	342	13	129	5	23	0	0	0
Indiana	603	22	48	1973	6	1972*	6.15	230	11	200	7	55	0	0	0
Iowa	726	27	54	1964	7	1956*	4.78	339	13	54	2	10	0	0	0
Kentucky	1194	44	97	1955	14	1976	5.38	555	21	162	6	20	0	0	0
Louisiana	214	8	34	1974	0	1953	1.96	121	4	99	4	25	0	0	0
Maine	530	20	55	1974	3	1955	4.05	334	12	86	3	18	0	0	0
Maryland	70	3	11	1971	0	1979*	-7.8	62	2	1	0	0	0	0	0
Massachusetts	75	3	10	1975	0
Michigan	107	2	10	1975	0

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