DECEMBER 1983 VOLUME 25 NUMBER 12

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"

L. Ray Hoxit

ACTING DIRECTOR
NATIONAL CLIMATIC DATA CENTER

This publication is funded by the
National Oceanic and Atmospheric Administration and the Federal Emergency Management Agency

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

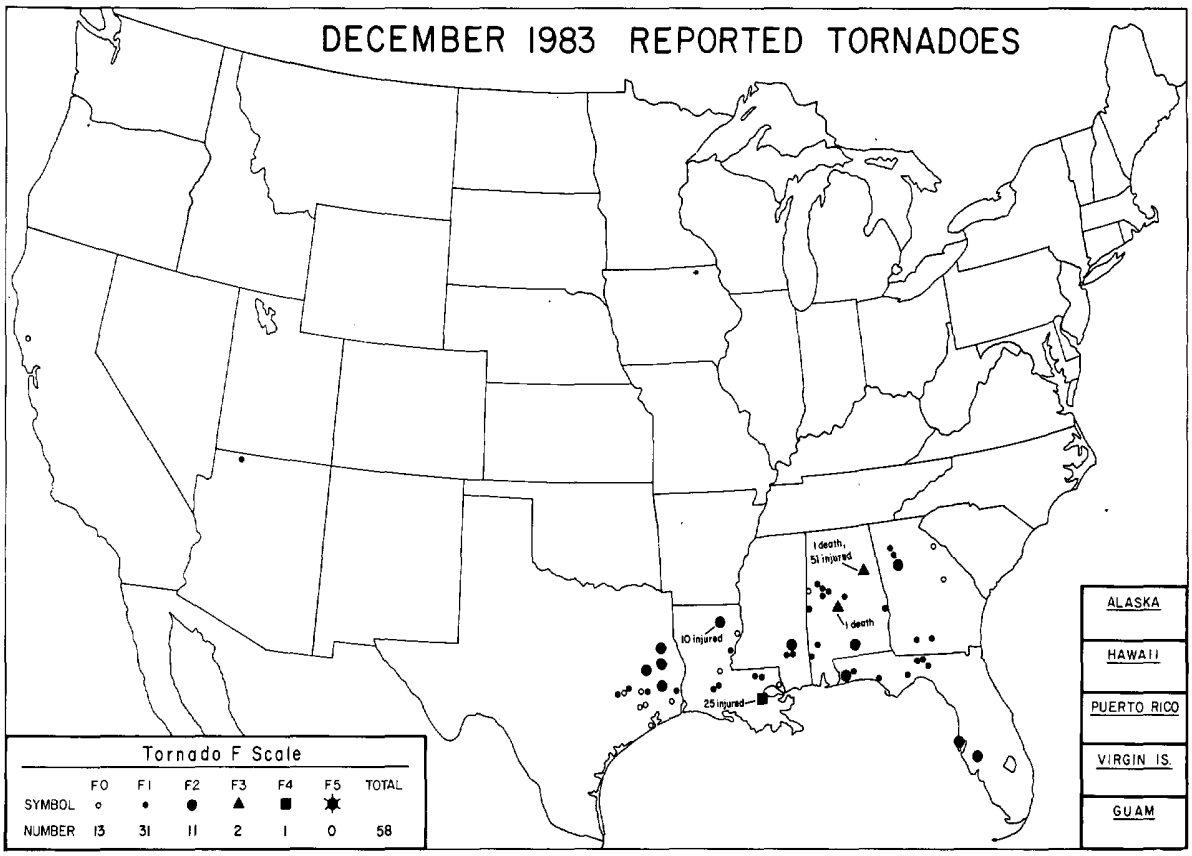
CONTENTS

Cover: Homes of the Belle Pointe subdivision in La Place, Louisiana that sustained F4 damage when swept from their foundations by a tornado on December 6th (see page 6). ---Photo by Duane Stiegler, The University of Chicago.

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 039-1972) is published monthly. Subscription, pricing, and ordering information is available from: Publications Section (E/CC413), The National Climatic Data Center, National Environmental Satellite, Data, and Information Service, NOAA, Federal Building, Asheville, NC 28801-2696.

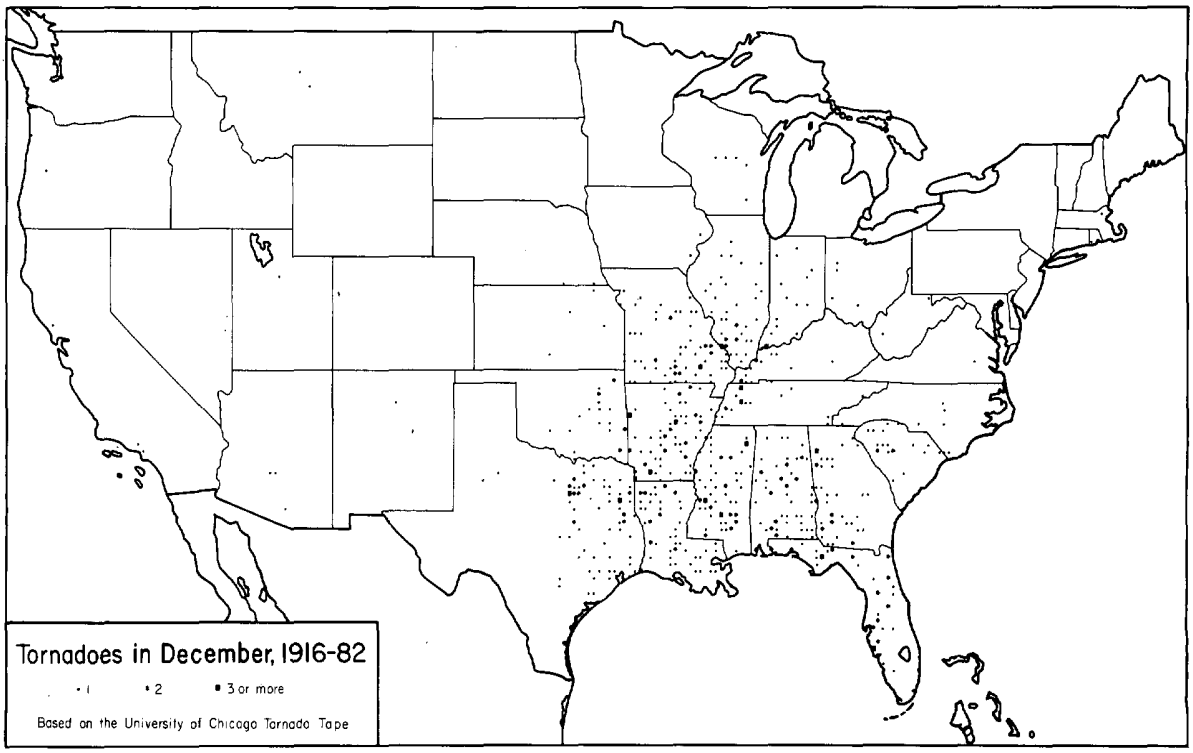
OUTSTANDING STORMS OF THE MONTH

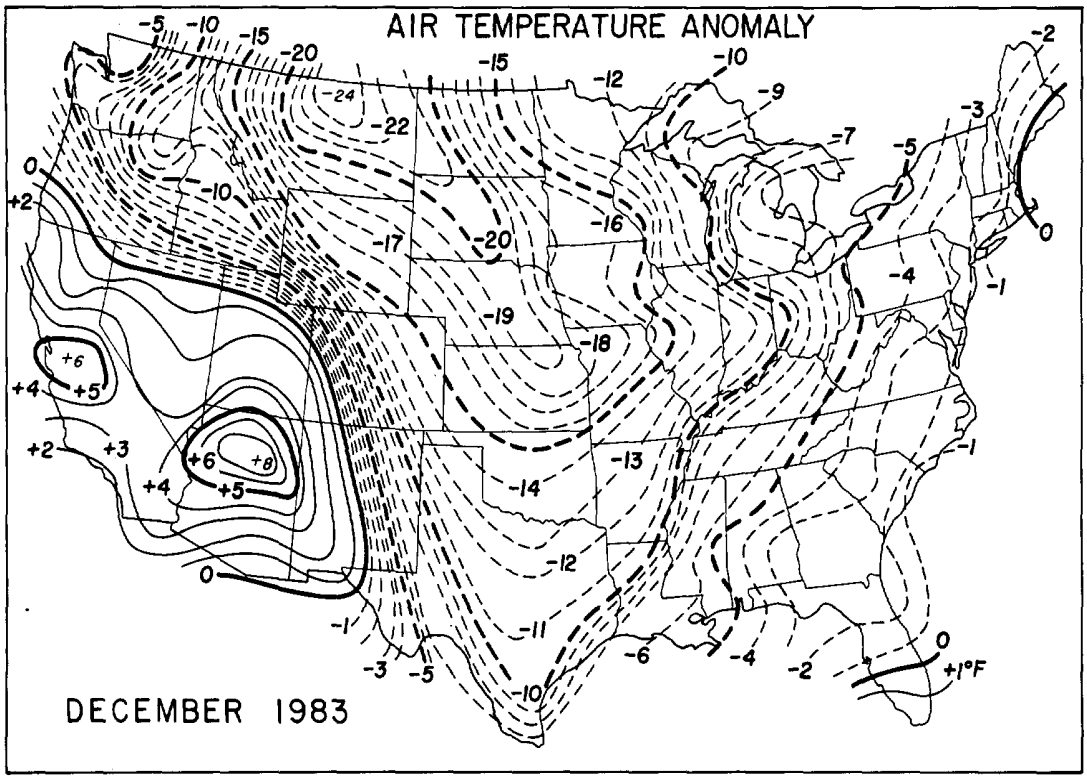


● COMPLETE REPORT RECEIVED
◑ PRELIMINARY REPORT RECEIVED
○ REPORT NOT RECEIVED

(N) northern (W) western
(S) southern (C) central
(E) eastern (O) coastal
(SE) southeastern

● 1AL	● 7DE	● 14KS	● 21MN	● 28NJ	● 33OH	● 39SD	● 44VA	● 49AK(SE)
● 2AZ	● 8FL	● 15KY	● 22MS	● 29NM	● 34OK	● 40TN	● 45WA	● 50HI
● 3AR	● 9GA	● 16LA	● 23MO	● 30NY(O)	● 35OR	● 41TX(N)	● 46WV	● 51PR
● 4CA(N)	● 10ID	● 17ME	● 24MT	● 30NY(C)	● 36PA(E)	● 41TX(S)	● 47WI	● 52VI
● 4CA(S)	● 11IL	● 18MD	● 25NE	● 30NY(W)	● 36PA(W)	● 41TX(W)	● 48WY	● 53PC
● 5CO	● 12IN	● 19MA	● 26NV	● 31NC	● 37RI	● 42UT	● 49AK(N)	
● 6CT	● 13IA	● 20MI	● 27NH	● 32ND	● 38SC	● 43VT	● 49AK(S)	

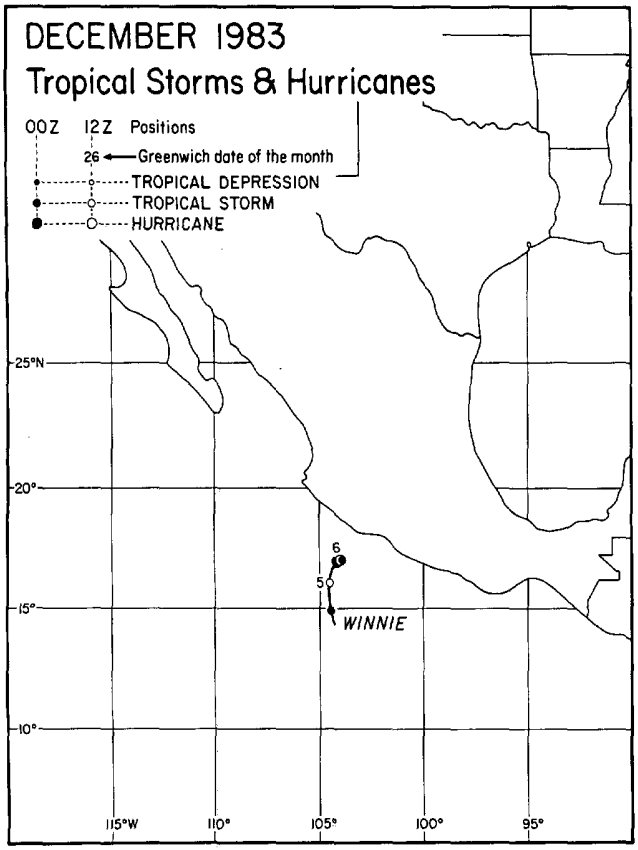




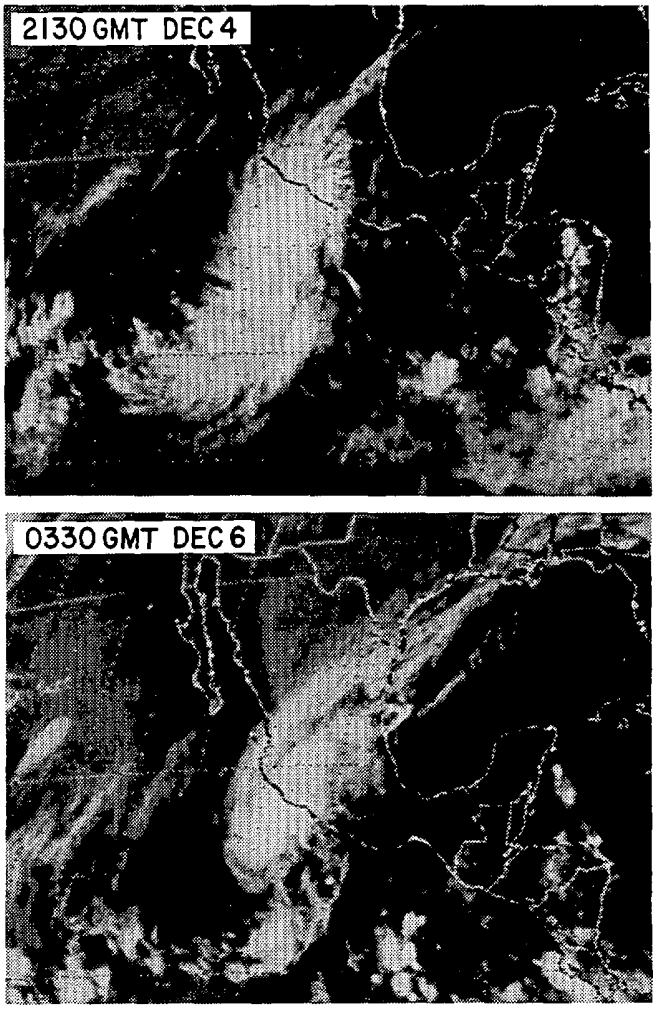
---Data base from NOAA/USDA Joint Agricultural Weather Facility.

TROPICAL STORMS AND HURRICANES

WINNIE, the last Pacific hurricane of a long 1983 season, remained almost stationary off the coast of Mexico during its 2-day life.



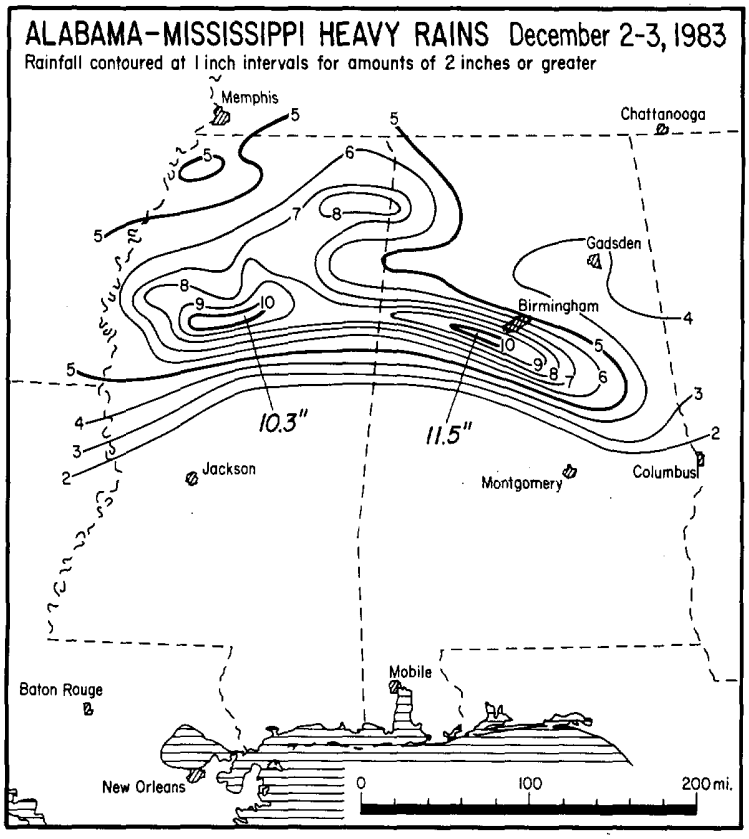
---Best track data from NWSFO San Francisco, California.



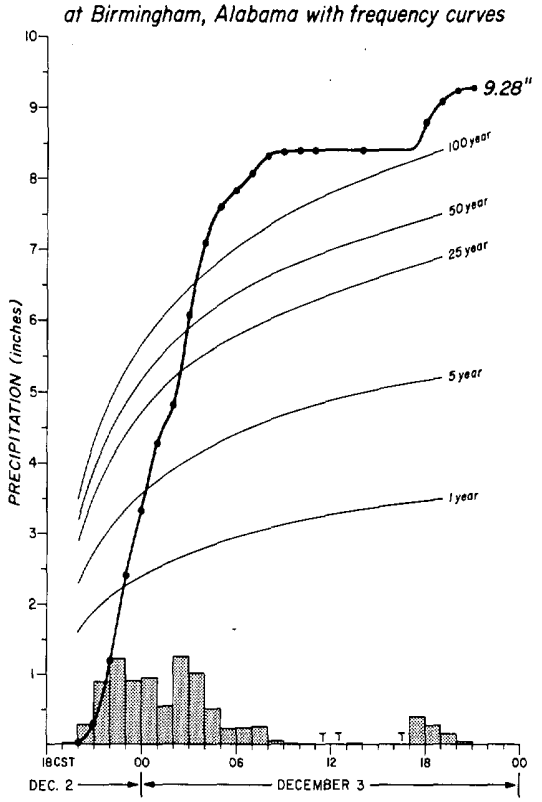
---Photos from NESDIS.

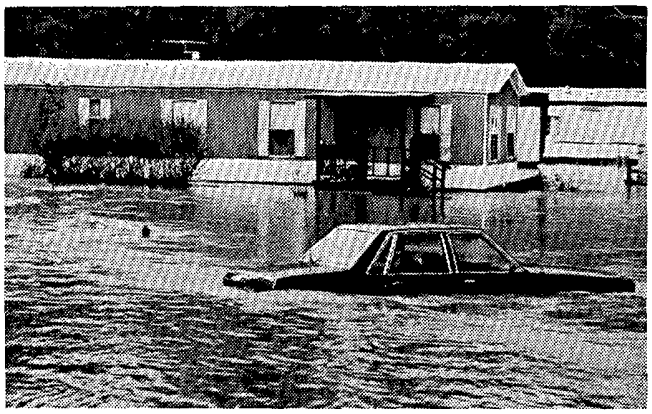
1. HEAVY RAINS and FLOODING in ALABAMA and MISSISSIPPI on December 2-3, 1983

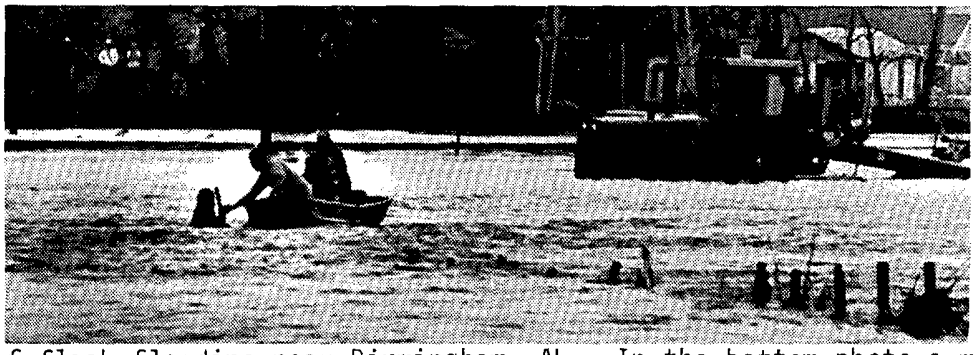
Late on December 2nd and through the morning of the 3rd, heavy rains with maxima of 10.3" and 11.5" fell in an east-west band over the northern halves of Mississippi and Alabama (see map below). The resulting flash floods claimed 1 life and caused damage to at least 2700 dwellings in the two states. Birmingham, Alabama received a record 9.22" in a 24-hour period, and had 9.28" overall, approximately equaling a 200 year rainfall event. ---Data supplied by Jay Shelley, NWSFO Birmingham, AL and Bruce Sullivan, NWSFO Jackson, MS.



Hourly and cumulative rainfall on December 2-3, 1983 at Birmingham, Alabama with frequency curves





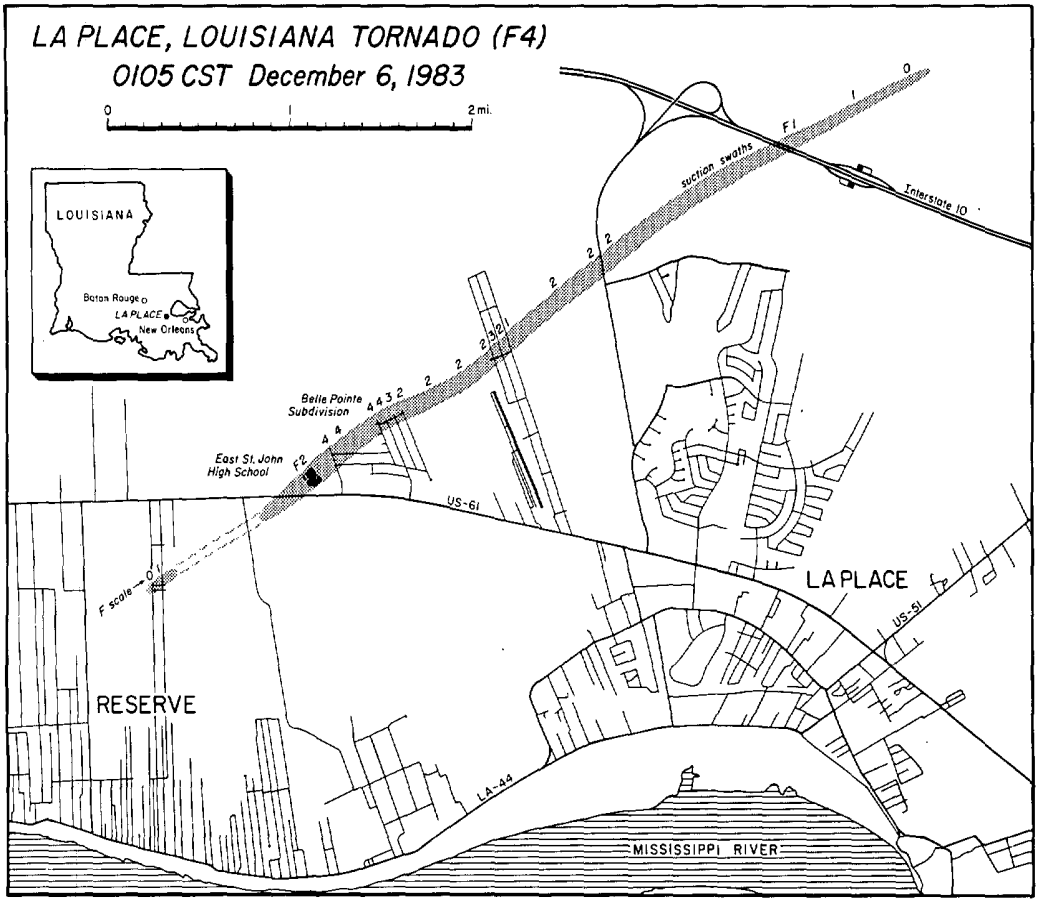


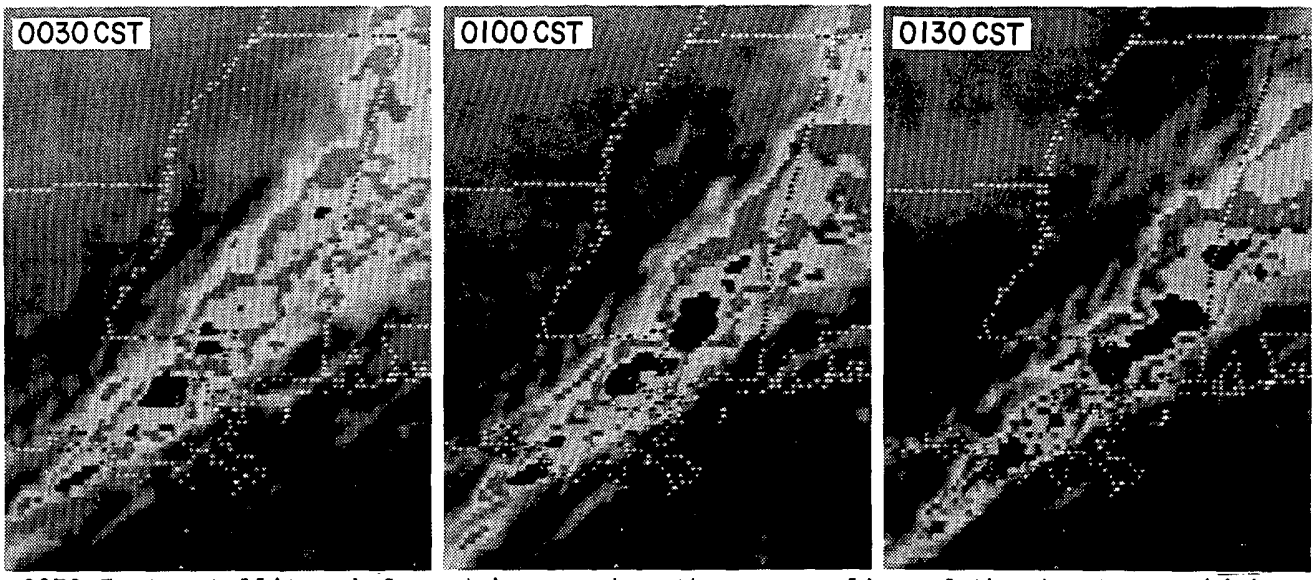
Examples of flash flooding near Birmingham, AL. In the bottom photo a man clinging to a post is rescued by two men in a boat. ---Photos from the Birmingham News.

2. TORNADO at LA PLACE, LOUISIANA on December 6, 1983

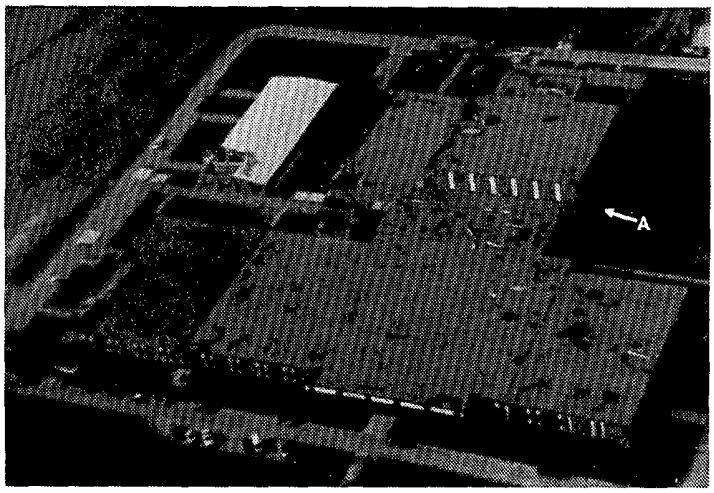
At 0105 CST on December 6th, a devastating (F4) tornado ripped a 5-mile, southwest to northeast path through portions of Reserve and La Place, Louisiana (see map below). The tornado passed directly over the East St. John High School, causing considerable damage to the gymnasium and a shop building. It then moved through the Belle Pointe subdivision where many homes were completely swept from their foundations. The tornado passed through a second subdivision and left suction swath marks in a farm field before it crossed Interstate 10 and dissipated in a forested area.

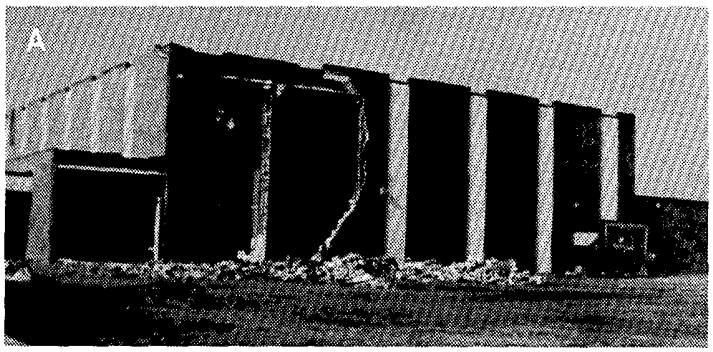
25 to 30 homes were destroyed, and another 100 to 125 received major damage. Local officials estimated the total damage to be about $6 million. Miraculously, no one was killed, although 25 people were injured. ---Mapping by NWSFO Slidell, Louisiana and the University of Chicago.





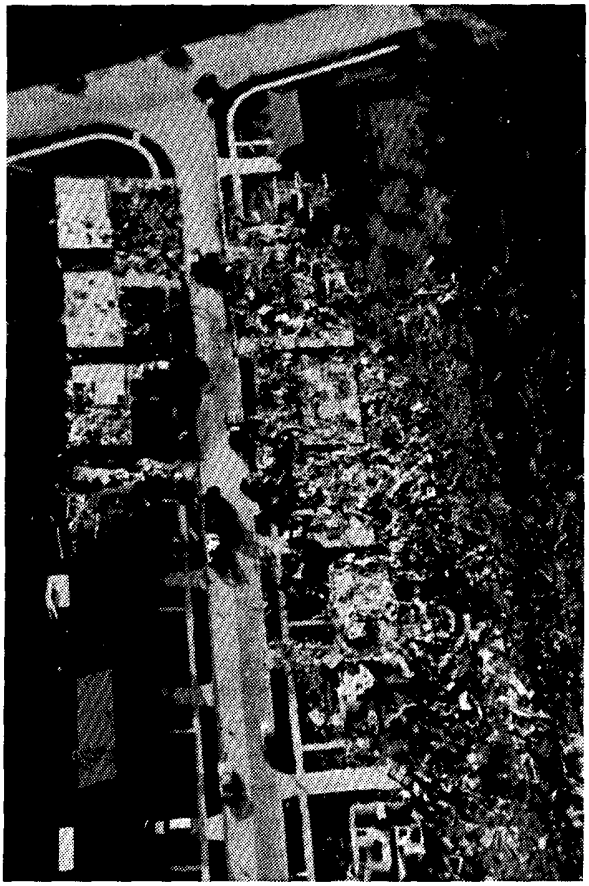
GOES East satellite, infrared images show the narrow line of thunderstorms which produced the La Place Tornado. ---Photos from NESDIS.





Damage to East St. John High School. Part of the gymnasium wall was blown off (photo A).

Destroyed homes in the Belle Pointe subdivision. A crushed home (photo B) was near the tornado's edge.



Other views of the destroyed homes along Houma Drive in the Belle Pointe subdivision. ---All photos on this and the following two pages by Duane J. Stiegler and James W. Partacz, University of Chicago, except where noted.

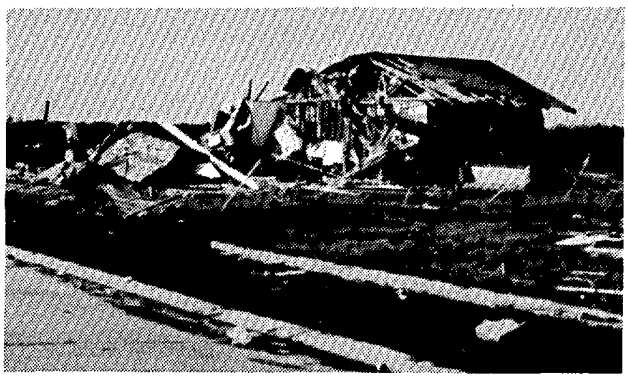
A car and pickup truck amid the rubble on Houma Drive had been tossed about like toys.

A collection of battered appliances and broken boards are all that is left of this house.

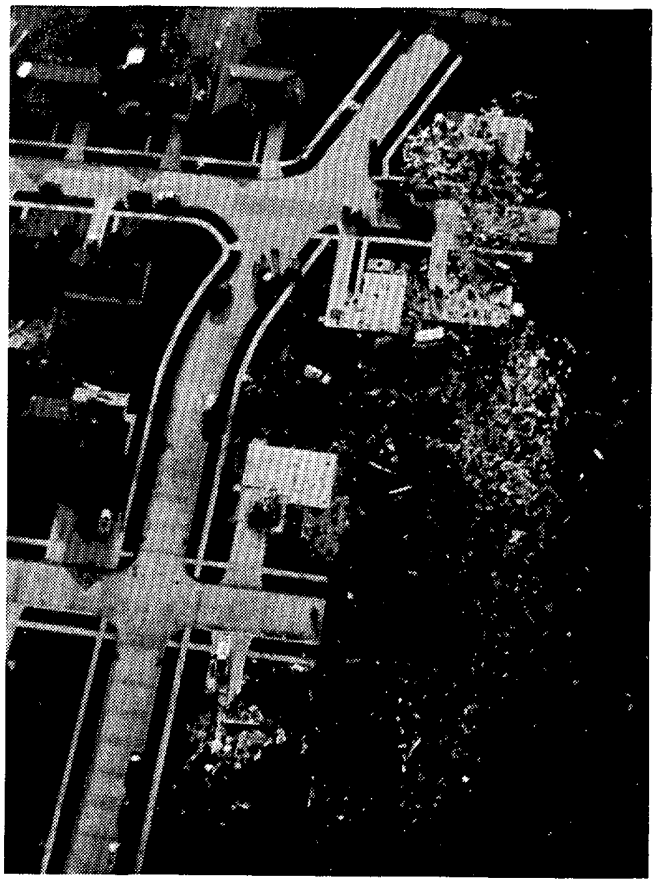
A destroyed car, into which a board had been driven through the opening to the gas tank and into the wheelwell.

Remains of a bath tub, made of a fiber-glass material.

Homes along Lee Drive in the Belle Pointe subdivision. Although many homes were totally swept from their foundations, appearing to be F5 damage, the tornado was rated F4 because the walls were only nailed to the foundations, not bolted.

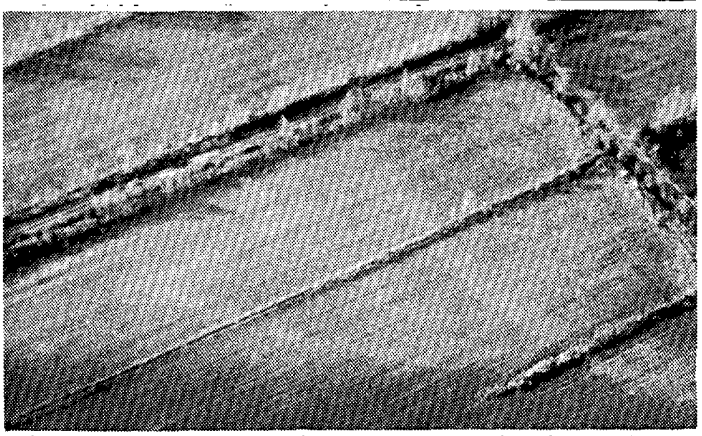


Two views of a destroyed home on Lee Drive. Most of the cyclone fence posts surrounding the home were bent over at ground level. ---Top photo by Jim Belville, NWSFO Slidell, Louisiana.



Overhead view of Lee Drive. The home in the photos at left is at the bottom left.

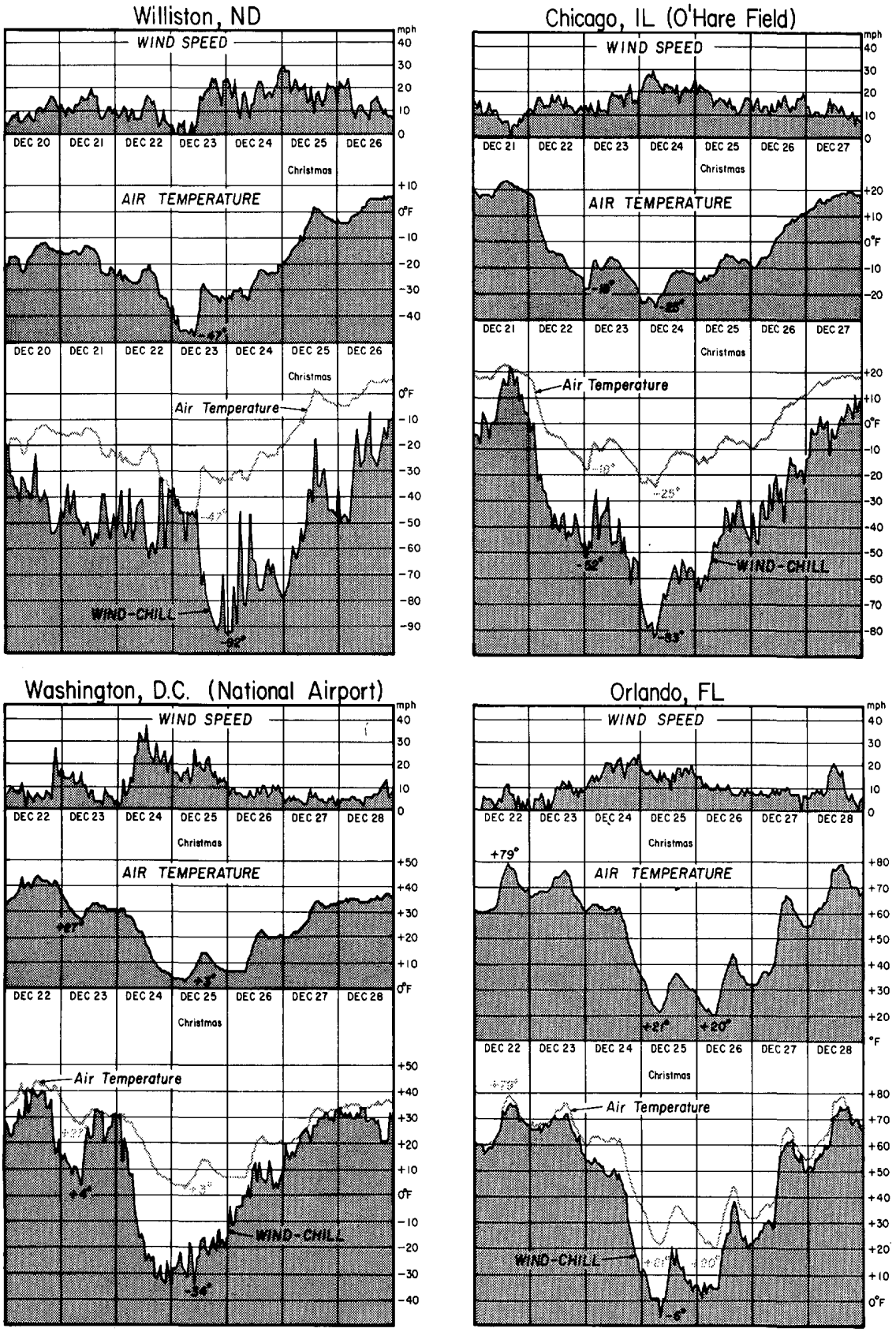
One of the anchoring nails which remained in the foundation of a home on Lee Drive after the walls had been blown free.



Three of many suction swath marks left in a farm field just south of Interstate 10 near the end of the tornado's path.

3. EXTREME COLD over the EASTERN TWO-THIRDS of the UNITED STATES, December 15-31, 1983

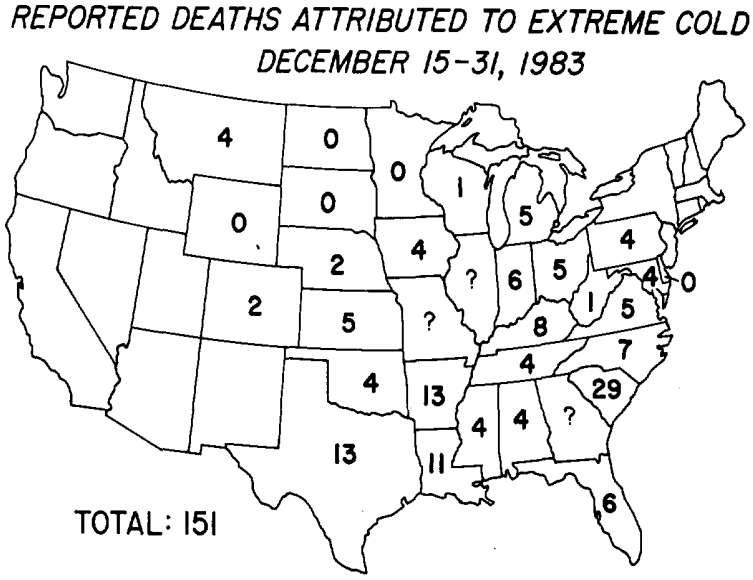
A series of bitter cold, arctic air masses began penetrating the midsection of the U.S. on December 15th, causing record low temperatures and extreme wind-chills over much of the eastern two-thirds of the nation through the remainder of the month.



Wind speed, air temperature and wind-chill graphs of the seven coldest consecutive days for four selected cities. The coldest days centered on the Christmas Holiday. ---Data from NWSFOs and NWSOs at identified cities.

EXTREME COLD ---- continued

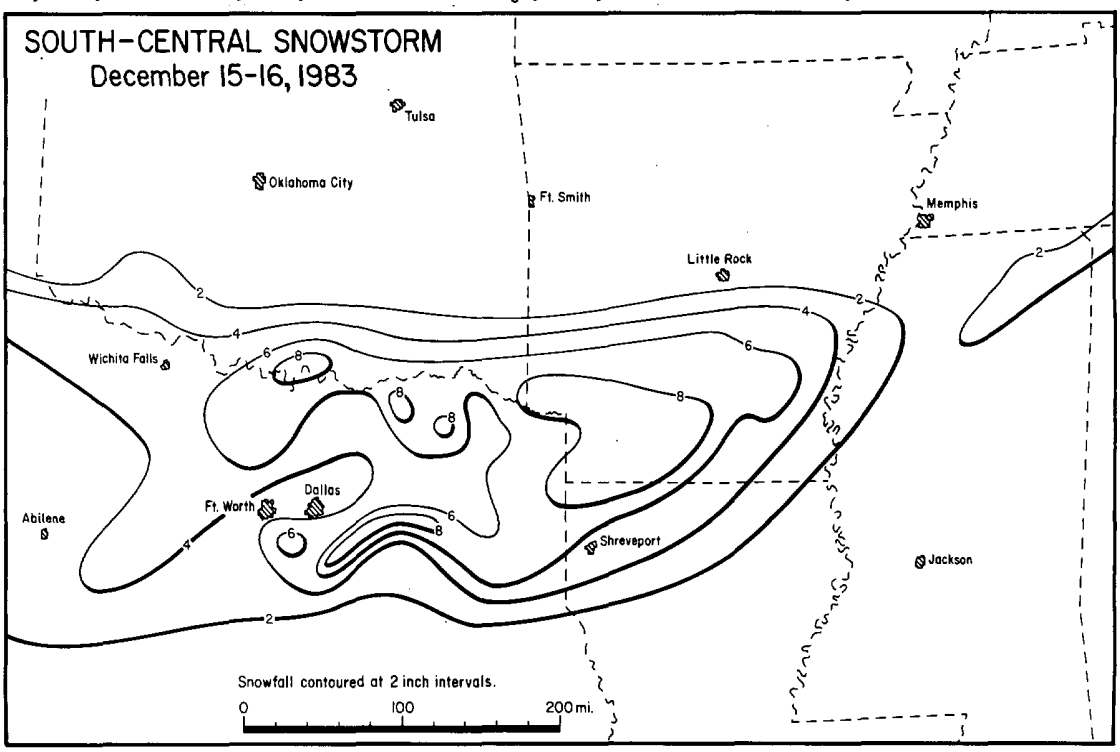
The abnormally cold temperatures were responsible for at least 151 deaths throughout the country. Although the northern states encountered colder temperatures for a longer period, most of the deaths were concentrated in the southern states where people are unprepared for such a long period of freezing temperatures. Many of the victims were elderly people who died of hypothermia in their unheated homes (see individual state listings).



Distribution of deaths for states which included the cold wave in their report.

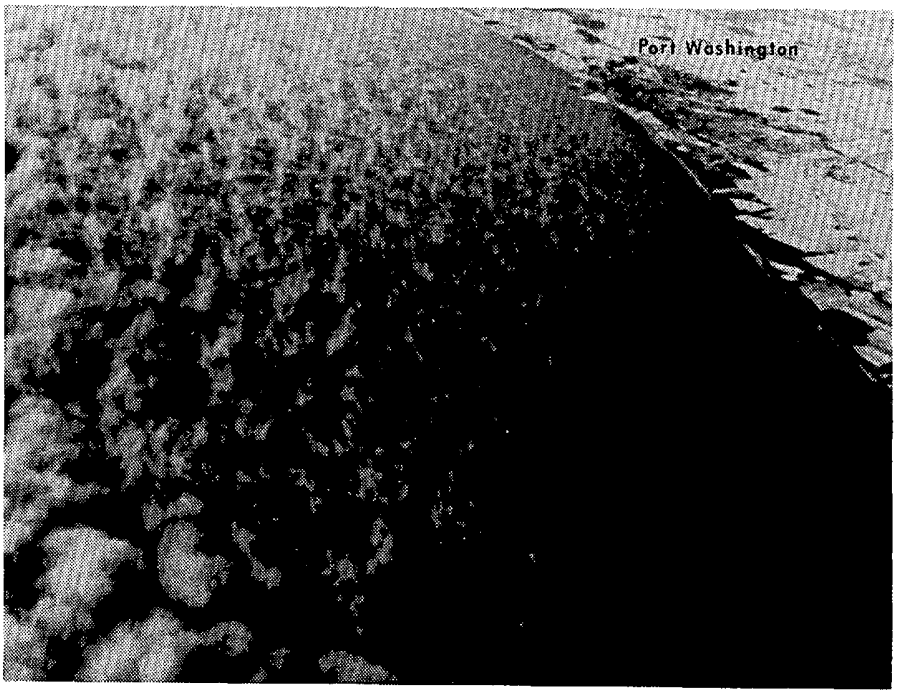
3a. SNOWSTORM in the SOUTH-CENTRAL STATES on December 15-16, 1983

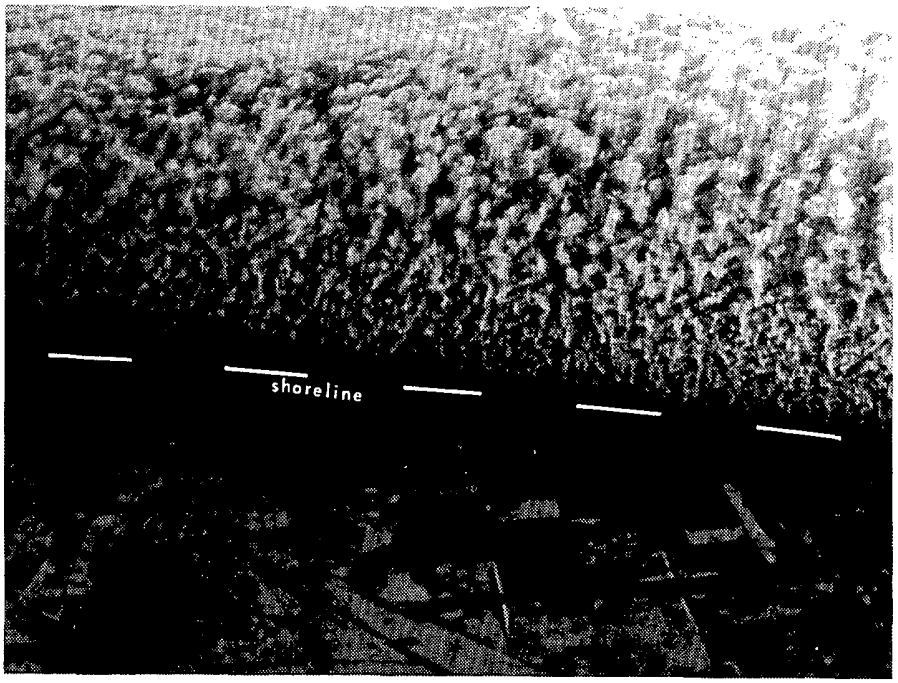
Combining with the first wave of cold air to push southward, an overnight storm dumped up to 10 inches of heavy snow in the south-central states on the evening of December 15th and into the morning of the 16th. The snow fell in an east-west band extending along the Red River Valley, much of northeast Texas, and eastward to northern Mississippi. The snow greatly disrupted area transportation since snowfalls of any accumulation are rarely received. Data supplied by NWSFOs at Little Rock, AR; Slidell, LA; Jackson, MS; Oklahoma City, OK; and Fort Worth, TX.



3b. STEAM FOG and STEAM DEVILS over LAKE MICHIGAN on December 18-19, 1983

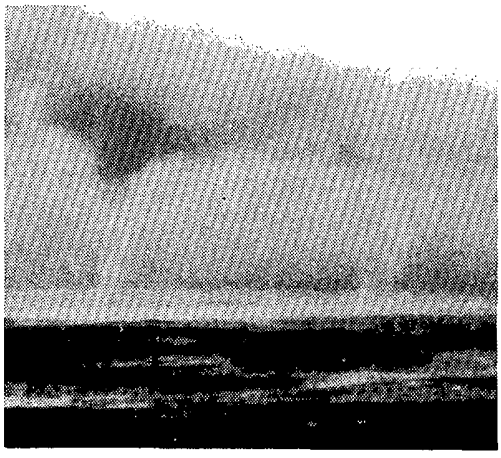
During the cold wave, lake snows became a regular occurrence along the Michigan and Indiana shores of Lake Michigan. Over the lake, widespread steam fog and numerous steam devils were produced as the frigid air passed over the warm waters. Members of the University of Chicago, Lake Snow Studies Project, headed by Dr. Roscoe R. Braham, Jr., captured the cloud-making process in these photos taken from NCAR aircraft during a 2 month field investigation.





TWO RIGHT PHOTOS: Steam rises from the water to form clouds on the upwind side of Lake Michigan near Port Washington, Wisconsin. ---Top photo (looking south at 1013EST, December 19) by Robert L. Fennimore; bottom photo (looking east at 0922 EST, December 18) by L. Michael Schoenberger.

LEFT & RIGHT PHOTOS: Steam devils rise from the lake surface. ---Left photo (1100EST, December 19) by Robert L. Fennimore; right photo (1008EST, December 18) by L. Michael Schoenberger.



STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
1 ALABAMA									
West Central Alabama	03	Early morning	1	0	7	0			Flash Flood
Heavy rainfall of 7 to 10 inches during the evening of December 2nd and early morning of December 3rd caused severe flash flooding and mainstream flooding in a narrow band from west central Alabama to just North of Tuscaloosa to the Birmingham area. The most severe flash flooding was in Jefferson and northern Shelby counties where record rainfall amounts produced record flood levels. The National Weather Service recorded 9.22 inches of rain during the 24 hour period from 2000CST on December 2nd to 2000CST December 3rd, and this established a new all-time 24-hour rainfall record for the city. Jefferson and Shelby counties were declared disaster areas due to flood damage. Numerous homes along Village Creek in Jefferson County were flooded and over 1500 families were affected. Most of the damage in Shelby County was to mobile homes in two mobile home parks located along Bishop Creek. About 200 dwellings were affected in northern Shelby County. Rescuers and warnings did reach the flooded areas in time to prevent anyone from being injured, although several hundred people did have to be rescued by boats. One death occurred when two men were attempting to cross a flooded bridge in southwest Jefferson County. One of the men lost his footing and was pulled under by the swift current. The other man managed to cling to a fence until rescuers could reach him. This happened around midmorning, after the rain had ended at the time, and flood waters had crested and receded somewhat.								
Tuscaloosa County	03	1605CST	.1	30	0	0	3	0	Tornado (F1)
A tornado, that was sighted by several persons including an aircraft pilot, over Lake Tuscaloosa touched down briefly and blew an empty school bus some 40 yards.									
Sumter County	03	1620CST	.2	30-50	0	0	5	0	Tornado (F1)
An apparent tornado struck the northwest part of York. There was major damage to a school where part of the roof was torn from the gymnasium. Two double-wide trailers, used as class rooms, were destroyed and one was damaged. Other damage included the loading dock doors of a building blown out and the entire building shifted on its foundation.									
Bethany area, Sumter County	03	1624CST			0	0	3	0	Wind
Thunderstorm winds downed trees and utility lines. Some trees were also downed in other parts of the county as a band of intense thunderstorms moved eastward.									
Hale and Bibb Counties	03	1650CST	14-18	20-60	0	0	4	0	Tornado (F1)
A tornado apparently first touched down over extreme northeast Hale County about 12 miles northeast of Greensboro and followed an intermittent path into Bibb County to near Eoline. Damage was mostly to timber.									
Bibb County	03	1700-1715CST			0	0	4	0	Wind
Thunderstorm winds gusted to 58 mph at about 1700CST and to 67 mph at 1706CST at the National Weather Service Office southwest of Brent. Downburst winds damaged the roofs of some buildings and downed trees in the Brent area a few minutes later. Other wind damage to a home and some farm buildings was reported near Woodstock.									
Bibb and Shelby Counties	03	1710CST	14-17	20-60	0	0	4	0	Tornado (F1)
An apparent tornado followed an intermittent path from U.S. Hwy. 82 about 2 miles northwest of Eoline to near Alabama Highway 5 about 2 miles southwest of West Blocton and into the southeast corner of Shelby County about 2 miles north of Marvel. Most of the damage was to timber.									
Saint Stephens area Washington County	03	1720CST			0	0	?	0	Wind
Thunderstorm winds downed trees and utility lines. Some roads were blocked by fallen trees. Scattered wind damage also occurred in other parts of the county. The roof was blown off an unoccupied home in Millry, and at least one home in Saint Stephens sustained roof damage.									
Dallas and Wilcox Counties	03	1720-1745CST			0	0	4	0	Wind
Thunderstorm winds downed trees and power lines. Trees were reported down on powerlines from just east northeast of Catherine in Wilcox County to 10 miles east northeast of Catherine in Dallas County. Other damage in western Wilcox County included at least one home damaged by a falling tree in the Arlington area and a mobile home was destroyed in the Lamison area.									

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
——ALABAMA									
Clarke County	03	1720-1800CST			0	0	4	0	Wind
Thunderstorm winds downed trees and utility lines as a band of intense thunderstorms moved eastward across the county. Wind damage was reported in the Jackson, Coffeeville, Thomasville and Gosport areas.									
Perry County	03	1725CST			0	0	?	0	Wind
Thunderstorm winds downed trees and damaged a mobile home in the Heilberger area.									
Shelby County	03	1730CST			0	0	4	0	Wind
Wind damage was scattered over the county as a band of intense thunderstorms moved eastward. Some trees fell on homes and buildings in the Montevallo, Pelham and Alabaster areas.									
Clarke County	03	1740CST	4-5	20-50	0	0	5	0	Tornado (F1)
A tornado moved eastward along an intermittent track from about 3 miles southwest of Grove Hill to near Whatley. Damage included some buildings unroofed, mobile homes damaged, some homes and vehicles were damaged by falling trees. There was extensive damage to timber and powerlines. At least 10 to 15 power poles were reported broken.									
Clanton, Chilton County	03	1745CST	.2	30	0	0	4	0	Tornado (F1)
A tornado dipped down briefly and downed trees and powerlines in about a two block area. At least two homes were damaged by falling trees.									
Monroe County	03	1800-1845CST			0	0	4	0	Wind
Thunderstorm winds downed trees and powerlines in parts of the county. Trees and powerlines were reported down north of Monroeville, and a car was reported to have been struck by a falling tree on the Monroe/Clarke County line.									
Oxford area, Calhoun County	03	1837CST	4	150	1	51	6	0	Tornado (F3)
Two persons were killed and at least 51 others were injured when a tornado struck a crowded shopping center. The shopping center consisted of an east to west row of adjoining buildings along U.S. 78. The deaths and most of the injuries occurred when a grocery store in the direct path of the tornado was destroyed. The windward wall apparently failed and the roof of the store collapsed inward. The grocery shelves kept the roof from crashing all the way to the floor and several hours were required for rescuers to reach all of the trapped victims underneath the collapsed roof. The two deaths were reported to have occurred in the rear or south part of the store. The tornado apparently first struck just east of the airport and crossed Interstate 20 and U.S. 78 as it moved northeast to the Golden Springs area. Most of the damage was in the area around the shopping center in a path about 1/4 mile long. Damage included 3 single family homes destroyed and 14 damaged, one apartment building damaged, 3 mobile homes destroyed and 11 damaged, 3 business buildings destroyed and 9 damaged, and 25 to 30 automobiles damaged or destroyed.									
Dallas County	03	1845CST			0	0	?	0	Wind
Thunderstorm winds downed trees on County Road 7 in eastern Dallas County.									
Autauga and Lowndes Counties	03	1845-1910CST			0	0	4	0	Wind
Thunderstorm winds caused scattered damage. Two houses and two outbuildings were reported to have been damaged in the Autaugaville area of Autauga County. At Benton, in Lowndes County, the roof was blown off a building that housed a machine shop around 1900CST.									
Elmore and Montgomery Counties	03	1900-1930CST			0	0	4	0	Wind
Scattered wind damage occurred as a band of intense thunderstorms moved eastward. Minor roof damage to several homes was reported in Elmore County and a powerline was downed southeast of Wetumpka. Trees and powerlines were downed in the Montgomery area. Winds gusted to 47 mph at Maxwell Air Force Base at 1903CST and to 38 mph at Dannelly Field in Montgomery at 1910CST. Powerlines and poles were reported blown down just west of Dannelly Field around 1914CST.									
Twin Springs area, Russell County	03	2115CST	short	40	0	0	4	0	Tornado (F1)
A tornado, that apparently touched down very briefly, destroyed a building that housed a cotton gin. The gin was not damaged, but several cotton wagons were twisted pretzel-fashion as was the steel frame work of the building. Trees were also downed.									
Jefferson County	06	0150CST			0	0	?	0	Wind
Thunderstorm winds downed some trees in the Mountain Brook area.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

ALABAMA

Selma Area, Dallas County	06	0251CST	13	200-500	1	19	6	0	Tornado (F3)

One person was killed and 19 others were injured by a tornado. The tornado apparently first touched down near Alabama Highway 22 just west of Selma and moved northeastward. The fatality occurred when the brick and concrete block wall of an apartment caved in on the couch where the victim was apparently sleeping. Seven students at Selma University received minor injuries when the roof and parts of the second floor of their dormitory was destroyed. The dormitory was occupied by 50 students when the storm hit. The other injuries apparently occurred to occupants of mobile homes and homes that were damaged or destroyed. Damage was very extensive along the tornado's path. At least 103 structures were damaged or destroyed. In addition to extensive damage to the apartment complex and Selma University, a new car dealership suffered extensive damage to buildings and some 30 to 40 vehicles destroyed.

Lowndes County	06	0310CST			0	0	4	0	Wind

Thunderstorm winds downed several trees, pushed three powerline poles over to about a 30° angle toward the northeast, destroyed one barn and damaged two other buildings in the area about 3 miles east of Benton.

Northern Autauga County	06	0330-0345CST			0	2	4	0	Wind

Damaging thunderstorm winds struck the area along U.S. 31 about 14 miles north of Prattville. Some trees and powerlines were blown down, a barn destroyed, and a mobile home damaged. Two persons were slightly injured by flying glass.

Elmore County	06	0345-0415CST			0	2	5	0	Wind

Two persons were hospitalized due to injuries sustained when downburst thunderstorm winds struck the area around Holtville and Holiday Shores. One mobile home was destroyed and several were overturned in the Holtville area. Several cars were damaged by falling tree limbs and powerlines were downed. At Holiday Shores on the east side of Lake Jordan, five homes and one mobile home were heavily damaged along with trees and powerlines downed.

Montgomery County	06	0350-0400CST			0	0	?	0	Wind

At least one home was damaged by falling trees and some powerlines were torn down as a band of intense thunderstorms moved through the area.

Clay County	06	0355CST			0	0	?	0	Wind

Thunderstorm winds downed some trees southwest of Ashland.

Butler County	06	0430CST			0	0	?	0	Wind

Thunderstorm winds downed some trees and powerlines, mostly in the Garland and McKenzie areas.

Citronelle, Mobile County	11	0315CST			0	0	4	0	Tornado (F1)

An apparent tornado touched down briefly about two miles northeast of the center of town. One home had severe roof damage and 15 others had lesser damage. Powerpoles were reported twisted off and many trees uprooted.

Mobile County	11	0410CST			0	0	?	0	Hail

Hail, at least 3/4 inch in diameter, was reported 6 miles southeast of Citronelle.

Liberty area, Pickens County	11	1700CST	3	100	0	0	4	0	Tornado (F0)

A small tornado apparently touched down about three times along an erratic path. Damage included two homes with roof damage, one home with windows blown out, two outbuildings destroyed and trees down. No rain was occurring at the time, and the funnel was plainly visible to spotters as it dipped up and down from its parent thunderstorm. Marble size hail had been reported around 1620CST northeast of the storm in the Millport area of Lamar County.

Tuscaloosa County	11	1845CST	.5	125	0	0	4	0	Tornado (F1)

An apparent tornado touched down briefly near Alabama Highway 171 about 6 miles northwest of Northport. A mobile home, a barn and a garage were damaged and trees were snapped off. Hail to golfball size was reported in Northport.

Jefferson County	11	2011CST			0	0	?	?	Hail

Hail to marble size and larger was reported on the Greensprings highway in the south part of the Birmingham Metro area.

Morgan County	11	2015CST							Funnel Cloud

Spotters reported a funnel cloud near Hartselle at 2015CST and near Somerville at 2040CST.

Shelby County	11	2040CST			0	0	?	0	Wind

Some trees reported down near U.S. 31 and Alabama Highway 70. Marble size hail reported at Columbiana.

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

ALABAMA

Shelby County	11	2108CST							Funnel Cloud

A funnel cloud was reported between Alabaster and Calera.

Chilton County	11	2130CST							Funnel Cloud

A funnel cloud was reported about 800 ft. above the ground 5 to 6 miles east of Clanton. Pea size hail had occurred earlier in the Jemison and Clanton areas.

Clay County	11	2220CST							Funnel Cloud

A funnel cloud was reported about 8 miles east of Ashland.

Statewide	24-27				4	?	?	?	Extreme cold/ icing

Bitterly cold air rapidly overspread Alabama on December 24 and before the temperatures finally moderated at least 4 deaths had occured as a result of overexposure to the cold. Many areas of the state had the coldest Christmas Day ever recorded, and the early morning low of 1° below zero in Huntsville was the coldest ever recorded there during the entire month of any December. Damage to property was extensive due to freezing water lines and as broken water lines began to thaw, water shortages occurred in some areas. As temperatures began to moderate somewhat, freezing rain and some snow spread over much of the state during the evening of the 26th and the early morning of the 27th. The icing glazed most roads in central and north Alabama and some icing was reported in the south part of the state. Conditions began to improve over most areas during the afternoon of the 27th, but some icing continued until the 28th over the higher elevations of northeast Alabama. Most of the icing was confined to roadways and ground surfaces, but some power outages did occur.

Covington County	28	0440CST	15	80	0	1	5	0	Tornado (F2)

A tornado apparently first touched down about three miles south of Loango and moved northeast along an intermittent path through part of River Falls before lifting near the Conecuh River bridge southeast of Gantt. One person was injured when struck on the head by a falling roof beam as the tornado hit their cottage near Gantt. The roof was ripped off the bedroom of one home where a person was sleeping and a large tree crashed through the bedroom roof of another occupied home, but no other injuries were reported. Damage along the tornado's path included 4 homes, 2 mobile homes, 2 barns, a truck, several outbuildings destroyed, 4 cottages, 2 homes and several outbuildings damaged and trees and power lines downed.

Flat Creek area, Geneva County	28	0538CST			0	0	5	°C	Wind

Downburst thunderstorm winds damaged at least 3 homes, damaged or destroyed at least 3 barns, and damaged a rural grocery store. Trees were also down in the area and there was some crop damage.

2 ARIZONA

Colorado City, Mohave County	27	2000MST	0.4	50	0	0	5	0	Tornado (F1)

During a violent thunderstorm with heavy rain and large hail, a small tornado touched down in the center of this small community on the Utah border. It moved from northwest to southeast and ripped metal roofs and sidings from sheds and warehouses and wrapped them around trees and power lines. After a spectacular electrical display the lines were broken and the town thrown into a blackout. A number of houses sustained roof and window damage. Large trees were uprooted and power poles knocked down. Luckily no one was injured.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
3 ARKANSAS									
Lee County	03	about 0230CST			0	0	4	-	Flooding
	Rising waters washed out a bridge along Wire Road. Urban flooding was reported at Marianna.								
Monroe County	03	about 1230CST			0	0	?	-	Flooding
	Widespread flooding was reported in the county after a 6-inch rainfall. Flooding occurred along stream beds and across some roads.								
Desha County	03	about 1330CST			0	0	3	-	Flooding
	About 5 inches of rain produced urban flooding in Dumas.								
Washington County	07	1930CST			0	1	?	-	Wind
	The oldest building in Maxville was destroyed by strong thunderstorm winds. One occupant was injured by debris. The wind also uprooted a few small trees and blew down some signs.								
Johnson County	08	1930CST			0	0	5	-	Lightning
	Two neighboring residences at Hartman were struck by lightning at approximately the same time. One residence had minor fire damage besides knocking out the TV set and a gas line. The other home was completely destroyed by fire.								
Ouachita County	10	about 0730CST			0	0	3	-	Flooding
	Urban flooding was reported in Camden after 3.3 inches of rain. Water closed some streets, but it did not enter any structures.								
Union County	10	1430CST			0	0	4	-	Lightning
	Lightning started a fire at four oil storage tanks near Smackover. Three of the four tanks blew their tops off. Approximately 200 barrels of crude oil were lost.								
Hempstead County	10	about 1700CST			0	0	4	-	Flooding
	Heavy rains produced flash flooding over the northern portion of the county. A bridge was washed out about 6 miles east of Nashville.								
Craighead County	13	0730CST			0	0	4	-	Lightning
	KASU Radio, the educational FM station from Arkansas State University, was knocked off the air by lightning. The transmission tower received major damage.								
Southern half of Arkansas	15-16				0	0	6	-	Snowstorm
	Snow began falling late on the night of the 15th, and it continued into the mid afternoon of the next day. The snow fell south of a line stretching roughly from Mena, to Little Rock, to Helena. The Forecast Office in North Little Rock, reported a trace of snow. The heaviest snow was reported at Foreman, where 9 inches of snow fell. Some reports of heavy snow were as follows: Hampton, Camden and El Dorado ..... 8" Cale, Star City, Rison, Monticello, Leola & Fordyce .. 7" Sheridan, Dumas, and Warren ..... 6" Pine Bluff ..... 5" Crossett and Stuttgart ..... 4" Travel was hampered by this snowfall because of the lack of snow removal equipment due to the infrequent occurrence of an event of this magnitude and extent. Many schools and businesses were closed.								
All of Arkansas	20-21				0	0	6	-	Ice Storm
	A combination of sleet and freezing rain began late on the 20th and continued into Wednesday the 21st. On Wednesday, precipitation was mainly in the form of freezing rain or freezing drizzle. All roads were hazardous due to the accumulation of ice. Schools were closed statewide early for the Christmas break. Innumerable traffic accidents occurred, causing many fatalities and injuries. Travelers were stranded along the major highways, and they had to be lodged in public shelters from the lack of hotel accomodations. Shelters were also needed because of the lack of electrical power. Trees and tree limbs were knocked down because of the weight of the ice; power lines were broken as a result. Other types of services interrupted were: cable television, water, telephone, and garbage collection. Some radio and television stations were unable to broadcast because of a variety of reasons, such as: lack of power, downed antenna or inaccessibility by personnel. Utility repair crews were called in from surrounding states. Timber damage was extensive in the commercial as well as the national forests.								

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
—— ARKANSAS									
Southern half of Arkansas	26-27				0	0	6	-	Ice Storm
	A second ice storm struck the southern half of the State, while snow and sleet fell over the other half. Travel was disrupted once more. Power interruptions were not as widespread because there were not that many tree limbs left to knock down across power lines. Countless traffic accidents with injuries and fatalities were reported. More timber damage occurred.								
All of Arkansas	15-31				13	0	7	-	Unusually Cold Weather
	Temperatures began falling significantly below normals about the 15th of the month and lasted until the end of the year. Many temperature records were set across the state. At the Forecast Office, the mercury stayed at or below freezing from 5PM, December 18, until 2PM, December 31, for a total of 309 consecutive hours. The Arkansas River froze from shore to shore along many portions for the first time since the McClellan-Kerr Navigation system was completed. In southwest Arkansas, Milwood Lake reservoir also froze over completely since it was impounded. Extremely low temperatures caused widespread problems with water pipes, even though many were buried two feet deep. House fires occurred with higher than normal frequency due to attempts to keep warm. Lack of water or low water pressure and icy roads prevented firefighters from putting out blazes. Low water pressure in many municipalities made it necessary to boil water before using it for human consumption. Strong winds during the coldest part of the arctic outbreak produced wind chill equivalent temperatures in the neighborhood of 60° below zero. Snow and ice remained on the ground for an unusually long period. Livestock had to be fed larger than average rations because pastures were covered. Ponds and water holes froze over completely. Many heads of cattle drowned as they fell through the ice while trying to get water. The weaker cows, calves, and calving cows suffered great stress from the low temperatures and many died. Poultry suffered considerably from the extreme temperatures, lack of electrical power, and from shortage of feeds that resulted from impassable roads. Elderly persons suffered considerable discomfort during the cold spell. Many services for the elderly were completely stopped or severely curtailed. Also, many elderly suffered from falls on the slippery surfaces and broke bones. Businesses suffered losses from interruptions to productivity or from the significant drop in sales during the Christmas shopping season. Trash collection was stopped in many cities for a two-week period due to icy roads. The State and municipalities spent large sums of money in personnel and equipment trying to keep the roads cleared. Salt, sand, and other chemical supplies ran low because of the long duration of icy conditions. Roads, streets, and highways suffered considerable damage from the freezing and refreezing of water on their surfaces. One hypothermia death occurred last month, November 17, in Pulaski County. During December, 13 more hypothermia fatalities occurred, according to the Arkansas Department of Health. The breakdown of these deaths by date and county is as follows: 12/18/83 Johnson County 1 12/18/83 Monroe County 1 12/23/83 Independence County 1 12/23/83 Desha County 1 12/23/83 Phillips County 1 12/24/83 Union County 2 12/24/83 Johnson County 1 12/24/83 Lafayette County 1 12/25/83 Washington County 1 12/26/83 Pulaski County 1 12/28/83 Independence County 1 12/28/83 Garland County 1 Total 13								
4 CALIFORNIA, Northern									
Sierra Nevada	03 04	1000- 0500PST	-	-	1	6	4	0	Heavy snow, wind
	A deepening low pressure moved through the Sierra Nevada, causing 2' to 4' of snowfall. Wind gusts of 40 to 60 MPH were common with gusts as high as 60 to 80 MPH, closing ski resorts. Visibility decreased to near zero. Blowing and drifting snow caused many major highways to close.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

DECEMBER 1983

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

CALIFORNIA, Northern

Sacramento Valley North Coast and San Francisco Bay Region	03	1600 - 2100 PST	-	-	4	15	7	5	Wind, Rain
	A rapidly developing low pressure moved onshore the morning of December 3rd. By afternoon it had moved eastward into Nevada and continued to deepen. The low moved inland and winds increased to 75 MPH, causing the Golden Gate Bridge to close for only the 3rd time in history. Over 400,000 customers were without power in the Bay Area alone. Rainfall totals ranged from ½" to 3". Near San Francisco Airport wind gusts reached 92 MPH at 600'. Winds in excess of 60 MPH drove waves over the Coast Highway, flooding expensive homes. In Marin County gusts blew trees over, ripped roofs from ridge-top homes and smashed bay windows. Many fishing boats were damaged. Winds reached 40 to 55 MPH over the Southern Sacramento Valley. Some flooding occurred in the Delta area.								
Northern California Coast	9	0400 - 1200 PST	-	-	0	1	4	0	High Wind
	There were wind gusts of 40 to 50 MPH along the coast, with a peak wind of 68 MPH at Pt. Arena. Winds were confined to the coastal strip. Little damage was reported.								
Southern Sacramento Valley	9	0900 - 1400 PST	-	-	0	0	4	0	High Wind
	Wind gusts of 25 to 40 MPH, occasionally reaching to 50 MPH were reported. There were a few downed trees and power lines.								
Northern Sierra Nevada	10 11	2100 - 0700 PST	-	-	0	0	0	0	Heavy Snow
	Higher elevations reported 15" to 25" of snow. The 2000' to 4000' levels reported 3" to 5".								
Ukiah, Mendocino County	11	1030 PST	2	30	0	0	3	0	Tornado (F0)
	A local newspaper reported a tornado, sounding like 2 freight trains coming together. Five big trees were pulled up. No injuries were reported.								
Fresno, Fresno County	11	1445 PST	-	-	0	0	0	0	Funnel Cloud
	The observer at the Fresno Airport sighted a funnel cloud to the southeast, moving east.								
Sierra Nevada	23 24	2200 - 1500 PST	-	-	0	1	4	0	Heavy Snow
	Snow fell at 1' to 3' above the 4000' to 6000' level.								

4 CALIFORNIA, Southern — NONE REPORTED

5 COLORADO

Mountains	2-7				0	0	0	0	Heavy Snow
	Periods of heavy snow occurred in all sections of the Colorado Mountains. The greatest 24 hour snowfall occurred at Wolf Creek Pass on the 4th, when 30 inches fell. Snowfall of a foot or more in a 24 hour period also occurred at Crested Butte, Gothic, Steamboat Springs, Copper Mountain, Breckenridge, Eldora, and Rocky Mountain National Park.								
Northern Mountains, Northeast Foothills	5-8				0	0	4	0	High Winds
	Strong winds buffeted the Northeastern Foothills and the adjacent mountains each day. Gusts to 63 MPH occurred in Golden Gate Canyon on the evening of the 5th, with a peak gust of 85 MPH during the night at Buckhorn Mountain, west of Fort Collins. On the evening of the 6th, winds knocked down trees and snapped power lines in Boulder; a few windows were blown out in the city. Gusts were clocked at speeds of up to 102 MPH around 8PM in the southwest part of the city. During the night, a 102 MPH gust was also recorded at Mines Peak, on a mountaintop west of Boulder. The winds moved south on the 7th, with a peak gust of 63 MPH at the Air Force Academy. Winds blew over a semi trailer near Castle Rock in Douglas County. Shortly after midnight on the 8th, high winds returned to the northeastern foothills and gusts to 97 MPH occurred in southeast Boulder at 3:40 AM. Speeds of 60 to 70 MPH were reported in other parts of the city. Buckhorn Mountain noted a gust of 86 MPH at 5:25 AM. In the mountains, a gust of 69 MPH occurred at Silverthorne, in Summit County.								

COLORADO

Mountains, West	13-15				0	0	0	0	Heavy Snow
	Heavy snow fell at many spots in the mountains and western valleys: 17 inches buried Vail in 24 hours, with 13 inches in a similar period at Steamboat Springs and 16 inches at Red Mountain Pass. Some cities at lower elevations received heavy snow as well; 8 inches fell at Durango and Glenwood Springs.								
Mountains, West	20-28				0	0	5	0	Heavy Snow
	A very strong westerly flow of air aloft brought abundant moisture from the Pacific Ocean inland, and almost continuous snowfall buried all sections of the Colorado Rockies. Heavy amounts also fell at lower elevations. Many ski areas received a foot or more almost every day for nearly a week. Four day snowfall totals during the period included 58 inches at Wolf Creek Pass; about four feet in Breckenridge and Winter Park; 40 inches at Monarch Pass; and 38 inches at Berthoud Pass and Crested Butte. Vail had 16 inches of snow on the 27th; it was the 48th consecutive day with snowfall at the resort. Heavy snow also fell at lower elevations of western Colorado. Glenwood Springs received 14 inches on Christmas Day and 61 inches for the month, a record. Several roofs in the area collapsed under the weight of the snow, and the citys snow removal budget was exceeded by many thousands of dollars. 18 inches fell in Craig during the holiday weekend, and snow caused the roof of a quonset hut to collapse in Hayden. Grand Junction received 19 inches of snow during December, a record for that city. The snow was frequently accompanied by high winds, causing near blizzard conditions. The strongest gusts occurred on the 22nd, with gusts of 85 to 90 mph at the top of the Keystone ski area.								
Eastern Plains	20-25				2	?	6	0	Cold
	While Western Colorado was getting buried under mountains of snow, but experiencing seasonal temperatures, only light snow fell in Eastern Colorado; but, the plains were in the grip of one of the most severe cold spells in history. The temperature stayed below zero for 118 hours at Fort Collins, and 115 hours at Denver; both figures easily established all time records. The mercury dropped to 21 below in Denver on the 21st, the coldest temperature recorded in the city in over 20 years. The cold was accompanied at times by winds that plunged chill factors to 50 to 70 below zero. The coldest actual temperature recorded in Eastern Colorado was 40 below zero near Windsor, in Weld County. Two people froze to death in Denver; both were found outside, dead of exposure. Numerous cases of frostbite were reported from hospitals. Hundreds of water pipes broke in the intense cold; water mains and natural gas lines also fractured, and electricity consumption reached record levels. Light snow fell at times, and holiday traffic at Denvers Stapleton Airport was occasionally delayed for several hours.								

6 CONNECTICUT

Statewide	7	Morning			0	0	?	0	High Winds
	An intensifying storm with barometric pressure which dropped under 29 inches as its center moved through New England to 28.7 inches by the time it reached western ME brought 50 to 60 MPH wind gusts. Up to 30,000 electric customers lost power as wires were felled by falling tree limbs. A barn in Manchester and a house under construction in Stonington were knocked down. A falling tree limb damaged a car in New Canaan and unroofed a patio in Stratford. The peak wind gust at Bradley International Airport in Windsor Locks was 49 MPH recorded at 0230 EST. The peak wind gust in Stratford was 54 MPH. The NWS issued high wind warnings.								
Statewide	28	Evening			0	0	?	0	High Winds
	Scattered power outages were reported across the state as winds gusted to 50 to 60 MPH. In Middletown a store window was blown out by the gusty winds.								

7 DELAWARE

Newcastle County	12-13				0	0	0	0	Rain
	Recurrent rains totaled around 3 inches over the two-day period. This brought about swollen streams and widespread flooding of basements. Motorists were also inconvenienced as numerous roads were partially impassable due to high water.								
Statewide	24-26				0	0	6	0	Cold
	One of the coldest outbreaks of the century resulted in record low temperatures. Wilmington, with a reading of 7 below zero, broke the previous record low for Christmas Day by 9 degrees. Broken water pipes brought heavy demands upon plumbing establishments. In addition, water damge was widespread as thawing took place.								
Statewide	28	Morning			0	0	0	0	Freezing Rain, Sleet
	Roads quickly became hazardous during the latter part of the morning rush hour. A host of highway accidents occurred, at least one involving a fatality.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
8 FLORIDA									
Parker, Bay County	4	1000EST	-	-	0	1	1	-	Thunderstorm wind
A man was shocked by a downed power line.									
Panama City Beach, Bay County	6	0700EST	-	-	0	0	3	-	Thunderstorm wind
A roof was blown on to an adjoining building damaging both roofs.									
Blountstown, Calhoun County	6	0800EST	-	-	0	0	4	-	Thunderstorm wind
A store roof was destroyed, a barn was destroyed and trees were uprooted.									
Hillard, Nassau County	6	1230EST	-	-	0	0	4	-	Thunderstorm wind
A roof was blown off an airport hanger and trees were blown down damaging a house.									
Nassau County	6	1330EST	-	-	0	0	4	-	Thunderstorm wind
Several trees blown down over the county damaging several houses.									
Eglin AFB, Okaloosa County	11	0730EST	0.5	30	-	-	3	-	Tornado (F1)
A tornado damaged two airplanes and roofs.									
St. Petersburg, Pinellas County	11	2300EST	8.0	100	0	0	5	0	Tornado(F2)
Forty-four mobile homes damaged, trees uprooted, sixteen apartment roofs damaged, several homes damaged by falling trees.									
Charlotte County	12	0130EST	-	-	0	2	5	0	Thunderstorm wind
Several mobile homes damaged, a carport was destroyed, trees and utility poles downed, several cars overturned.									
Arcadia, Desoto County	12	0230EST	1.0	50	0	4	5	0	Tornado(F2)
A tornado destroyed several mobile homes and frame houses and injures four people.									
Rockledge, Brevard County	12	0520EST	-	-	0	0	5	-	Lightning
Lightning started a fire which destroyed a restaurant,garage and an apartment.									
Port St. Lucie, St. Lucie County	12	0610EST	-	-	0	0	4	-	Lightning
Lightning started a fire which destroyed an unoccupied mobile home.									
Milton(5S), Santa Rosa County	13	2330EST	1.5	300	0	0	5	-	Tornado(F2)
Four mobile homes were destroyed, six homes were damaged, three businesses were damaged.									
Panama City, Bay County	14	0240EST	1.5	50	0	0	5	-	Tornado(F1)
Blew out windows of motels and businesses and damaged 40 cars.									
Cape Coral, Charlotte County	16	0330EST	-	-	0	0	3	-	Thunderstorm wind
Wind destroyed screen enclosures and damaged a roof.									
Dade County(SW part)	16	0930EST	-	-	0	0	4	-	Thunderstorm wind
Several roofs were damaged, fences and trees downed.									
Florida	25/26		-	-	6	-	see below		Cold
Unusual cold weather caused broken irrigation and water pipes. Inadaquate heating units and carelessness with heating units caused many fires. Citrus and vegetable crops and plants were damaged and/or destroyed. ornamental plants were damaged. Several roads in north Florida were damaged. Six people died of exposure, three in Miami, two in Jacksonville and one in Tampa. Damage estimates for crops:$500,000,000 Damage estimates for other:$50,000,000									
Chipley, Washington County	28	0300EST	-	-	0	0	3	-	Thunderstorm wind
A school roof was damaged and rain water did further damage.									
Santa Rosa County	28	0600EST	-	-	0	0	3	-	Thunderstorm wind
Trees and utility poles downed, windows broken, utility shed destroyed.									

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
—— FLORIDA									
Dellwood, Jackson County	28	0630EST	-	-	0	0	4	-	Thunderstorm wind
One home destroyed and two others suffered roof damage.									
Port ST. Joe, Gulf County	28	0730EST	-	-	0	0	5	-	Thunderstorm wind
Three mobile homes destroyed, roofs damaged, sheds blown down, trees and power lines downed.									
Sopchoppy, Wakakulla County	28	0900EST	1	30	0	0	4	-	Tornado(F1)
Two homes extensively damaged, roofs were blown off and structural damaged occured, power lines and trees downed.									
Live Oak, Suwannee County	28	1030EST	3	30	0	0	4	-	Tornado(F1)
Large oaks and pines uprooted, several golf carts damaged along with their shelter, one mobile home damaged.									
Suwannee County Hamilton County (western)	28	1050EST	3	30	0	0	4	-	Tornado(F1) Hail
Golfball size hail covered the ground. Windows were broken out, trees and power lines and signs were downed.									
Cross City, Dixie County	28	1050EST	-	-	0	0	0	0	Hail
Golfball size hail.									
Chattahoochee/Sneads Jackson and Gadsden Counties	29	0100EST	-	-	0	0	0	0	Hail
Golfball size hail fell.									
Lee Madison County	29	0145EST	-	-	0	0	4	-	Tornado(F1)
A brick home was damaged, several mobile homes overturned, power lines and trees downed.									
Tallahassee, Leon County	29	0315EST	-	-	0	0	0	0	Hail
Baseball size hail fell in the northwest part of town.									
9 GEORGIA									
Paulding County	03	2130EST	0.3	30	0	0	3	0	Tornado (F1)
A tornado touched down briefly in Hiram, snapping or downing about 50 pine trees. One of the trees fell on a frame house, causing considerable roof damage. A metal shed was demolished.									
Cherokee County	03	2130EST	2.5	100	0	0	5	0	Tornado (F1)
A tornado touched down about 5 miles north of Canton. The tornado destroyed 12 greenhouses and one chicken house, damaged the roofs of two houses, and heavily damaged two garages and a truck. Several trees were downed.									
Muscogee County	03	2145EST			0	0	3	0	Wind
Thunderstorm winds downed a few trees and power lines. A few storage sheds were destroyed.									
Fulton County	03	2200EST	0.5	80	0	0	6	0	Tornado (F2)
A tornado demolished one warehouse, heavily damaged another, and caused roof damage to a third warehouse in the Fulton Industrial Park. Three delivery trucks were heavily damaged.									
Stewart County	03	2240EST			0	0	4	0	Wind
Thunderstorm winds caused damage at a marina in the northwest part of the county. A few mobile homes also suffered minor damage. Several trees were downed.									
Jones County	03	2335EST			0	0	2	0	Wind
Thunderstorm winds downed some power lines and damaged a few trees and one roof.									
Oglethorpe County	03	2345EST	4.0	40	0	0	5	0	Tornado (F0)
A tornado destroyed a double-wide house trailer 1 mile west of Enterprise on Highway 77. Several trees and power lines were downed. One barn and a few farm sheds were heavily damaged.									
Jefferson County	04	0115EST	1.0	30	0	2	5	0	Tornado (F0)
A tornado damaged two mobile homes near Bartow, slightly injuring two people in the mobile homes. Several large pine, oak, and pecan trees were uprooted or toppled. Several power lines and poles were blown down. Elsewhere in the county thunderstorm winds downed a church steeple, and a barn, damaged the roof of a house, and downed a few trees.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

DECEMBER 1983

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	
GEORGIA									
Burke County	04	0150EST			0	0	3	0	Wind
	Thunderstorm winds damaged a few farm buildings and downed a few trees near Shewville.								
Colquitt County	05	2015EST	10	80	0	3	5	0	Tornado (F1)
	A tornado touched down near the community of Bay and moved across the northwest part of the county. At least 3 mobile homes were destroyed and several homes sustained minor damage. Three people were injured when their mobile homes were destroyed. The tornado downed several trees, demolished 3 tobacco barns, and one hog pen, killing several hogs. Several roads were temporarily closed because of fallen trees on the roads.								
Mitchell County	05	2015EST			0	0	4	0	Wind
	Thunderstorm winds damaged a house and barn southwest of Pelham. Several trees were blown down onto the highway between Lester and Bridgeboro.								
Tift County	05	2108EST	4.0	100	0	0	5	0	Tornado (F1)
	A tornado heavily damaged four houses and one truck and downed numerous trees. The damage occurred near Brookfield.								
Irwin County	05	2130EST-2200EST			0	0	3	0	Wind
	Thunderstorm winds damaged a farm house 3 miles west of Irwinville and uprooted several trees.								
Berrien County	05	2230EST			0	0	4	0	Wind
	Thunderstorm winds blew a tree onto a house and moved several mobile homes off their support blocks. The damage occurred near Enigma.								
Berrien County	28	0300EST			0	0	4	0	Wind
	Thunderstorm winds destroyed a home under construction in the southern part of the county.								
Jones County	28	0800EST			0	0	3	0	Wind
	Thunderstorm winds downed several trees, destroyed a utility shed and damaged one house.								
Decatur County	28	0800EST			0	0	3	0	Wind
	Thunderstorm winds damaged two barns and a carport about 5 miles north of Bainbridge.								
Warren County	28	0840EST			0	0	2	0	Wind
	Thunderstorm winds downed a few trees just east of Mayfield.								
Elbert County	28	0900EST			0	0	3	0	Wind
	Thunderstorm winds downed a few trees and caused some roof damage at the Bobby Brown State Park.								
Morgan, Greene, Oglethorpe, and Taliaferro Counties	28	0900EST			0	0	3	0	Wind
	Thunderstorm winds downed a few trees in these counties.								
Richmond County	28	0915EST			0	0	4	0	Wind
	Thunderstorm winds downed a few trees and power lines. Falling trees and tree limbs damaged a few cars. Several car windows were smashed at Fort Gordon.								
Columbia County	28	0915EST			0	1	5	0	Wind
	Thunderstorm winds destroyed a mobile home near Harlem, slightly injuring one person. Several trees and power lines were downed. Four planes were damaged at a private airstrip on Old Belair Road.								
Lincoln County	28	0915EST			0	0	3	0	Wind
	Thunderstorm winds blew the roof from one small building at Martin's Crossroad. Several trees were damaged.								
Decatur County	29	0120EST			0	0	0	0	Hail
	Hail as large as baseballs fell near Bainbridge.								
Grady County	29	0200EST			0	0	0	0	Hail
	Hail as large as golfballs fell in Cairo.								
Cook County	29	0230EST			0	0	4	0	Wind
	Thunderstorm winds downed several trees in the southern part of the county. A few homes sustained roof damage, mostly from falling trees.								
GEORGIA									
Colquitt County	29	0245EST			0	3	4	0	Wind
	Thunderstorm winds destroyed one mobile home and heavily damaged another. Three people suffered minor injuries.								
Lanier County	29	0330EST			0	0	4	0	Wind
	Thunderstorm winds damaged the roofs of two mobile homes and destroyed two barns and several chicken houses.								
10 IDAHO									
Cassia, Minidoka, Power, Bannock, Bingham, Bonneville, Jefferson, and Madison counties	3	Evening			0	0		0	Heavy Snow
	Strong winds produced areas of blowing and drifting snow closing many roads. Idaho Falls received 8 inches of new snow; Rexburg, 9 inches; and Pocatello, 7 inches.								
Canyon, Ada, Elmore, Gooding, Lincoln, Jerome, and Twin Falls counties	24				0	0		0	Heavy Snow
	Many roads were again closed due to heavy snow accumulations and areas of blowing and drifting snow. New snow totals included Boise, 6 inches and Burley, 9 inches.								
11 ILLINOIS — NONE REPORTED									
12 INDIANA									
Statewide	Last two weeks				6	?	6	?	Extreme Cold
	Bitter cold arctic air settled in on Indiana during the last two weeks of the month. The extreme cold resulted in 6 deaths being reported due to hypothermia and large number of people treated for various degrees of frostbite. There were numerous reports of water pipes and mains bursting, causing damage to buildings.								
13 IOWA									
Statewide	18-25				4	10	5	0	Extreme Cold and Windstorm
	From the 18th thru the 25th extreme cold characterized the weather in Iowa. The month as a whole was the coldest December on record (9.8°F at Des Moines), but the average temperature for this 8-day period (again at Des Moines) was -9.4°F. During all but 26 hours of this period the mercury remained below zero. Besides the inconvenience of cars not starting in the cold, many mechanical devices were put to the test by the extreme weather and were found wanting. In several places water mains were frozen, and individual homes suffered losses due to frozen and broken pipes and attendant water damage. Just walking outside was potentially perilous, and more than a few people suffered from frostbite. The most dangerous period was from the evening of the 23rd thru the evening of the 24th. The wind came up and was blowing steadily at 25 to 35 mph, with gusts over 40. This caused the snow to start blowing and drifting, blocking roads and stranding holiday travelers. The wind chills experienced by those out in this weather were horrendous - in the -50 to -90 range.								
	At least about 10 people had to be treated for frostbite at hospitals after being exposed, although many more did not seek treatment for minor cases. The deaths directly associated with the cold are detailed below:								
Benton County	A Vinton woman died of exposure apparently after she was unable to get into her apartment. She was dropped off by her son at 11 PM on the 23rd. Apparently she couldn't find her keys to get inside, and succumbed to the cold before anyone could help. The temperature was between -10 and -20 at the time.								
Greene County	A couple was found dead in a car 5 miles north of Rippey. The car was found by farmers Saturday afternoon (December 24th), buried in drifts of snow. The Medical Examiner found that both exposure and carbon monoxide poisoning were to blame for these deaths.								
Jefferson County	A Fairfield woman died of exposure outside of her apartment. She was found the morning of the 26th. It was not known whether the woman had accidently locked herself out or had slipped on the ice.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED[1] DAMAGE PROPERTY	ESTIMATED[1] DAMAGE CROPS	CHARACTER OF STORM
14 KANSAS									
All of Kansas	18-25				5	0	6	0	Severe Cold.
	An unprecedented cold spell set temperature records throughout Kansas. Record lows were set every morning from the 18th through the 25th at Topeka and Wichita, and on all but the 21st at Concordia. Records were also recorded at Goodland from the 21st through the 23rd, and at Dodge City on the 19th and 22nd. Temperatures stayed at or below zero for 67 consecutive hours at Dodge City, 95 at Topeka, 110 at Wichita, 132 at Goodland and 161 at Concordia. All were all-time record lengths for below zero readings for any month. Lowest temperatures ever measured in December were: 17 below at Topeka on the 22nd, 16 below at Concordia on the 22nd and 10 below at Wichita on the 24th. The 10 below reading at Dodge City on the 19th tied the record low for December there. Average monthly temperatures were also the coldest on record in December throughout Kansas, and in some places it was the coldest month ever.								
	Five deaths resulted directly from the cold. A 76 year old woman died of exposure early on the 20th after her car became stuck on a country road near Colby. A 56 year old man was found frozen to death on the front porch of his home in Cawker City the morning of the 21st. A 90 year old man was found dead in his home on the 26th. Authorities believed he died from exposure on the 22nd. A 17 year old boy died as a result of hypothermia in his car after it became stuck on a back road east of Beloit early the morning of the 24th. A 55 year old transient was found dead as a result of exposure in an abandoned warehouse in Wichita on the 25th.								
	Most property damage resulted from frozen water pipes.								
15 KENTUCKY									
Southcentral Kentucky	03	Late Aftn -Eve			0	0	2	0	Flooding
	Minor flooding occurred over southcentral Kentucky when heavy rains moved north out of middle Tennessee. Some roads had to be closed near Scottsville, in Allen County, due to high water.								
Graves County	11	1400EST			0	0	2	0	Hail
	In the Cuba-Sedalia-Lynnville area, hail fell to a depth of 1/2 inch. Some traffic stopped briefly due to slick roadway surfaces on Highway 303 and a few other roads over extreme southern Graves County. The size of the hail varied from pea to marble size. A brief period of hail was also reported at Farmington and Wingo.								
Edmonson County	11	Eve			0	0	2	0	Lightning
	Some 200 homes in the Bee Spring area and towards Nolin Reservoir were without electricity for about 4 hours after lightning hit a utility pole.								
Western Kentucky	20-21	Lt Aftn Mrng			0	0	2	0	Icing
	Freezing rain that fell across western Kentucky prompted cancellation of schools and activities. Ice-covered roads resulted in hundreds of traffic accidents, most of them minor. A 27 year old Fancy Farm man, (Graves County), lost control of his car on Kentucky Highway 80, seven miles west of Mayfield. The man was thrown from...and then under the car, killing him. Road and bridge closures were numerous. Both the Irvin Cobb Bridge over the Ohio river at Paducah and the I-24 Bridge at Paducah were briefly closed. KY 641 near Draffenville and also KY 641 in the Sinkhole Hill area south of Benton along with the Purchase Parkway north of Mayfield were closed due to road conditions and the number of vehicles that were in the ditch.								
Statewide	23-26	Mrng Ngt			8	0	4	0	Bitter Cold
	The 1983 Christmas Season will be long remembered as one of the coldest on weather records. Some reporting stations broke century old records for low temperatures. Sub-zero temperatures coupled with wind speeds of 20 to 30 miles an hour plunged windchill indices down to 30 to 60 degrees below zero. The record cold temperatures raised havoc by freezing water lines causing pipes and meters to break, electrical controls malfunctioned, livestock stress increased, power lines snapped, automobiles became stranded, and numerous home fires occurred as a result of people trying to stay warm. Throughout the state of Kentucky, eight deaths were attributed to hypothermia.								

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED[1] DAMAGE PROPERTY	ESTIMATED[1] DAMAGE CROPS	CHARACTER OF STORM
KENTUCKY									
Statewide	27-28	Mrng Ngt			0	0	4	0	Freezing rain and snow
	Freezing rain moved west to east across the state of Kentucky on December 27 followed by light snow. the weather's icy grip contributed to numerous weather related traffic accidents, several with serious injuries. A few were fatal. Transportation was at a near standstill. Heating systems malfunctioned leaving hundreds without heat in the cold temperatures. Ice formed on tree limbs and interferred with power lines causing power outages. Domestic water pipes, industrial sprinklers and some city water lines broke and split. Many people throughout the state were without water for days. House fires were numerous.								
16 LOUISIANA									
Ouachita Parish	02	2305CST	2	150	0	10	6		Tornado (F2)
	A tornado struck the south portion of Monroe destroying 12 houses and damageing 125 additional buildings. The path of the tornado was 2 miles long and 150 yards wide. The most severe damage occurred to a government housing project where all 90 buildings sustained at least moderate damage., Total damage was estimated at over 1 million dollars. Of the 10 reported injuries, all were indicated to be minor.								
St. Landry Parish	03	1845CST	1.5	100	0	0	6		Tornado (F1)
	A tornado struck the town of Port Barre. The majority of the damage occurred to the downtown area. Two lumber sustained severe damage. One was totally destroyed and the other was severely damaged, including a 10,000 lb door that was torn from its hinges. At least 14 other places of business were damaged.								
Concordia Parish	05	1800CST	2	100	0	0	5		Tornado (F1)
	A tornado touched down several miles west of Vidalia destroying 11 new mobile homes and severely damageing 7 others. The tornado then hit a lodge inflicting severe damage to several buildings. Several autos on the road had windows and headlights blown out. Several homes close to the path had roof damage.								
Tensas Parish	05	1930CST	?	?	0	0	1		Tornado (F0)
	A tornado was observed to touch down for a short period of time in a rural area 10 miles southwest of Newellton. There was not reported damage.								
Franklin and Madison Parishs	05	2000CST				4			SVR TSTM
	A severe thunderstorm moving through these two parishs produced scattered areas of damage to trees and power lines.								
Rapides Parish	05	2200CST	?	?	0	0	1		Tornado (F0)
	A small tornado was observed by the sheriff dept. to touch down briefly just east of Alexandria. No damage reported.								
St. John-the-Baptist Parish	06	0105CST	5	100-300	0	25	7		Tornado (F4)
	The largest tornado ever recorded in southeast Louisiana struck the northwest residential sections of La Place Louisiana. The tornado had a track 5 miles long and a path width that varied from 100 to 300 yards wide. The tornado initially struck a new high school causing one wall to fail, the roof of a shop building to fail, and windows to be blown out. This structure remained sound after the tornado strike. The tornado then struck parts of two subdivisions totally destroying 25-30 homes and causing major damage to an additional 100-125. In the Belle Pointe subdivision, several homes had foundations swept clean including bathroom fixtures. However, this was not classified as F5 because the walls were nailed to the foundation, not bolted. As the tornado left the residential area it moved across a golf course then crossed Interstate 10 before dissipating. In all, 25 persons were injured with 5 seriously. All of the injured recovered.								
Caddo Parish	10	1610CST							Funnel Cloud
	A funnel cloud was observed near Four Forks, LA.								
Desoto Parish	10	1620CST							Funnel Cloud
	A funnel cloud was reported east of Stonewall, LA.								
Sabine Parish	10	1650CST			?	?			Hail
	A severe thunderstorm was accompanied by hail 1 inch in diameter.								
Bossier and Bienville Parishs	10	1658CST				4			SVR TSTM
	A severe thunderstorm moved across these two parishs producing tree and power line damage. Also, a funnel cloud and hail .75 inch in diameter was reported with this storm.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

Natachitoches Parish	10	1715CST							Hail
A severe thunderstorm produced hail 1 inch in diameter at the town of Robeline. There was no reported property damage.									
De Soto and Sabine Parishs	10	AFTN				5			Heavy Rain
Heavy rains of 5 to 8 inches fell during the afternoon causing widespread flash flooding which closed several major highways and numerous backroads. Several dwellings and numerous automobiles were damaged by the flood waters.									
Lafayette Parish	10	1955CST	.5	100	0	3	5		Tornado (F1)
A tornado touched down near the town of Youngsville causing damage to several homes and inflicting severe tree damage. There were 3 injuries associated with this storm.									
Evangeline and St. Landry Parishs	10	2155CST-2355CST				6			SVR TSTM
Severe thunderstorms moved across these two parishs for a two hour period. The storms were accomapnied by large hail, winds estimated near 100 mph, and very heavy rain. There was widespread damage to roofs and windows of homes in Opelousas, Basile, Sunset, Placid, Coteau, Holms Loreauville, and Eunice. Numerous utility poles were snapped and several mobile homes were destroyed. From insurance estimates, 2000 automobiles sustained damage from hail. In one instance a Louisiana State Policeman had his car pushed back 30 feet by the wind. He was applying the breaks at the time. Several cars were washed from roadways with about a dozen being rescued from the flood waters. No major injuries were reported, but numerous minor ones were. Flash flooding continued through the night.									
Caldwell Parish	11	0010CST							Funnel Cloud
The Louisiana State Police reported a large funnel cloud 12 miles southwest of Columbia.									
East Baton Rouge Parish	11	0015CST				4			SVR TSTM
A severe thunderstorm produced high winds which destroyed two new green houses at Zachary High School.									
St. Helena Parish	11	0030CST	.75	200	0	4	5		Tornado (F1)
A tornado touched down 4 miles east of Pine Grove. It destroyed 5 mobile homes and 3 homes were severely damaged. Four persons in the mobile homes were treated for minor injuries.									
Tangipahoa Parish	11	0105CST	2	150	0	0	5		Tornado (F1)
A tornado touched down near Shiloah (south of Amite). Numerous trees were destroyed, power lines downed and a girl scout camp sustained severe damage. About a dozen homes in the area near where the tronado was received damage ranging from moderate to major. There were no reported injuries.									
Washington and Tangipahoa Parishs	11	0110CST				4			SVR TSTM
A severe thunderstorm produced high winds which caused widespread tree and power line damage west of Franklinton. In addition, several farms received severe wind damage to barns and other outbuildings.									
La Fourche Parish	11	0425CST				5			SVR TSTM
A severe thunderstorm struck the northern portion of the parish causing widespread tree and power line damage. One mobile home was destroyed by high winds at Bayou Blue. Also, roof damage was reported in Raceland and Mathews.									
Orleans and Jefferson Parishs	11	0445CST				5			SVR TSTM
A severe thunderstorm struck the New Orleans Metropolitan area with high winds. The winds at New Orleans International Airport were clocked at 53 knots; however, wind shear equipment near the terminal had a gust to 90 knots during the storm. The wind blew out windows in the terminal building. As the storm moved into Orleans Parish, winds of 39 knots were recorded at Lake front Airport. The NWS wind equipment on Lake Pontchartrain recorded wind gusts to near 60 knots during the storm. Wind damage was reported in all parts of both Orleans and Jefferson Parishs. However, most was confined to tree, roof, and windows. The wind did manage to overturn a large truck in the northern part of New Orleans. There no injuries reported during the storm.									

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

LOUISIANA

Entire State	22-26					11	7	6	Cold Wave
An arctic air mass invaded the state on the 22nd and continued through the 26th. Record low temperatures for the month and records for duration below freezing were broken in almost every major town in the state. Low temperatures ranged from 6 degrees in Shreveport to 14 degrees in New Orleans. An ice storm on the 21st caused tree damage in the northern sections of the state. Otherwise, the cold wave episode was for the most part dry. Damage was widespread over the entire state and mainly consisted of broken pipes and the subsequent flooding. The New Orleans International Airport was without water and heat for 10 days. Also, the water pressure reached dangerously low levels in the New Orleans area. At LSU alone, damage to pipes was estimated at 100,000 dollars. In another parish, all 37 parish schools sustained at least 10,000 dollars damage each. In Placqumines Parish, the loss to the Citrus Crop was put at 1 million dollars. A total of 11 persons died as a direct result of the cold temperatures and wind. In southern Louisiana, over 100 hunters were rescued from the swamps on the 23rd and 24th. Several of the persons rescued were near death.									
Jefferson, Orleans, and St. Tammany Parishs	28	Night					6		Heavy Rain
Rains of 5 to 7 inches fell over much of Jefferson, Orleans, and St. Tammany Parishs causing significant flooding. In the city of Kenner in Jefferson Parish the flooding was worst. This was because the drainage pumps were damaged by the earlier freeze. At least 100 homes had up to 2 feet of water in them. Another 400 houses had water to the doorstep. In Orleans Parish most of the flooding was confined to roadways. In St. Tammany Parish, several homes received flood damage in the town of Covington. Severe street flooding continued into the afternoon of the 29th.									
St. Tammany Parish	28	2300CST	3	50			4		Tornado (F0)
A small tornado produced spotty damage to trees and roofs as it moved across the city of Slidell. The tornado was first observed by a NWS forecaster near his home.									

17 MAINE

Coastal; York, Cumberland, Sagadahoc, Lincoln, Knox, Waldo, Hancock and Washington Counties	06-07	1200EST			0	0	5	0	High Winds
A developing low over the central Great Lakes early Tuesday afternoon moved eastnortheast and was located just to the southwest of Caribou Wednesday morning. This vigorous system produced strong southeast winds and rough seas along the entire coast late Tuesday night and early Wednesday. Winds veered into the southwest and west during the rest of Wednesday. The Coast Guard at Jonesport recorded wind gusts to 58 mph. High tides were 1 to 2 feet above normal and high winds did minor damage to two lobster boats at Jonesport, when they dragged their moorings and began pounding together. Also, the rough seas at Hunnewell Beach in Phippsburg toppled the cottage damaged by the Thanksgiving weekend storm into the ocean and began undermining another. Several trees and numerous tree limbs were felled which, in turn, downed power lines, causing many scattered power outages in the coastal counties. Hardest hit appeared to be North Haven where islanders were powerless for 7½ hours.									
Southwest; York, Cumberland and Sagadahoc Counties	12	1600EST			0	12	5	0	Freezing rain
Light freezing rain began around the late afternoon commuter hour and caused acute traffic problems, especially in the Portland to Brunswick area. Interstate 295 was closed from Scarborough to Falmouth as about 400 cars either skidded off the road or into other cars. Two tractor-trailers jackknifed and another rolled over compounding the problem on the Interstate. In Brunswick, about 250 cars wound up off the road when workers left the Bath Iron Works Plant. U.S. Route 1 had traffic backed up for several miles as the Carlton Bridge, connecting Bath and Brunswick, became impassible at about 1745EST and took until 2000EST to untangle the mess. Several schools away from the coast were forced to cancel school Tuesday as many secondary roads remained ice covered even though temperatures went above freezing overnight.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS: KILLED	NO. OF PERSONS: INJURED	ESTIMATED¹ DAMAGE: PROPERTY	ESTIMATED¹ DAMAGE: CROPS	CHARACTER OF STORM

MAINE

Hancock and Kennebec Counties	13-14	0000EST			0	0	5	0	Heavy Rain

About 3 to 4½ inches of rain fell over most of Maine during the 48 hour period and produced flooding of many small rivers and streams. However, flooding was not as bad as that of the Thanksgiving weekend. The Bangor Hydro-Electric Company's 65 foot dam on the Union River in Ellsworth was reporting a flow of 10,000 CFS over or through the generating dam. At the base of of the dam, electrical regulators located closest to the river's edge had their bases flooded, forcing the utility to cut power. Also, two bisinesses located downstream received flood damage. This was a greater flow than the 9,000CFS recorded in 1963 which sent water over the Main Street Bridge. In Augusta, the Kennebec River crested 2 feet above the flood stage of 13 feet early Thursday morning, flooding parking lots in Augusta, Gardiner and Hallowell. The 14 lakes and ponds in the Cobbossee watershed were also spilling over their banks and all dams in the system were wide open. Normally, the dams are closed by November. By the end of the 14th, Portland had recorded 63.70 inches of rain so far this year, making 1983 the wettest in the 112 years of record, surpassing the 61.15 inches of 1979.

Central Aroostook County	13-14	1200EST			0	0	5	0	Ice Storm

Freezing rain began around noon over central Aroostook County. Ice build-up on trees and utility pole lines caused tree limbs to break and fall onto utility wires. The fallen limbs also damaged parked vehicles and impeded travel. Maine Public Service Co. was inundated with power outages late Tuesday night and many customers were without power for over 24 hours. The affected area was Mapleton, Washburn, Perham, New Sweden, Woodland, Stockholm and west to Long Lake, Fort Kent, Eagle Lake, Portage and Ashland. A spokesman for Maine Public Service said it was the worst ice storm he had seen in the 32 years he has worked for the company. Repairs were thwarted for 3 days as repaired lines would succumb to more falling limbs.

Central and Coastal	28	1900EST			0	0	5	0	High Winds

A strong southerly wind developed quickly ahead of a vigorous and fast-moving cold front. The winds diminished rapidly behind the front. Peak gusts of 69 mph (60Kt) were reported by the FAA in Augusta, by the Coast Guard on Great Duck Island and Manana Island. Other gusts reported were 63 mph (55 Kt) by the Coast Guard on Seguin Island and 55 mph (48 Kt) by the WSMO at Portland. Owls Head Airport in Rockland reported a freak gust estimated at 100 mph, which tore a light plane from its tie downs and wrapped it around a support cable. Street signs, windows and tree limbs fell victim to the strong winds. There were minor scattered power outages.

18 MARYLAND and D.C.

Allegany and Garrett Counties	3-4				0	0	4	0	Sleet, Freezing Rain

Ice coated roads, beginning late on the 3rd through morning of the 4th. Auto mishaps resulted in several injuries as driving became hazardous. The area between Grantsville and Frostburg was hardest hit and ice-laden trees and wires brought about power outages for up to 12 hours.

Central, Northern & Western Counties	6-7				0	0	4	0	Wind

Low pressure center moved out of the Ohio Valley and intensified rapidly over New England. Strong northwesterly winds developed over the state, particularly across the northern sections. Wind gusts up to 50 mph were prevalent with one report of a 63 mph gust in Garrett County. Damage was scattered and minor for the most part. Some of the more noteworthy incidents: A mobile home was blown over while being towed through Caroline County near Baltimore Corner; A transformer blown off a pole on the University of Maryland campus exuded toxic material that was safely contained; Route 50 in Garrett County was blocked by fallen trees; Power outages affected 17,000 homes in the Baltimore metropolitan area.

Statewide	12-13				0	1	4	0	Rain

Recurrent rains over the two-day period totaled 3 to 4 inches in many sections. Minor flooding of low-lying area roads was common, along with widespread basement flooding. The Edgewood to Elkton region was hardest hit, and several roads were closed for a time. Near Largo, Prince Georges County, a driver attempted to ford a normally inches deep stream. The automobile was swept away by 8-ft waters. One occupantwas able to reach land and summon help. The other was rescued with minor injuries, after clinging for a time to tree limbs.

Most of State and District of Columbia	21-22				0	?	3	0	Freezing Rain

One of the worst freezing rain situations in many years enveloped the area beginning the evening of the 21st into early morning of the 22nd. Exceptions were the southeastern counties where precipitation was unfrozen, and the far western counties where sleet changed over to a 2-inch snowfall over Allegany and Garrett Counties. Travel came to a virtual standstill..many people electing to wait it out. Those who did venture onto roads soon were beset by multitudes of accidents, abandoned vehicles and long backups. Several bridges in Washington, D.C. were closed..as were sections of the beltways around Washington and Baltimore. Roads began to be passable again during the morning of the 22nd, as temperatures climbed above the freezing mark.

MARYLAND and D.C.

Statewide and District of Columbia	24-26				4	10	6	0	Cold

One of the most severe outbreaks of Arctic air of the Century enveloped the mid Atlantic region..creating many record low temperature readings on Christmas Day. Readings of below zero were prevalent, with a 20 below zero temperature recorded at Oakland, Garrett County. A number of persons were treated for frostbite or hypothermia..including a man and wife who were marooned when their vehicle became stuck on an isolated road south of Frederick. In addition, 4 men were victims of exposure. Widespread frozen water and gas lines placed a heavy demand on plumbers. Considerable damage to homes and business establishments then occurred as frozen pipes later thawed. One example was water damage at a Rockville area school amounting to $50,000. Area marinas also reported many boats to be damaged by ice.

Northern and District of Columbia	28				0	?	0	0	Freezing Rain

Another major glaze situation occurred during the early morning hours and rush-hour drivers had to contend with numerous accidents, including many multi-vehicle ones. An undetermined number of minor injuries were attributed to falls on slippery walkways.

Dorchester County	28	1600EST			0	0	3	0	Wind

Winds associated with an approaching cold frontal system gusted to 50 mph in the Cambridge and Church Creek areas. Tree and minor property damage resulted.

19 MASSACHUSETTS

Statewide	6-7	Evening-All day			0	0	5	0	High Winds

Wind gusts reaching 60 to 70 MPH were common across the state. A portion of a roof on a three-story house was ripped off at 2330 EST on the 6th in Revere. In the early morning hours of the 7th several plate glass windows were blown in in Cambridge and Lynn. Many scattered power outages were reported with one particular power failure resulting in a three-hour shutdown of the water supply for the city of Lawrence. In Worcester, dagger-like chunks of glass were blown from the window of a city skyscraper. Overhead traffic signals were blown down in Waltham and a silo leveled in Sterling. In Braintree, a 25 foot cement wall of a warehouse under construction was blown down. On Route 290, near Worcester, a trailer truck flipped over crushing a small car. No injuries resulted. In the Berkshires in western MA a peak wind gust to 83 MPH was recorded in N. Adams. NWS high wind warnings were issued early on the 7th. An intensifying storm center moved northeastward through N.E. with the central pressure dropping under 29 inches to a low of 28.70 inches when it reached northwest ME early on the 7th. Thunderstorms accompanied this system as it moved through the state on the evening of the 6th.

Central and Western Portion	28	Afternoon & Evening			0	?	0	0	Ice Storm and Street Flooding

A rash of highway accidents occurred and a number of pedestrians were treated for falls on the ice. Some sections of state roads were closed for a time due to the icing from freezing rain. Temperatures rose above freezing by early evening but many roads were flooded from heavy rain and the thawing conditions.

Eastern Portion	28	Evening			0	1	5	0	High Winds

Winds gusting to hurricane force or 75 MPH at Onset, 89 MPH from the SSE at Blue Hill Observatory, Milton, injured a woman in Onset when her storm door broke loose, and destroyed a building under construction in Fall River. In Hull, a commuter boat was driven into a pier damaging the boat and the pilings of the pier. Many thousands lost electric power for up to several hours throughout southeastern Massachusetts. Two tethered light planes tore loose and flipped over at Mansfield airport.

20 MICHIGAN

Lake Michigan near Ludington	05	1000 EST			1	0	0	0	Wind, waves

Man drowned when boat capsized.

Entire state	23	all day			2	0	0	0	Cold

Two persons died of hypothermia in Detroit area. Many records for the date broken. Marquette -17, Escanaba -17, Sault Ste. Marie -10, Battle Creek -12, Jackson -12, Lansing -6, Ann Arbor -12, Detroit -9.

Entire state	24	all day			1	0	0	0	Cold,snow,wind

One person frozen in Detroit. Many frostbitten. 18 persons injured in about 80 auto accidents. Highways closed and many persons stranded near south shore of Lake Superior and east shore of Lake Michigan.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

MICHIGAN

Entire state	25	all day			2	0	0	0	Cold
	One person frozen in Jackson, another died of hypothermia after slipping on ice in Detroit. Coldest Christmas on record. Power failure in Thumb area. Many water pipes burst. 8 ships trapped by ice in the Detroit River. Marquette -13, Sault Ste. Marie -13, Lake City -22, Jackson -11, Detroit -10.								

21 MINNESOTA

Northeast	10/11				0	0	0	0	Heavy Snow
	Snow began falling in the Duluth area on the morning of December 10th and continued through the following morning. Duluth received a maximum accumulation of 14.7 inches. The amount of snowfall decreased away from Duluth and ranged from 6 to 8 inches through Carlton, Itasca, St. Louis, Lake and Cook counties.								
Entire State	13/14/15				0	0	0	0	Wind, Snow
	Snow spread over Minnesota on December 13th and did not diminish until late on December 15th. Snow accumulations ranged from 1 to 2 inches in the west to over 10 inches in the east. Minneapolis had the largest three day snowfall total with 13.1". Winds increased and temperatures began to fall on December 14th as an arctic cold front pushed through the state. The strongest winds occurred during the night of December 14th and on the morning of December 15th. Near blizzard conditions developed in the southwest and west central sections of the state where the visibility was reported to be near zero with winds of 20 to 30 mph. The wind chill index dropped to 30 below to 60 below zero. Blowing and drifting snow conditions occurred to some degree over all of Minnesota. Many roads were closed due to drifts. Drifting snow continued during the evening of December 15th as the winds and snowfall gradually diminished.								
Northeast	21	Morning			0	0	0	0	Heavy Snow
	A narrow band of heavy snow fell inland from Lake Superior on the morning of December 21st. The heavy snow extended from Homecroft, just north of Duluth, to Finland with up to 20 inches reported.								
South and West	23/24/25				0	0	4	0	Wind, extreme cold
	Winds of 20 to 30 miles per hour with occasionally higher gusts caused near blizzard conditions to the south and west of Kandiyohi county. The wind chill index was generally 60 to 80 degrees below zero at Worthington on the morning of December 24th. Blowing and drifting snow developed during the evening of December 23rd in the western portion of the state and spread rapidly through southern Minnesota during the morning of December 24th. Visibilities were frequently near zero and 4 to 5 ft. drifts closed numerous roads making travel impossible. A drift on Highway 15 south of Winthrop reached 15 feet by the afternoon of December 25th and took over 5 hours for a snowplow to clear. Hundreds of motorists became stranded during the evenings of December 23rd and 24th. Many holiday travelers heading west from Minneapolis and St. Paul got into the central Minnesota counties of McLeod and Sibley before conditions became too severe to continue. Winds and severe cold in the southwest corner of the state caused several power outages as well as the loss of livestock.								

22 MISSISSIPPI

North Mississippi	2-5				0	0	5	?	Flood/Flash Flood
	Late on the 2nd and early on the 3rd, from six to eleven inches of rain fell across Mississippi north of a line from Rolling Fork to Macon. The heavy rains were quickly followed by minor flash flooding in West Central and Northeast Mississippi. This was followed by serious river flooding on the Yazoo, Big Black, and Tombigbee River basins. The Governor declared seven counties as disaster areas. As many as 1,000 homes were flooded, mainly near the cities of Greenwood, Grenada and Columbus.								
Lauderdale County	03	0345CST			0	0	5	0	Wind
	Widespread wind damage occurred as very heavy thunderstorms moved over the county. Numerous trees were blown down, a small shed was destroyed, and mobile home and a house were damaged.								
Leake County	03	1015CST			0	0	4	0	Wind
	Thunderstorm winds damaged a house, destroyed a garage and blew down numerous trees just south of Thomastown.								
Clarke County	03	1550CST			0	0	4	0	Wind
	Very heavy thunderstorm destroyed numerous small buildings and blew down a large area of trees in Northwest Clarke County.								

MISSISSIPPI

Laurel	03	1600CST	01	100	0	0	5	0	Tornado (F2)
	A tornado touched down in Laurel near the airport. It moved northeast about one mile damaging two hangers and destroying four aircraft. In Laurel, four businesses and five houses were heavily damaged.								
Pike County	11	0100CST			0	0	4	0	Winds
	Thunderstorm winds blew down numerous trees and overturned a trailer near the Felder's Campground community.								
Hattiesburg	11	0158CST	.6	75	0	0	5	0	Tornado (F1)
	A weak tornado touched down briefly in east Hattiesburg near the Leaf River, destroying one business and damaging two houses. Numerous trees and two small sheds were blown over.								
Jones County	11	0200CST	1	100	0	1	5	0	Tornado (F1)
	A small tornado touched down near Whitfield in southeast Jones County. The tornado path was about one mile long and about 100 yards wide. It destroyed two houses, two barns, and numerous smaller buildings. Two mobile homes were heavily damaged. A teenage boy was slightly injured when he was buried in the rubble of one of the damaged houses.								
Covington County	11	0200CST			0	0	4	0	Wind
	One house was heavily damaged and a chicken house and a mobile home were destroyed by strong thunderstorm winds.								
Harrison County	11	0536CST			0	0	4	0	Wind
	Thunderstorm winds blew down trees and destroyed the front porch of a home in Pass Christian.								
North Mississippi	16				0	0	0	0	Snow
	One to three inches of snow fell in Mississippi north of a Greenville to Columbus line. The heaviest snow fell near Bolivar and Sunflower Counties in Northwest Mississippi.								
Entire State	24 & 25				4	?	0	0	Extreme Cold
	Bitter cold arctic air moved over the deep South on the 24th. Low temperatures Christmas morning ranged from minus five in North Mississippi to the low teens along the coast. Strong winds pushed the wind chill temperature to less than 20 below over most of the state. The cold burst pipes and left many communities in the state without water. A state of emergency was declared in many communities due to the lack of water. During the cold spell, four elderly people died of hypothermia.								
North Mississippi	27				0	0	?	0	Freezing Rain
	Freezing rain and sleet glazed the northern part of the state, north of a line from Greenville to Columbus. The freezing rain produced scattered power outages and closed many major and secondary roads including portions of Interstate 55. In Northeast Mississippi about one half inch of snow covered the freezing rain by the evening of the 27th.								

23 MISSOURI — NONE REPORTED

24 MONTANA

Phillips County	16				1	0	0	0	Extreme Cold
	An elderly man whose vehicle had broken down died from exposure while attempting to walk into town under extreme weather conditions. Temperatures were near -20 degrees F. This combined with a 20 MPH wind was producing a wind chill temperature of -60 degrees F.								
Custer County (50 Miles South of Miles City)	21				1	0	0	0	Extreme Cold
	An 80 year old man died 600 feet from a ranch house after his vehicle became stuck about a mile away.								
Alberton	23				1	0	0	0	Extreme Cold
	A 64 year old woman died after walking to the store and back home. She died in the hospital from hypothermia.								
Glendive	25				1	0	0	0	Extreme Cold
	An 83 year old man died of exposure in his unheated home.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
25 NEBRASKA									
Southeast Nebraska	10	Daytime			0	0	0	0	Freezing Rain
	Freezing rain southeast of a line from Decatur to Beatrice caused glazing resulting in vehicle accidents.								
Dawes County	12	1345CST			0	0	0	0	High wind
	Winds gusted briefly to 60MPH at the Chadron airport. No damage reported.								
East Nebraska	14	Daytime			0	0	0	0	Heavy snow
	Locally heavy snow fell in eastern Nebraska with around 4 inches at Omaha and Lyons. Gusty north winds caused reduced visibilities in blowing snow.								
Central and East Nebraska	20	Daytime			0	0	0	0	Heavy snow
	Powder type snow accumulated 7 to 10 inches at Beatrice, 6 to 8 inches at Valentine, 6 inches at Grand Island, Lincoln, Mullen, Ord and Omaha and 4 inches at North Platte and Norfolk.								
East Third Nebraska	23-24	Night -Daytime			0	8	0	0	Ground Blizzard
	North to Northwest winds gusting 30 to 45MPH resulted in ground blizzard conditions in blowing and drifting snow reducing visibility in open areas to less than ¼ mile. Many east-west roads were reduced to one way travel or became blocked because of drifted snow. Some 8 to 12 foot drifts were reported in outlying regions. The winds also resulted in extremely dangerous wind chills of 60 to 80 below. One man and six children sustained frostbite in the Orchard area as they walked from a stranded vehicle. A woman also sustained frostbite after her car became stuck near Sutton.								
Entire State	16-25	----			1	0	4	0	Bitter cold
	Bitterly cold arctic air covered state shattering numerous temperature records. All time record low temperatures for December were set at Valentine with 37 below, North Platte with 34 below, Lincoln with 27 below, Omaha with 24 below and Grand Island with 23 below. Other records for the coldest December and consecutive hours at or below zero were set. Human activities were hindered by the cold. On December 22nd an elderly Omaha woman was found frozen to death in her backyard. Livestock losses were reported.								
East Nebraska	28	Night			1	0	0	0	Cold
	A woman was discovered frozen to death on a downtown Omaha street.								
East Central Nebraska	31-01	Night -Morning			0	0	0	0	Heavy snow
	Locally heavy snow fell with 4 inches reported at Offutt AFB, Papillion and Plattsmouth.								
26 NEVADA ——— NONE REPORTED									
27 NEW HAMPSHIRE ——— NONE REPORTED									
28 NEW JERSEY ——— NONE REPORTED									
29 NEW MEXICO ——— NONE REPORTED									
30 NEW YORK, Coastal ——— NONE REPORTED									
30 NEW YORK, Central									
Area Wide	3-4	Late PM			0	8	4	0	Heavy Snow
	The first major snow storm of the season entered Eastern New York late Saturday night/Sunday morning. Snow amounts ranged from near 4 inches in the Lower Hudson Valley to over 8 inches in Northern Saratoga-Warren County Area. The storm caused several minor fender-benders with 8 persons requiring medical assistance in Eastern New York. Otherwise, there was no damage done by this storm.								
NEW YORK, Central									
Area Wide	6-7	Late AM			5	50	7	0	High Winds, Blowing Snow, Rain
	Strong winds caused blizzard-like conditions in some sections of Eastern New York. Barometric readings went as low as 28.49 at Griffis Air Force Base at Rome, NY. Wind gusts of over 47 MPH were recorded at Albany Airport, and over 55 MPH at the Cortland County Airport. Wind gusts of over 69 MPH were reported in Amsterdam, Montgomery County. Snow fell in the Mohawk Valley and to the North, with amounts ranging from 2 inches in Eastern Fulton County to more than 8 inches in some Adirondack communities. Blizzard-like conditions are reported to have been the cause of at least 3 auto accidents, which claimed 5 lives. South of the Mohawk Valley temperatures remained above freezing. Rainfall of over 1.20 inches was reported in Kingston. As a result, creeks swelled and trees and power lines came down. The wind alone collapsed 2 buildings in Saratoga County, and brought power lines down on a 3rd building, which resulted in a major fire. Thousands of homes and stores were without power, some for up to 12 hours due to the wind.								
Clinton County, Essex County, Franklin County	12	PM			0	3	4	0	Rainstorm, Flooding
	Over 1.75 inches of rain fell at Ellenburg Depot Monday into Tuesday. Some minor flooding took place along the Saranac River. As a result, Clinton County instituted its County Disaster Plan. Overall damage was minor, as the rain changed over to snow and ice on the morning of the 13th. The ice which accumulated at the end of the storm did bring down some trees/power lines. Some areas of Essex County along the Boquet River volunteered to leave their homes.								
Mohawk Valley Lower Hudson Valley, Southern Tier	12	PM			0	7	7	0	Heavy Rain, Flooding
	Rain started falling in the Southern Tier and Central portions of the State the evening of the 12th. The heavy rain produced bankfull and flood conditions throughout most of Eastern New York. By Wednesday morning, reports of 4 inch plus storm totals were common. The hardest hit area was the Southern Tier of New York. Many areas along the Susqahanna River suffered flooding equaling a 15 year flood. The Conklin-Kirkwood Area of Broome County had water over 7 feet above flood stage. Near the end of the storm, the temperature started to drop below freezing and the precipitation changed to freezing rain. This resulted in some trees/power lines coming down, and several car accidents.								
Area Wide	22	2300EST			0	12	6	0	Heavy Snow
	The first day of winter found Eastern New York under a blanket of snow. Depth of snow ranged from 2 1/2 inches near Utica in Onieda County to 6 inches in Saratoga County. Toward the end of the storm the precipitation turned to freezing rain and snow. This created some problems for motorists trying to get to work. More than 70 accidents occured in Onieda, Madison and Herkimer Counties alone due to the buildup of snow and ice. Several trees/power lines came down during the same period.								
Area Wide	29	0030EST			1	25+	7	0	Ice Storm
	Freezing rain covered most of Eastern New York the morning of the 29th. Icy roads and sidewalks were so severe in Northern Saratoga County that postal officials stopped delivery of the mail. Some residents stated it was raining so hard you couldn't tell the rain from the sleet. Hundreds of car accidents were reported in Eastern New York. In Goshen, Orange County, an 83 year old man died of injuries he received from a car accident. The road was ice covered and inpassable according to local police. Icy roads were also blamed for 2 house fires in Sullivan County because local Fire Departments could not reach the homes due to icy roads. Additionally, power companies and DPW crews were kept busy with down trees/power lines.								
30 NEW YORK, Western									
Auburn, Cayuga County & other parts of Western New York	06	Evening			0	0	4	0	Wind & Snow
	High winds toppled trees and power lines, Clean-up took many hours. Blowing snow and icy roads created dangerous driving conditions. There were some reports of vehicular accidents.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED[1] DAMAGE PROPERTY	ESTIMATED[1] DAMAGE CROPS	CHARACTER OF STORM
—— NEW YORK, Western									
Parts of Monroe, Ontario, Seneca, Genesee, Wyoming, Orleans, Yates, Steuben, Chautauqua, Cattaraugus, Erie, & other Western & Central NY Counties	07				0	1	5	0	Wind & Snow
	Lake effect snow squalls made travel hazardous and caused many vehicular accidents. The strong wind blew down power lines. Many communities were without electricity for up to 3 hours. In the town of Bristol, Ontario County, a barn was torn down. Four cows inside were killed. In Waterloo, Seneca County, a huge tree was uprooted and ruptured a power line to 400 homes. Most schools in Genesee, Wyoming, and Orleans Counties were forced to close. In Canandaigua, Ontario County, a huge tree fell on a house. In the town of Potter, Yates County, a large tree fell on a car. The car's roof collapsed and the passenger was injured. In Bath, Steuben County, and portions of Chautauqua and Cattaraugus Counties, strong winds downed many trees and power lines.								
Village of Medina and other parts of Orleans County; North Tonawanda, Niagara County; Tonawanda, Erie County; parts of Oswego, Lewis, & Jefferson Counties	12	Morning			0	0	5	0	Rain and Freezing Rain
	More than an inch of rain, combined with melting snow, flooded streets and basements. In portions of Oswego, Lewis, and Jefferson Counties, many schools were closed due to freezing rain. There were some reports of vehicular accidents.								
Portions of Lewis, Jefferson, Tompkins, Chemung, and other parts of Central New York and Eastern New York Counties	14-16				0	0	5	0	Rain and Freezing Rain
	Snowmelt and 3.5 inches of rain produced flooding in low lying areas in Lowville, Castorland, Martinsburg, and Lyonsdale in Lewis County; town of Oxbow in Northern Jefferson County; and areas close to Fall Creek in Tompkins County. Temperatures hovered near the freezing point in some areas. Tree branches were coated with heavy ice. The weight bent and snapped tree limbs and brought down power lines.								
Sandy Creek & Tug Hill in Oswego County; portions of Jefferson & Lewis Counties.	17				0	0	4	0	Snow
	A lake-effect snowstorm dumped up to 4 feet of snow. Hardest hit was a 15 mile wide band extending from Lake Ontario eastward to the Tug Hill Plateau area in Northern Oswego and Western Lewis Counties. Motorists had to abandon their cars.								
Most portions of Western and Central New York	21-23				0	0	5	0	Snow, Wind, & Freezing Rain
	Heavy snow coupled with frigid temperatures pummeled the area. Airports, dozens of schools, many businesses were forced to close. Power and telephone lines were downed. Travel was hazardous. There were numerous fender-bender accidents.								
Parts of Lewis, Jefferson, Oswego Counties; Parts of the Central Finger-Lakes Region	29	Morning			0	0	4	0	Snow and Wind
	Strong winds and heavy snow caused blizzard-like conditions. Visibility was reduced to near zero in blowing and drifting snow. Trees and power lines were downed. Some vehicular accidents were reported.								
31 NORTH CAROLINA									
Statewide	06				0	0	?	?	High Winds, Heavy Rain
	A strong cold front moving across the State produced high winds and torrential rains which resulted in minor though widespread damage. The combination of 50 mph wind gusts and 1-3 inches of rain, which saturated the ground, resulted in countless trees being uprooted, many of which fell across powerlines resulting in power outages to thousands of homes. Isolated structural damage was also reported as several trees fell upon houses as well as automobiles.								
Statewide	24-31				7	0	?	?	Cold Wave
	A week long outbreak of frigid arctic air resulted in power outages, frozen water pipes, stalled automobiles, and countless house fires across the entire Tarheel State. Christmas morning produced the coldest temperatures of the episode as the following record lows were recorded: Asheville -7°; Cape Hatteras 12°; Charlotte 4°; Grandfather's Mt. -21°; Greensboro 1°; Raleigh-Durham 4°; and Wilmington 9°. A total of seven fatalities were directly attributed to the cold, the result of prolonged exposure and hypothermia.								
32 NORTH DAKOTA									
East	15-16	Evening			0	0	0	0	Ground Blizzard
	Strong northwest winds (gusts to 44mph at Fargo in Cass County and 46mph at Grand Forks in Grand Forks County) caused considerable blowing and drifting snow resulting in ground blizzard conditions. Many County roads were blocked or drifted shut, and wind chill temperatures dropped to 50 to 60 below.								
Statewide	23 to 25	Morning to Morning			0	?	5	0	Cold Temperatures Ground Blizzard
	Bitterly cold temperatures generally ranging from 30 to 50 below (51 below at Lake Metigoshe in Bottineau County; 50 below at Williston in Williams County; 50 below at Watford City in McKenzie County; and 50 below at Almont in Morton County) on the morning of the 23rd caused water pipes to freeze and some schools were closed because of the cold temperatures. Strong northwest winds (gusts to 44mph at Jamestown in Stutsman County) from the evening of the 23rd to the morning of the 25th caused considerable blowing and drifting snow resulting in ground blizzard conditions. Some roads were drifted shut and wind chill temperatures dropped to nearly 100 below. Several minor cases of frostbite occurred because of the extremely cold wind chills.								
33 OHIO									
Green Township, Trumbull County	23				1	0	0	0	Cold
	A 97 year old man was frozen to death in his house. He suffered from hypothermia after he collapsed from frostbite and his coal stove went out.								
Lake and Ashtabula Counties	24	Aftn & Eve			0	10	4	0	Blizzard
	Forty to fifty mile an hour winds whipped more than six inches of new snow into 10 to 15 foot drifts. Visibilities were zero for several hours and virtually all roads were closed. Utilities were out for several hours and hundreds of residents and travelers had to go to shelter areas. The City of Ashtabula was declared a disaster area and the National Guard was activated. Several people suffered frostbite as temperatures fell below zero.								
Akron	24	-			1	0	0	0	Cold
	A 77 year old man froze to death in his garage. He lived alone and was locked out of his house. His house keys were found locked in his garage.								
Entire State	22-26								Extreme Cold
	Record cold temperatures persisted in the state for several days. Many areas experienced the coldest Christmas ever. Temperatures remained below zero for 60 hours in some areas.								
Cleveland	27	-			2	0	0	0	Cold
	A 86 year old woman was found frozen to death and her husband unconscious in their unheated home on Cleveland's east side. The man later died. The couple had lived for several years without utilities.								
Southwest Quarter	28	Morning			0	0	4	0	Ice Storm
	Freezing rain put down an icy glaze on most of the southwest quarter of Ohio. Several utility lines were downed and tree branches broken. Travel was difficult and several accidents occurred.								
Cuyahoga County	30				1	0	0	0	Cold
	A transient man was found frozen to death in the base of an outdoor movie screen in one of Cleveland's eastern suburbs.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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	
34 OKLAHOMA									
South-Central Sections	15-16				0	0	?	?	Winter Storm
	Eight to ten inches of snow fell.								
Entire state	17-31				0	0	?	?	Winter Storm
	An artic air mass settled across the entire state causing a variety of winter weather situations. The extremely low temperatures occurring during the last two weeks of the month caused the average monthly temperature to be the coldest on record. The temperatures caused water pipes and water mains to freeze in every section of the state which in turn caused some people to be without water for a week or more. Periods of freezing rain, freezing drizzle, and snow occurred but snow depths were generally less than 3 inches.								
Tulsa, Tulsa County	19	morning			1	0	?	?	Freezing Temperatures
	A man who was living in a truck apparently froze to death.								
Muskogee, Muskogee County	22	morning			1	0	?	?	Freezing Temperatures
	A 73 year old woman died of exposure when she apparently left the doors to her home open.								
Oklahoma City, Oklahoma County	22	Morning			1	0	?	?	Freezing Temperatures
	A 63 year old man slipped outside his home and died of exposure.								
Tulsa, Tulsa County	25	morning			1	0	?	?	Freezing Temperatures
	A man was found dead in his yard from hypothermia.								
Buffalo, Harper County	24-26				0	0	?	?	Winter Storm
	Fourteen inches of snow fell with strong winds causing drifts of 3 feet.								
35 OREGON									
Western and Northern Oregon	2-3				0	1	3	0	Snow
	The first snowfall of the season dusted Willamette Valley. Icy roads caused a few accidents and power was interrupted in several areas.								
Most of Oregon	6-7				0	4	0	0	High Winds, Rain, Snow
	High winds, with gusts greater than 100 mph at Cape Blanco on the coast, and up to 60 mph in the Southwest interior, accompanied heavy rains west of the Cascades and snow east. Some power outages and traffic accidents on icy roads resulted.								
South Coast	13-14				0	0	0	0	Heavy Rain
	The 24 hour rainfall at Brookings was 4.67 inches. Flood warnings were issued for the Coquille in Coos County.								
Statewide	19-26				13	?	6	5	Extreme Cold, High Winds, Heavy Snow, Freezing Rain
	An arctic outbreak drove temperatures to subfreezing nearly statewide, breaking many old low temperature records. High winds to 50 mph occurred in the Portland Metropolitan Area as well as the Columbia Gorge. Wind uprooted trees, one of which destroyed a 1-story house. High winds were accompanied by heavy snow in the south. 40 families were evacuated in the Bend area, where ice jams on the Deschutes River caused a 10-block area to be covered with water. Farmers reported fatalities of new born calves as well as severe damage to fruit trees. The Big Chill ended in a freezing rain episode with warm air spreading northeastward from the southwest over trapped cold air in valleys. The cold caused fires, fatalities, frozen pipes and frequent fender benders.								
Willamette Valley and Southwest	28-29				2	?	?	?	Freezing Rain
	Freezing rain again hit Western Oregon from Siskiyou Summit to Portland Metro causing more accidents and headaches.								
Northeast Oregon and South around Klamath Falls	29				0	?	?	?	Snow
	A snowstorm hit Northeast Oregon and the Southern Cascades area, with the heaviest accumulations in the south. Many people were stranded in Klamath Falls which was "buried in snow".								

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	
36 PENNSYLVANIA, Eastern									
Eastern Penna.	02 03	1500 EST 0400 EST			0	0	0	0	Snow
	A snowfall of 1 to 2 inches resulted in many automobile accidents, which caused quite a few injuries and a number of deaths.								
Eastern Penna.	06 07	2000 EST 1400 EST			2	5	5	0	Wind, Lightning
	Strong wind gusts brought down trees and many tree limbs. The wind gusts and falling limbs disrupted electrical service to thousands of customers. Extensive damage was caused to the roof of a motel near South Waverly, Bradford County. A flag pole blown over by the wind struck children in a school yard in Philadelphia. Two girls were killed and five were injured. The wind gusts blew over a utility building, flipped over a tractor trailer truck and blew windows out of a pickup truck. Downed trees damaged a house, a truck and Post Office jeep. Wind gusts to 40 MPH or more were widespread and the highest gusts reported were 69 MPH near South Waverly, Bradford County, and 53 MPH at Allentown. Some thunderstorms moved across the area at the beginning of the strong wind period. Lightning struck the roof of a pavilion near Phoenixville, Chester County, causing a fire.								
Eastern Pennsylvania	12 15	0100 EST 0200 EST			2	0	6	0	Heavy Rain, Flood, Glaze
	Rain started early on the 12th when temperatures were below freezing over much of the area. This resulted in some icy glaze which brought about numerous automobile accidents and some deaths and injuries. The rain which was heavy at times until 5 AM on the 14th caused widespread drainage and stream flooding. Many fields, parking lots, buildings, basements and roadways were flooded. Numerous roads and bridges had to be closed. The heavy rains during the two days resulted in flooding along major rivers such as the Susquehanna, Delaware, Lehigh and Schuylkill by the end of the period with some places along the Susquehanna not cresting until 2 AM on the 15th. Some of the most extensive property damage and flooding occurred in Tioga and Bradford Counties. Rainfall amounts for the two days ranged from 2-1/2 to over 5 inches. One of the highest amounts reported was 5.35 inches in Lebanon. Although there were not any crops to be damaged at this time of year, flooding did cause damage to fields. Two drowning deaths occurred with the flooding. One woman drowned in her automobile which was found on a flooded road next to a stream in York County. In Lycoming County an elderly man was drowned in a flooded drainage ditch.								
Eastern Pennsylvania	21 22	2200 EST 0700 EST			0	0	3	0	Snow, Glaze
	Snow that changed to or mixed with sleet or freezing rain caused hazardous traveling conditions. Many automobile accidents occurred with several deaths and quite a few injuries. The precipitation fell as snow for more of the time over northern sections and accumulations of 2 to 6 inches occurred. By 5 to 7 AM the precipitation had changed to all rain most sections as temperatures rose above freezing.								
Eastern Penna.	23 24	2000 EST 1200 EST			0	0	2	0	Snow
	Light snow which accumulated from a dusting to 3 inches caused numerous traffic accidents.								

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

PENNSYLVANIA, Eastern

Eastern Penna.	24 27	0800 EST 0800 EST			4	10+	5	0	Cold Wave

Some of the coldest December weather ever experienced in Eastern Pennsylvania occurred over Christmas. Most of the southern portion experienced the coldest Christmas day on record and near record or record cold prevailed over north portions. Temperatures dropped to near zero or below across Eastern Pennsylvania on the 24th, 25th and 26th. Just about all of the area recorded some new record during the period. The types of records established were: lowest temperature for the date, lowest average temperature for the date, lowest high temperature for the date. Some locations set all three of these records on some days and new records were established on the 24th, 25th and 26th in some locations. Strong winds accompanying the cold resulted in wind chill factors of 40 below zero or lower at times. The highest gusts reported were about 44 MPH. The exceptionally cold conditions resulted in many frozen pipes and some frozen and burst water mains. Plumbers throughout the area spent much of the holiday answering emergency calls. At least 4 elderly people died after venturing out in the cold and later being found frozen. Quite a few people had to be treated for exposure or frost bite with a few cases of severe frostbite.

Eastern Penna.	28	0600 EST 1900 EST			2	10+	4	0	Glaze, Heavy Rain

Freezing rain and sleet coated roadways and walkways causing extremely hazardous traveling. Hundreds of motor vehicle accidents occurred resulting in several deaths and many injuries. Two elderly men died after falling on the ice and hitting their head. Many people were injured in falls on the ice. Tree limbs and utility lines were coated with ice causing some of them to fall and interupt service. The rain continued through the day and was heavy at times causing drainage flooding. Some minor flooding occurred along some streams. Most streams were frozen from the preceding cold weather and the rising water broke up the ice and deposited large chunks of it on property adjoining streams. Although temperatures rose above freezing in the afternoon over most of the area: some sections, especially in the north, stayed below freezing and had icing problems through the day. Although the precipitation ended around 7 PM, most paved surfaces remained wet causing icing conditions again as temperatures fell overnight and early the next morning. This precipitation was the last in a very wet December. Most locations set a new record or were close to a record for the most precipitation in December.

36 PENNSYLVANIA, Western– NONE REPORTED

37 RHODE ISLAND

Smithfield	6	2200EST			0	0	2	0	Lightning

A bolt of lightning struck a house causing slight structural damage to the basement.

Statewide	7	All Day			0	0	?	0	High Winds

Winds gusting up to 60 MPH blew down many tree limbs and some trees resulting in scattered power outages. The peak gust at the NWS, Providence, was 49 MPH. In Westerly, a large plate glass window was blown in and a truck damaged by a falling tree. The NWS issued high wind warnings statewide.

RHODE ISLAND

Statewide	28	Evening			0	0	5	0	High Winds

Southeast to south winds gusting to 60 to 75 MPH caused the partial collapse of a barn roof killing as many as 300 sheep in Cranston. In South Kingstown winds tore a 100-foot hole in the University of RI sports bubble. A 50-foot radio tower designed to withstand 125 MPH winds was knocked down by winds recorded at 70 MPH in Wakefield. Scattered power outages were reported across the state as wires were felled by falling tree limbs.

38 SOUTH CAROLINA

Western and Central South Carolina	3/4	2300 EST			0	0	5	4	High winds, thunderstorms, heavy rain

A line of thunderstorms, high winds and heavy rains moved across S.C. late Saturday night and early Sunday morning causing widespread but mostly minor damage. Areas of heavier damage were:
Greenwood County, Bradley area, December 3, 2300 EST. High winds toppled five utility poles and twisted off a number of trees. Power interrupted for 24 hours.
York County, 3 miles east of McConnells or 6 miles southwest of Rockhill, 0200 EST. High winds destroyed two large equipment sheds and several small buildings, toppled trees and blew shed framing as far as 1,000 feet.
Chester County, Chester area, 0230 EST. Heavy rains caused flash flooding on Frazier Street.
Orangeburg County and Calhoun County, between North and Neeses hence eastward for ten miles. 0200 EST. High winds over a narrow path caused extensive damage to trees, power lines, etc. Several homes damaged, windows broken, roofs crashed by trees or ripped by high winds. First area of organized damage was at a mobile home park just south of bridge over the north Edisto River. Storm moved eastward causing scattered damage for ten miles. Home damaged in Wolfton. A large barn housing several thousand hogs was heavily damaged 2 miles southeast of St. Matthews.
In addition to areas listed above, scattered wind damage also occurred in Saluda, Lexington, Aiken, Richland, Fairfield, and Sumter Counties.

Western, Northern, and Central S.C.	6	AM & PM			0	0	5	3	Flash flooding, high winds, thunderstorms

An area of heavy rainfall moved across western South Carolina during the night of the 5th and early morning of the 6th. Strong gusty winds occurred over much of the state during the afternoon. Flash flooding was reported in Anderson, Greenville, Greenwood, Rock Hill, Chester, and Columbia. Winds blew down trees in Greenville, Union, Anderson, Columbia, Lexington, and West Columbia.

West Central South Carolina	11	0430 E.S.T.			0	0	4	3	High winds

Winds estimated to 45 mph knocked down several trees, disrupted power and caused damage to several homes in eastern Columbia and Greenwood, S.C.

Northwest and Northcentral S.C.	22	AM			0	0	4	0	Freezing Rain

Freezing rain andsleet during the early morning caused numerous accidents and some power outages. Most damage from Greenville County across to York County.

Statewide	25	AM			27*	UNK	6	6	Cold wave

Record cold weather throughout the state. Minimum temperatures ranged from below zero in the mountains to one degree above in York upward to near ten degrees on the coast. Temperatures remained below freezing through the 26th over much of the state. Heavy damage to property, flowers, vegetables and items subject to freezing damage. Large number of home heating fires.

Central, S.C.	28	AM			0	0	5	0	High winds thunderstorms

Squall line moved eastward across Chappells, central South Carolina causing scattered damage from near Chappells in Newberry County northeastward through Newberry into Fairfield County. A second area of wind damage was reported from near Batesburg eastward across Lake Murray into Richland County.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

SOUTH CAROLINA

Statewide	30-31	AM			2*	0	5	4	Cold wave

Second cold wave accompanied by low temperatures in the teens. A number of home heating fires reported.

* While most of the deaths occurred during the record cold weather on Christmas day, the second cold wave at the end of the month caused at least two additional deaths. Preliminary vital statistics for South Carolina for 1983 list cold weather as the cause of death for 4 persons in January 1, 1 in October, 2 in November, and 29 in December.

39 SOUTH DAKOTA

Southeast Corner of State	10-11	Early p.m. Early a.m.			0	0	0	0	Freezing Rain

Freezing rain coated roads with ice,creating extremely slippery driving conditions and causing numerous traffic accidents.

Eastern Third of State	14-15	Late After-noon - Afternoon			0	0	0	0	Snow, Winds

Up to five inches of snow, combined with strong winds, produced blocked roads and numerous school closings on the 15th throughout most of the eastern third of the state. No travel was advised late afternoon on the 14th due to poor visibility and blocked roads in Roberts and Brookings Counties. The poor driving conditions resulted in several traffic accidents.

Entire State with exception of Southwest Counties.	23-25	Early Eve Early a.m.			0	0	0	0	Ground Blizzard

Very light snow and loose surface snow combined with extremely strong winds produced ground blizzard conditions in a majority of the state. The ground blizzard paralyzed most areas, completely blocking the vast majority of roads, as a result of the combination of drifts, stranded vehicles and near zero visibility. At one point, at least 70 vehicles were stalled in a 14 mile stretch between Kennebec and Reliance (Lyman County). The Pierre Airport (Hughes Airport) was closed twice on the 23rd as visibility was zero. Most flights were cancelled at Sioux Falls Airport (Minnehaha County), stranding numerous holiday travelers. Sub-zero temperatures,combined with gusts of over 60 mph, produced wind chill indexes in the 60-100 below zero range. Several cases of frostbite were reported, propane gas solidified, fuel jelled and water pipes and tanks froze as a result of the extreme cold. In Minnehaha County at Wall Lake, electrical outages of 12 hours were experienced from power lines snapping as a result of the cold and winds.

40 TENNESSEE

Dyer County	6-8						5		Rain, floods

Heavy rains caused crop and field damage and forced small streams to flood. The North Fork of the Forked Deer River flooded causing damage primarily to crops and fields.

Oak Ridge, Anderson County	6	1115 cst				4	?		Wind

Strong, gusty winds downed a number of trees causing power outages and some property damage. A driver narrowly escaped injury when a tree was blown over onto her car as she passed.

Knox County	6	1200 cst				?	?		Wind

Strong, gusty winds downed trees and caused scattered power outages throughout the county. Power was out for nearly 12 hours for people in east Knox County. The highest wind reported at the Knoxville Airport in adjacent Blount County (Alcoa) reported a peak wind of 47 mph at 1252 cst.

Sullivan County	6	aftn				?	?		Wind

Strong, gusty winds blew down trees and caused power outages across Sullivan County. Problems were reported in Bristol and Kingsport. A motorcycle shop lost the roof off a garage building. The highest wind reported at the Tri-Cities Airport was 52 mph at 1:53 pm cst.

Washington County	6	aftn				4	?		Wind

High winds blew down trees and caused scattered power outages across the county. The most significant damage occurred in Erwin when strong winds blew a roof off a builders supply building at 2:25 pm cst. Several tree limbs were blown onto a store in Johnson City, and a tree was blown down onto a car.

TENNESSEE

Southeast Tennessee	16	aftn				?	?		Snow

A band of snow originating in Northeast Texas affected the southeast portion of Tennessee in a triangular area bounded roughly by Chattanooga, Knoxville, and Lawrenceburg. The counties primarily involved with significant snow were Giles, Lincoln, Franklin, Moore, and Coffee. Southern Giles had as much as 4 inches in the southern part of the county as did Lincoln while Franklin had as much as 5 inches in the Sewanee-Monteagle area. One automobile accident death was attributed to the weather conditions in Franklin County. In the area from Coffee and Franklin Counties to Knoxville, the snow tapered off rapidly.

Statewide	19-31					7	?		Extreme cold

A strong Arctic high pressure system settled into the central sections of the country bringing record cold to Tennessee from the 20th through the end of the month. Coldest days were the 24th, 25th, and 26th. Record low temperatures were set statewide including:

New Record Low Temperatures

City	24	25	26	30	31
Memphis		0	9		
Nashville	-4	-5	2	1	
Chattanooga	2	-2	2		
Knoxville	-2	-6	1		
Tri-Cities	-3	-6	0		5

The cold weather was accompanied by several periods of wintery precipitation, including freezing rain, sleet, and snow, but, no individual episode was considered heavy. However, each episode created problems for travelers and motorists as icy conditions made travel hazardous. Accidents too numerous to count were reported all across Tennessee. Several deaths occurred as a result of automobile accidents. The cold weather also created problems in power outages, increased number of house fires, and burst water pipes and water mains. The insurance industry estimated that damage to homes, businesses, and vehicles in Tennessee surpassed $15 million. The cold also killed; individual deaths attributed to the cold are detailed by county.

Sullivan County	25	?				2			Cold

Two men suffered frostbite after being stranded near Holston Mountain. The two were involved in a wreck on Saturday, the 24th, but were not found until the 25th.

Bartlett, Shelby County	27	?				1			Cold

An 87-year-old woman died from the cold in her unheated house.

Clarksville, Montgomery County	27	?				1			Cold

A 63-year-old man died from the cold in an unheated house.

Nashville, Davidson County	27	?				1			Cold

A 71-year-old man died from exposure to the cold just outside his house.

Bristol, Sullivan County	27	?				1			Cold

An 85-year-old woman died from hypothermia and other medical problems. The heat had gone off in her home over the weekend, and she was admitted to the hospital with a temperature of 84.

Blount County	27	aftn				1			Ice

A 71-year-old man was dead on arrival at a hospital after slipping on ice on a patio and hitting his head.

41 TEXAS, Northern

Nacogdoches, San Augustine, and Sabine Counties	10	Early AM			0	0	?	?	Heavy Rains, Flooding

Heavy rains, measured up to 10 inches in San Augustine County, caused brief local flooding problems to all three counties. General rainfall amounts of 3 to 6 inches were common with numerous rural roads being flooded for a short time.

The worst flooding was reported in San Augustine County where 6 to 10 inches fell to the west and north of the city of San Augustine. The Ayish Bayou began to flood in less than 1 hour, trapping at least a dozen people in their homes. Boats and 4 wheel drive vehicles were used to evacuate the people, with no injuries reported.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

TEXAS, Northern

Harrison County, Marion County	10	1500CST			0	0	5	?	Thunderstorm Winds, Hail

High winds cut a half mile wide path through the area to the west and north of Hallsville, heavily damaging at least 15 homes and one business. Numerous barns and outbuildings were destroyed and several power lines were downed as the high winds struck first about 2 miles west of Hallsville and continued its path for several miles to the northeast.

High winds also destroyed several barns and outbuildings in rural Southern Marion County. Golfball size hail was reported with the storm in both counties. No injuries were reported.

Trinity County	10	1500CST	10	50	0	0	5	?	Tornado F2

The tornado touched down first just south of the Westville community, heading slightly north of east. It approached the west side of the city of Groveton, lifting as it crossed Highway 287 near the auction barn. It touched down again approximately 1 mile further east near Farm Market 3154, destroying 4 mobile homes and heavily damaging several homes. A number of barns and outbuildings were also destroyed as the tornado left a path 20 to 30 yards wide through the forest. Several cows were killed before the tornado lifted several miles northeast of Groveton.

Angelina County	10	1530CST	18	50	0	2	6	?	Tornado F2

The tornado touched down about 5 miles east of Diboll heading slightly north of east. Numerous small barns and outbuildings were destroyed, as were trees in a 30 yard wide path through the forest. The storm continued eastward across the rural area, crossing Highway 69 near the Shawnee Church.

As it approached the Hankes Creek area on the west side of Sam Rayburn Lake, numerous eyewitnesses described two tornadoes joining together and then hitting a residential area. Fifteen homes and five mobile homes were destroyed with only two injuries, one serious.

Hail to golfball size was reported along with torrential rains. Rainfall in the area was generally 3 to 4 inches.

Nacogdoches County	10	1550CST	8	50	0	3	6	?	Tornado F2

A tornado touched down several miles west of Nacogdoches, just west of the loop and south of Highway 21. Moving slightly north of east, the tornado destroyed two mobile homes as it crossed over Highway 21 and lifted as it entered the city limits.

The tornado touched down two more times as it moved through the northern portion of the city. Scores of homes and businesses sustained heavy structural damage, but fortunately only three injuries were reported, none serious. One building sustained roof and structural damage and collected 7 feet of water in the basement.

Downed trees and power poles caused extensive damage to homes and autos. Over 3000 customers were without electricity for several hours, and cable TV service was cut off for up to two days.

North Texas	15 16	PM - AM			1	10+	5	?	Snow

Snow began falling over North Texas by sunset on the 15th and by sunrise on the 16th, four to six inch amounts were common. Most of the snow fell in an area from the Red River, southward to near Waco, then northeast to near Texarkana. The Dallas/Fort Worth Metroplex received the least snow in the area, with general amounts of two inches. Heaviest amounts were 7½" at Denison and near 10" at Pittsburg.

One death was attributed to the snow when a driver lost control of his car on the slick highway. At least 10 people were injured in scattered auto wrecks and in falls on slick ground.

Tree branches, falling under the weight of snow, broke powerlines in east Texas, leaving over 15,000 customers without electricity for up to 36 hours.

North Texas	18 30	Early AM Aftn			6	100+	7	?	Bitter, prolonged cold, freezing rain

A frigid arctic air mass plunged temperatures below freezing over North Texas on the 19th, with some areas not rising above the freezing mark until December 30. For most areas, this was the longest period of time below freezing ever recorded. And, while some areas did not reach their coldest temperature ever recorded, it was by far the coldest December on record.

At least six people died as a result of the cold, mostly older people who froze to death in their homes. At least two persons died of exposure, while one person died in an auto accident in Denton on ice covered roads on the 21st.

Scores of people were injured during the cold spell when drizzle coated the ground on the night of the 18th, and during the day on the 21st and 27th. While amounts were very small, such as .03 inch liquid precipitation at DFW on the 21st, the ice coating made not only driving hazardous, but simply walking outside became nearly impossible. One hospital in TYR admitted over 70 people for injuries on the 27th, most being broken bones sustained in falls on ice.

Utility companies were hard pressed to meet consumer demands during the siege of cold air. Gas and electric companies had to curtail commercial usage, closing a number of plants and businesses for several days. Water systems suffered tremendous problems from the cold. The Fort Worth Water Department had nearly 1000 water line breaks, with some customers being without water for three days. Some smaller rural systems were shut down entirely for days until frozen pumps could thaw.

Damages from broken water lines alone amounted to millions of dollars. The cost of repairing broken city lines in Fort Worth was estimated at least $1.5 million, which excludes repairs to homes and businesses. Several million dollars more damage occurred when lines broke inside buildings and ruined walls, ceilings, floors, and furnishings.

Agricultural losses were extremely high, with estimates in the tens of millions of dollars. Insurance adjusters said initial claims for the state were in excess of $50 million and could easily pass $100 million.

41 TEXAS, Southern

Jefferson County	10 	1350CST 1400CST			0 0	0 0	4 4	0 0	Hailstorm Flooding

Port Arthur police reported golfball-sized hail in Port Acres along with heavy rain. The weather was associated with a severe thunderstorm that was moving to the east at nearly 20 mph. Flooding developed near 1400CST in Port Acres, ending after about one hour. No injuries were noted.

Jefferson County	10 	1415CST 1430CST			0 0	0 0	0 0	0 0	Funnel Hailstorm

Shortly after the departure of the first severe thunderstorm, police in Port Arthur reported a second severe thunderstorm had produced a funnel over SH 73 in Port Arthur. The funnel was moving to the east at 15 mph. Shortly afterward, jagged hail of up to one inch in diameter began to fall in the eastern portion of Port Arthur. No damage, however, was indicated.

Madison County	10	1550CST			0	0	3	0	Hailstorm

Golfball-sized hail was reported by the Sheriff's office 5 miles south of Madisonville. The hail occurred over generally open country and caused little damage. The thunderstorm that produced the hail was moving northeastward at near 40 mph.

Jefferson County	10	1551CST			0	0	0	0	Funnel

A small funnel was visible briefly in Beaumont.

Washington County	10 	1600CST 1608CST	4 2	200 150	1 0	0 0	5 5	5 3	Tornado (F1) Tornado (F0)

A tornado struck about 6 miles to the southwest of the town of Washington near 1600CST. It touched down near a farm and moved eastward, destroying a barn. A man working near the barn was killed when he was struck by a piece of roofing from the building. Two other persons working in the same area were not injured. The tornado moved eastward for nearly three miles, then lifted and disappeared. Witnesses reported hearing a "sound like a freight train" just before the tornado struck.
Shortly afterward, a second tornado was produced by the same thunderstorm about three miles east of the first tornado. It destroyed a mobile home, but caused no injuries as the occupants were away. The tornado moved eastward for nearly two miles, destroying farm equipment and knocking out power lines.

Grimes County	10	1650CST	1	100	0	0	5	4	Tornado (F1)

A small tornado was produced by a severe thunderstorm as it moved eastward across Grimes County. The tornado touched down about 4 miles south of Navasota, destroying a house and scattering debris for 500 yards. The tornado had first touched down only a few hundred yards from a mobile home park, but had fortunately missed it. The tornado was preceded by very heavy rain.

Harris County	10 	1805CST 1825CST	.5 1	30 50	0 0	0 0	3 5	0 0	Tornado (F0) Tornado (F0)

A severe thunderstorm produced two small tornadoes in northeast Harris County. The first, small and short-lived, struck briefly near Mount Houston. It caused only minor damage to homes. The second, longer-lived, and stronger of the two tornadoes dropped from the base of the same thunderstorm about 20 minutes after the first tornado had dissipated. It struck a house, causing minor damage to the roof and to equipment around the house, then tracked eastward for nearly one mile before lifting and disappearing.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS KILLED	NO. OF PERSONS INJURED	ESTIMATED† DAMAGE PROPERTY	ESTIMATED† DAMAGE CROPS	CHARACTER OF STORM
TEXAS, Southern									
San Jacinto County	10	1805CST	3	200	1	3	5	4	Tornado (F1)
A tornado struck near the town of Evergreen just after 1800CST. It touched down close to a restaurant filled with guests, causing minor damage to the building, then moved eastward to a residential area. The tornado completely destroyed one house, killing one woman and injuring three others. The Sheriff's Department reported nothing larger than a piece of plywood in the debris. The tornado then struck a second home, causing minor damage but no injuries. Shortly afterward, the tornado lifted, then disappeared.									
Montgomery County	10	1810CST	2	100	0	0	0	0	Tornado (F0)
Department of Public Safety officers spotted a small tornado three and one-half miles north of Conroe near I-45. The tornado moved east at nearly 30 mph. No damage was noted.									
Tyler County	10	1945CST	26	700	0	4	6	7	Tornado (F2)
An unusually large and long-lived tornado touched down in the extreme southwestern portion of Tyler County and caused extensive damage as it moved eastward across the southern portion of the County. It touched down at 1945CST along the Tyler-Hardin County line about 9 miles southwest of Warren, striking a home and destroying it completely. The house next door was filled with a party of 31 people, but little damage occurred.									
The tornado's path continued for 26 miles, moving to the east-northeast and carrying it through the community of Fred. In all, it destroyed 7 mobile homes and 9 houses while damaging another 15 mobile homes and 40 houses. Four persons were injured during the event. Two of the four injuries were sustained as a man and his wife attempted to leave their mobile home. The woman slipped and fell down as she was leaving, and the man attempted to protect her with his body. The tornado struck the mobile home, rolling it over on the couple who sustained only minor injuries. The tornado was preceded by very heavy rain and one witness reported hearing a sound "like jet airplanes taking off" just before it struck.									
Jasper County	10	2030CST	.5	40	0	0	5	4	Tornado (F1)
A small tornado was sighted as it dropped from a thunderstorm just south of the town of Call Junction. It moved to the east for just about a half-mile, but overturned and damaged several large trees in its path. Shortly afterward, it disappeared.									
Galveston County	13	0905CST	.5	20	0	0	4	0	Tornado (F0)
Galveston Police reported that a small tornado touched down very briefly about 3 miles east-northeast of the city of Galveston. It struck one home, destroying the roof and causing minor damage to the walls. The tornado was moving to the east at near 30 mph.									
Jefferson County	13	1025CST	.5	30	0	0	1	0	Tornado (F0)
A small tornado was observed as it touched down briefly in the south portion of the city of Beaumont. The tornado moved eastward through the area, causing minor damage, then lifted and disappeared.									
41 TEXAS, Western									
Entire Area	Later half of month				7	?	?	?	Winter Storms
It was one of the coldest arctic air outbreaks ever in West Texas from the middle of December to nearly the end of the month. Low temperature records tumbled everywhere; even in El Paso. It was the coldest month ever in most of the area.									
Amarillo established 9 low temperature records and several low maximum temperature records. The coldest was 7 degrees below zero for the coldest ever in December. The all-time low for December in San Angelo was 1 below zero and it was 6 degrees in Midland. The low of 10 degrees broke the record for the 29th in El Paso. Numerous low temperature records were also established in Lubbock.									
Records for the longest number of days with freezing temperatures also fell in many sections.									
In Amarillo the highest pressure at 31.11 is the new highest pressure ever.									
The cold spell brought disruptions, suffering and property destruction. It also brought death. One man died in El Paso and six, a whole family, in Hart. The man was found in an abandoned car while the family was found in a small, totally sealed house with a defective gas heater.									
Cattle losses were high; particularly, in the Panhandle.									
Water from water pipes, broken by ice, gushed inside thousands of homes and other buildings, resulting in considerable damage.									
TEXAS, Western									
	Snow and ice covered roads created numerous traffic accidents. Luckily, the snow was not particularly heavy in most places, except in parts of the Panhandle where blizzard-like conditions appeared at times due to the heavy snow and strong, bitterly cold wind.								
	Travelers Advisories were continuous during the cold spell.								
42 UTAH — NONE REPORTED									
43 VERMONT — NONE REPORTED									
44 VIRGINIA									
Southwestern and Central Mountains	6-7				0	0	0	0	Snow
Snow developed during the evening of the 6th..and continued into the morning of the 7th. The snowfall was associated with a strong cold front and followed an afternoon of showers and scattered thunderstorms. Up to 4 inches of snow fell over the higher elevations from Highland County southward into Wythe County.									
Western, Central and Northern Counties	21-22				0	?	4	0	Freezing Rain
One of the worst glaze situations in years brought chaotic conditions to many sections. Thousands of highway accidents occurred over the state and scores of persons received minor injuries from falls on icy surfaces. The freezing rain began during the evening of the 21st and continued into the morning hours of the 22nd, when thawing began. Extensive power interruptions developed due to falling branches and ice-laden wires.									
Statewide	24-27				5	6	7	0	Cold
Record breaking temperatures were prevalent over the state in one of the most severe cold outbreaks of the Century. Burst water pipes involved extensive damage to homes and business establishments.. with losses into the millions. At least six persons were treated for frostbite or hypothermia, and exposure claimed the lives of at least 5 others. Some towns were without water for a time due to ruptured mains, leaving them also in precarious position from a lack of fire protection. One business concern in Arlington estimated water damage at $250,000..while nearby Fairfax County made a preliminary estimate of water pipe damage at $3 million.									
Northern	28	Morning			0	?	0	0	Glaze
Another freezing rain situation brought nearly identical conditions...striking at the rush-hour period. Major traffic delays and scores of accidents were again the bane of motorists, along with scores of pedestrians being victims of minor ice-related injuries.									
45 WASHINGTON									
King, Pierce, Clark and Skamania Counties	24				0	?	7	0	High Winds
Strong pressure gradient between an arctic high pressure system to the east and low pressure off the Oregon Coast caused very high winds on the west slopes of the Cascade mountains. Greatest damage occurred in the vicinity of Enumclaw where winds up to 90 mph were reported with unofficial gusts estimated at more than 100 mph. The wind ripped off roofs, shattered windows, downed power lines, destroyed barns and flattened several homes. In the Enumclaw area damage to residences and businesses was around 10 million dollars. Known injuries included a broken leg, a cut forehead requiring stitches and a slight concussion.									
46 WEST VIRGINIA									
Entire State	6	1600 - 2300 EST			0	0	?	0	High Wind
High winds with gusts from 40-63 MPH resulted in scattered property damage around the state. Peak wind speeds included 47 MPH at Elkins, 63 MPH at Martinsburg, and 55 MPH at Charleston. Most damage was to trees and power lines. However, waves resulting from the wind swamped a barge loaded with coal resulting in the barge sinking in the Ohio River near Huntington.									
Northern Half	21-22	Afternoon-Morning			0	?	?	0	Freezing Rain
Freezing rain spread through the northern half of the state around noon on the 21st and on the morning of the 22nd resulting in very hazardous driving conditions and numerous accidents. At Charles Town, 3/4 of an inch of ice was measured on the 21st. At Sheppard airport, 1/2 of an inch of ice was reported.									

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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

—— WEST VIRGINIA

Entire State	24-26			1	0	?	0	Extreme Cold	

An arctic air mass resulted in extreme cold and record low temperatures over the entire state during the period of December 24-26. Record lows included Huntington with -7 degrees F on Dec. 24; Snowshoe with -26 degrees F, Spruce Knob -22 degrees F, Marlington -18 degrees F, Elkins -17 degrees F, Charleston and Parkersburg with -10 degrees F, Huntington -9 degrees F, and Beckley and Morgantown with -15 degrees F on Dec. 25; and Welch -15 degrees F, Union -12 degrees F, and Parkersburg with -10 degrees F on Dec. 26. Strong winds accompanied the cold air pushing the wind chill factors to 50-70 degrees below zero across the state. Extensive damage was done around the state as a result of water pipes bursting in homes and businesses due to the extreme cold. One death was attributed to the cold involving a woman in Charlestown who froze.

Entire State	28	0100-1400 EST		0	9	?	0	Freezing rain Sleet	

Freezing rain and sleet swept across the state causing numerous accidents. Portions of Interstate Highways 77, 81, and 79 were closed due to heavy accumulations of ice. Vehicle accidents were reported from all over the state with numerous injuries. Wood County Airport was closed from 1 A.M. until noon due to icy runways. Injuries were also reported involving persons falling on ice covered walkways. Ice accumulations caused power lines to snap near Rock Cliff, Martinsburg, and southern portions of Berkeley County. Over 300 residents were reported to be without power for several hours.

47 WISCONSIN

Statewide	13-Morning Hours into 16 Early Morning Hours			0	0	0	0	Snowstorm	

A very slow moving snowstorm drifting northward from the Gulf States across Lake Michigan produced an extended period of precipitation. Snow began in the Northwest, while a mixture of drizzle and freezing drizzle in the Southeast eventually changed to all snow late on the 14th. When the snow finally ended, totals ranged from 12 to 17 inches in the Lake Superior "Snow Belt", 8 to 12 inches in the Northwest, 4 to 8 inches from southwest to northeast and 2 to 4 inches along the Lake Michigan shoreline.

Statewide	17-Early Morning Hours into 20 Early Morning Hours			0	0	?	0	Severe Cold	

A prolonged arctic cold spell invaded the state plunging temperatures well below zero. Harrison in Oneida county recorded a 44 below zero on the 19th, although there was an unofficial 56 below zero near Grantsburg in Burnett county. La Crosse set record low temperatures on 4 consecutive days (17-20). The cold weather took its toll with numerous water main breaks, frozen bridge locks, frozen water pipes in homes and businesses, and many school closures. Several power outages occurred throughout the state. The northern half of Oshkosh reported a power failure from 415 am to 815 am on the 19th. The power outage resulted in 1200 plants valued at $3000 being destroyed at the North High greenhouse when the heat failed. Numerous problems with vehicles resulted. Some of the vehicles that did start broke down on the way and were abandoned on city streets, county roads, and state and interstate highways.

Statewide	22-Early Morning Hours into 26 Morning Hours			1	0	?	0	Severe Cold	

A second blast of frigid arctic air in less than a week screamed into the state. Strong Northwest winds sent wind chill factors to the 60 below to 80 below range. A Milwaukee woman died of exposure to the cold. A number of record low temperatures were set incuding 3 at Madison. In addition, both Milwaukee and Madison were each below zero for 100 consecutive hours. Cars that broke down littered streets, water mains as well as residental and business plumbing pipes broke. There were also scattered power outages. Near Madison, underground cable TV connectors froze and broke. Some churches cancelled Christmas Eve services. Some post offices delivered only 1st class mail. Wisconsin Gas Company reported record sales of natural gas.

48 WYOMING

Lander	4	4-6AM		0	0	3	0	Heavy Snow	

Heavy snow collapsed the roof of a chicken farm that housed some 6,000 chickens. Up to a thousand hens perished in the pre-dawn tragedy which also demolished most of the building.

Southern Wyoming	6-7	6PM-8AM		0	0	2	0	High Winds	

Winds gusting up to 60 mph whipped up ground blizzards so bad that Interstate 80 across most of southern Wyoming was closed for up to 12 hours. Numerous trucks were blown off roads and up to 300 vehicles were marooned in small towns overnight.

All of Wyoming	20-25			0	?	6	0	Subzero Cold	

The worst arctic outbreak ever in December hit Wyoming full force with almost all of the state remaining below zero for five days. Overnight lows in the 20 to 40 below range were common, with quite a few towns setting record December lows. Most Wyoming residents fared much better in the bitter cold than mechanical items. A malfunctioning transformer left the town of Lander without power for 12 hours, and numerous vehicles were damaged by the extreme temperatures. The greatest damage, however, occurred to homes and businesses as hundreds of water pipes froze and burst. The State Capitol Building in Cheyenne, for example, suffered almost a quarter of a million dollars damage due to burst water pipes.

49 ALASKA, Northern

Eastern Arctic Coast	01-02			0	0	?	0	Blizzard	

An Arctic front situated just south of the eastern Arctic coast reintensified as strong high pressure rebuilt to the north of the area. Winds of 30 to 40 miles an hour began blowing on the afternoon of Dec. 1, and increased to 35 to 50 miles an hour on the evening of Dec. 1, causing lowered visibility in blowing snow. Blizzard conditions, and chill factors down to 35 below, were reported at Prudhoe Bay and Barter Island from 11PM YST Dec. 1 through the morning hours of Dec. 2. The wind abated at mid-day on Dec. 2. The peak wind at Barter Island was 47 knots. No damage was reported.

Western Arctic Coast	05-06			0	0	?	0	Blizzard	

A weakening occluded front from the Bering Sea moved north to the Seward Peninsula, where it stalled out. Strong high pressure remained over the Chukchi and Beaufort Seas. Wainwright had wind to 30 knots, visibility at 1/8 mile for over 24 hours (from the evening of Dec. 5 to late on Dec. 6), and chill factors down to 65 below. Pt. Lay had winds to 38 knots and visibility at or near zero from the evening of Dec. 4 through mid-day on the 6th. No damage was reported.

Northern Seward Peninsula and Lower Kobuk Valley	06			0	0	?	0	High Wind	

The same synoptic situation described in the blizzard on the western Arctic coast above caused strong winds in Northwest Alaska on Dec. 6. Kotzebue had winds to 44 knots, and Shungnak had wind to 35 knots. Though the wind at Kotzebue was not unusually strong, the extent of strong wind penetrated unusually far inland. The wind peaked out early on the morning of Dec. 6, and diminished by that evening. No damage was reported.

Kotzebue	16-17			0	0	?	0	High Wind	

High pressure over the Interior of Alaska and a disturbance in the Bering Sea produced winds to 46 knots and chill factors to 45 below at Kotzebue from the morning of Dec. 16 through the morning of Dec. 17. The strong wind was localized; no damage was reported.

Northwest Alaska	19-23			0	0	?	0	High Wind	

Strong high pressure, with a central value of 1066mb near Dawson, Y. T., persisted over the eastern Interior of Alaska, while a series of disturbances moved up the west coast of the state, producing strong winds at coastal stations at times over a 4-day period. Kotzebue had peak winds to 45 knots, Cape Lisburne to 60 knots, Tin City to 53 knots, and Gambell close to 50 knots. Temperatures were rather mild in this southerly regime, so chill factors and visibility were not very low. No damage was reported.

Arctic Coast	24-25			0	0	5	0	High Wind	

Strong high pressure continued to hold over Interior Alaska as a series of disturbances moved across the Arctic, producing strong southwest winds on the Arctic coastal plain. During the early morning, winds estimated around 40 miles an hour blew the roof off the gymnasium at Atkasuk, 58 miles southwest of Barrow. Peak winds were: 38 knots at Barrow, 47 knots at Deadhorse, 60 knots at Cape Lisburne, and 61 knots at Barter Island. Temperatures were quite mild - in the teens to lower 30's, and several hours of freezing rain occurred at Barter Island on the afternoon and evening of Dec. 25.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

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	
49 ALASKA, Southern									
South Central	25	0600-1200 AST			0	?	4	0	High Wind
Strong northerly winds with gusts to over 75 mph blew across the Matanuska and southern Susitna Valley during the morning of Christmas Day. The winds took down trees and power lines throughout the area and did roof damage to several buildings.									
49 ALASKA, Southeastern									
Juneau Area	8				0	0	3	0	High Winds
Weak Taku winds struck the Juneau area with gusts in Douglas over 50 MPH. Taku inlet, 15 miles south of Juneau, reported winds to 90 MPH. There was an area wide power outage.									
50 HAWAII									
All Islands	24-26				0	0	5	5	Wind, Rain
A cold front moving slowly southeastward across the island chain produced strong, southwesterly winds gusting locally near 50 MPH. The winds caused minor damage and power outages over many normally windward areas during the afternoon hours of the 24th. Heavy thunderstorm rains over Maui and northern portions of the island of Hawaii on the 25th and 26th produced localized flash flooding. Some damage to crops and other property occurred on Maui where more than 6 inches fell over the Kula region, and more than 8 inches fell over west Maui. On the Big Island, the normally dry north Kona slopes and the Waimea saddle area received 4 to 6 inches, while up to 10 inches fell locally over the Kohala mountains. Some water damage occurred to roads and construction projects. Generally, the rains were much appreciated since the moisture relieved drought conditions on both Maui and the Big Island. In spite of these Christmas rains, 1983 turned out to be the driest year of record in many areas.									
Maui	31	1213HST			0	0	0	0	Waterspout
A pilot reported a waterspout in the vicinity of Maalaea.									
51 PUERTO RICO — NONE REPORTED									
52 VIRGIN ISLANDS — NONE REPORTED									
53 PACIFIC — NONE REPORTED									

STORM SUMMARY

DECEMER 1983

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		DEATHS	INJURIES	†DAMAGE	
								PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS
Alabama	13	4	3	71	7			?	?		4	6	C⁰					1		7										4		?	?
Arizona	1	1			5																												
Arkansas											1	?				5				5				6					13			
California	1	1			3					4	16	7	5									1	7	4								
Colorado												4												5					2	?	6	
Connecticut												?																				
Delaware																															6	
Florida	9	6		4	6							3	5			5													6		7	8
Georgia	7	3		5	6						4	5																				
Idaho																																
Illinois																																
Indiana																													6	?	6	?
Iowa																													4	10	5	
Kansas																													5		6	
Kentucky								2								2				2							4		8		4	
Louisiana	10	7		42	7			6				6								6								5	11	?	7	6
Maine												5								5						12	5					
Maryland												4							1	4						?	4		4	10	6	
Massachusetts											1	5														?						
Michigan																															?	
Minnesota																															4	
Mississippi	3	2		1	5							5								6	?						?		4		?	
Missouri																																
Montana																													4			
Nebraska																							8						2		4	
Nevada																																
New Hampshire																																
New Jersey																																
New Mexico																																
New York										5	50	4							10	7			20	7		1	25+	7				
North Carolina												?	?							?									7		?	?
North Dakota																														?	5	
Ohio																							10	4			4		5			
Oklahoma																								?	?		?	?	4	?	?	?
Oregon											2	6	6							5		2	?	?	?	11	?	?	?			
Pennsylvania										2	5	5				4		2		6				3		2	10+	4		4	10+	5	
Rhode Island												5				2																
South Carolina												5	4							5	3							4		29	?	6	6
South Dakota																															?	?
Tennessee												5	?								5			?	?					5	2	7	7
Texas	14	2	2	12	6			4	?			5	?							4	?	1	10	5	?					13	100	7	?
Utah																																
Vermont																																
Virginia																																
Washington											?	7															?	4		5	6	7	
West Virginia												?											?	?			9	?		1		?	
Wisconsin																														1		?	
Wyoming												2												3							?	6	
Alaska											?	5												?								
Hawaii												4	4							5	5											
Pacific																																
Puerto Rico																																
Virgin Islands																																

GENERAL SUMMARY OF TORNADOES, 1983

HENRY N. VIGANSKY
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER

A total of 931 tornadoes were reported in the United States during 1983. Tornadoes occurred on 184 days, killed 34 people and injured 746 others. Property losses were estimated to be in excess of 500 million dollars. In 1983 tornadoes damaged 481 and destroyed 623 mobile homes, which left 20 people dead and 230 people injured. Alaska, Maine, New Hampshire, Rhode Island and Utah were the only states which did not experience these devastating storms. The following three tables depict the locations of killer tornadoes, state to state border crossings, and new monthly records by state:

LOCATION OF KILLER TORNADOES

DATE	STATE	COUNTY	TOTAL DEATHS
January 31	Louisiana	Avoyelles	1
January 31	Louisiana	Vermilion	1
February 2	Florida	Highlands	1
April 1	Louisiana	Morehouse	2
April 9	Florida	Citrus	3
April 29	Missouri	Greene	1
May 1	Illinois	Effingham	2
May 2	New York	Cayuga	1
May 2	New York	Chautauqua	2
May 2	Ohio	Cuyahoga	1
May 2	Ohio	Wood	1
May 6	Kansas	Shawnee	1
May 19	Louisiana	La Salle	1
May 20	Texas	Harris	1
May 20	Texas	Harris	1
May 20	Texas	Harris	1
May 20	Texas	Jefferson	1
May 20	Texas	Washington	1
June 9	Texas	Hutchinson	1
June 27	Oklahoma	Tulsa	1
July 9	Montana	McCone	1
July 21	Delaware	Kent	2
July 21	Michigan	Allegan	1
December 3	Alabama	Calhoun	2
December 6	Alabama	Dallas	1
December 10	Texas	San Jacinto	1
December 10	Texas	Washington	1

STATE TO STATE BORDER CROSSINGS

DATE	STATE		STATE
May 1	Missouri	into	Illinois
May 1	Nebraska	into	Iowa
May 13	Texas	into	Oklahoma
June 19	South Dakota	into	Nebraska

GENERAL SUMMARY OF TORNADOES

NEW MONTHLY RECORDS

MONTH	STATE	NEW RECORD	PREVIOUS RECORD
February	Florida	21	10 (1975)
May	Louisiana	17	12 (1975)
May	Pennsylvania	5	3 (1973)
July	Wisconsin	25	17 (1980)
August	Alabama	2	1 (1976)
August	Kentucky	3	2 (1972)
October	Virginia	7	2 (1979)
December	Alabama	13	9 (1975)
December	Louisiana	10	5 (1969)

The first tornado of the 1983 season occurred on January 29th, at 10:15 p.m., when a waterspout moved onshore at Panama City Beach, Florida. Damages included 47 mobile homes demolished, 25 boats overturned, roofs ripped off of several houses and numerous power lines downed.

On January 31st, seven tornadoes were spawned in southwestern Louisiana. At 9 p.m., a tornado with multiple vortices touched down in the community of Laleux which is located several miles northeast of Kaplan, Louisiana. One residence was destroyed with one woman killed. Two other dwellings sustained minor damage. Another tornado touched down two miles (3.2 km) south of Bunkie, Louisiana, and moved five miles (8 km) to the northeast. Numerous farm buildings were damaged, and one mobile home was destroyed where one child was killed and two people were injured.

Florida was hit by 18 tornadoes on February 1st and 2nd. In the Orlando area at least 10,000 homes were left without electricity and 200 people were left homeless. One person was killed and 26 injuries were reported.

On April 1, at 4:15 p.m., a severe thunderstorm struck Monroe, Louisiana, accompanied with hail 1.5 inches (3.8 cm) in diameter, and high winds. A funnel was sighted and it touched the ground 10 miles (16.1 km) northeast of Monroe. The tornado moved northeast, striking the town of Collinston at 4:35 p.m. Two persons were killed, 20 people were injured, and 34 homes were destroyed. Observers described the tornado as a large grey mass rather than as having a distinct funnel.

Seven miles (11.3 km) south of Lecanto, Florida, on April 9th, a tornado damaged a mobile home park, demolished a service station and overturned a large delivery truck onto two unoccupied automobiles. One person was injured. The tornado continued moving to the northeast. Just west of Inverness it lifted an automobile with four occupants 50 feet (15.2 m) off the ground and deposited it in a wooded area. Three occupants were killed and one was critically injured. One person was thrown from the car while it was airborne and two others were crushed to death upon impact. The twister caused extensive damage to a Little League sports complex, a school and numerous mobile homes.

On April 29th, a very strong tornado touched down and left in its wake 5.5 miles (8.8 km) of destruction across South Springfield, Missouri. A 16-year-old girl was killed by flying debris and 19 people were injured. The tornado path-width ranged from 5 feet (1.5 m) to 600 feet (182.9 m). Fifty homes were demolished and 790 were damaged. Additional destruction included five businesses, one church, and one school house destroyed. Twenty-five businesses received minor damage.

Severe thunderstorms on May 2nd spawned 23 tornadoes over a four-state area which included Michigan, New York, Ohio, and Pennsylvania. Five people were killed, three in New York and two in Ohio. The Governor of New York declared five western counties a disaster area.

During the late evening hours of May 19th, a super thunderstorm complex, which measured 25-30 miles (40.2-48.3 km) in diameter developed in eastern Texas and moved eastward across northern Louisiana at speeds of 35-55 mph (56.3-88.5 km/h), causing widespread damage. At 9:36 p.m. a tornado touched down north of Many, Louisiana and destroyed several mobile homes. Winds estimated at 100 mph (160.9 km/h) caused widespread damage in Negreet and Many, Louisiana. Hail 3/4 inch (1.91 cm) in diameter was reported at both locations. Another tornado touched down at 10 p.m., in Natachitoches, Louisiana, which caused extensive damage to an apartment complex and severely damaged or destroyed numerous mobile homes. The third tornado touched down at 10:35 p.m., near Saline Lake on the Winn/Natachitoches Parish line and traveled 23 miles (37 km) through Kisatchie National Forest. The twister dissipated southwest of Winnfield, Louisiana. A total of 375 homes were either destroyed or damaged. The Louisiana Forest

GENERAL SUMMARY OF TORNADOES

Service reported that 64,000 acres of trees, valued at 30 million dollars, were destroyed. Ten people were injured. The super thunderstorm complex moved through the northern portion of La Salle Parish with strong downburst winds; it left a path of devastation 5 to 9 miles (8 to 14.5 km) wide. A tornado touched down at 11:05 p.m. near Urania, traveled through Olla and finally dissipated near Kelly, Louisiana. Seventy percent of the buildings in Urania sustained major damage. Twenty-five homes were destroyed in Olla; over 800 homes were damaged within La Salle Parish. Thirty people were injured and one person was killed. In the town of Kelly, several mobile homes were destroyed and numerous homes received major damage. Five people were injured. Hebert, Louisiana was hit by a tornado at 11:20 p.m. Twenty-five homes and mobile homes were either damaged or destroyed. Six persons received minor injuries. The final tornado produced by this super thunderstorm complex touched down at 11:35 p.m., in a rural area of Franklin Parish. Damages were confined to trees, power lines and numerous farm buildings.

On May 20th, severe thunderstorms spawned 21 tornadoes which affected the following seven counties in Eastern Texas: Austin (3), Chambers (2), Grimes (1), Harris (7), Jefferson (5), Liberty (2) and Washington (1). Three people were killed in Harris County, while Jefferson and Washington Counties each recorded one fatality.

On June 13th, a slow moving cold front lingered over the Mississippi Valley and spawned 28 twisters in seven states. Thunderstorms with heavy rain, golfball-size hail and tornadoes accompanied the massive storm system which stretched from sections of Colorado to Texas and up through Oklahoma, Kansas, Nebraska, Iowa and Minnesota. Of the 28 tornadoes reported, 11 were in Minnesota, 10 in Oklahoma, two apiece in Iowa and Nebraska, while Colorado, Kansas and Texas each had one.

An intensive line of thunderstorms moved into northwest Wisconsin early in the afternoon of July 3rd, generating downburst winds over 100 mph (160.9 km/h) and 22 tornadoes. The downburst winds covered an area, over 110 miles (176.9 km) long with an average width of 5 miles (8 km), from Polk County northeast to Ashland County. Damage estimates were over $11 million.

On July 21st, the first killer tornado in Delaware since August 12, 1888, touched down near Hartly, Delaware. Several homes and barns were destroyed. The two fatalities were occupants of separate mobile homes.

Hurricane Alicia struck the Texas Gulf Coast early on the morning of August 18th, resulting in the death of 18 people and 1,800 injuries. The contributing factor to the low fatality count was that over 70,000 people were evacuated from Brazoria, Harris and Matagorda Counties, and over 20,000 people took refuge within the city of Houston. The eye of the hurricane made landfall near San Luis Pass located on the southwest portion of Galveston Island. Alicia moved directly over the Galveston/Houston metropolitan areas causing property damages in excess of 3 billion dollars. Twenty-one tornadoes were spawned from Alicia, causing only two injuries. Tornadoes were not a contributing factor to the 18 deaths.

On October 13th, a line of severe thunderstorms surged across Virginia producing downburst winds and seven tornadoes. Damages were estimated to exceed 2 million dollars. Six people were injured.

In Ellis County, Texas, on November 22nd, a tornado touched down at the Ennis Airport destroying five airplanes, and heavily damaging six other planes and two hangers. The tornado moved east into town destroying four buildings and caused extensive damage to numerous other structures. The school sustained over $300,000 damage. Six people were injured.

At 6:37 p.m., on December 3rd, two persons were killed and 51 others were injured when a tornado struck a crowded shopping center near Oxford, Alabama. The deaths and most of the injuries occurred when a grocery store was destroyed. Most of the damage was in the area of the shopping center, within the tornado path of 440 yards (402 m) long. Damage included: three homes destroyed and 14 damaged, three mobile homes destroyed and 11 damaged, three business buildings destroyed and nine damaged, and 30 automobiles damaged.

On December 7th, the largest tornado ever recorded in southeast Louisiana struck the northwest residential sections of La Place, Louisiana. The tornado had a path length of 7 miles (11.3 km) long and the path width varied from 100 to 300 yards (91.4 to 274.3 m) wide. The tornado struck two subdivisions, totally destroyed 30 homes, and caused major damage to an additional 125 homes. Twenty-five people were injured.

At 1:45 a.m., on December 29th, the final tornado of the 1983 tornado season touched down in Lee, Florida, damaging one brick home and several mobile homes.

Additional information is presented in the following tables and charts. Continuing efforts in data collection by the National Severe Storms Forecast Center, Weather Service Forecast Offices, the

University of Chicago, and the National Climatic Data Center have resulted in several corrections to the previous tables.

More detailed information about tornado activity can be obtained from monthly Storm Data publications. The National Severe Storms Forecast Center has generated a magnetic tape which contains tornado statistics for the period 1950-1983. A copy of that tape can be obtained by contacting the National Climatic Data Center, Federal Building, Asheville, North Carolina 28801- 2696. (Telephone: (704) 259-0682)

TORNADO SUMMARY, 1983

STATE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANN
ALABAMA													
Number		5	2	2	8	1	1	2			11	13	45
Days		2	2	2	4	1	1	2			5	6	25
Deaths												3	3
Injuries		3			6	1					22	71	103
ARIZONA													
Number							1	3				1	5
Days							1	3				1	5
Deaths													0
Injuries													0
ARKANSAS													
Number			4	3	5						4		16
Days			2	1	2						1		6
Deaths													0
Injuries					2						4		6
CALIFORNIA													
Number		1	4					1	2			1	9
Days		1	3					1	1			1	7
Deaths													0
Injuries			31					1	3				35
COLORADO													
Number				3	1	20	2	5	1				32
Days				1	1	10	2	2	1				17
Deaths													0
Injuries													0
CONNECTICUT													
Number								1					1
Days								1					1
Deaths													0
Injuries													0
DELAWARE													
Number							1						1
Days							1						1
Deaths							2						2
Injuries							9						9
FLORIDA													
Number	1	21	9	13	4	8	7	6	4		3	9	85
Days	1	3	5	3	2	6	7	5	4		1	6	43
Deaths		1		3									4
Injuries		26	8	9		2		2				4	51
GEORGIA													
Number		3		3	7		1	1		1	3	7	26
Days		1		1	2		1	1		1	1	3	11
Deaths													0
Injuries		3			4					6	2	5	20
HAWAII													
Number									1				1
Days									1				1
Deaths													0
Injuries													0
IDAHO													
Number							1	1					2
Days							1	1					2
Deaths													0
Injuries													0
ILLINOIS													
Number			1		12	1							14
Days			1		3	1							5
Deaths					2								2
Injuries					43								43

TORNADO SUMMARY, 1983

STATE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANN
INDIANA													
Number					2	2	1						5
Days					2	1	1						4
Deaths													0
Injuries													0
IOWA													
Number					14	9	5		2				30
Days					3	3	3		1				10
Deaths													0
Injuries					3	28	1						32
KANSAS													
Number			2		14	13	1		1				31
Days			2		6	6	1		1				16
Deaths					1								1
Injuries			4		25								29
KENTUCKY													
Number			1	2	2	1		3					9
Days			1	2	2	1		2					8
Deaths													0
Injuries				1				6					7
LOUISIANA													
Number	7	3	4	11	17	1		1	1		9	10	64
Days	1	2	3	3	5	1		1	1		4	7	28
Deaths	2			2	1								5
Injuries	2	7		27	51						10	42	139
MARYLAND													
Number					1					1			2
Days					1					1			2
Deaths													0
Injuries													0
MASSACHUSETTS													
Number							1	1					2
Days							1	1					2
Deaths													0
Injuries													0
MICHIGAN													
Number			2		8	3	5	1					19
Days			1		3	2	2	1					9
Deaths							1						1
Injuries					3		1						4
MINNESOTA													
Number						16	3	1					20
Days						4	3	1					8
Deaths													0
Injuries							4						4
MISSISSIPPI													
Number		1	1	4	11						2	3	22
Days		1	1	2	4						2	2	12
Deaths													0
Injuries		3		7	7						3	1	21
MISSOURI													
Number			2	6	14								22
Days			1	4	3								8
Deaths				1									1
Injuries				22	11								33
MONTANA													
Number							4						4
Days							4						4
Deaths							1						1
Injuries							1						1

TORNADO SUMMARY, 1983

STATE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANN
NEBRASKA													
Number					2	12	1						15
Days					1	6	1						8
Deaths													0
Injuries													0
NEVADA													
Number								1					1
Days								1					1
Deaths													0
Injuries													0
NEW JERSEY													
Number							1						1
Days							1						1
Deaths													0
Injuries													0
NEW MEXICO													
Number					1		1		1				3
Days					1		1		1				3
Deaths													0
Injuries													0
NEW YORK													
Number					6		1	1					8
Days					1		1	1					3
Deaths					3								3
Injuries					7			1					8
NORTH CAROLINA													
Number			7		4	1	1	2					15
Days			4		2	1	1	2					10
Deaths													0
Injuries			9		9								18
NORTH DAKOTA													
Number						6	11	9					26
Days						3	6	4					13
Deaths													0
Injuries						2							2
OHIO													
Number					7	1	1						9
Days					1	1	1						3
Deaths					2								2
Injuries					52								52
OKLAHOMA													
Number			4	12	40	23	2	1		2	8		92
Days			2	4	5	5	1	1		2	2		22
Deaths						1							1
Injuries			1		1					1	9		12
OREGON													
Number			1			2							3
Days			1			2							3
Deaths													0
Injuries													0
PENNSYLVANIA													
Number			1		5		6	4					16
Days			1		3		4	1					9
Deaths													0
Injuries					10		1	2					13
SOUTH CAROLINA													
Number			2	3		3	3						11
Days			1	2		2	3						8
Deaths													0
Injuries				8		1							9

TORNADO SUMMARY, 1983

STATE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANN
SOUTH DAKOTA													
Number					3	13	6	2	2				26
Days					1	7	3	1	1				13
Deaths													0
Injuries						4							4
TENNESSEE													
Number					1	2		1			2		6
Days					1	1		1			1		4
Deaths													0
Injuries					1								1
TEXAS													
Number	5	7	24	1	62	35	4	22	5		7	14	186
Days	1	1	9	1	15	14	2	2	5		5	2	57
Deaths					5	1						2	8
Injuries	5	3	21		19	1	2	2			11	12	76
VERMONT													
Number								1					1
Days								1					1
Deaths													0
Injuries													0
VIRGINIA													
Number					1			2		7			10
Days					1			2		1			4
Deaths													0
Injuries										6			6
WASHINGTON													
Number				2			1			1			4
Days				1			1			1			3
Deaths													0
Injuries													0
WISCONSIN													
Number						4	25	2					31
Days						3	2	2					7
Deaths													0
Injuries							10						10
WYOMING													
Number						2	1	1					4
Days						2	1	1					4
Deaths													0
Injuries													0
UNITED STATES													
Number	13	41	71	65	249*	178*	99	76	20	12	49	58	931*
Days†	2	7	21	15	26	27	24	21	15	5	11	13	184
Deaths	2	1	0	6	14	2	4	0	0	0	0	5	34
Injuries	7	45	74	74	254	39	29	14	3	13	59	135	746

*Corrected for boundary-crossing tornadoes.

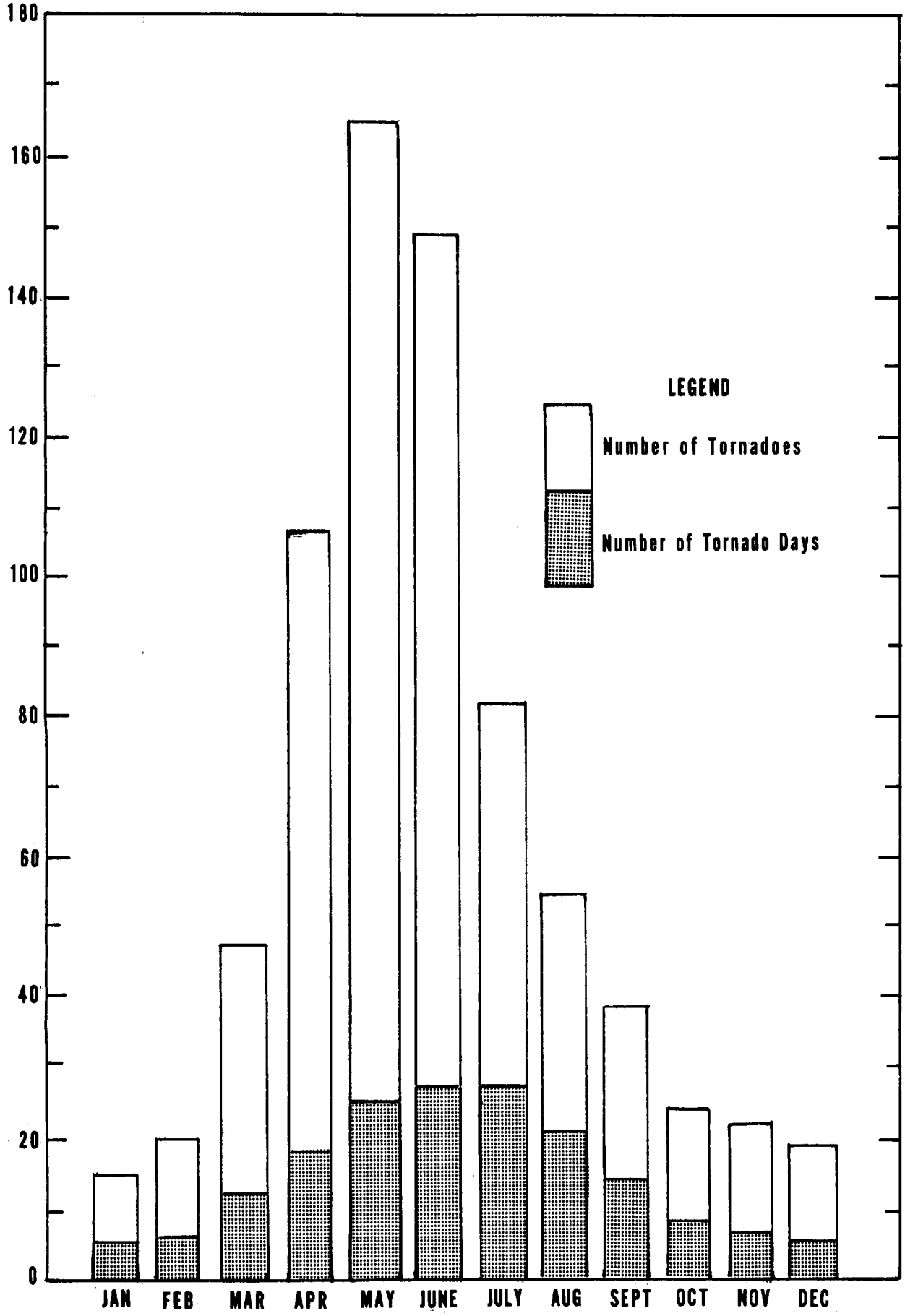
†Tornado days for country as a whole.

NUMBER OF TORNADOES, TORNADO DAYS, AND DEATHS BY MONTHS, 1953-83

	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER			ANNUAL		
YEAR	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS	NUMBER	DAYS	DEATHS
1953	14	6	0	16	3	3	40	10	24	47	16	34	94	21	161	111	24	244	31	19	0	24	15	0	5	4	0	6	4	0	12	6	0	21	8	49	421	136	515
1954	2	1	0	17	9	2	63	13	10	112	22	3	101	22	9	107	26	5	45	23	0	49	21	1	21	10	3	14	8	2	2	2	0	17	3	1	550	160	36
1955	3	2	0	4	3	0	43	15	5	99	18	7	147	26	103	154	28	2	49	21	5	33	18	0	15	8	2	23	7	1	20	4	1	3	2	0	593	152	126
1956	2	2	0	47	12	8	31	7	1	85	15	67	79	24	4	65	21	0	91	26	1	43	20	2	16	10	0	29	8	0	7	6	0	9	4	0	504	155	83
1957	17	3	13	5	3	0	38	7	1	216	21	29	227	26	87	147	25	14	55	19	0	20	14	0	17	10	2	18	11	2	58	11	25	38	4	19	856	154	192
1958	12	7	0	20	5	13	15	10	0	76	19	4	68	21	0	127	27	42	121	30	1	46	20	1	24	14	1	9	6	4	45	6	0	1	1	0	564	166	66
1959	16	2	3	20	5	21	43	11	9	30	12	1	226	28	8	73	25	2	63	24	0	38	18	0	58	15	14	24	10	0	11	4	0	2	2	0	604	156	58
1960	9	4	0	28	10	0	28	10	0	70	20	7	201	26	34	124	27	3	43	22	0	47	23	1	22	13	0	18	10	1	25	6	0	1	1	0	616	172	46
1961	1	1	0	31	8	0	124	17	7	74	19	3	137	25	23	107	23	2	77	27	0	27	16	0	53	16	15	14	5	0	36	7	1	16	5	0	697	169	51
1962	12	3	1	25	7	0	37	9	17	41	8	1	200	22	3	171	29	0	78	26	0	51	21	6	24	11	0	11	10	0	5	4	0	2	2	0	657	152	28
1963	15	5	1	6	3	0	48	12	8	84	14	16	71	21	1	91	23	0	62	26	0	26	13	2	33	13	3	13	5	0	15	6	0	0	0	0	464	141	31
1964	14	3	10	2	2	0	36	11	6	157	23	15	135	20	16	136	24	0	63	23	0	79	23	2	25	10	0	22	4	22	17	8	0	18	5	2	704	156	73
1965	21	11	0	32	4	0	34	9	2	129	20	264	275	25	17	147	28	6	86	26	0	61	23	1	64	21	0	16	4	1	34	6	5	7	4	0	906	181	296
1966	1	1	0	28	5	0	12	6	58	80	20	12	98	17	0	126	28	19	100	27	3	58	21	0	22	13	0	29	6	6	20	3	0	11	3	0	585	150	98
1967	39	4	7	8	5	0	42	14	3	149	18	73	116	25	3	210	28	6	90	25	1	28	16	2	139	16	5	36	7	4	8	5	0	61	10	10	926	173	114
1968	5	3	0	7	3	0	28	8	0	102	15	40	145	26	72	136	27	11	56	22	2	66	23	2	25	14	0	14	9	0	44	12	3	32	9	1	660	171	131
1969	3	1	32	5	5	0	8	2	1	68	15	2	145	25	4	137	28	7	99	27	0	69	21	19	20	11	0	26	10	0	5	3	0	23	7	1	608	155	66
1970	9	5	0	16	3	0	25	12	2	117	16	29	88	19	26	134	24	6	81	26	3	55	21	0	54	20	0	50	13	6	10	4	0	14	8	0	653	171	72
1971	18	7	1	83	12	131	40	13	2	75	14	11	166	24	7	199	28	1	100	30	1	50	21	0	47	15	0	38	12	0	16	7	0	56	9	2	888	192	156
1972	33	10	5	7	4	0	69	17	0	96	20	16	140	27	0	114	25	2	115	29	0	59	23	2	49	19	0	34	10	0	17	4	2	8	6	0	741	194	27
1973	33	7	1	10	4	0	80	16	17	150	22	10	250	26	35	224	26	2	80	26	0	51	23	4	69	22	3	25	11	0	81	11	12	49	12	3	1102	206	87
1974	24	8	2	23	9	0	36	12	1	269	22	313	144	28	10	194	26	31	59	19	0	107	26	0	25	11	0	45	10	4	13	8	0	8	5	0	947	184	361
1975	52	7	12	45	12	7	84	16	12	108	20	13	188	30	5	196	28	6	79	26	2	60	25	2	34	17	0	12	7	0	40	8	0	22	8	1	920	204	60
1976	12	5	0	37	6	5	180	18	21	113	23	1	155	24	8	169	26	3	84	28	2	38	18	1	35	15	3	11	5	0	0	0	0	1	1	0	835	169	44
1977	5	4	0	17	3	2	64	15	0	88	15	26	228	29	4	132	27	0	99	27	1	82	26	6	65	21	1	25	5	1	24	10	0	23	7	2	852	189	43
1978	23	7	2	6	3	0	17	8	0	107	17	4	213	27	7	148	28	17	143	30	11	65	24	1	20	10	6	7	5	0	9	5	0	30	9	5	788	173	53
1979	16	9	0	4	3	0	53	13	1	120	17	58	112	23	2	150	24	8	132	30	1	127	27	5	68	19	2	47	12	7	21	8	0	2	1	0	852	186	84
1980	5	4	0	11	9	0	41	15	2	137	16	4	203	25	8	217	30	7	95	26	5	73	27	0	37	14	1	43	7	1	3	2	0	1	1	0	866	176	28
1981	3	3	0	25	5	2	33	13	1	84	18	13	187	24	0	223	29	8	98	27	0	64	22	0	26	16	0	32	12	0	7	5	0	1	1	0	783	175	24
1982	18	8	1	3	2	0	60	15	6	150	20	30	327	28	14	198	30	4	95	29	0	34	15	0	38	12	2	9	4	0	19	6	0	95	13	7	1046	182	64
1983	13	2	2	41	7	1	71	21	0	65	15	6	249	26	14	178	27	2	99	27	2	76	21	0	20	15	0	12	5	0	49	11	0	58	13	5	931	184	34
1953-1983 TOTAL	450	145	93	629	174	195	1523	375	217	3298	550	1112	5115	760	685	4645	819	460	2568	793	41	1706	645	60	1170	435	63	712	242	62	673	188	49	630	164	108	23119	5284	3147
MEAN	15	5	3	20	6	6	49	12	7	106	18	36	165	25	22	150	26	15	83	26	1	55	21	2	38	14	2	23	8	2	22	6	2	20	5	3	746	170	102

AVERAGE NUMBER OF TORNADOES AND TORNADO DAYS EACH MONTH IN THE UNITED STATES

(BASED ON 23,119 TORNADOES THAT OCCURRED FROM 1953-1983)



NUMBER OF TORNADOES, TORNADO DAYS, DEATHS, AND RESULTING LOSSES BY YEARS, 1916-83

YEAR	Number Tornadoes	Tornado Days	Total Deaths	Most Deaths in Single Tornado	Total Property Losses †	PROPERTY LOSS FREQUENCY*		
						Category 5	Category 6	Category 7 and Over
1916	90	36	150	30	6	7	1	0
1917	121	38	551	101	7	21	9	0
1918	81	45	136	36	7	20	5	0
1919	64	35	206	59	7	10	2	0
1920	87	50	499	87	7	14	10	0
1921	105	55	202	61	7	22	3	0
1922	108	64	135	16	7	27	5	0
1923	102	59	110	23	6	21	1	0
1924	130	57	376	85	7	26	11	1
1925	119	65	794	689	7	34	2	1
1926	111	57	144	23	6	28	0	0
1927	163	62	540	92	7	42	9	1
1928	203	79	95	14	7	40	7	0
1929	197	74	274	40	7	48	4	0
1930	192	72	179	41	7	38	6	0
1931	94	57	36	6	6	14	1	0
1932	151	67	394	37	7	23	1	1
1933	258	96	362	34	7	46	9	0
1934	147	77	47	6	6	10	3	0
1935	180	77	71	11	6	29	0	0
1936	151	71	552	216	7	17	5	1
1937	147	75	29	5	6	24	0	0
1938	213	76	183	32	7	29	6	0
1939	152	75	91	27	7	21	3	0
1940	124	62	65	18	7	13	2	0
1941	118	57	53	25	6	24	1	0
1942	167	66	384	65	7	42	10	0
1943	152	61	58	5	7	28	8	0
1944	169	68	275	100	7	50	9	0
1945	121	66	210	69	7	21	10	1
1946	106	65	78	15	7	29	7	0
1947	165	78	313	169	7	46	7	1
1948	183	68	139	33	7	62	11	2
1949	249	80	211	58	7	54	13	0
1950	200	88	70	18	7	47	9	0
1951	262	113	34	6	7	35	11	2
1952	240	98	229	57	7	53	19	0
1953	421	136	515	116	8	63	18	7
1954	550	160	36	6	7	63	8	1
1955	593	152	126	80	7	74	13	1
1956	504	155	83	25	7	83	24	1
1957	856	154	192	44	8	129	26	3
1958	564	166	66	19	7	70	8	1
1959	604	156	58	21	7	70	4	1
1960	616	172	46	16	7	65	11	1
1961	697	169	51	16	7	103	21	1
1962	657	152	28	17	7	51	10	0
1963	464	141	31	5	7	77	15	1
1964	704	156	73	22	7	113	17	5
1965	906	181	296	44	8	126	30	11
1966	585	150	98	58	8	79	13	4
1967	926	173	114	33	8	125	33	8
1968	660	171	131	34	8	82	26	6
1969	608	155	66	32	8	98	16	3
1970	653	171	72	26	8	97	24	6
1971	888	192	156	58	8	71	30	5
1972	741	194	27	6	8	100	28	1
1973	1102	206	87	7	9	219	67	9
1974	947	184	361	34	9	166	82	25
1975	920	204	60	9	9	189	31	11
1976	835	169	44	5	8	145	41	5
1977	852	189	43	22	8	173	40	6
1978	788	173	53	16	9	153	53	6
1979	852	186	84	42	9	169	62	11
1980	866	176	28	5	9	201	79	13
1981	783	175	24	5	9	144	43	12
1982	1046	182	64	10	9	254	79	13
1983	931	184	34	3	9	211	85	10
Means: 1953-1983	746	170	102	---	---	121	33	6

NOTE: - - The above estimated losses are based on values at time of occurrence.

†Storm damages in categories:

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 and over

*Number of times property losses reported in Storm Data in Categories 5, 6, 7, and over.

NUMBER OF TORNADOES, TORNADO DAYS, AND DEATHS BY STATES, 1953-83

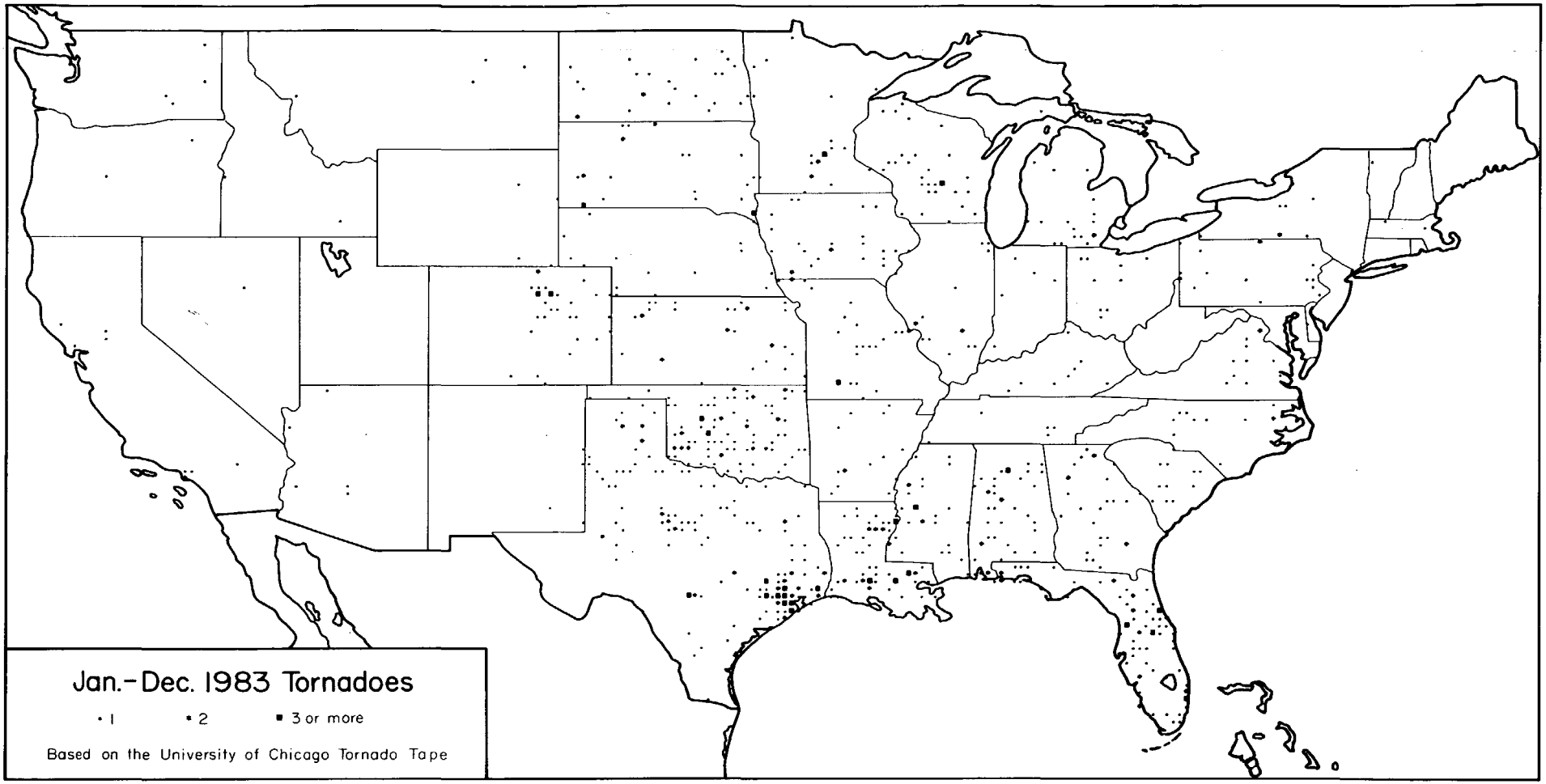
STATE	TORNADOES							DAYS		DEATHS		
	TOTAL	AVER-AGE	GREAT-EST	YEAR	LEAST	YEAR	Per # 10,000 Sq. Mi.	TOTAL	AVER-AGE	TOTAL	AVER-AGE	Per @ 10,000 Sq. Mi.
ALABAMA	644	21	45	1983+	5	1956	4.03	353	11	207	7	40
ALASKA	1	0	1	1959	0	1983+	.00	1	0	0	0	0
ARIZONA	109	4	17	1972	0	1965+	.31	90	3	3	0	0
ARKANSAS	675	22	78	1982	2	1969+	4.10	299	10	141	5	27
CALIFORNIA	122	4	14	1982	0	1968+	.25	88	3	0	0	0
COLORADO	575	19	58	1982	1	1959	1.78	362	12	2	0	0
CONNECTICUT	43	1	8	1973	0	1981+	2.77	39	1	4	0	8
DELAWARE	27	1	5	1975	0	1982+	4.23	25	1	2	0	10
DISTRICT OF COLUMBIA	0	0	0		0	1983+	.00	0	0	0	0	0
FLORIDA	1370	44	97	1975	10	1956	7.55	871	28	59	2	10
GEORGIA	643	21	46	1971+	7	1960	3.52	368	12	72	2	12
HAWAII	21	1	4	1971	0	1981+	1.06	17	1	0	0	0
IDAHO	42	1	5	1967+	0	1977+	.16	34	1	0	0	0
ILLINOIS	832	27	107	1974	4	1953	4.76	386	12	145	5	26
INDIANA	658	21	48	1973	4	1982	5.85	320	10	205	7	56
IOWA	860	28	54	1964	7	1956	4.93	396	13	54	2	10
KANSAS	1340	43	97	1955	14	1976	5.25	629	20	167	5	20
KENTUCKY	249	8	34	1974	0	1953	1.99	146	5	101	3	25
LOUISIANA	670	22	64	1983	3	1955	4.45	409	13	93	3	19
MAINE	71	2	11	1971	0	1983+	.69	63	2	1	0	0
MARYLAND	83	3	10	1975	0	1970+	2.53	67	2	1	0	1
MASSACHUSETTS	110	4	12	1958	0	1982+	4.30	80	3	99	3	120
MICHIGAN	486	16	39	1974	2	1959	2.69	280	9	233	8	40
MINNESOTA	544	18	41	1981	5	1972	2.09	310	10	75	2	9
MISSISSIPPI	658	21	44	1973	1	1979	4.45	353	11	320	10	67
MISSOURI	890	29	79	1973	6	1953	4.12	397	13	128	4	18
MONTANA	124	4	13	1978	0	1974+	.27	95	3	1	0	0
NEBRASKA	1053	34	78	1975	10	1966	4.40	523	17	49	2	6
NEVADA	20	1	4	1964	0	1981+	.06	19	1	0	0	0
NEW HAMPSHIRE	61	2	9	1963	0	1983+	2.11	55	2	0	0	0
NEW JERSEY	49	2	8	1973	0	1978+	2.02	41	1	0	0	0
NEW MEXICO	250	8	18	1972	0	1953	.66	192	6	3	0	0
NEW YORK	114	4	8	1983+	0	1953	.74	93	3	5	0	1
NORTH CAROLINA	366	12	38	1973	2	1970	2.24	234	8	25	1	5
NORTH DAKOTA	531	17	52	1976	2	1961	2.42	304	10	21	1	3
OHIO	446	14	43	1973	3	1966+	3.49	237	8	153	5	37
OKLAHOMA	1746	56	107	1957	21	1978	8.06	712	23	186	6	27
OREGON	27	1	3	1983+	0	1982+	.10	23	1	0	0	0
PACIFIC	2	0	1	1981+	0	1983+	—	2	0	0	0	--
PENNSYLVANIA	255	8	23	1976	0	1959	1.81	179	6	8	0	2
PUERTO RICO	9	0	2	1979+	0	1983+	.85	8	0	0	0	0
RHODE ISLAND	1	0	1	1972	0	1983+	.27	1	0	0	0	0
SOUTH CAROLINA	285	9	23	1973	1	1970+	2.96	197	6	24	1	8
SOUTH DAKOTA	761	25	64	1965	1	1958	3.19	375	12	8	0	1
TENNESSEE	337	11	44	1974	1	1962	2.57	186	6	74	2	18
TEXAS	3909	126	232	1967	32	1953	4.72	1546	50	393	13	15
UTAH	37	1	5	1970+	0	1983+	.14	30	1	0	0	0
VERMONT	26	1	5	1962	0	1981+	.87	23	1	0	0	0
VIRGINIA	178	6	22	1975	1	1982+	1.41	122	4	16	1	4
VIRGIN ISLANDS	2	0	1	1979+	0	1983+	--	2	0	0	0	--
WASHINGTON	40	1	4	1983+	0	1977+	.19	33	1	6	0	1
WEST VIRGINIA	65	2	6	1980+	0	1983+	.87	50	2	2	0	1
WISCONSIN	582	19	43	1980	3	1953	3.34	314	10	59	2	11
WYOMING	277	9	42	1979	0	1970	.91	193	6	2	0	0
TOTAL: UNITED STATES	23119*	746	1102	1973	421	1953	2.06	5284†	170	3147	102	9

\+ Also in earlier year(s).
* Corrected for boundary-crossing tornadoes.
† Tornado days for country as a whole.

\# Mean annual tornadoes per 10,000 square miles.
@ Number of deaths per 10,000 square miles.

NUMBER OF FUNNEL CLOUDS, 1983

STATE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANN
ALABAMA		5			1						5	4	15
ALASKA							2	1					3
ARIZONA								1					1
ARKANSAS			10	5	8	1	1						25
CALIFORNIA													0
COLORADO													0
CONNECTICUT													0
DELAWARE													0
DISTRICT OF COLUMBIA													0
FLORIDA						2							2
GEORGIA				1	1	2	1	2			2		9
HAWAII					1								1
IDAHO			1										1
ILLINOIS						2							2
INDIANA					1		1						2
IOWA					41	7	2	1					51
KANSAS					12	28	3	2	1		1		47
KENTUCKY				1	4	2		1					8
LOUISIANA	1			1		10	3	4	2		1	3	25
MAINE													0
MARYLAND													0
MASSACHUSETTS							7	3					10
MICHIGAN			5		2		1	2					10
MINNESOTA						32	10	5	13				60
MISSISSIPPI	2		2		1	3					2		10
MISSOURI					2								2
MONTANA							3						3
NEBRASKA					5	12							17
NEVADA								1	1	1			3
NEW HAMPSHIRE													0
NEW JERSEY													0
NEW MEXICO													0
NEW YORK							1						1
NORTH CAROLINA				3			2						5
NORTH DAKOTA						8	12	17	1				38
OHIO													0
OKLAHOMA			1	3	25	1	1		2		1		34
OREGON													0
PACIFIC													0
PENNSYLVANIA					1		1						2
PUERTO RICO													0
RHODE ISLAND													0
SOUTH CAROLINA													0
SOUTH DAKOTA					3	2	6	7	3				21
TENNESSEE							1	2					3
TEXAS	2	5	11	1	24	29	9	27	8	1			117
UTAH													0
VERMONT													0
VIRGINIA										4			4
VIRGIN ISLANDS													0
WASHINGTON				3		1							4
WEST VIRGINIA							1						1
WISCONSIN					8	5	42	12					67
WYOMING						5							5
TOTAL: UNITED STATES	5	10	30	18	140	152	110	88	31	6	12	7	609


Jan.-Dec. 1983 Tornadoes
• 1
• 2
■ 3 or more
Based on the University of Chicago Tornado Tape

GENERAL SUMMARY OF LIGHTNING, 1983

HENRY N. VIGANSKY
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER

During 1983 lightning killed 77 people in the United States; this figure is 23 percent below the 25 year (1959-1983) national average. Seventy-five percent of these fatalities occurred between the hours of 12 p.m. and 4 p.m., local standard time. Three hundred thirty-seven people were injured by lightning; which is 32 percent above the national average. Seventy-four percent of those injuries were recorded between the hours of 11 a.m. and 8 p.m., local standard time. For comparative purposes, the location and percentage frequency of lightning deaths and injuries are listed in Table I.

TABLE I

LOCATION AND PERCENTAGE FREQUENCY OF LIGHTNING DEATHS AND INJURIES

	1959-1983		1983	
	PERCENTAGE FREQUENCY		PERCENTAGE FREQUENCY	
LOCATIONS	DEATHS	INJURIES	DEATHS	INJURIES
Open fields, ball fields, etc.	27	28	37	42
Under trees	17	14	19	14
Boating, fishing and water related	13	5	21	7
Tractors, heavy road equipment, etc.	6	3	8	4
Golf courses	4	4	3	5
Telephones	1	3	0	1
Various other and unknown locations	32	43	12	27

Some of the lightning incidents are described briefly by month in the following summary.

March - A group of baseball players from the Latin High School of Charlotte, North Carolina were struck by lightning as they were attempting to seek shelter from the storm. One of the players was killed and 15 others were injured. A house in Foster, Rhode Island was struck; the damage was minimal.

April - Lightning strikes twice! The house in Foster, Rhode Island which was struck by lightning in March, was struck again in April. Fortunately the damage was minimal the second time, also.

May - At the race track in Dover, Delaware a bolt of lightning struck within a group of people running to their cars. A man and his wife were killed instantly. One man was placed on the critical list for several days while six other people received minor injuries. On Mille Lacs Lake, Minnesota lightning hit an 18 foot (5.5 m) aluminum boat and knocked one man unconscious. Another man was thrown 20 feet (6.1 m) from the boat; he received second degree burns around his waist and on his legs. Three men were injured when they were struck by lightning while standing under a tree at the Fox Meadows Golf Course in Memphis, Tennessee. The lightning went through one man's neck, down his spine, came out a pocket containing his keys, and went into a nearby tree (he survived!).

June - A group of camp counselors at Umstead State Park near Raleigh, North Carolina was struck by lightning, leaving two girls critically injured. One of the girls died almost two weeks later, having never regained consciousness. Near Carthage, North Carolina three boy scouts were struck by lightning while attending a training session that was being held in a building with a metal roof. The boys received minor burns and one suffered ear damage. Lightning struck a sawmill in Saint Martinville, Louisiana and started a fire that caused an estimated $450,000 damage.

July - On Mount Desert Island, Maine lightning destroyed the Hall Quarry boat yard. The ensuing fire destroyed boats and equipment valued over one million dollars. Numerous lightning strikes during a single day resulted in the deaths of four people and injuries to four others on Jones Beach near Freeport, Long Island, New York. One man was killed there when a bolt of lightning struck a portable radio he had slung over his shoulder and then coursed through his body. Another lightning occurrence in the Lake George region of New York claimed the lives of four people. Two girl scouts and another person were killed by separate lightning bolts while they were in their tents. The fourth victim was a lone camper who was leaning against a tree which was hit by lightning. In Fall Creek Falls State Park, Tennessee lightning struck and injured nine people of which one died a week after the incident. They were in an area of flat terrain overlooking a large gorge and had sought refuge from a thunderstorm under a cluster of trees; lightning struck a large oak tree near the people. In Eau Claire, Wisconsin lightning struck a large propane gas truck, at a large building supply and lumber yard, which created a fire that destroyed the structure and inventory. Losses were estimated at $10 million.

GENERAL SUMMARY OF LIGHTNING

August - Five boys were injured by lightning in Mobile, Alabama while riding bicycles in the high school parking lot. Two of the children were hospitalized while the others received emergency treatment and were released. An eight year old boy was killed and his sister was critically injured when they were struck by lightning as they played on the beach at Jekyll Island, Georgia. Another person received minor injuries. Lightning struck a tree at the Shawnee Country Club Golf Course in Topeka, Kansas killing one person and injuring four other golfers who had sought shelter from the rain underneath the tree. The man who was killed was leaning against the tree while the other four were just a few feet away from the tree trunk. Three miles (4.8 km) south of Springfield, Kentucky a woman sustained second and third degree burns on her two middle fingers of her left hand when lightning struck a power line and arched over to her hand as she reached to unplug the air conditioner! Lightning created havoc in a picnic area located in Flushing Meadow Park, New York City killing two soccer players. They had taken refuge from the thunderstorm by standing under a tree. Also, another man at the picnic was struck and injured by lightning. At Camp LeJeune, North Carolina one marine was killed and 29 others were injured when lightning struck within a bivouac area. Thunderstorms moved through Cabarrus and Mecklenburg Counties, North Carolina accompanied with torrential rains, high winds, and continuous lightning which ignited 15 fires in Charlotte, North Carolina and caused $450,000 in damages. Lightning triggered a fire in Mount Pleasant, North Carolina which destroyed a business valued at one million dollars. Near Oak Grove, Tennessee three people were killed and 10 others were injured when lightning struck an oak tree. The thunderstorm developed quickly while the people were having an outdoor fish fry. An eyewitness of the tragedy reported that when lightning struck the oak tree it lit up like a Christmas tree.

September - In DeKalb, Illinois lightning struck and injured 11 football players. In Battle Creek, Michigan, lightning destroyed an aircraft hanger, seven airplanes, three trucks and a 52 foot (15.8 m) sailboat. Severe thunderstorms did considerable damage to trees, powerlines and buildings in Bowling Green, Ohio, and lightning strikes started several fires and caused over $150,000 in damages to the electric company equipment. Lightning struck a barn 1/4 mile (.4 km) south of Sheboygan Falls, Wisconsin destroying the structure, 40,000 bales of hay, 5,000 bales of straw, a tractor and five silos; losses were estimated to exceed $200,000.

October - A couple were driving their automobile, about 3 miles (4.8 km) from their home of Laurens, Iowa when lightning struck the citizens band radio antenna and entered the passenger compartment. A "ball of fire" was between the couple in the car as the lightning charge destroyed the citizens band radio. They decided to drive home but discovered one of the right tires was flat. After fixing the flat tire they drove home, at which time they discovered they had another flat tire on the right side of the car. Upon investigating the damages they found burn holes in the flat tires, with burned steel belt pieces inside the tires. The only thing left of the citizens band antenna was a scorched bracket. There was no evidence of any other burns inside the car. The woman was unharmed, but the man suffered ear aches afterwards. In Ada, Oklahoma lightning struck a football field killing one player and injuring 14 others. A woman was injured when struck by lightning while talking on a telephone in Berlin, Wisconsin. She suffered from burns on her ear and cheek, and spinal injuries. The bolt of lightning had knocked her several feet from the telephone.

November - In Walnut Ridge, Arkansas lightning started a fire which destroyed a furniture store and four other businesses, which resulted in damages in excess of $500,000.

Additional information is presented in the following tables.

More detailed information concerning lightning data can be obtained from the monthly Storm Data publications. The National Climatic Data Center has lightning data available on magnetic tape for the period 1959-1983. The tape contains the date/time (year, month, day and hour), location (state and county), number of fatalities, number of injuries, and amount of property damage. A copy of this tape can be obtained by contacting the National Climatic Data Center, Federal Building, Asheville, North Carolina 28801-2696.

LIGHTNING FATALITIES, 1983

STATE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALABAMA	0	0	0	0	0	0	1	1	0	0	0	0	2
ALASKA	0	0	0	0	0	0	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0	1	0	0	0	0	1
ARKANSAS	0	0	0	0	1	0	2	0	0	0	0	0	3
CALIFORNIA	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORADO	0	0	0	1	0	0	0	0	0	0	0	0	1
CONNECTICUT	0	0	0	0	0	0	0	0	0	0	0	0	0
DELAWARE	0	0	0	0	2	0	0	0	0	0	0	0	2
DISTRICT OF COLUMBIA	0	0	0	0	0	0	0	0	0	0	0	0	0
FLORIDA	0	0	0	0	0	1	2	5	2	0	0	0	10
GEORGIA	0	0	0	0	0	0	2	1	0	0	0	0	3
HAWAII	0	0	0	0	0	0	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	1	0	0	0	0	0	0	1
ILLINOIS	0	0	0	0	0	0	0	1	0	0	0	0	1
INDIANA	0	0	0	0	0	1	0	0	0	0	0	0	1
IOWA	0	0	0	0	0	0	0	0	0	0	0	0	0
KANSAS	0	0	0	0	0	0	1	1	0	0	1	0	3
KENTUCKY	0	0	0	0	0	0	0	1	0	0	0	0	1
LOUISIANA	0	0	0	0	0	0	2	0	0	0	1	0	3
MAINE	0	0	0	0	0	0	1	0	0	0	0	0	1
MARYLAND	0	0	0	0	1	0	1	0	0	0	0	0	2
MASSACHUSETTS	0	0	0	0	0	1	0	0	0	0	0	0	1
MICHIGAN	0	0	0	0	0	0	1	0	0	0	0	0	1
MINNESOTA	0	0	0	0	0	0	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	1	0	0	2	0	0	0	0	0	3
MISSOURI	0	0	0	0	0	0	0	1	0	0	0	0	1
MONTANA	0	0	0	0	0	0	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0	0	0	0	0	0	0
NEVADA	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW JERSEY	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0	3	1	0	0	0	4
NEW YORK	0	0	0	0	0	0	10	2	0	0	0	0	12
NORTH CAROLINA	0	0	1	0	0	2	0	1	1	0	0	0	5
NORTH DAKOTA	0	0	0	0	0	0	0	0	0	0	0	0	0
OHIO	0	0	0	0	0	1	1	0	0	0	0	0	2
OKLAHOMA	0	0	0	0	0	0	0	0	0	1	0	0	1
OREGON	0	0	0	0	0	0	0	0	0	0	0	0	0
PENNSYLVANIA	0	0	0	0	0	0	0	0	0	0	0	0	0
PUERTO RICO	0	0	0	0	0	0	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	0	0	0	1	0	2	0	0	0	3
SOUTH DAKOTA	0	0	0	0	0	0	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	0	0	1	5	2	0	0	0	8
TEXAS	0	0	0	0	0	1	0	0	0	0	0	0	1
UTAH	0	0	0	0	0	0	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	0	0	0	0	0	0	0	0
WASHINGTON	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VIRGINIA	0	0	0	0	0	0	0	0	0	0	0	0	0
WISCONSIN	0	0	0	0	0	0	0	0	0	0	0	0	0
WYOMING	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	2	4	8	28	23	8	1	2	0	77

LIGHTNING INJURIES. 1983

STATE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALABAMA	0	0	0	0	0	1	0	10	0	0	0	0	11
ALASKA	0	0	0	0	0	0	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	1	3	0	0	0	0	4
ARKANSAS	0	0	0	0	1	0	2	3	0	0	0	0	6
CALIFORNIA	0	0	0	1	0	0	0	0	0	0	0	0	1
COLORADO	0	0	0	0	0	2	2	1	1	0	0	0	6
CONNECTICUT	0	0	0	0	0	3	2	0	0	0	0	0	5
DELAWARE	0	0	0	0	7	0	0	0	0	0	0	0	7
DISTRICT OF COLUMBIA	0	0	0	0	0	0	0	0	0	0	0	0	0
FLORIDA	0	0	0	0	0	2	10	4	3	13	0	0	32
GEORGIA	0	0	0	0	1	1	4	2	0	0	0	0	8
HAWAII	0	0	0	0	0	0	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	2	1	2	0	0	0	0	5
ILLINOIS	0	0	0	0	0	0	0	6	11	0	0	0	17
INDIANA	0	0	2	0	0	0	0	0	0	0	0	0	2
IOWA	0	0	0	0	0	0	1	0	0	1	0	0	2
KANSAS	0	0	0	0	2	0	0	4	5	0	0	0	11
KENTUCKY	0	0	0	0	0	5	1	4	0	0	0	0	10
LOUISIANA	0	0	0	0	0	0	1	0	0	0	0	0	1
MAINE	0	0	0	0	0	0	1	0	0	0	0	0	1
MARYLAND	0	0	0	0	4	0	1	2	0	0	0	0	7
MASSACHUSETTS	0	0	0	0	0	0	1	6	0	0	0	0	7
MICHIGAN	0	0	0	0	0	1	12	0	0	0	0	0	13
MINNESOTA	0	0	0	0	2	0	0	0	1	0	0	0	3
MISSISSIPPI	0	0	0	0	0	0	1	0	0	0	0	0	1
MISSOURI	0	0	0	0	0	0	0	2	0	0	0	0	2
MONTANA	0	0	0	0	0	0	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0	1	0	0	0	0	1
NEVADA	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	1	0	0	0	0	0	1
NEW JERSEY	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0	1	0	0	0	0	1
NEW YORK	0	0	0	0	0	0	15	2	0	0	0	0	17
NORTH CAROLINA	0	0	19	0	0	4	2	30	0	0	0	0	55
NORTH DAKOTA	0	0	0	0	1	0	0	0	2	0	0	0	3
OHIO	0	0	3	0	0	3	4	0	0	0	0	0	10
OKLAHOMA	0	0	0	0	1	0	0	0	0	16	0	0	17
OREGON	0	0	0	0	0	0	0	0	0	0	0	0	0
PENNSYLVANIA	0	0	0	0	0	0	4	3	1	0	0	0	8
PUERTO RICO	0	0	0	0	0	0	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	2	2	0	6	2	3	0	0	0	15
SOUTH DAKOTA	0	0	0	0	0	0	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	3	0	8	15	2	0	0	0	28
TEXAS	0	0	0	0	1	0	0	0	0	0	0	0	1
UTAH	0	0	0	0	0	0	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	0	0	3	0	0	0	0	3
WASHINGTON	0	0	0	0	0	0	2	0	0	0	0	0	2
WEST VIRGINIA	0	0	0	0	0	0	0	0	0	0	0	0	0
WISCONSIN	0	0	0	0	0	0	3	7	1	1	0	0	12
WYOMING	0	0	0	0	0	0	1	0	0	0	0	0	1
TOTAL	0	0	24	3	25	24	87	113	30	31	0	0	337

TOTAL LIGHTNING FATALITIES BY STATE FOR PERIOD, 1959-83

STATE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALABAMA	0	0	2	2	4	15	24	14	1	1	0	0	63
ALASKA	0	0	0	0	0	0	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	1	1	14	13	7	0	0	0	36
ARKANSAS	0	0	8	0	11	28	25	18	3	0	0	0	93
CALIFORNIA	0	0	0	0	0	2	2	5	3	0	0	0	12
COLORADO	0	0	0	1	9	12	28	14	0	1	0	0	65
CONNECTICUT	0	0	0	0	0	3	5	3	1	0	0	0	12
DELAWARE	0	0	0	0	2	2	3	3	0	0	0	0	10
DISTRICT OF COLUMBIA	0	0	0	0	0	1	1	1	0	0	0	0	3
FLORIDA	0	0	3	3	18	61	66	58	32	2	1	1	245
GEORGIA	0	0	2	3	4	15	25	10	2	1	0	0	62
HAWAII	0	0	0	0	0	0	0	0	0	0	0	0	0
IDAHO	0	0	0	1	1	6	5	5	1	0	0	0	19
ILLINOIS	0	0	0	4	7	21	12	11	7	2	0	0	64
INDIANA	0	0	1	2	6	21	15	12	4	2	0	0	63
IOWA	0	0	1	3	9	14	6	13	4	4	0	0	54
KANSAS	0	0	0	3	8	5	13	7	4	1	2	0	43
KENTUCKY	1	0	0	2	7	16	15	9	10	0	0	0	60
LOUISIANA	0	0	1	5	7	19	35	12	11	0	2	1	93
MAINE	0	0	0	0	0	3	5	6	0	3	0	0	17
MARYLAND	0	0	0	0	2	5	6	6	1	0	0	81	101
MASSACHUSETTS	0	0	0	1	3	3	5	7	1	0	0	0	20
MICHIGAN	0	0	0	1	6	19	19	19	5	0	0	0	69
MINNESOTA	0	0	0	2	2	7	5	12	8	1	0	0	37
MISSISSIPPI	1	0	4	2	10	8	22	17	5	0	0	0	69
MISSOURI	0	0	5	4	19	18	10	8	3	1	0	0	68
MONTANA	0	0	0	0	2	8	6	2	0	0	0	0	18
NEBRASKA	0	0	0	1	3	13	8	6	4	0	0	0	35
NEVADA	0	0	0	0	0	1	0	2	0	0	0	0	3
NEW HAMPSHIRE	0	0	0	0	0	3	2	0	0	0	0	0	5
NEW JERSEY	0	0	0	1	2	7	17	14	3	0	0	0	44
NEW MEXICO	0	0	0	1	3	8	20	25	4	0	0	0	61
NEW YORK	0	0	0	0	5	18	48	25	4	2	0	0	102
NORTH CAROLINA	0	1	4	2	18	25	44	32	4	0	0	0	130
NORTH DAKOTA	0	0	0	0	0	4	3	3	0	0	0	0	10
OHIO	0	0	0	3	7	18	38	14	7	2	2	0	91
OKLAHOMA	1	1	1	9	12	11	7	15	11	3	1	0	72
OREGON	0	0	0	0	1	0	0	1	2	0	0	0	4
PENNSYLVANIA	0	1	0	0	7	24	26	25	7	1	0	0	91
PUERTO RICO	0	0	0	0	0	3	5	8	5	3	0	0	24
RHODE ISLAND	0	0	0	0	0	0	1	0	2	0	0	0	3
SOUTH CAROLINA	0	0	1	0	5	9	29	11	6	0	0	0	61
SOUTH DAKOTA	0	0	0	0	2	1	4	1	3	3	0	0	14
TENNESSEE	0	1	1	4	12	29	16	17	13	2	2	0	97
TEXAS	0	0	0	12	24	14	35	21	14	7	1	0	128
UTAH	0	0	0	0	0	5	2	6	2	0	0	0	15
VERMONT	0	0	0	0	0	4	5	4	0	0	0	0	13
VIRGINIA	0	0	0	0	9	6	8	8	2	0	0	0	33
WASHINGTON	0	0	0	0	0	1	0	0	0	0	0	0	1
WEST VIRGINIA	0	0	0	0	4	2	8	2	1	0	0	0	17
WISCONSIN	0	0	0	1	0	8	12	10	2	1	1	1	36
WYOMING	0	0	0	0	2	4	7	6	2	0	0	0	21
TOTAL	3	4	34	73	254	531	717	541	211	43	12	84	2507

ON DECEMBER 8, 1963, THE CRASH OF A JETLINER KILLING 81 PEOPLE NEAR ELKTON, MARYLAND, WAS ATTRIBUTED TO LIGHTNING BY THE CIVIL AERONAUTICS BOARD INVESTIGATORS.

TOTAL LIGHTNING INJURIES BY STATE FOR PERIOD, 1959-83

STATE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALABAMA	6	1	7	2	2	13	51	37	0	2	0	0	121
ALASKA	0	0	0	0	0	0	0	0	0	0	0	0	0
ARIZONA	2	0	0	0	6	1	26	21	12	0	0	0	68
ARKANSAS	1	2	2	9	26	15	30	56	9	0	0	1	151
CALIFORNIA	1	0	0	4	0	0	6	7	1	0	1	1	21
COLORADO	0	0	0	0	21	39	42	42	5	0	0	0	149
CONNECTICUT	0	0	2	0	3	17	12	11	6	0	0	0	51
DELAWARE	0	0	0	0	8	9	0	1	2	0	0	0	20
DISTRICT OF COLUMBIA	0	0	0	0	0	4	1	1	0	0	1	0	7
FLORIDA	0	1	12	12	23	156	160	155	116	27	0	1	663
GEORGIA	0	0	2	2	17	39	93	31	3	5	0	0	192
HAWAII	0	0	0	0	0	0	0	0	0	0	0	0	0
IDAHO	0	0	0	1	6	17	14	17	4	1	0	0	60
ILLINOIS	0	0	0	2	13	37	23	31	20	1	0	0	127
INDIANA	0	0	2	4	18	31	26	21	1	0	0	0	103
IOWA	0	0	1	7	21	39	33	17	16	3	1	0	138
KANSAS	0	0	5	10	13	22	37	23	26	4	1	0	141
KENTUCKY	0	0	0	2	19	50	46	17	10	1	0	0	145
LOUISIANA	1	0	6	2	13	13	91	32	13	0	1	1	173
MAINE	0	0	0	0	3	5	18	46	0	0	1	0	73
MARYLAND	0	0	0	0	21	15	31	17	5	0	0	0	89
MASSACHUSETTS	0	0	1	11	16	30	100	72	26	4	2	1	263
MICHIGAN	0	0	1	8	33	121	87	182	18	6	0	0	456
MINNESOTA	0	0	0	0	8	17	14	13	6	3	0	0	61
MISSISSIPPI	1	2	3	2	10	10	97	30	6	2	1	1	165
MISSOURI	0	1	1	8	15	16	4	15	3	2	4	0	69
MONTANA	0	0	0	0	5	9	10	8	0	0	0	0	32
NEBRASKA	0	0	0	4	14	6	7	12	5	0	0	0	48
NEVADA	0	0	0	0	0	0	0	2	0	0	0	0	2
NEW HAMPSHIRE	0	0	0	0	2	17	27	2	2	0	0	0	50
NEW JERSEY	0	0	0	0	3	11	49	18	14	0	0	0	95
NEW MEXICO	0	0	0	1	17	9	29	18	6	0	0	0	80
NEW YORK	0	0	0	0	4	48	80	114	20	3	1	0	270
NORTH CAROLINA	0	2	27	12	38	58	87	99	16	2	1	0	342
NORTH DAKOTA	0	0	0	0	2	0	0	4	4	0	0	0	10
OHIO	0	0	3	3	29	39	39	83	42	4	11	0	253
OKLAHOMA	1	1	3	14	27	36	30	32	19	18	5	2	188
OREGON	0	0	0	0	2	2	0	9	3	0	0	0	16
PENNSYLVANIA	0	5	0	0	9	67	71	130	13	2	0	0	297
PUERTO RICO	0	0	0	0	0	0	1	0	2	1	0	0	4
RHODE ISLAND	0	2	0	0	1	5	4	11	2	0	1	0	26
SOUTH CAROLINA	0	0	0	3	17	6	79	18	19	0	0	0	142
SOUTH DAKOTA	0	0	0	1	2	13	6	6	1	2	0	0	31
TENNESSEE	0	1	4	2	26	49	65	45	18	4	0	0	214
TEXAS	0	2	4	28	41	38	32	33	23	7	2	0	210
UTAH	0	0	0	0	1	18	6	11	4	0	0	0	40
VERMONT	0	0	0	0	0	3	10	2	0	0	0	0	15
VIRGINIA	0	0	0	2	7	12	39	24	1	0	0	0	85
WASHINGTON	0	0	0	0	4	1	7	7	0	0	0	0	19
WEST VIRGINIA	0	0	0	0	0	2	22	25	1	1	0	0	51
WISCONSIN	0	1	2	2	4	25	50	18	7	2	2	0	113
WYOMING	0	0	0	0	4	32	17	21	6	0	0	0	80
TOTAL	13	21	88	158	574	1222	1809	1647	536	107	36	8	6219

LIGHTNING FATALITIES AND INJURIES BY YEAR 1959-83

LIGHTNING FATALITIES

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1959	1	0	1	4	18	25	50	39	13	7	0	0	158
1960	0	0	1	5	7	33	25	17	9	0	0	0	97
1961	0	0	1	2	9	23	47	20	10	1	0	0	113
1962	0	0	3	6	27	20	26	28	9	1	0	0	120
1963	0	0	4	3	11	37	42	20	10	2	0	81	210
1964	0	0	9	6	15	21	29	19	7	1	1	0	108
1965	0	0	2	4	12	34	39	28	4	2	0	0	125
1966	0	0	1	1	8	15	21	16	11	3	0	0	76
1967	1	0	1	2	3	26	21	14	1	2	1	1	73
1968	0	0	0	1	5	24	30	29	9	3	1	1	103
1969	0	0	1	5	13	17	27	13	14	3	0	0	93
1970	0	0	0	1	17	25	27	19	21	1	0	0	111
1971	0	0	2	1	12	27	33	19	19	0	0	0	113
1972	0	0	1	1	5	21	31	28	3	1	0	0	91
1973	0	1	2	3	10	24	31	18	13	2	1	0	105
1974	0	2	0	7	12	21	28	24	6	0	2	0	102
1975	0	1	3	3	11	19	28	18	6	2	0	0	91
1976	0	0	0	1	9	19	19	19	3	2	0	0	72
1977	0	0	0	4	9	19	16	35	14	1	0	0	98
1978	0	0	1	1	9	26	24	22	3	1	0	1	88
1979	0	0	0	3	11	4	20	16	4	3	2	0	63
1980	0	0	0	0	7	16	27	20	5	1	0	0	76
1981	0	0	0	4	5	13	19	19	5	0	2	0	67
1982	1	0	0	3	5	14	29	18	4	3	0	0	77
1983	0	0	1	2	4	8	28	23	8	1	2	0	77
TOTAL	3	4	34	73	254	531	717	541	211	43	12	84	2507
AVERAGE	0	0	1	3	10	21	29	22	8	2	0	3	100

ON DECEMBER 8, 1963, THE CRASH OF A JETLINER KILLING 81 PEOPLE NEAR ELKTON, MARYLAND, WAS ATTRIBUTED TO LIGHTNING BY THE CIVIL AERONAUTICS BOARD INVESTIGATORS.

LIGHTNING INJURIES

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1959	0	0	0	5	27	52	110	103	23	3	1	1	325
1960	0	0	2	11	12	70	28	50	16	9	4	0	202
1961	0	0	7	14	15	49	83	50	31	5	1	1	256
1962	0	0	3	5	39	38	90	49	12	6	0	0	242
1963	7	0	0	6	14	64	55	44	18	1	0	0	209
1964	0	0	10	15	14	38	99	53	8	1	1	0	239
1965	3	2	2	4	26	42	59	59	19	1	0	0	217
1966	0	2	1	2	37	39	42	44	15	1	0	0	183
1967	0	0	0	4	7	35	59	33	4	2	0	1	145
1968	0	0	4	2	16	52	117	155	14	9	1	0	370
1969	0	0	0	4	19	75	39	23	12	0	0	1	173
1970	0	0	1	5	40	40	82	43	43	4	1	0	259
1971	0	1	0	1	24	71	79	54	22	1	1	0	254
1972	0	0	8	6	12	24	72	54	24	2	1	0	203
1973	0	0	10	2	20	23	74	59	29	9	2	0	228
1974	1	9	1	3	12	27	56	51	12	1	0	0	173
1975	0	3	0	1	30	60	107	154	42	1	0	1	399
1976	0	1	0	7	16	39	73	68	13	1	0	1	219
1977	0	0	0	3	35	58	58	67	62	4	4	0	291
1978	0	0	5	3	19	100	73	54	42	5	0	0	301
1979	0	2	4	26	32	73	55	49	9	2	2	0	254
1980	0	1	2	11	11	49	50	134	16	1	0	0	275
1981	1	0	2	9	34	60	108	52	9	3	13	0	291
1982	1	0	2	6	38	20	54	32	11	4	4	2	174
1983	0	0	24	3	25	24	87	113	30	31	0	0	337
TOTAL	13	21	88	158	574	1222	1809	1647	536	107	36	8	6219
AVERAGE	1	1	4	6	23	49	72	66	21	4	1	0	249

NORTH ATLANTIC TROPICAL CYCLONES, 1983

Robert A. Case
and
Harold P. Gerrish
National Hurricane Center, NOAA
Miami, Florida

The hurricane season of 1983, with a total of four named cyclones, was the least active season since 1930 (fig. 34). Three hurricanes and one tropical storm made the 1983 season minimal in many respects. The hurricanes that did occur were rather short lived. A total number of only five hurricane days made this season the least in number of hurricane days since 1931. For comparative purposes, the average number of hurricane days per season, based on a 30-yr period, is 26. This year became the first year since 1871 that no storms or hurricanes formed south of latitude 25°N. Finally, the 1982 and 1983 seasons became the first consecutive years since 1871 that no tropical storms or hurricanes formed in the Caribbean. A summary of the 1983 cyclone statistics are given in table 1, and past statistics in tables 2 and 3.

Fortunately for the shipping interests, the season was a minimal one in intensity as well as in activity. Hurricane Barry managed to attain minimal hurricane strength (maximum winds 70 kn) just prior to moving onshore along the northeast Mexican coast. Chantal intensified to minimal hurricane strength (65 kn) for about 24 hr prior to being engulfed by a fast moving disturbance in the mid-latitude flow pattern, and Dean (55 kn) was never more than a strong tropical storm. Hurricane Alicia was the only major hurricane of the season, and the ship that reported the highest wind gusts (110 kn) was the Coast Guard Cutter BUTTONWOOD, docked along the eastern end of Galveston Island.

HURRICANE ALICIA - AUGUST 15-21

Satellite pictures received on August 14 indicated that a cloud mass had begun to drift toward the southwest from the north central gulf coast. However, neither buoy data nor

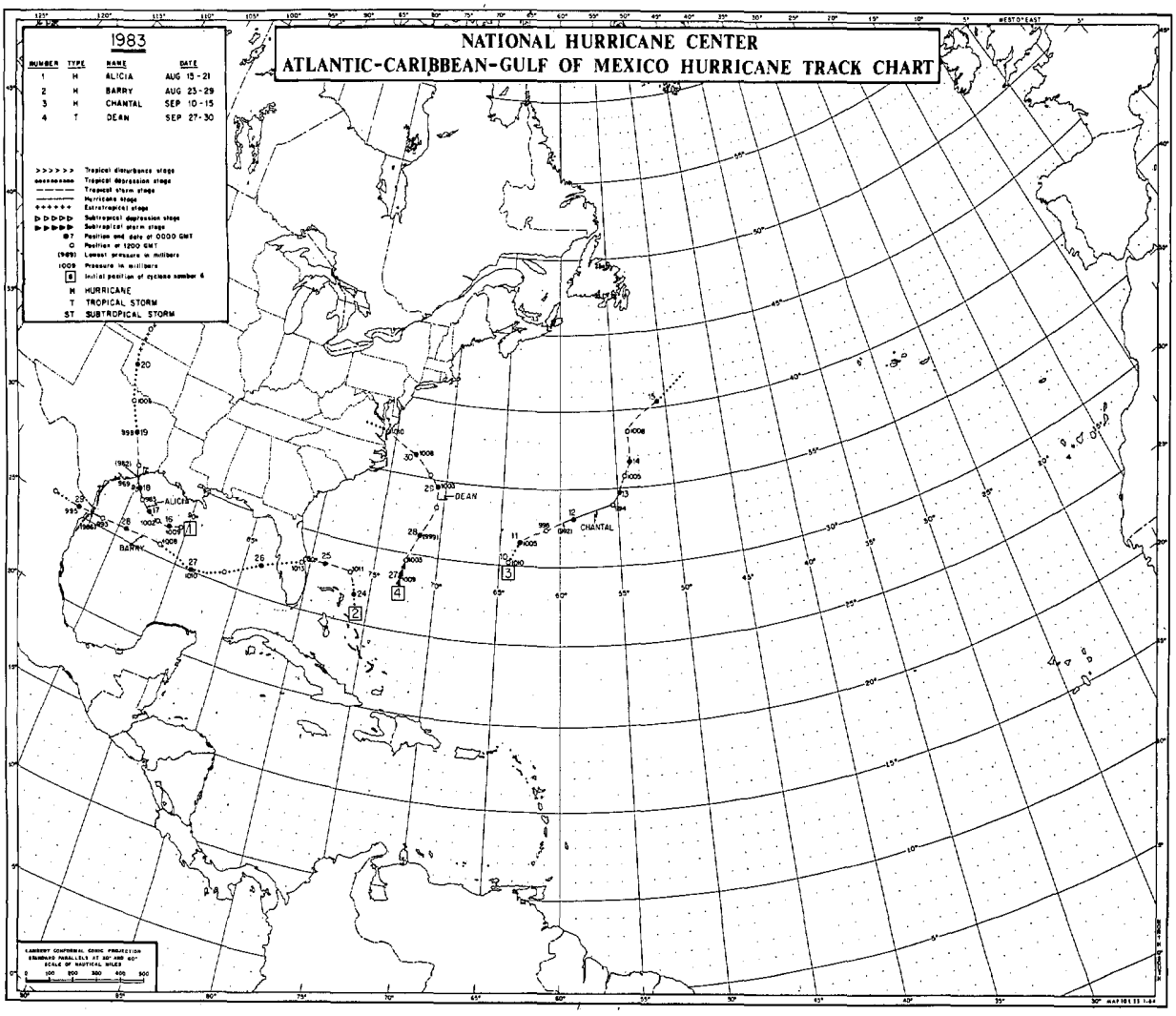


Figure 34.-- North Atlantic tropical cyclone tracks, 1983.

Table 1.-- Summary of North Atlantic tropical cyclone statistics, 1983

Cyclone Number	Name	Class	Dates	Maximum Sustained Winds (kn)	Lowest Pressure (mb)	U.S. $ Damage (millions)	Deaths
1	Alicia	H	15-21 AUG	100	962	100-200	21
2	Barry	H	23-29 AUG	70	986		1
3	Chantal	H	10-15 SEP	65	992		
4	Dean	T	27-30 SEP	55	999		

T = Tropical Storm (winds 34-63 kn)
H = Hurricane (winds 64 kn or higher)
ST = Subtropical storm (winds 34-63 kn)

Table 2
NORTH ATLANTIC TROPICAL CYCLONES FOR PAST YEARS

TOTAL NUMBER OF TROPICAL CYCLONES, LOSS OF LIFE AND DAMAGE								
Total Number Tropical Cyclones*			Total Number Hurricanes		Loss of Life		Damage by Categories**	
Year	All Areas	Reaching U.S. Coast	All Areas	Reaching U.S. Coast	Total All Areas	United States	Total All Areas	United States
1931	9	2	2	0		0		#
1932	11	5	6	2		0		#
1933	21	7	9	5		83		7
1934	11	5	6	3		17		6
1935	6	2	5	2		414		7
	58	21	28	12				
1936	16	7	7	3		9		6
1937	9	4	3	0		0		4
1938	6	4	3	2		600		8
1939	5	3	3	1		3		3
1940	8	3	4	2		51		6
	45	21	20	8				
1941	6	4	4	2		10		7
1942	10	3	4	2	17	8	?	7
1943	10	4	5	1	19	16	?	7
1944	11	4	7	3	1,076	64	8	8
1945	11	5	5	3	29	7	8	8
	48	20	25	11				
1946	6	4	3	1	5	0	?	?
1947	9	7	5	3	72	53	8	8
1948	9	4	6	3	24	3	?	?
1949	13	3	7	2	4	4	8	8
1950	13	4	11	3	27	19	?	?
	50	22	32	12				
1951	10	1	8	0	244	0	?	6
1952	7	2	6	1	16	3	6	6
1953	14	6	6	2	3	2	?	?
1954	11	4	8	3	720+	193	9	9
1955	12	5	9	3	1,518+	218	9	9
	54	18	37	9				
1956	8	2	4	1	76	21	8	?
1957	8	5	3	1	475	395	8	8
1958	10	1	7	0	49	2	?	?
1959	11	7	7	3	57	24	?	?
1960	7	5	4	2	185	65	8	8
	44	20	25	7				
1961	11	3	8	1	345	46	8	8
1962	5	1	3	0	4	4	6	6
1963	9	1	7	1	7,218+	11	9	7
1964	12	6	6	4	266	49	9	9
1965	6	2	4	1	76	75	9	9
	43	13	28	7				
1966	11	2	7	2	1,040	54	8	?
1967	8	2	6	1	68	18	8	8
1968	8	3	5	1	11	9	?	?
1969	18	3	12	2	364	256	9	9
1970	10	3	5	1	74	11	9	8
	55	13	35	7				
1971	13	5	6	3	44	8	8	8
1972	7	3	3	1	128	121	9	9
1973	8	1	4	0	16	5	?	?
1974	11	2	4	1	3,000+	1	8	8
1975	9	1	6	1	80	21	9	9
	48	12	23	6				
1976	10	4	6	1	77	9	8	8
1977	6	1	5	1	10	0	?	?
1978	12	2	5	0	41	35	?	?
1979	9	5	5	3	1,285	22	9	9
1980	11	2	9	1	236	2	9	8
	48	14	30	6				
1981	12	2	7	0	2	0	?	?
1982	6	2	2	0	26	3		?
1983	4	3		2	22	22	8	8
1984								
1985								
Total	516	181	295	87				
Mean	9.9	3.5	5.7	1.7				

**The Environmental Data Service has for some time recognized that, without detailed expert appraisal of damage, all figures published are merely approximations. Since errors in dollar estimates vary in proportion of the total damage, storms are placed in categories varying from 1 to 9 as follows:

1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

* Including hurricanes and after 1967 subtropical cyclones
# Not reported in literature, believed minor.
+ Additional deaths for which figures are not available.

ship information could verify any closed circulation associated with the suspicious area. By 1800 August 15 the EXXON BOSTON (WHML) located about 75 mi southwest of the suspected center of circulation reported southwest winds of 25 kn with 6 ft seas and a surface pressure of 1016.0 mb. At approximately the same time, an Air Force reconnaissance plane found winds of 40 kn and an estimated central pressure of 1006 mb. Based upon this aircraft and ship information, the disturbance was named tropical storm Alicia late on the afternoon of August 15. Due to the abnormally high environmental pressures surrounding the storm, it generated winds stronger than usually observed in storms with similar minimum central pressures.

On the afternoon of the 16th (1900 GMT), the DB CHAMPION (located about 50 mi northwest of the storm center) reported winds from the east-northeast at 50 kn with gusts to 75 kn in squalls. During the next 24 hr, Alicia turned slowly toward the northwest and passed directly over the barge. Table 4 illustrates the excellent meteorological observations taken by the crew of the CHAMPION during this critical time period. The crew of the DB CHAMPION are to be commended for a job well done. Unfortunately, the tug JOEL ROBIN, out of Cameron, La., sank during the episode with the loss of one life while coming to the aid of the DB CHAMPION.

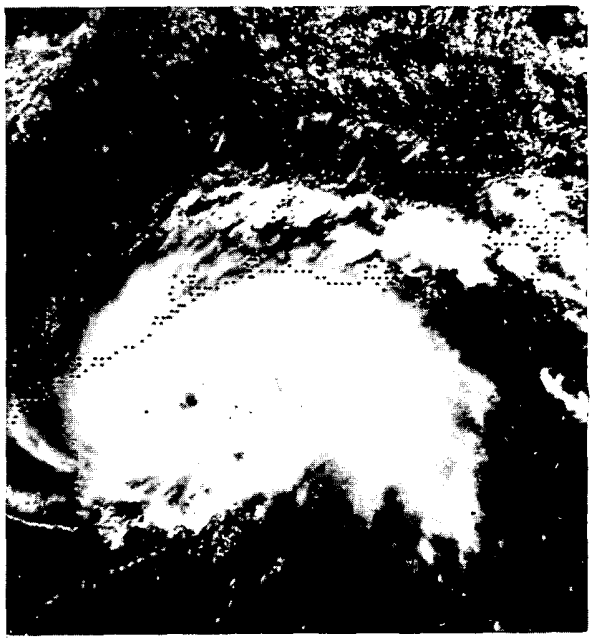


Figure 35.-- Hurricane Alicia is intensifying while approaching the Texas coast at 1731, August 17.

Hurricane Alicia continued to strengthen as it tracked toward the northwest on the remainder of the 17th. Figure 35 shows the well defined eye of the intensifying hurricane. During the pre-dawn hours of the 18th the center of Alicia (962 mb) moved onto the upper Texas coast a little more than 20 mi southwest of Galveston, Tex. Alicia became the first hurricane to strike the U.S. mainland since hurricane Allen hit the lower Texas coast in August of 1980.

HURRICANE BARRY - August 23-29

Barry was the season's only named tropical storm that began from an African disturbance. The disturbance became a depression just east of the northern Bahamas on the evening of August 23. At 0600 August 24, the OCEANIC (HOOE), located within 50 mi to the south of the suspected center, reported southwest winds of 20 kn with a central pressure of 1016 mb and seas of 9 ft. An unidentified ship located just to the north of the center at the same

Table 3

NORTH ATLANTIC TROPICAL CYCLONES FOR PAST YEARS

Frequency of Tropical Cyclones (Including Hurricanes) by Months and Years											Frequency of Tropical Cyclones Reaching Hurricane Intensity by Months and Years									
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1931			1	1	2	3	1	1		9	1931					2				2
1932		1			3	3	3	1		11	1932				3	1	1	1		6
1933		1	1	3	7	5	3	1		21	1933		1	1	3	3	1			9
1934		1	1	1	2	2	3	1		11	1934		1	1	1	1	1	1		6
1935					3	1	2			6	1935				2	1	2			5
1936			3	2	6	4	1			16	1936		1	1	3	2				7
1937				1	2	6				9	1937					3				3
1938					3	1	3	1		8	1938				2	1				3
1939			1		1	1	2			5	1939				1		2			3
1940		1			3	2	2			8	1940				3	1				4
1941						4	2			6	1941					3	1			4
1942					3	3	3	1		10	1942				3			1		4
1943				1	2	4	3			10	1943			1	1	2	1			5
1944				3	2	4	2			11	1944			2	1	3	1			7
1945			1	1	4	3	2			11	1945		1		1	1	2			5
1946			1	1	1	1	2			6	1946			1		1	1			3
1947				1	2	3	3			9	1947				2	1	2			5
1948		1		1	2	3	1	1		9	1948				1	3	1	1		6
1949					3	7	2	1		13	1949				2	4	1			7
1950					4	3	6			13	1950				4	3	4			11
1951		1			3	4	2			10	1951	1			2	3	2			8
1952	(Feb.) 1				2	2	2			7	1952				2	2	2			6
1953		1			3	4	4	1	1	14	1953				2	3	1			6
1954			1	1	2	4	1	1	1	11	1954		1		2	3	1		1	8
1955				1	4	5	2			12	1955				3	5	1			9
1956			1	1	1	4	1			8	1956			1	1	1	1			4
1957			2		1	4	1			8	1957		1			2				3
1958			1		4	4	1			10	1958				3	3	1			7
1959		1	2	2	1	3	2			11	1959		1	2		3	1			7
1960			1	2	1	3				7	1960			1	1	2				4
1961				1		6	2	2		11	1961			1		5	1	1		8
1962					2	2	1			5	1962				1	1	1			3
1963				1	1	5	2			9	1963			1	1	4	1			7
1964			1	1	4	4	1	1		12	1964				2	3	1			6
1965			1		2	2	1			6	1965				2	1	1			4
1966			1	4	1	4		1		11	1966		1	3	1	1		1		7
1967					1	4	3			8	1967				1	3	2			6
1968			3		1	3	1			8	1968		2		1	1	1			5
1969				1	5	6	5	1		18	1969				4	4	3	1		12
1970		1		1	3	3	2			10	1970	1			1	1	2			5
1971				1	4	6	1	1		13	1971				2	4				6
1972		1	1		2	2		1		7	1972		1		1	1				3
1973				2	2	2	2			8	1973			1	1	1	1			4
1974			1	1	4	4	1			11	1974				2	2				4
1975			1	1	2	3	1		1	9	1975			1	2	3				6
1976		1		1	5	2	1			10	1976				4	1	1			6
1977					1	3	2			6	1977				1	3	1			5
1978	(Jan) 1			1	4	3	3			12	1978				2	2	1			5
1979			1	2	3	2	1			9	1979			1	2	2				5
1980					3	5	1	2			1980				3	3	1	2		9
1981		1	1		2	5	1	1		11	1981				1	5	1	1		8
1982			2		1	3				6	1982		1			1				2
1983					2	2				4	1983				2	1				
1984											1984									
1985											1985									
Totals	(Jan) 1 (Feb) 1	12	30	41	132	161	94	20	3	515	Totals	2	12	19	82	116	48	10	1	296

time reported a pressure of 1017 mb, northeast winds of 20 kn and 5 ft seas. Thereafter, the depression quickly strengthened into tropical storm Barry.

On the 24th Air Force reconnaissance observations, satellite pictures and ship reports gave strong evidence to indicate that a surge of high pressure moving off the eastern coast of the United States had begun to turn Barry toward the west. At 1800 on the 24th, an unidentified ship (located within 50 mi west of Barry) reported north-northeast winds of 30 kn and a falling barometer. Elsewhere to the north all ships were showing strong pressure rises. In addition to the surface pressure surge from the north, strong upper level winds from the northeast forced most of the heaviest convection associated with Barry to the southern semi-circle of the storm (fig. 36), thus diminishing the storm's intensity.

Barry was downgraded to a depression as it crossed the Florida east coast just south of

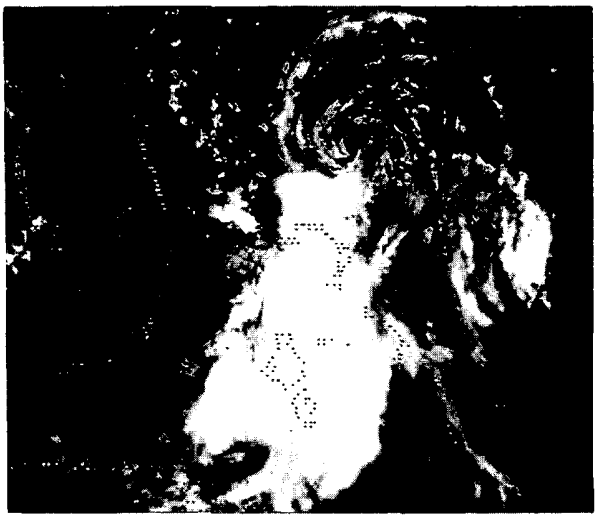


Figure 36.-- The low-level circulation of tropical storm Barry can be clearly seen north of the heavy deep convection at 1413 August 24.

Table 4.-- Ships encountering tropical cyclones in the North Atlantic during 1983

Vessel	Nationality	Date	Position of Ship Lat. Deg.	Long. Deg.	Time GMT	Wind Dir. 10°	Speed kt.	Visibility N.Mi.	Present Weather Code	Pressure MB	Temperature °C Air	Sea	Sea Waves * Period Sec.	Height Ft.	Swell Waves Dir. 10°	Period Sec.	Height Ft.
ALICIA																	
DB CHAMPION	NETHERLANDS	16	W CAMERON	BLK 655	19	07	50	2	63	1018.5	25				10	10	23
DB CHAMPION	NETHERLANDS	16	High Is.	A 393	21	06	50	1-2	63	1014.5	25				10	11	25
DB CHAMPION	NETHERLANDS	16	27.8	93.5	23	05	60	1/4	97	1011.6	25				09	11	25
DB CHAMPION	NETHERLANDS	17	27.7	93.6	00	04	50	1	81	1011.0	25				09	11	28
DB CHAMPION	NETHERLANDS	17	27.7	93.6	01	04	70	1/2	65	1009.8	25				06	11	33
DB CHAMPION	NETHERLANDS	17	27.7	93.7	02	04	80	1/5	65	1008.0	25					11	35
DB CHAMPION	NETHERLANDS	17	27.7	93.8	03	04	80	<1/10	65	1007.8					04		37
DB CHAMPION	NETHERLANDS	17	27.6	93.9	05	**		1									33
DB CHAMPION	NETHERLANDS	17	27.6	93.9	06	02**	30	2		1003.0							30
DB CHAMPION	NETHERLANDS	17	27.5	93.9	07	25	55	1		1000.8	26						33
DB CHAMPION	NETHERLANDS	17	27.5	94.0	08	27	60	< 1	65	1001.0	26				27		27
DB CHAMPION	NETHERLANDS	17	27.5	94.0	09	27	60	2	63	1004.8	26				27		27
TOYOTA MARU	JAPAN	17	27.2	96.0	12	02	75		13	1011.1			03	03	06	07	11
DB CHAMPION	NETHERLANDS	17	27.6	93.9	13	25	45	1	81	1008.0	27						20
DB CHAMPION	NETHERLANDS	17	27.6	93.6	17	20	45	1	81	1011.8	26						27
BARRY																	
(No Ships)																	
CHANTAL																	
(No Ships)																	
DEAN																	
GHWR	UNITED KINGDOM	27	32.2	74.4	12	02	40			1013.2			06	16	05	12	16
PETERSBURG	UNITED KINGDOM	27	31.2	74.7	12	22	40			1011.0			02	06	01	05	10
DRYSO	NORWAY	27	34.6	74.8	18	02	40			1014.5			07	10			
PETERSBURG	UNITED KINGDOM	27	30.3	74.6	18	03	35			1000.8			04	08	03	05	08
CARDIFF CITY	UNITED KINGDOM	28	36.0	73.8	12	03	35			1018.3			06	10			
OLEANDER	NETHERLANDS	28	36.1	70.0	18	05	35			1012.7			04	05	05	10	11
SAN PEDRO	UNITED KINGDOM	28	31.5	70.1	18	21	45			1007.2			04	11	24	06	16
C.G. Cutter TAMAROA	UNITED STATES	29	36.3	70.5	00	05	40			1001.0			03	08	05	05	18
VERGELEGEN	SOUTH AFRICA	29	37.3	68.5	00	04	40						05	03	05	08	18
SHIP		29	36.0	73.4	06	36	35			1016.6			07	06	04	04	19
VERGELEGEN	SOUTH AFRICA	29	37.2	66.6	06	12	35			1016.3			05	08	05	06	11
SHIP		29	36.5	70.3	06	05	40			1020.0							
SHIP		29	36.8	72.3	06	03	35			1001.7							
SHIP		29	34.2	75.5	06	32	40			1015.9							
BONAIRE	NETHERLANDS	29	33.7	74.7	09	03	40			1016.6							
SHIP		29	36.5	73.2	12	01	35			1014.5			05	11	02	07	29
CARMANIA	UNITED KINGDOM	29	38.4	73.9	18	04	40			1020.4			03	06	04	05	10
SHIP		29	37.0	72.6	18	04	55						06	06	04	08	28
CARMANIA	UNITED KINGDOM	29	38.7	73.3	21	05	40			1018.9			03	08	04	05	11
SHIP		29	37.3	72.2	21	03	40			1012.3			04	06	04	14	23
SHIP		29	33.5	74.3	21	04	35						03	06			
CARMANIA	UNITED KINGDOM	30	38.4	73.2	00	07	40			1017.9			03	08	05	06	13
SHIP		30	38.1	73.8	06	06	35			1012.5			09	13	36	09	16

* Direction for sea waves same as wind direction.
** Plain language report states ship in eye.

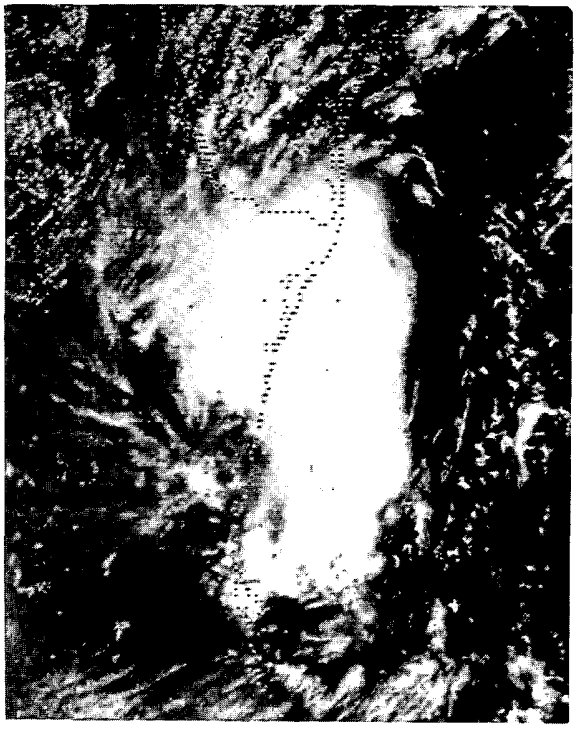


Figure 37.-- Hurricane Barry crossing the upper Mexican coast at 1700 August 28.

the Kennedy Space Center. Turning toward a west-southwest course, Barry moved under a more favorable upper-air pattern by the time it reached the central Gulf of Mexico, and once again attained tropical storm strength at 1200 on the 27th. Thereafter, Barry moved toward the west and strengthened to a minimal hurricane just prior to making landfall on the upper Mexican coast about 30 mi south of Brownsville (fig. 37). Damage from Barry was minimal in Florida and Texas. However, there was some structural damage and road washouts reported from Mexico.

HURRICANE CHANTAL - SEPTEMBER 10-15

Chantal began in a large envelope of low pressure centered a little over 100 mi south of Bermuda. On the morning of September 10, an Air Force reconnaissance plane found a closed circulation with sustained winds of 25 kn and 1010 mb pressure near latitude 30°N and longitude 64°W. During the afternoon and evening of the 10th, the intensifying depression moved toward the northeast with the center passing 100 mi to the southeast of Bermuda. Late on the afternoon of the 10th, reconnaissance aircraft found that the depression had deepened to 1006 mb with winds of 35 kn; therefore, it was upgraded to tropical storm Chantal.

No significant ship reports were available

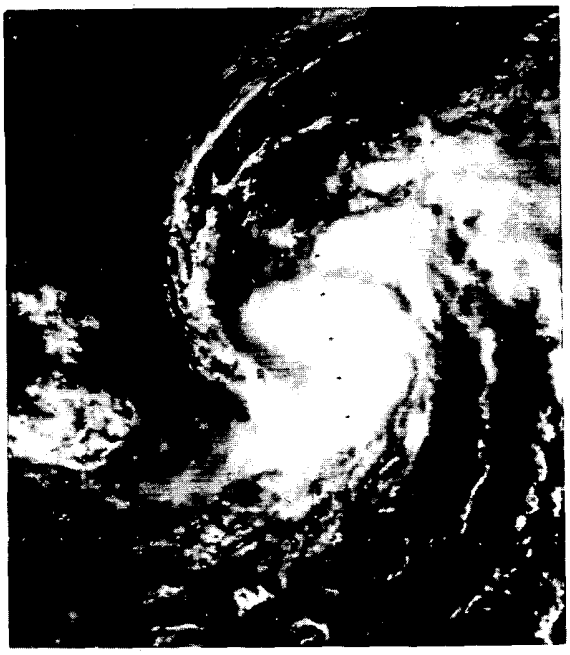


Figure 38.-- A faint eye was barely visible in Chantal's circulation beneath the cirrus overcast at 1701 September 11.

during the night of the 10th. Therefore, the first new information that supported the continued strengthening of Chantal was the final Air Force reconnaissance report on the morning of the 11th which showed winds of 55 kn and a central pressure of 996 mb. Based upon satellite data, (fig. 38), and since there were no ships close enough to the center of Chantal to be of help, Chantal was upgraded to a minimal hurricane on the afternoon of the 11th. Little change was detected in the hurricane during the following 24 hr (11/1800 - 12/1800). However, by the afternoon of the 12th, Chantal's deep convection became disorganized and it was downgraded to a tropical storm that evening.

A major trough in the westerlies moved to the northeastern U.S. coast on the 13th and Chantal turned toward the north. As the trough weakened and accelerated to the northeast during the following 24 hr, Chantal lost its identity and was engulfed by an associated surface weather front.

TROPICAL STORM DEAN - SEPTEMBER 27-30

Dean was a storm of subtropical origin that developed within a frontal cloud band which had moved off the U.S. east coast on September 22. During the next few days the front became stationary and extended from the Bahama Islands northeastward beyond Bermuda. At the same

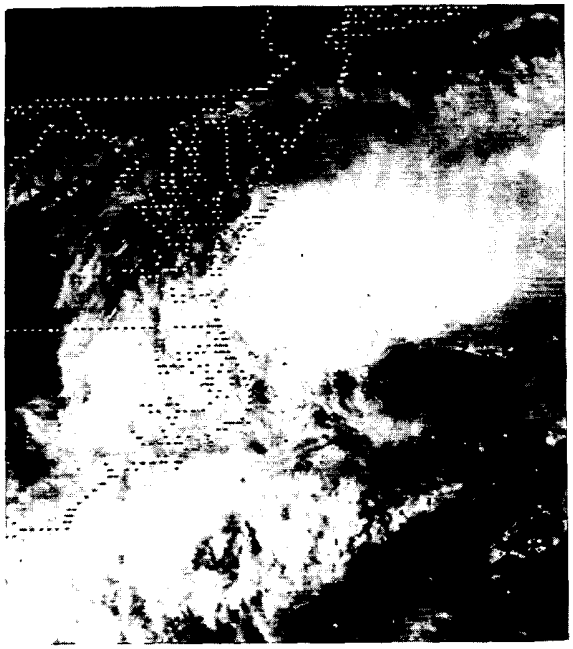


Figure 39.-- Tropical storm Dean was off the Virginia/North Carolina coast at 2001 September 29.

time, a large 1035 mb high-pressure center settled over the northeastern U.S. This combination of high pressure and the developing storm created a strong surface pressure gradient and produced northeasterly winds to near gale force along a large portion of the eastern seaboard.

By the 27th, Air Force reconnaissance found a surface pressure of 999 mb which was the lowest of the storm's existence. At the same time, satellite pictures indicated that the storm's cloud pattern and circulation were separating from the remainder of the frontal cloud band. Thereafter, Dean began to gradually weaken and, on the 29th, turned toward the northwest. Figure 39 shows the unorganized storm located just off the mid-Atlantic coast. Early on the 30th Dean moved onshore along the Virginia Eastern Shore and dissipated a few hours later.

During the time period 27/1200 to 30/0600, 23 ships within 300 mi of the storm reported winds of 34 kn or higher (table 4). Highest reported surface winds of 55 kn occurred on the 29th at 1800 by an unidentified ship located about 75 mi north-northeast of the center. With the multitude of ship reports, Air Force reconnaissance data, and satellite information, forecasters developed a great deal of confidence that Dean would turn toward the northwest and ultimately move inland along the mid-Atlantic coast.

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
°/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.

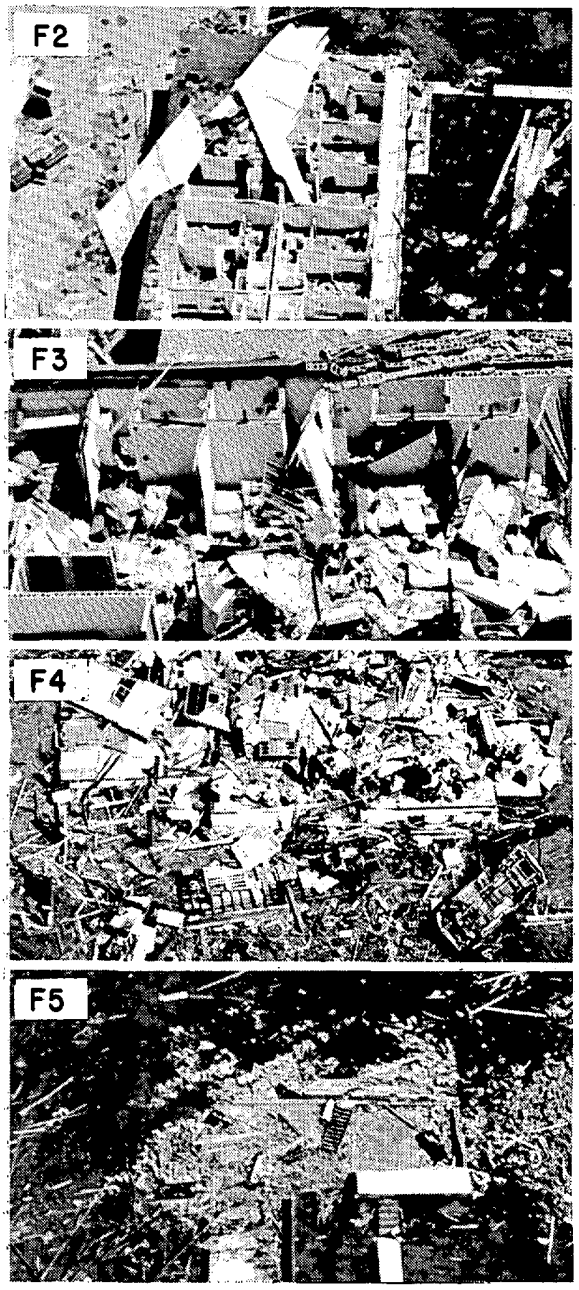
(F3) Severe tornado (158-206 mph): Severe damage
Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.

(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

DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
NATIONAL CLIMATIC DATA CENTER
FEDERAL BUILDING
ASHEVILLE, N.C. 28801

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE

COM 210

THIRD CLASS
BULK RATE