

U. S. DEPARTMENT OF COMMERCE

LUTHER H. HODGES, Secretary

WEATHER BUREAU

ROBERT M. WHITE, Chief

STORM DATA

SEPTEMBER 1964

Volume 6 No. 9



ASHEVILLE: 1964

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1964

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM	PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INURED	PROPERTY	CROPS							KILLED	INURED	PROPERTY	CROPS	
ALABAMA			None reported							IOWA (Cont'd.)	7	Early p.m.				5	5		Heavy rain
ALASKA			None reported							Northwest and North Central Iowa									Generally 2-5 inches (8" near Fostoria). Small stream flooding. Little wind and lightning damage. Rock Island RR. bridge taken out.
ARIZONA										Merrill	7	5:00 p	2	250		5	4		Tornado
North Tucson	6	mid-day			0	3	4	C	Thunderstorm, hail and flash floods	2S Remsen	7	5:30 p	7	200		5	4		Tornado
			Thunderstorm with hail (marble size) over North Side, Tucson, washed out roads, overturned trailers, flooded some low-lying homes. Several minor injuries. Minor local citrus damage.							W of LeMars	7	6:00 p							Funnel
Southeast and south-central parts	9-10				0	0	4	C	Thunderstorms	Ryan	20	4:00 p				4			Lightning
			Heavy local rains, scattered light hail, washed out roads, flooded low-lying homes. Local crop damage.							6SE Shenandoah	22	3:10 p	10	300		5	4		Tornado
Central portions	13-15				0	4	5	4	Thunderstorms, wind, hail	Fairfield	22	5:10 p				5			Windstorm
			Heavy local rains, flooding, scattered hail. Homes and highways damaged. Some cotton loss. Several minor injuries.							KANSAS	5	Afternoon and night				4			Lightning
Near Meteor Crater	15	12:50 pm			0	0	0	0	Tornado	Northern and eastern portions									A severe electrical storm occurred over portions of northern and eastern Kansas. The heaviest losses were in Washington County.
			Funnel cloud reported by aircraft and highway patrol. Funnel touched ground briefly in open country about 8 miles west of Meteor Crater, no damage.							Pratt County	10	2:35 p.				1	3		Wind
Central and southeast portions	19-25				0	0	3	5	Thunderstorms, hail, and flash floods	South Central Kansas	17	Afternoon							Funnels aloft
			Thunderstorms, mostly in mountain sections of Central and Southeast, but occasionally down in valleys, with scattered hail and rain damage to cotton (locally severe), some flash flooding, wind, and lightning damage.																About twelve funnels were seen near Wichita, one was reported five miles west of Hutchinson, another was seen in Harper County just north of Manchester, Oklahoma, and one or two were reported southeast of Schilling Air Force Base (Salina).
ARKANSAS			None reported							KENTUCKY									None reported
CALIFORNIA Entire State			None reported							LOUISIANA									
COLORADO										Gulf of Mexico	3	1:00 p.			1	1	0	0	Lightning
Southeastern Colo.	5	Afternoon Evening			0	2	3		Lightning	Union Parish	4	3:15 p.			1	0	0	0	Lightning
			At 3:00PM, a woman in Pueblo was knocked unconscious by lightning at her home. A youth received burns on his arm and back when lightning struck a tractor that he was operating on a farm in the Castle Rock area. Lightning caused minor damage to electrical equipment and power lines at various points in the Arkansas Valley.							Southwest Division to East Central Division	5	Afternoon			2	0	5	4	Thunderstorms
CONNECTICUT			None reported																Number of places reported damaged during severe thunderstorm. CALCASIEU PARISH: 1-2 p. Lightning struck several Lake Charles houses and caused fires; one house and furnishings a total loss. JEFFERSON DAVIS PARISH: Lightning struck Walsh airport building; caused fire, blaze spread to pits shop; building a total loss. POINT COUPEE PARISH: Some utility lines down; some sugar cane damaged in Maringouin area, including sections of Point Coupee; hail reported. WEST FELICIANA PARISH: Several trees blown down and power failure in St. Francisville area; hail reported to S. ST. TAMMANY PARISH: Ward 6, Tallascheek, 2:45 p., 6-year old girl and 9-year old brother were killed by lightning while playing on bed-spring under hickory tree near home; lightning hit nearby before striking children.
DELAWARE			None reported							Gulf of Mexico	6	4:00 p.							Waterspout
FLORIDA			No report received by printing deadline							Flaquemine Parish	16	4:00 p.							Waterspout
										Caddo Parish	16	3:30 p.			0	0	5	0	Thunderstorm
GEORGIA Southeast	9-12				0	0	7	5	Hurricane Dora	Orleans Parish	17	3:15 p.-3:18 p.							Waterspout
			Hurricane Dora brought winds estimated at 90 mph to the coastal islands of extreme southeast Georgia and gale force winds were felt as far west as Waycross and as far north as Savannah. Torrential rains fell in several southeastern counties with some storm totals exceeding 10 inches as Dora moved westward across north Florida and eastnortheastward across south Georgia from the 9th to the 12th. More than five inches of rain fell over the area southeast of a line from Valdosta to Jesup and most of the southern half of the State received over three inches. Damage was extremely heavy in the coastal area where beaches were badly eroded, beach property undermined and washed away and both public and private buildings damaged extensively by wind. Hundreds of trees were blown down, many falling on buildings, automobiles and utility lines. Utilities suffered heavy damage as electric and telephone service disruption was almost 100 percent in some areas. Most of the inland damage was due to the heavy rains and resulting flash flooding. Roads, streets and bridges were washed out in many sections and some homes and businesses suffered water damage. Cave-ins caused extensive damage to buildings and streets in Waycross. Damage to crops was comparatively light. The quality of some cotton and peanuts was reduced and there was considerable lodging of corn, making harvesting more difficult. Farm and pasture land was flooded in many areas. No deaths or injuries were attributed directly to Dora in Georgia.							Calcasieu Parish	19	3:30 p.-4:15 p.							Funnel cloud aloft
HAWAII			None reported							Flaquemine Parish	26	1:00 p.							Waterspout
IDAHO			None reported																Pilot reported waterspout 4 SSW Alvin Callender Field.
ILLINOIS			See data at end of table							Orleans Parish	17	3:15 p.-3:18 p.							Waterspout
INDIANA			None reported							Calcasieu Parish	19	3:30 p.-4:15 p.							Funnel cloud aloft
IOWA																			12 NW Lake Charles: 3:30 p.-3:32 p., Sheriff's Department reported funnel cloud, moved toward NE. 10 NW Lake Charles: 4:15 p., radar report of funnel cloud.
W edge of Sibley	2	10:00 p						4	Windstorm	Flaquemine Parish	26	1:00 p.							Waterspout
6SW Battle Creek (Ida County)	3	11:00 a						3	Tornado										
Ida Grove area	3	Noon						4	4	Windstorm									
			Winds gusted to 70 mph. plus walnut size hail.																
4SW Westgate	3	3:00 p						4	Lightning										
			Barn and contents destroyed. \$10,000 loss.																

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1964

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
LOUISIANA (Cont'd.) Livingston and Tangipahoa Parishes	27-28	6:00 p. - 6:00 a.			0	1	4	0	Thunderstorm, heavy rain
					Severe electrical storm accompanied by heavy rain in Albany, Tickfaw, Pontchatoula, Springfield areas. Parts of area flooded; some families evacuated by boat. Many roads covered with water, several schools closed. Severe lightning caused some fires, power failures and knocked one man to floor. Worst part of storm and most rain between 6:00 and 10 p. Rain continued in Hammond area until 6:00 a., 28th; totaled 12.77 inches at NW Hammond. Residents several miles S of Pontchatoula said "it only sprinkled".				
MAINE					None reported				
MARYLAND					None reported				
MASSACHUSETTS Nantucket Island	14				0	0	2	0	Tropical Storm Dora
					Tropical storm Dora (reduced from previous hurricane status), moving northeastward, passed about 80 to 100 miles southeast of Nantucket at about 1 P.M., E.S.T. Fastest mile of wind at that station was 47 m.p.h. from the northeast at 11:30 A.M., and highest observed gust was 50 m.p.h. from the north at 2:20 p.m. Lowest sea-level pressure was 29.62 inches. Total rainfall was 2.53 inches. The storm caused very little damage on the island-- couple of boats washed up on the beach and some tree damage. No damage was experienced on the mainland.				
Nantucket Island	23				0	0	2	0	Hurricane Gladys
					Hurricane Gladys, moving northeastward, passed about 150 miles to the southeast of Nantucket. The only effect of the storm was some beach erosion resulting from heavy surf. No damage was experienced on the mainland.				
MICHIGAN Central, southwest- ern, and northwest- ern Lower Michigan	3	6:00 p. - 10:00 p.					5		Thunderstorms with lightning, high winds and heavy rains
					High winds estimated at 75 mph felled numerous trees with resultant damage to buildings and cars. Streets and roads in some areas were blocked by wind felled trees. Small boats and docks on inland lakes reported wind damage. Lightning induced fires damaged several homes. High winds and lightning severed power lines which cut service to hundreds of buildings. Damage was reported due to heavy rains flooding roads, streets and basements.				
Lake City	3	8:04 p.	?	?	0	0	5		Tornado
					Tornado destroyed large modern county highway garage building. Repair equipment, tools and 30 trucks inside the building were damaged. Total damage estimated at ninety thousand dollars. Resident, who was a city block distance away stated that he heard a terrible roaring noise before the garage was hit.				
MINNESOTA Duluth, St. Louis County	7	Morning			0	0	5	0	Heavy rain
					A series of Labor Day thundershowers swept across the state hitting Duluth most severely. A total of 2.28 inches of rain fell early the 7th following a 1.68 inch downpour the evening before. Over 60 flooded basements; one elementary school flooded; chunks of blacktop torn up. Storm sewer system backed up submerging streets under a foot to three feet of water. Storm cleanup costly on lower level roads.				
Middle River SESE, Marshall County	9	4:20P	4	225	0	0	4	2	Tornado
					Tornado damaged several farm sites. Numerous trees uprooted, several buildings destroyed with their contents thrown about. Storm moved from SW to NE.				
Hitterdal-Lake Park, Clay-Becker Counties	9	5:30P	13	200	0	1	4	3	Tornado
					Tornado funnel first heard and observed over Hitterdal moving to SE. Funnel touched down in open field doing minor crop damage. Funnel observed again 7 miles northwest of Lake Park moving east about 5:50P with last touchdown 8 miles NE of Lake Park at 6:00P. Four farmsteads damaged. Three barns destroyed, two silos and several outbuildings. Stacked bales of hay pulled apart. A small boy was hit by falling debris inside farm home.				
Bluffton 3N-Wadena 7N- Upper Gull Lake, Otter Tail-Wadena-Cass Counties	9	7:00P	22	150	0	0	4	0	Tornado
					Tornado first observed at Bluffton 3N pulling up a 15 x 30 ft. strip of bituminous highway. Funnel continued eastward, dipped to ground 7 miles north of Wadena at 7:20P hitting one farm, destroying a garage, chicken house, granary, silo, small barn and well house. Apparently no further touch-down until Upper Gull Lake, 8:17P, where several cabins and a resort hit. Several boats and pontoon boats damaged. Length of path here 3/4 mile with width near 1/2 mile. Tornado debris laid from southwest to northeast.				
Nimrod 4N, Wadena County	9	7:40P	?	?	0	0	4	0	Tornado
					New garage demolished, corn crib turned end for end with no damage, two other buildings damaged, 10 acres of corn leveled and stripped. Other minor damage reported at 4 nearby farm sites. Tornado moved from SW to NE.				

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	
MINNESOTA (Cont'd.) Hackensack 1NW, Cass County	9	8:15P	1/2	200	0	0	3	0	Tornado
					Small tornado hit southeast tip of Birch Lake, near Hackensack, demolishing one cabin and damaging another. Uprooted trees, dented one car and snapped electric and telephone lines. Two occupants in damaged cabin uninjured. Tornado moved from SW to NE. This tornado could have been a continuation of the tornado that fell on Nimrod 4N at 7:40P.				
Dalton, Otter Tail County	13	6:45P	0	0	0	0	0	0	Funnel cloud aloft
					Funnel cloud observed. Did not touch ground.				
Moorhead, Clay County	26	12:30P	?	?	0	0	4	3	Hail, wind
					Hail up to 2 3/4 inches in diameter broke hundreds of windows, damaged cars, roofs, power lines and some late crops. Wind over 50 mph recorded by Weather Bureau at Fargo, North Dakota.				
Duluth, St. Louis County	26	4:25A	?	?	0	0	4	0	Hail
					Three-quarter inch hail fell over parts of Duluth at 4:25A, 4:38A and again near 4:55A.				
Waskish 1S, Beltrami County	26	5:45A	2	100	0	0	3	0	Tornado
					A small tornado touched down in timber area uprooting and twisting trees. Some hail also reported at nearby Waskish forest ranger station.				
Crookston, Polk County	26	11:00A			1	1	4	0	Wind
					Gusty wind to 40 mph toppled third story fire-gutted wall on to parked car killing one person and injuring another. Two other cars flattened. Adjacent business establishments damaged by falling debris.				
MISSISSIPPI Jackson County	1	pm			0	1	2	0	Lightning
					Helena: Girl ill, talking on telephone, suffered minor shock when lightning bolt hit wiring and set fire to house.				
Choctaw County, Ackerman	27	Night			0	0	2	0	Lightning
					Horse, standing under tree, killed by lightning.				
Delta area	27-29	pm-am			0	0	3	4	Heavy rain
					Heavy rains flooded some streets and fields. Unofficial reports of up to four inches measured in some parts. COAHOMA COUNTY: Flooded streets resulted in drowned-out engines in some neighborhoods of Clarkdale. SHELBY and WASHINGTON COUNTY agents said cotton in field may drop one grade because of water damage and shorten staple length about one grade.				
MISSOURI Mound City, Holt County	17	2:30 pm							Funnel Aloft
Washington (5 N) Franklin County	18	4:20 pm							Funnel Aloft
Memphis-Wayaconda Scotland-Clark Counties	22	evening						4	Thunderstorm
					Wind damage reported on several farms, and to a large livestock barn at the Scotland County fairgrounds.				
Brookfield, Linn County	22	10:30 pm						4	Thunderstorm
					Damage to three homes, and to trees and power lines.				
Pattonsburg, Daviess County	22	5:30 pm						4	Tornado
					Wind damage to trees and farm buildings. Two inches of rain fell. Many roads were completely blocked. Several persons sighted the tornado cloud, and the fire signal was sounded just before it struck Pattonsburg. Many light wires were down.				
Daviess-Grundy County	22	5:50 pm	4	100				4	Tornado
					The tornado first struck a farm 5 miles NNW of Jamesport. Funnel was observed descending by neighbors to the west. A metal grain bin was lifted from its foundation, carried northeast, then blown back to the south. As the storm passed east, the farm family observed a "tail" of the parent thunderstorm cloud dip to earth three times. A church yard and a vacant farm in extreme western Grundy County were damaged as the tornado roved toward the east. This storm path is on a line which would pass through Pattonsburg, where wind damage had occurred a few minutes earlier.				
MONTANA Big Timber (20 miles North) Sweetgrass County	22	Unknown	?	?	0	1	0	0	High Wind
					A 50-foot house trailer was overturned by gust winds. The tractor was flipped into a ditch. The driver was hospitalized, but he was not seriously injured.				

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1964

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS				ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	PROPERTY	CROPS	
NEBRASKA Northeast Thayer Co.	1	2:00 a.	10	2*	0	0	0	4			Hail and high winds
		Severe damage to corn and milo in the Carleton-Bruning area from small size hail driven by strong winds.									
Near Arcadia	2	6:00 p.	Short	Narrow	0	0	4	0			Damaging Winds
		Barn crib, and granary blown down.									
Northern Jefferson, Southern Saline, and Northern Gage Counties	19	4:30 p. - 5:30 p.	30	2*	0	0	4	4			Hail
		Several strips of hail damage from Tobias and Daykin eastward to Adams. Stones mostly 3/4" to 1" diameter, but ranged up to 1 3/4".									
South of Lincoln	22	1:00 p.	Short	Narrow	0	0	4	0			Damaging Winds
		Power lines blown down, damage to roofs and walls of buildings.									
NEVADA		None reported									
NEW HAMPSHIRE Statewide	27	Widespread, mostly minor wind damage reported in many parts of the state and particularly in northern sections. Power knocked out by falling trees and branches. Many signs blown down.									
NEW JERSEY		None reported									
NEW MEXICO South-central area	11	Evening			0	0	4	6			Heavy rain
		Heavy rains caused flash flooding of arroyos and streets, and damaged Dona Ana County cotton crop.									
Malaga, Eddy County	14	Afternoon			0	0	0	5			Hail
		Hail destroyed 600 acres of cotton and heavily damaged 100 additional acres of cotton.									
Roswell area, Chaves County	21	5:45 p.m.	Short	50	0	0	4	5			Tornado, rain, hail, wind
		Tornado 4 miles north Roswell moved east-northeast and damaged gasoline station. Six miles northwest of Roswell high winds overturned cotton trailers. Rain to unofficial 2.90 inches and hail to 3/8 inch diameter did \$50,000 damage to cotton and \$50,000 damage to other crops in 4 by 5 mile area northwest of Roswell.									
Albuquerque area, Bernalillo and Sandoval Counties	25	5:00 p.m.			0	0	?	?			Hail
		Hail, 1/4 to 1 inch in diameter, accompanied thunderstorm in scattered parts of north Albuquerque and northward in Rio Grande valley. Damage to Bernalillo County apple orchards negligible; but up to 50% loss in some Sandoval County orchards.									
Roswell area, Chaves County	26				0	0	?	5			Hail
		Hail, 1-1/2 inch diameter, just south-southeast of Roswell moved northeast to Hecce River. Damage to over 3,000 acres of crops and to some roofs.									
NEW YORK East Central	9	a.m.					4				Electrical
		Morning thunderstorms brought lightning damage to scattered local areas in the eastern Mohawk and upper Hudson River Valleys. Large dairy barn with contents of hay and farm tools destroyed by fire near Broadalbin, Fulton County. Bolt killed 12 cows huddled under small tree near Chatham, Columbia County.									
NORTH CAROLINA New Hanover County	10	7:25 am	short	narrow	0	0	2	0			Waterspout
		Small funnel was seen by CERN observer to move westward from the Atlantic Ocean across the town of Carolina Beach, during the period when Hurricane Dora was centered over northern Florida. Damage was slight, only a few signs blown down.									
Wilson County	11	afn			0	1	0	0			Electrical
		Lightning struck and injured construction worker near Black Creek.									
Brunswick County	12	9 pm	2	narrow	0	0	4	0			Waterspout
		Small storm apparently moved northwestward off the Atlantic Ocean across Long Beach at night; noise like a jet aircraft heard. Two beach cottages turned upside down; two outbuildings damaged; several trees and signs blown down. Damage also observed two miles west, probably same storm dipped down again; limbs ripped from trees and signs blown down.									
Coast	13				0	0	4	4			Hurricane Dora
		Storm moved up North Carolina coastline while somewhat weakened by two days over land to southwest. Caused some beach erosion and blew off a few shingles. Very heavy rains fell along the northern coast, causing flooding which blocked portions of the beach highway for 48 hours and caused slight ground-floor water damage to several beach structures. Winds were not generally of destructive force, but gustiness caused light local damage at one or two points well inland. Some scattered light damage to corn.									
NORTH CAROLINA (cont'd.) Carteret County	13	7 am	**100	10	0	0	4	0			Tornado
		Small funnel observed near Newport, moving northeastward. Overturned two house trailers, demolished one outbuilding, unroofed one.									
Coast	21-23				0	0	5	4			Hurricane Gladys
		Storm center moved slowly northward well offshore, but wind-driven water caused erosion of dunes over about half the coastline. Water going over dunes flooded highway, retained in low places several days. A few buildings damaged by water entering ground floor. Much grass which had been planted on dunes for stabilization washed away; this is listed above as "crop damage". Banks nearly cut through 3 miles north of Buxton. Little structural damage.									
NORTH DAKOTA		No report received by printing deadline									
OHIO		None reported									
OKLAHOMA Ada, Pontotoc County	4	Afternoon			0	1	1	0			Electrical
		Lightning struck a home and knocked out a window and screen. A lady putting up the window received a burned arm and was deafened for a while.									
Hartshorne, Near, Pittsburg County	4	4:30p.			1	0	0	0			Electrical
		A rancher was killed instantly by lightning while rounding up cattle in his pasture north of the City.									
Marshall County	15-16	10:00p., 15th-5:00p., 16th			0	0	0	0			Rain
		Heavy rains over the south-central part of Oklahoma totaled up to 3.79 inches at the Willis Biological Station, Marshall County.									
McCurain County	16-17	Overnight, 16th - 7:00a., 17th			0	0	0	0			Rain
		Heavy rains over the southeast corner of the State provided totals of 3 to 4 inches over the southern half of the County. Broken Bow reported 4.09 inches. Streams ran heavily, but no flash flooding was reported.									
Wakita, Near, Grant County	17	12:15p.-12:25p.									Funnel aloft
		A funnel aloft was sighted about 5 miles south of Wakita by a pilot and several other persons in the vicinity. It moved east-northeast very slowly without touching the ground.									
Southeast third of State	20-21	8:00a., 20th - 7:00a., 21st			0	0	0	0			Rain
		Heavy showers and thundershowers across area provided heavier amounts of 3.60 inches at Marlow, Stephens County, 3.53 inches at Daisy, Atoka County, 3.97 inches at McAlester, Pittsburg County, and 3.86 inches at Heavener, LeFlore County.									
Muskogee County	22	7:00a.-11:00a.			0	0	0	0			Rain
		Very heavy thundershowers over the County totaled up to 4.35 inches at Muskogee. No damage was reported.									
Maeker, Lincoln County	26	Evening			0	0	4	0			Electrical
		A home with most of its furnishings was destroyed by fire after it was struck by lightning.									
Chandler, Lincoln County	26	8:20p.	1/2	100	0	0	3	3			Tornado
		A small tornado touched the ground several times along a south-eastward path across two farms 1 mile west of Chandler. Roofs of two homes were damaged, a chimney was sheared off at roof-top level, a steel bin lifted over a 7-foot fence, and several trees were stripped or damaged.									
Atoka, Pittsburg, and Pushmataha Counties	28	7:00a.-3:00p.			0	0	0	0			Rain
		Heavy downpour over the tri-county border area totaled up to 3.86 inches of rainfall at Daisy, Atoka County, and 4.71 inches at Clayton, Pushmataha County.									
OREGON		None reported									
PACIFIC AREA		None reported									
PENNSYLVANIA		None reported									
PUERTO RICO		None reported									
RHODE ISLAND		None reported									

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1964

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
SOUTH CAROLINA									
South Carolina	12-13	11:00 pm to forenoon of 13th			0	0	4	4	Tropical Storm Dora
									Dora on her recurvature northeastward into South Carolina near Savannah about 11 p.m. on the 12th, moved parallel to the coast some 25 miles inland, until she left the state by way of Horry, Marion and Dillon Counties in the late forenoon of the 13th. Wind damage was relatively minor but rains in the eastern part of the state ranged from three to over eight inches. Conway reported a 24-hour rain of 8.25 inches and Loris, also in Horry County, had a 24-hour fall of 5.20 inches. Tornadoic events associated with Dora are given below.
Garden City Beach, Horry County	12	1:05 pm			0	0	0	0	Water spouts
									Three or four water spouts about 10 miles southwest of Myrtle Beach associated with storm Dora.
Myrtle Beach, Horry County	12	2:00 pm	2 1/2	50	0	0	4	0	Tornado
									Funnel observed moving from east to west - associated with Tropical Storm Dora.
South Carolina Coast	21	All day			0	0	0	0	Hurricane Gladys
									Hurricane Gladys passed north-northeastward a considerable distance out of range of damaging effects for South Carolina.
South Carolina Midlands and Coastal Plains	30-	All day Oct. and most 1st of night			0	0	5	5	Rain Storm
									Heavy to excessive rains fell in the South Carolina midlands and the coastal plains. There was heavy local flooding, especially in the Columbia section, where several small private dams burst.
SOUTH DAKOTA									
SE of Menno	9	9:00 p	8	*4	0	0		5	Hail and Wind
									Walnut size hail driven by strong wind caused extensive damage to corn.
TENNESSEE									
None reported									
TEXAS									
12 S Temple Bell Co.	2	6:28 p							Funnel aloft
S Brownsville Cameron Co.	3	10:20 a							Funnel aloft
S Galveston Galveston Co.	4	9:21 a							Two waterspouts
10 ESE Alice Jim Wells Co.	4	12:30 p							Funnel aloft
40 SW Palacios Calhoun Co.	5	6:00 p							Funnel aloft
25 S Nederland Jefferson Co.	8	1:38 p							Funnel cloud and waterspout
Sheridan Colorado Co.	8	5:00 p			1	0	0	0	Lightning
									Lightning struck and killed a 42-year old man as he worked in the garden near his home.
3 SSE Palacios Matagorda Co.	10	6:30 a-6:50 a							Waterspout
20 NE Corpus Christi San Patricio Co.	10	8:10 a							Waterspout
El Paso El Paso Co.	11				0	0	5	0	Heavy rain, flooding
									Flooding from 1.79 inches of rain in 24 hours caused an estimated one-half million dollars in property damage in El Paso. Hard hit areas included El Paso Drive, where residences and businesses were flooded early in the storm. Mesa Street was covered with mud and rock that poured down from the Franklin Mountains. One of the worst flooded residential areas was northeast of Chelmont Center on Hunt Court and Drissom Lane. Timberwolf Drive, from Mesalero to Mathis Drives served as a channel which carried two to three feet of water into homes and yards. Pavement caved in at Cliff Edgar Park Drive, Magnetic Drive, Marr Street, just south of Oxford Avenue, and at the intersection of Kansas Street and Baltimore Avenue. Homes were flooded on several streets in the Tejas Addition.
Pecos Reeves Co.	14	7:30 p	?	?	0	2	?	?	Wind, hail, rain, lightning
									High winds and light hail struck the Pecos area and injured two persons when a house trailer overturned in the windstorm. Both were hospitalized. The trailer house next door was also blown over, but the occupants received only minor bruises. Other wind damage in the city included trees, signs, and some roof damage. Some hail damage was also reported on area crops. Lightning struck one house, setting it on fire. Flash flooding was reported on the east side of Pecos.
Dimmitt Co.	15-16	night			0	2	6	?	Torrential rains, flooding, wind
									Torrential rains of up to 10 inches or more in Dimmitt County sent normally dry creeks on a rampage and routed some residents from their homes. Heaviest downpours fell in the Asherton-Catarina area. 9.46 inches fell at Catarina, while 11 inches was reported unofficially one-half mile south of the city.
TEXAS (Cont'd.)									
Dimmitt Co.									About 21 families were rescued from homes in Asherton. One home occupied by 13 persons was carried off its foundation and moved 75 feet into a tree. Almost all downtown Asherton residents had their homes flooded. Water stood six to eight inches deep in most of the homes and businesses. Two persons were treated at a hospital for minor cuts and bruises. Damage to roads, homes, and fields in Dimmitt County was estimated at \$1 million. About 1,000 acres of newly planted carrots were washed away. A windstorm struck Carrizo Springs about 9:00 P.M. on the 15th destroying a hangar at the airport.
Killeen Bell Co.	16	4:00 p-11:00 p			0	0	5	?	Heavy rain, flooding
									Torrential thunderstorm rains at Killeen sent Nolan Creek roaring out of its banks, flooding streets and homes. 5.70 inches fell between 4:00 P.M. and 11:00 P.M. Red Cross officials reported 48 houses suffered minor damage; three trailer homes totally damaged; four trailer homes with major damage and 47 with minor damage. 102 families were affected, including those who were evacuated and those whose trailer homes were moved. Total property damage was estimated at \$110,000. Between 50 and 75 automobiles were flooded. All of the trailer parks and most of the homes flooded were on the edges of Nolan Creek. Some homes in other parts of the city were flooded when drainage ditches overflowed. College Street, North 4th, Avenue J, and Dimple Street, were the streets hardest hit by the flood waters.
6 SW Ben Bolt Jim Wells Co.	16		short narrow		0	0	3	0	Tornado
									A small tornado struck in an area about six miles southwest of Ben Bolt. On the Burton Dunn ranch, the roof and porch were blown off a newly built farm house. A section of metal fence was also destroyed. Damage was estimated at \$2000.
Middle Rio Grande Valley, Southwest Texas	19-27				0	0	?	?	Heavy rains, flooding, wind
									Rainfall over the Devil's River watershed and over the Rio Grande in both Texas and Mexico was locally very heavy for about one week. Beginning on the night of the 19th, up to 15 inches of rain fell in the Devil's River basin within 24 hours. The result was flash rises on almost all area streams and flooding of border towns and cities along the Rio Grande. At Del Rio about 200 residents were routed from their homes along San Felipe Creek. The flood on San Felipe Creek was due to locally heavy rain at Del Rio but complicated by backwater from the Rio Grande. Across the Rio Grande at Ciudad Acuna on the Mexico side, an estimated 400 persons were forced to evacuate their homes; however, there were no known lives lost. At Eagle Pass, the Rio Grande was in flood stage three times for a total of seven days. Some 20 to 30 homes were inundated and 100 families evacuated. In Piedras Negras, across the river in Mexico, about 100 homes were flooded. Flood damage at Laredo was relatively minor and restricted to shanties along the river bank and the low-level parking floor of the La Posada Motel. A few automobiles were flooded. The Rio Grande river in the Del Rio-Eagle Pass-Laredo area reached its highest stages since the record flood of 1954. At Del Rio high winds caused widespread damage, overturning nine house trailers, unroofing structures north of the city, and uprooting trees all over the city.
Collin, Dallas, and Tarrant Counties	21-23				2	0	6	?	Torrential rain, flooding
									Torrential rains of more than 12 inches fell during the first eight hours of the 21st in a band extending from northeastern Tarrant County eastward over Dallas and Collin Counties. Flash flooding of tributaries of the Trinity River and smaller creeks and streams in the area resulted in two deaths by drowning and an estimated \$3 million property damage. 12.10 inches fell at McKinney between 1:15 A.M. and 7:00 A.M. on the 21st. Damage was severe throughout Collin County. Flooding of homes occurred in all sections of McKinney. Many streets were washed out, water lines unearthed and broken. An immense amount of damage was sustained to the county road system. An estimated 200 bridges were washed away or damaged. One man was drowned in the floodwaters of Rowlett Creek after his car was washed off the roadway just northeast of Plano. A freight train was derailed north of Plano, and the heavy downpour caused some roofs in downtown Plano to collapse and damage furniture. The Santa Fe Railway bridge crossing Rowlett Creek between Wylie and Garland was washed away. 10.47 inches fell within 24 hours at Carrollton. 60 homes were evacuated. Hardest hit areas were in the lowlands of the Trinity watershed, including Trinity Mills, Ratton Branch, West College, Wallace Road, and Carroll. In the Dallas-Fort Worth area there was considerable damage to residences along Big Fossil and White Rock creeks. There was also damage to businesses along White Rock Creek and Elm Fork. There was significant damage to roads and bridges in Dallas and Tarrant Counties. Dozens of expensive homes in North Dallas were heavily damaged. Some of the heaviest street damage came on Hillcrest, Alpha Road and Valley View near White Rock Creek, where pavement was washed away in huge chunks. One man was found drowned in the back seat of his car on Northwood Country Club golf course. His car had apparently been swept off Alpha Road in the 4500 block and carried some 100 yards south of the street by the floodwater. In the northeast Fort Worth suburban section of Richland Hills, the torrential rains sent Big Fossil Creek over its banks, forcing several families to flee their homes. At the so-called Apple residence on Kingsbury Court, water was half-way to the roof line shortly after 9:00 A.M. on the 21st. In Hurst, the heavy rains sent Loreat Branch, a creek that runs through the center of the town, over its banks about 100 feet wide. Water was reported in some homes in Hurst Hills, near Richland Hills. Agricultural damage was mainly along the East Fork of the Trinity, where one levee broke. One rancher reported a loss of 50 head of cattle that drowned in the flood-water along the Trinity.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

SEPTEMBER 1964

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
TEXAS (Cont'd.) Lake Worth Tarrant Co.	21	10:56 a	short	narrow	0	0	0	0	Tornado and waterspout
			A tornado touched ground twice at the edge of the main runway at Carswell Air Force Base at Fort Worth. It then formed a waterspout as it moved northeast out over Lake Worth. There were no injuries or damage reported.						
Haltom City Tarrant Co.	21	morning							Funnel aloft
WVN Ellington AFB Harris Co.	21	1:11 p							Funnel aloft
Near Rochelle McCullough Co.	22	3:15 p							Funnel aloft
15 S Abilene Taylor Co.	23	11:15 a							Funnel aloft
E Brownsville Cameron Co.	25	9:01 a							Funnel aloft
SW Hale Co.	26	6:40 p- 7:15 p	5	?	0	0	?	?	Tornado
			A tornado touched ground about six miles northwest of Cotton Center in southwest Hale County. It moved eastward toward the Henderson residence, then veered to the northeast. It was observed about five miles north of Cotton Center at 7:00 P.M. Two farm buildings destroyed was the only reported damage.						
7 S Muleshoe Bailey Co.	26	5:00 p- 6:00 p	2½	*1½	0	0	0	5	Hailstorm
			Small hail stripped cotton in an area about 7½ miles south of Muleshoe. Heaviest damage was to late cotton. In places, hail entirely covered the ground, and to a depth of two inches. Largest stones were ¾ inch in diameter.						
Wolforth Lubbock Co.	26	evening							Funnel aloft
Boerne Kendall Co.	27	2:00 a- 4:00 a			1	0	5	0	Flooding
			Heavy rains of five inches or more on the watersheds of Cibolo, Frederick, and Ranger Creeks caused the Cibolo to flood in the Boerne area to the highest level in history. Heaviest damage was from U. S. Highway 87 to Pipe Creek. At Boerne, 4.47 inches fell within 2½ hours, most of which fell between 2:00 and 4:00 A.M. Unofficial accounts up to 1½ inches were reported in the watersheds. One man was drowned, six businesses flooded, 53 homes flooded, and considerable damage done to automobiles, roads, telephone lines, and fences. The Cibolo Creek bridge on U. S. Highway 87 was covered by the floodwaters and bridge railings washed away. A veterinary clinic was completely underwater. One small house was demolished and others were swept from their foundation. Property damage was estimated at \$100,000.						
UTAH			None reported						
VERMONT Statewide	27				0	0	4	0	Wind
			Widespread, mostly minor wind damage occurred throughout the state. In the Burlington area, unofficial reports of gusts to 58 m.p.h. were received. Also in the Burlington area, trees and numerous signs were downed and many power lines were knocked out. On Lake Champlain ferry boats bucked waves and spray. A large falling limb bounced off the roof of a moving automobile, nearly wrecking the vehicle on U. S. 7, a mile south of Shelburne Village. The driver was unhurt.						
U.S. VIRGIN IS.			None reported						
VIRGINIA Hampton Roads Area, Southeastern Counties	12-13				0	0	5	0	Tropical Storm Dora
			Storm Dora remained well out to sea away from the Virginia mainland and its influence was mostly confined to the coastal area. Moderate flooding resulted from high tides in the Hampton Roads Area and heavy rains ranging from 3 to 4 inches caused some minor flooding at Yorktown and Suffolk. Forty families were evacuated due to high waters at Portsmouth and Oceans. Numerous trees, limbs, awnings, etc., were blown down from gusty winds in excess of 60 MPH throughout the area. A large freighter was driven aground near Cape Henry.						
Hampton Roads Area	22				1		4	0	Hurricane Gladys
			The effects of the storm were minor due to its distance of over 200 miles from the mainland. Some moderate flooding occurred during high tides in low lying areas. Wind damage was minor but extensive, with one person critically injured from flying glass.						
WASHINGTON			No report received by printing deadline						
WEST VIRGINIA			None reported						

PLACE	DATE	TIME - LOCAL STANDARD	LENGTH OF PATH (MILES)	WIDTH OF PATH (YARDS)	NO. OF PERSONS		ESTIMATED ¹ DAMAGE		CHARACTER OF STORM
					KILLED	INJURED	PROPERTY	CROPS	
WISCONSIN Richland County	3	3:15 - 3:45 PM	15	850	0	4	5	4	Tornado
			First touched down near Highways 60 and County F, skipped across townships of Richmond, Eagle and Orion with last touchdown near Richland Lane.						
Dodge County	3	5:00 PM	short	narrow	0	0	3	3	Tornado
			Touched down in cornfield 7 miles northwest of Hartford.						
Milwaukee	3	5:20 PM	1/8	100	0	0	5	0	Tornado
			Crossed Zimmerman Airfield.						
Central and Eastern Counties	3	afternoon			0	0	5	4	Squall line
			Hardest hit by wind and rain was the area east of a line drawn from Green Bay to Madison to Lake Michigan.						
WYOMING			None reported						
ILLINOIS Knox County	22	8:35p			0	0	4	0	Wind, rain
			A severe windstorm accompanied by locally heavy rain caused spotty structural damage near Galesburg. Major wind damage to two buildings occurred one mile south of Galesburg. Lesser damage was spaced at two mile intervals at two other spots to the northeast.						

- C Crop damage.
- * Miles instead of yards.
- ** Yards instead of miles.
- + Storm damages 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.

Note: This publication contains our best information on storms but, due to the difficulties inherent in collection of this type of data, it is not all-inclusive. Delayed data and corrections will be carried in the June and December issues of this publication.

SUBSCRIPTION PRICE: 15 cents per copy; yearly subscriptions \$1.50 domestic, \$2.00 foreign. Checks and money orders should be made payable to the Superintendent of Documents. Remittance and correspondence regarding subscriptions should be sent to "Superintendent of Documents, Government Printing Office, Washington 25, D. C."

USCOMM-WB-Asheville, N. C. 10/30/64-1050