TROPICAL STORM DORIA 1971

Report

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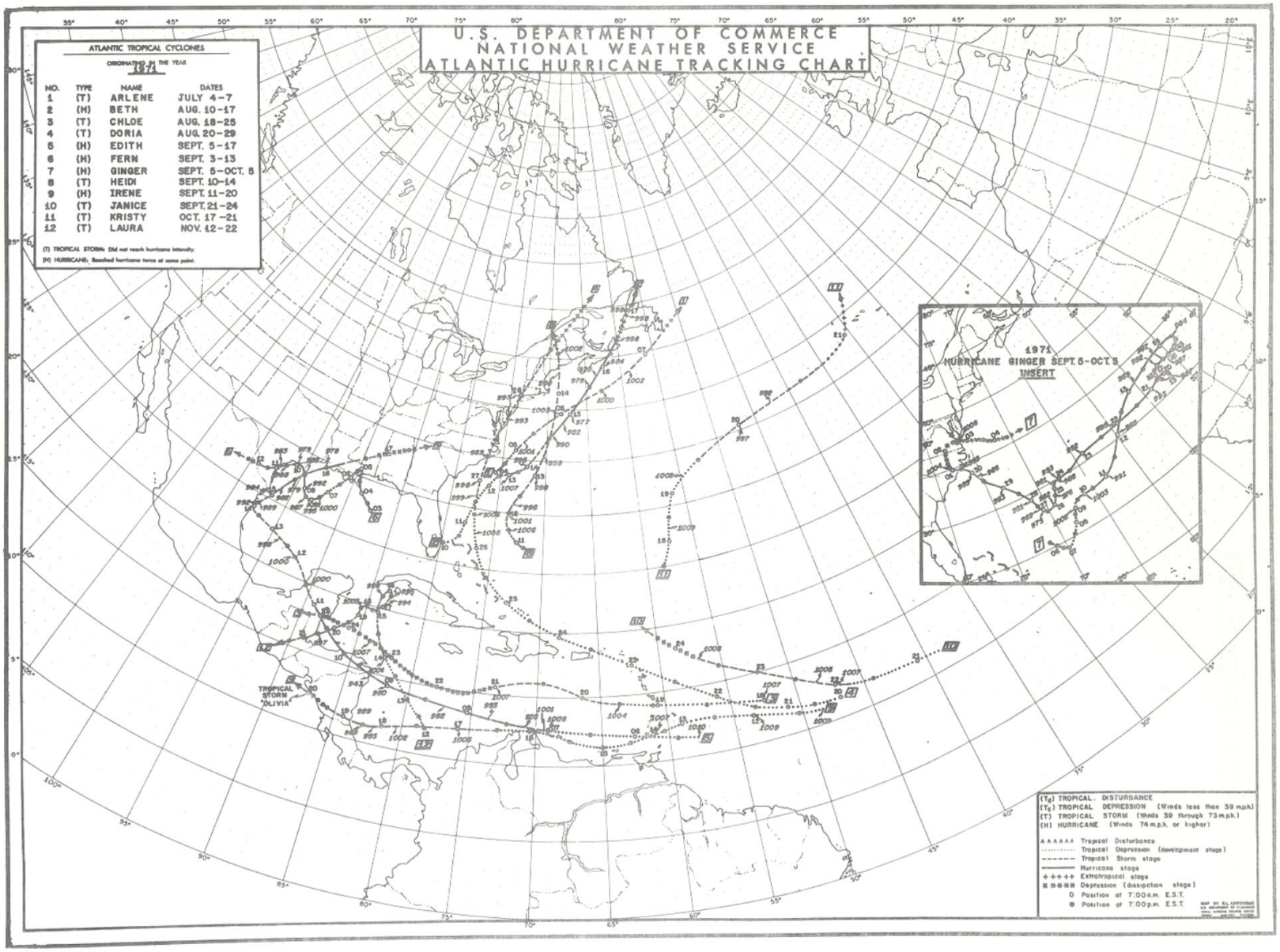

FIGURE 1.—Atlantic hurricanes and tropical storms, 1971.

Tropical Storm Doria, August 20–29

Even though Doria never attained hurricane status, it was by far the most damaging to the United States of any named storm in 1971. This is because it traversed a heavily populated area of the country, and the heavy rains it carried caused extensive damage to property and crops as rivers and streams overflowed their banks.

The seedling from which Doria grew moved off the African coast in mid-August. On August 20, it had barely reached the depression stage with a central pressure of 1008 mb and maximum sustained winds of 25 kt.

Little change was observed until August 25 when satellite pictures and aircraft reconnaissance indicated better organization. The following day, winds over a considerable area had increased to 35 kt and the tropical cyclone was named as it reached a point 200 n.mi. east of Daytona Beach, Fla., moving on a more northerly track. As the center approached the North Carolina coast, the central pressure fell rapidly, reaching a minimum value of 989 mb as the center moved inland near Morehead City, N.C., on August 27 carrying maximum winds of 60 kt in gusts. As the storm moved northward through the Middle Atlantic States, the center almost straddled the coastline until it moved far inland across New England with gradually weakening circulation.

Much of the rainfall associated with Doria occurred well in advance of the storm, north of a frontal trough that receded northward with the storm. Heavy rains were confined mainly to the area east of the mountains. In New England, however, heaviest amounts were west of the storm track. Rainfall, wind, pressure, and tidal extremes for selected stations are shown in table 2. Eight to 10 in. of rain were reported at a number of locations in eastern Maryland, Delaware, New Jersey, and southeastern New York. More than 6 in. was reported in southeastern Pennsylvania, western Massachusetts, and Vermont. From Maine northward, lesser amounts were recorded as the storm accelerated north-northeastward and acquired extratropical characteristics.

Wind gusts of 60 kt were measured at Atlantic Beach, N.C., near the point of landfall, and gusts to 50 kt were reported along the Outer Banks and the shores of Pamlico and Albermarle Sounds.

Streets and highways in many areas were blocked by flood waters and some by mudslides. Considerable damage was done to water and sewer systems. Many power systems were interrupted temporarily, and in some areas flooding severely damaged residential and industrial properties. In most areas wind damage was minimal, affecting mainly shrubbery, trees, and power lines. However, a tornado which touched down near the airport at Norfolk, Va., caused property damage estimated at $250,000.

Deaths of DORIA : United States : 6
(New Jersey-3, Virginia-1, Massachusetts-1, Pennsylvania-1).

TABLE 2.—*Tropical cyclone data for tropical storm Doria, Aug. 20–29, 1971 [from Environmental Data Service (EDS), NOAA]*

Station	Date	Pressure		Wind				Highest tide*	Time	Storm rainfall	Remarks
		Low	Time	Fastest mile	Time	Gusts	Time				
	Aug.	(in.)	(EST)	(mi/hr)	(EST)	(mi/hr)	(EST)	(ft)	(EST)	(in.)	
SOUTH CAROLINA											
Charleston	27	29. 77	0500	NW 22	1057			5.7 MLW	1148	T	1.75 in. at Ocean Drive Beach
NORTH CAROLINA											
Wilmington	27	29. 68	1201	N 21	1159	N 30	1222	2 AN		2. 19	Tide at Cape Fear
Hatteras	27	29. 61	1557	SSE 41†	1557	S 54	1600			4. 17	
Elizabeth City	27	29. 33	1800			60					
VIRGINIA											
Norfolk	27	29. 37	1951	NE 52	1837	NNE 71‡	1909	3.6 AN		3. 09	Tornado confirmed 10 mi west-southwest of Norfolk Regional Airport
Richmond	27	29. 79	2158	SE 17	1347					1. 40	
DISTRICT OF COLUMBIA											
Washington National Airport	28	29. 77	0100	NW 19	0014	W 26	0844			3. 85	
MARYLAND											
Salisbury (FAA)	27	29. 39	2330	ENE 36	2210	ENE 50	2210			3. 34	
Assateague Island	27			SE 30	2215	50	2215	2 AN		3. 58	
Baltimore (WSO)	27	29. 75	28/0032	N 18	2347			2.7		4. 39	Tide at Ft. Henry
Ocean City (C. G. Station)	27	29. 33	28/0000 28/0100	E 23	2200	E 63	2330				
DELAWARE											
Wilmington	28	29. 56	0156					3.2 AN	0000	5. 09	Tide at Lewes
PENNSYLVANIA											
Philadelphia	28	29. 44	0250	NW 51	0355	NW 73	0430			6. 57	
NEW JERSEY											
Atlantic City	28	29. 37	0230	SE 35	0055	SE 54	0048	5.3	0050	1. 88	
Trenton	28	29. 43	0145	NE 43	0159					8. 09	7.55 in. rain in 24 hr set record for station
Newark	28	29. 46	0455	NW 23	0554					8. 01	
NEW YORK											
New York City (WSO)						NE 48	0335				
	28	29. 43	0515	SE 32†	0424	SE 48	0424	3.8	0548	5. 96	Tide at the Battery
New York City (J. F. K.)	28	29. 44	0530	NW 32	0711	ESE 44	0308			3. 69	
New York City (LGA)	28	29. 43		S 40	0415	E 40	0252			5. 49	2.29 in. of rain, 1340–1440 on the 27th
CONNECTICUT											
Hartford	28	29. 51	0745	SE 37	0645	SSE 48	0726			3. 12	
RHODE ISLAND											
Providence	28	29. 66	1018	SSE 44†	0738	SSE 61	0737	5.9 MLW		0. 97	
MASSACHUSETTS											
Boston	28	29. 62	1056	SSW 45	1018	SE 56	0857			0. 83	
MAINE											
Portland	28	29. 63				45					

* Tide above mean sea level (MSL) unless noted; AN–above normal, MLW–above mean low water
† One-minute wind speed
‡ Anemometer at 60 ft