

Tropical Storm Danielle
4-7 September 1980

There is some evidence that a feature which contributed to the development of Danielle was a tropical wave which emerged from the African coast on 22 August and briefly became a depression in the mid-Atlantic on 27 August. The surviving wave continued westward and interacted with a mid-tropospheric low over southern Florida on 2 September. The latter system had been producing disturbed weather over southern Florida and adjacent waters for two days prior to the arrival of the wave.

There were indications of a developing circulation over the north-central Gulf of Mexico on 3 September. Organizing continued, and a tropical depression formed on the following day, centered just off the southeastern Louisiana coast. A weak ridge of high pressure to the north kept the depression on a generally west northwestward track across the northern Gulf. Intensifying slowly, it became a tropical storm only hours before the center crossed the coast in the Galveston Bay area during the evening of 5 September. After moving inland, the storm took a more westerly track. It was downgraded to a depression on the morning of 6 September. Continuing westward, the low center could be tracked on synoptic charts to the Rio Grande Valley near Del Rio on 7 September. An area of rain, evidently associated with the remnants of the system, moved northwestward into west Texas during the next two days.

Conditions for tropical storm development in the northern Gulf of Mexico were less than ideal when the wave moved off Florida on 2 September. An east-west shear line at 200 mb had persisted for some time across the northern Gulf. However, as the depression formed on 4 September, an anticyclonic pattern at 200 mb began to develop over the surface system. The quick landfall of the storm precluded further strengthening.

The highest wind measured by reconnaissance aircraft was 40 kt at 1725 GMT on 5 September. However, an oil rig, EC42-B, located at 29.5N 92.8W, reported winds 52 kt gusting to 70 kt at 1500 GMT on 5 September.

The lowest reconnaissance pressure was 1006 mb at 1725 GMT on 5 September, but another oil rig, EC97-A, located 29.2N 92.8W reported 1004 mb about the same time.

The lowest pressure reported on land was 1008 mb at Galveston, and the highest wind gust was 38 kt, also at Galveston.

A post-storm report received for the Glomar Tender II asserted that the barge had encountered sustained winds of 50 kt with gusts to 80 kt at 28.9N 91.9W between 0600 and 1100 on 5 September. During this period there was only occasional light rain. Since these observations occurred before other information indicated that Danielle had reached storm intensity, it would seem that any such phenomena must have been on a small scale and not representative of the overall strength of the system.

No wind damage was reported on land. Tides were no more than 2 to 3 feet above normal on the southwest Louisiana and upper Texas coasts. Beach erosion was minor.

The main impact of Danielle was caused by its heavy rainfall. A 24-hour total of 17.16 inches at the Beaumont airport exceeded that station's previous 24-hour record. A 25 inch rainfall was reported near Junction, Texas as the low pressure system was losing its identity at the surface.

There was major Metropolitan flooding in the Beaumont-Port Arthur area of Texas requiring evacuation of some homes. Flash flooding occurred as the remnants of Danielle moved through the counties to the west and northwest of San Antonio, Texas. Interstate Highway 10 had to be closed, and some evacuation was carried out near Junction, Texas. Some boats and boat docks reportedly were washed out on Lake Buchanan in Llano county, Texas.

One fatality was caused directly by the storm when an automobile was driven past a barricade into 15 feet of water in the Beaumont, Texas area.

Damage estimates are not yet available.

METEOROLOGICAL DATA
TROPICAL STORM DANIELLE

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<u>LOCATION</u>	<u>HIGHEST SUSTAINED WIND (kt)</u>	<u>PEAK GUST (kt)</u>	<u>LOWEST PRESSURE (mb)</u>	<u>RAINFALL (in)</u>	<u>TIDE (msl)</u>
TEXAS					
WSO Galveston	22	38	1008	0.23	2 to 3' abv normal
WSCMO Houston	25	34	1012	3.00	
WSO Beaumont			1010	17.16	
Port Arthur				14.01	
Beaumont Arpt.				16.05	
Orange				8.96	
Groves				17.35	
Evadale				5.35	
Cheek				12.10	
China				12.87	
Beaumont (City)				15.03	
LOUISIANA					
WSO Alexandria				0.68	
WSO Baton Rouge				1.56	
WSCMO Boothville				1.17	
Crowley				0.41	
Lafayette				0.32	
WSCMO New Orleans				1.66	
Houma				2.23	
Reserve				1.98	
WSO Lake Charles	20	29	1014	1.71	2.3
P26 (28.5N 90.1W)	23				
P30 (28.3N 93.0W)	17				
VUW (28.2N 91.8W)	19				
WC66-C (29.7N 93.1W)	39	44			
GRD CHN (29.8N 93.0W)	24	32			
EC-42-B (29.5N 92.8W)	52	70			
EC97-A (29.2N 92.8W)	36	50			
VR242-A (28.6N 92.6W)	35	42			

(Buoy readings are instantaneous values.)

PRELIMINARY BEST TRACK

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<u>DATE</u>	<u>TIME</u> <u>(GMT)</u>	<u>POSITION</u>		<u>PRESSURE</u> <u>(MB)</u>	<u>WIND</u> <u>(KT)</u>	<u>STAGE</u>
		<u>LATITUDE</u> <u>(°N)</u>	<u>LONGITUDE</u> <u>(°W)</u>			
9/4	1800	28.3	90.6	1010	25	Tropical Depression
9/5	0000	28.3	91.3	1010	25	Tropical Depression
	0600	28.4	91.8		25	
	1200	28.8	92.4	1008	30	
	1800	29.4	93.4	1004	50	Tropical Storm
	0000	29.4	94.9		40	
9/6	0600	29.3	96.3	1008	35	
	1200	29.1	97.0		30	Tropical Depression
	1800	29.0	97.8		25	
	0000	29.0	98.3	1010	20	
9/7	0600	29.0	99.0			
	1200	29.0	100.0			