

PRELIMINARY REPORT

HURRICANE DANNY

12 TO 20 AUGUST 1985

The system which was to become Hurricane Danny moved off the west coast of Africa as a tropical wave on July 30. This tropical wave then moved westward in the trade wind belt, entering the eastern Caribbean on August 8. Some showers accompanied the system, but it only produced a slight ripple in the wind and pressure fields as it passed over the windward islands. Shower activity associated with the system increased as it moved westward through the eastern Caribbean. By mid day on August 10, a broad low pressure area with a minimum central pressure of 1010 mb was analyzed over the central Caribbean. An Air Force reconnaissance aircraft investigated the area early on August 12 and found that a tropical depression had formed with its poorly defined center located just west of Grand Cayman Island. The system then moved on a northwest track over the extreme western tip of Cuba and into the southeastern Gulf of Mexico with little change in organization or strength through late day on August 13. The depression then intensified fairly rapidly going from minimal tropical storm strength to hurricane strength in a 24-hour period. The hurricane continued to move on a track toward the northwest before turning on a more northerly course during the morning hours of August 15 just off the Louisiana coast. The center of the minimal hurricane made landfall just south and east of Lake Charles, Louisiana near mid day on August 15. The hurricane quickly weakened to tropical storm strength as it moved inland across Louisiana. The system remained identifiable as a tropical depression and low pressure system as it moved east northeast toward the Atlantic coast where it merged with a frontal trough and became extratropical (figure 1).

Gale warnings and a Hurricane Watch were first issued for portions of the upper Texas coast and eastward to Mobile, Alabama (Table 2) late on August 13. Probabilities ranged from 13 to 19 percent from New Iberia, Louisiana to Pensacola, Florida at this time (Table 1). By mid day on August 14, Gale Warnings and a Hurricane Watch were extended westward on the upper Texas coast to Freeport. Hurricane Warnings were then placed in effect at 5 PM CDT on August 14 from Freeport, Texas eastward to the mouth of the Mississippi river excluding the metropolitan New Orleans area. Probabilities that the center of the hurricane would move within about 75 miles of the selected locations ranged from 20 percent at Freeport up to 36 percent at Port Arthur, Texas, down to 16 percent at New Orleans at the time these warnings were initiated (Table 1).

Hurricane Danny reached its maximum strength near the time of landfall. The minimum pressure recorded by reconnaissance aircraft at this time was 987 mb (29.15 in.) with an estimated maximum wind speed of near 90 mph. (Figure 4 shows a plot of NOAA aircraft reconnaissance observations along the Louisiana coast just before landfall. These observations were transmitted from the computers onboard the NOAA aircraft to a satellite and then down to a satellite receiving station and land line to computers at the National Hurricane Center where they were plotted

in the form shown.) The core of the hurricane moved over a sparsely populated coastal region in Louisiana minimizing damage from this category 1 hurricane (Saffir/Simpson scale ranging from 1 the weakest to 5 the strongest). The primary coastal affect was tides ranging from 2 to 3 feet above normal along the Alabama and Mississippi coasts to 5 to 8 feet above normal estimated along the Louisiana coast near and to the right of where the center moved on shore. Some beach erosion was experienced along the Alabama, Mississippi and Louisiana coasts.

The primary effect in Louisiana was coastal flooding and localized flooding from heavy rains inland. The Red Cross reported that 33 single family homes and 26 mobile homes were destroyed, 42 single family homes and 174 mobile homes received major damage, 454 single family homes and 90 mobile homes and 3 apartments or condominiums received minor damage in Louisiana. Some 792 families were affected with 66 injured and 6 hospitalized, but no loss of life in Louisiana. The Red Cross reported housing about 5700 people in shelters during the storm. Property damage was initially estimated at \$17 to \$23 million with agricultural losses being about one half of the total. However, the American Insurance Association estimated insured claims of \$25.1 million in Louisiana and these estimates do not include losses due to industry shut downs, government insured property or extra expenses due to emergency actions such as extra police, evacuations, etc. Past experience has indicated that total losses are often two to three times the insured loss.

Hurricane Danny and its remnants generated several tornadoes and some heavy rains over a large area from Louisiana eastward. Two tornadoes were reported in Louisiana, 2 in Mississippi, 34 in northern Alabama, 3 in Tennessee, 4 in Georgia, 1 in South Carolina and 3 in North Carolina. Two deaths and 14 injuries with 4 hospitalized were reported in Alabama and 36 injuries with 3 being hospitalized in South Carolina were reported by the Red Cross. They also reported 27 single family residences, 18 mobile homes destroyed and 46 single family residences, 6 mobile homes suffering major damage with 44 single family homes and 2 mobile homes suffering minor damage with 23 small business also suffering damage from the tornadoes in Alabama. The numbers for South Carolina were 3 single family homes, 21 mobile homes destroyed and 15 single family homes and 11 mobile homes suffering major damage and 37 single family residences and 15 mobile homes suffering minor damage as well as 2 small businesses being damaged. The insured losses reported by the American Insurance Association were \$5.0 million for Alabama, \$2.0 million each for Mississippi and South Carolina, and \$1.0 million each for Georgia, North Carolina and Virginia. Some additional damage resulted from heavy rains and localized flooding where rainfall of greater than 5 inches was reported over portions of northern Alabama and southern Tennessee as well as along the Appalachian chain from South Carolina through Virginia and eastward over Maryland and south Delaware.

A summary of losses includes 2 lives in Alabama related to the tornadoes, 1 indirect loss of life near Galveston, Texas due to electrocution while moving a sail boat and 116 injuries. Privately insured losses totaled \$37.1 million with government insured values and assistance program values unknown at this time. Total economic losses are likely \$50 to \$100 million.

Table 1. Chances of the center of Danny passing within 65 miles of the listed locations by date and time (CDT) indicated (probabilities in percent).

ADVISORY DATE/TIME	13/5PM	13/11PM	14/5AM	14/11AM	14/5PM	14/11PM	15/5AM
<u>PROBABILITY THRU</u>	<u>16/1PM</u>	<u>16/7PM</u>	<u>17/1AM</u>	<u>17/7AM</u>	<u>17/1PM</u>	<u>17/7PM</u>	<u>18/1AM</u>
Cedar Key, FL	3	X	X	X	X	X	X
St. Marks, FL	7	X	X	X	X	X	X
Apalachicola, FL	9	3	X	X	X	X	X
Panama City, FL	11	5	3	X	X	X	X
Pensacola, FL	14	13	8	2	1	2	X
Mobile, AL	15	18	12	4	4	7	3
Gulfport, MS	16	22	16	7	7	13	4
Buras, LA	19	30	20	10	9	21	2
New Orleans, LA	16	27	22	13	16	32	10
New Iberia, LA	13	23	25	23	35	51	67
Port Arthur, TX	8	13	19	26	36	28	57
Galveston, TX	6	9	16	26	29	14	20
Freeport, TX	5	7	13	23	20	8	5
Port O Conner, TX	3	4	7	15	9	4	X
Corpus Christi, TX	X	2	4	9	4	2	X
Brownsville, TX	X	X	2	3	X	X	X
Gulf 29N 85W	9	2	X	X	X	X	X
Gulf 29N 87W	17	12	5	X	X	X	X
Gulf 28N 89W	26	41	21	5	2	5	X
Gulf 28N 91W	20	39	45	36	66	81	81
Gulf 28N 93W	11	17	31	45	61	47	76
Gulf 28N 95W	5	6	13	25	18	5	2
Gulf 27N 96W	3	3	6	12	4	X	X
Gulf 25N 96W	2	X	2	3	X	X	X

X MEANS LESS THAN 2 PERCENT

Table 2. Watches and warnings.

<u>LOCATION</u>	<u>TYPE</u>	<u>EFFECTIVE</u>	<u>DISCONTINUED</u>
East or Port Arthur, TX to Mouth of Miss. River	GALE WARNING	13/22Z	16/07Z
	HURRICANE WATCH	13/22Z	14/22Z
	HURRICANE WARNING	14/22Z	16/01Z
Mouth of Miss. River to Mobile, AL	GALE WARNING	13/22Z	14/16Z
	HURRICANE WATCH	13/22Z	14/16Z
Freeport, TX to Port Arthur, TX	GALE WARNING	14/16Z	15/19Z
	HURRICANE WATCH	14/16Z	14/22Z
	HURRICANE WARNING	14/22Z	15/19Z
Port Aransas, TX to Freeport, TX	GALE WARNING	14/16Z	15/13Z
	HURRICANE WATCH	14/16Z	15/13Z
East of Mouth of Miss. River to Pensacola, FL	GALE WARNING	15/04Z	16/04Z
	HURRICANE WATCH	15/04Z	15/13Z



Table 4. Selected meteorological and hydrological statistics for Hurricane Danny 12 to 20 August 1985.

<u>LOCATION</u>	<u>STRONGEST WIND (MPH)</u>			<u>MIN PRESS.</u> <u>DATE/TIME</u>	<u>RAINFALL (IN.)</u>		<u>STORM</u> <u>TOTAL</u>
	<u>DATE/TIME</u>	<u>SUSTD</u>	<u>PEAK</u>		<u>DATE</u>	<u>24 HR</u>	
New Orleans, Louisiana	15/1313Z	35	46	15/2153Z 29.75	15	2.29	3.00
Lake Charles, Louisiana	15/1850Z	35	52	15/1843Z 29.45	16	4.10	4.10
Port Arthur, Texas	15/1952Z	22	37	15/2048Z 29.69	15	.07	
Baton Rouge, Louisiana	15/2158Z	25	36	15/2107Z 29.59	16	3.57	3.84
Keesler AFB, Mississippi	15/1548Z	25	48	15/2155Z 29.84	14	.53	.84
Mobile, Alabama	15/1410Z	21	35	16/0045Z 29.89	15	2.06	

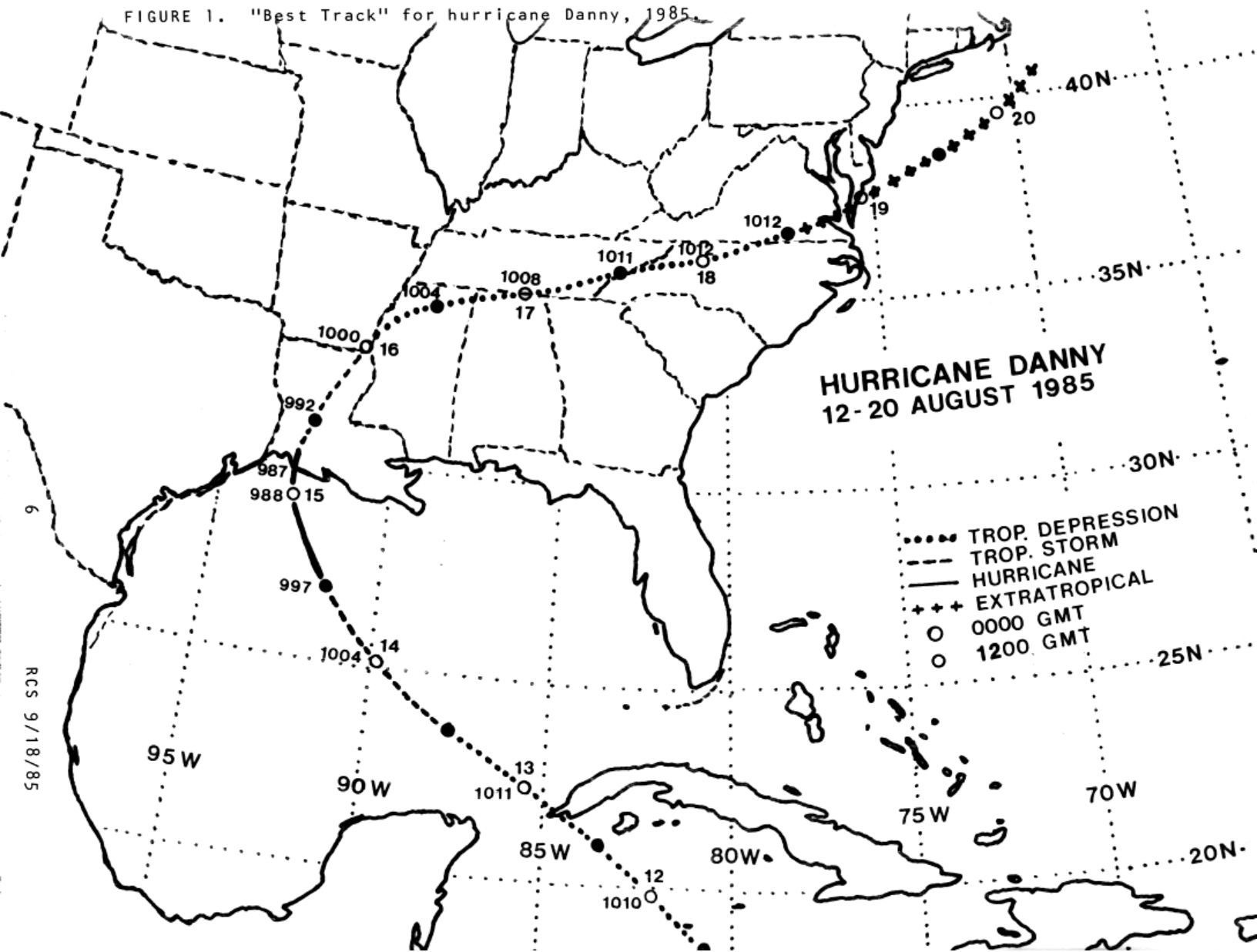
Selected oil rig, ship and buoy observations (anemometer heights and characteristics vary from site to site).

<u>LOCATION</u>	<u>STRONGEST WIND (MPH)</u>			<u>LOCATION</u>	<u>STRONGEST WIND (MPH)</u>		
	<u>DATE/TIME</u>	<u>SUSTD</u>	<u>PEAK</u>		<u>DATE/TIME</u>	<u>SUSTD</u>	<u>PEAK</u>
EC42B 29.5N 92.8W	15/1327Z	92	116	SS 158C 28.7N 91.0W	15/0700Z	75	92
GRD CHN 29.8N 93.0W	15/1800Z	52	65	SM 136B 28.2N 92.0W	15/1100Z	69	74
WC 66C 29.7N 93.1W	15/1700Z	69	85	VR 242A 28.6N 92.6W	15/1200Z	69	110
SM 108G 28.4N 92.0W	15/0500Z	81	98	BUOY 25.9N 89.7W	14/1800Z	46	60
SHIP WFGW 23.7N 87.3W	14/0000Z	40					

Miscellaneous rainfall storm totals (INCHES).

<u>LOCATION</u>	<u>TOTAL</u>	<u>LOCATION</u>	<u>TOTAL</u>	<u>LOCATION</u>	<u>TOTAL</u>
Liverpool, LA	5.75	Bay St. Louis, MS	6.9	Keesler AFB, MS	2.06
Gretna, LA	4.98	Chalmette, LA	7.00	Slidell, LA	7.05
Kentwood, LA	8.57	Bogalusa, LA	5.22		
RCS 9/18/85			5.		

FIGURE 1. "Best Track" for hurricane Danny, 1985.



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RCS 9/18/85

FIGURE 2. "Best Track" minimum pressure curve for hurricane Danny (1985)

