

PRELIMINARY REPORT
TROPICAL STORM DENNIS
08-20 SEPTEMBER 1987

Dennis was first detected on satellite imagery as a low level circulation on 8 September near the coast of Africa. It moved westward, passing some 300 n.m. south of the Cape Verde Islands on 10 September, and intensity estimates based on satellite imagery indicated that it attained minimal tropical storm strength (sustained surface winds of 35 knots) at this time.

Dennis moved west northwestward at near 10 knots for the next four days. A slower westward motion was then resumed for the next four days and, on the 18th, Dennis reached a position about 525 n.m. east northeast of Antigua.

On the 18th, an Air Force plane was scheduled to investigate a tropical depression located to the northeast of Antigua and several hundred miles west of Dennis. This plane was diverted to Dennis and could only find a weak 1011 millibar low pressure area and 25-knot flight-level winds. Satellite-based wind speed estimates had also decreased to below 35 knots, and Dennis was downgraded to a depression.

At this same time, the center shifted abruptly to the north in an almost discontinuous manner, suggesting that a new center may have formed. In any case, the depression moved northward and then eastward at 15 to 20 knots through a weakness in the Atlantic subtropical high pressure ridge. It then merged with an extratropical cyclone on the 20th in the central North Atlantic Ocean.

Dennis was never a threat to land. The enclosed best track table shows maximum sustained winds peaked at 45 knots on 11 September as estimated from satellite pictures. Graphs of wind speed and pressure versus time are also enclosed. Note that there is only a single aircraft data point on the pressure curve. The remainder of the pressure curve is based solely on the wind curve and on the pressurewind relation given on page 6-7 of the 1987 National Hurricane Operations Plan.

The official forecast tracks were generally biased to the right or north of the best track for those forecasts issued from 12-16 September, when the storm was moving toward the west northwest, and it was believed that the northward component of motion was a signal for recurvature. This bias was exacerbated by the storm's return to a due westward motion. It is also noted that NHC83 and BAM, which are models utilizing NMC's Aviation Model output, both correctly anticipated the deceleration which occurred as Dennis slowed from 13 knots on the 14th to 6 knots forward motion on the 16th.

Final edition
10/06/87
MBL

Preliminary best track, Tropical Storm Dennis, 8-20 September 1987

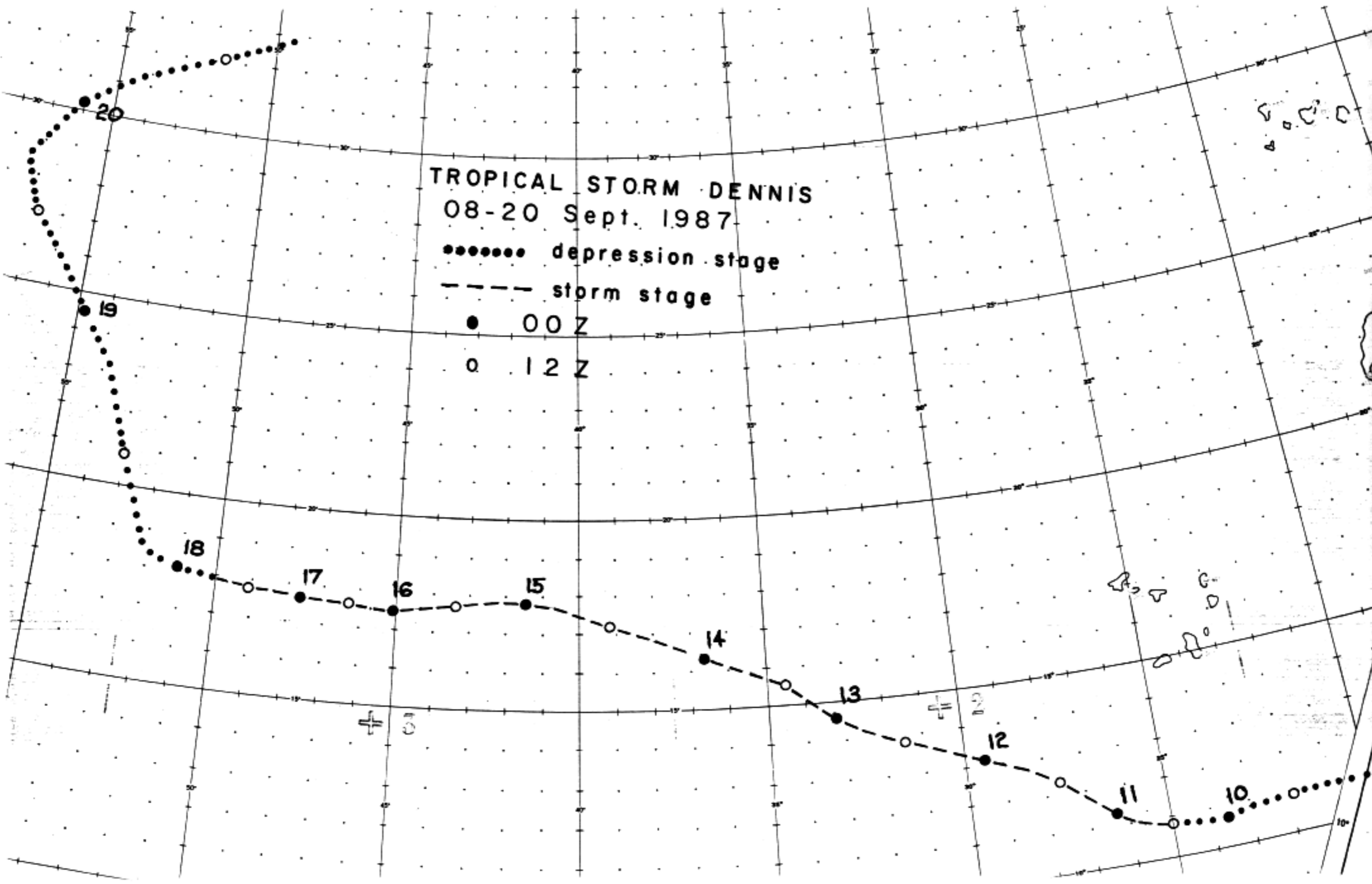
Date/time (UTC)	Position		Pressure (mb)	Wind Speed (knots)	Stage
	Lat.	Lon.			
09/1800	10.8	18.4	1012	25	Depression
09/0000	10.9	19.5	1011	"	"
0600	10.9	20.7	"	"	"
1200	10.9	21.9	"	"	"
1800	10.8	23.0	"	30	"
10/0000	10.7	23.6	"	"	"
0600	10.7	24.3	1009	"	"
1200	10.8	25.0	1008	35	Storm
1800	10.9	25.7	1005	"	"
11/0000	11.3	26.3	1003	40	"
0600	11.8	27.0	1002	"	"
1200	12.3	27.7	1001	45	"
1800	12.8	28.5	1000	"	"
12/0000	13.2	29.5	"	"	"
0600	13.5	30.5	1001	40	"
1200	13.8	31.5	1002	"	"
1800	14.2	32.5	1004	35	"
13/0000	14.6	33.2	1005	"	"
0600	15.1	33.9	"	"	"
1200	15.5	34.6	"	"	"
1800	15.9	35.4	"	"	"
14/0000	16.3	36.7	"	"	"
0600	16.8	37.9	"	"	"
1200	17.2	39.2	"	"	"
1800	17.7	40.5	"	"	"
15/0000	17.8	41.5	"	"	"
0600	17.8	42.4	"	"	"
1200	17.7	43.4	"	"	"
1800	17.6	44.4	"	"	"
16/0000	17.5	45.1	"	"	"
0600	17.5	45.7	"	"	"
1200	17.6	46.3	"	"	"
1800	17.6	46.9	"	"	"
17/0000	17.7	47.7	"	"	"
0600	17.8	48.4	"	"	"
1200	17.8	49.1	1006	"	"
1800	17.9	49.9	"	"	"
18/0000	18.1	51.1	1007	30	Depression
0600	18.5	52.1	1009	"	"
1200	20.8	53.0	1010	"	"
1800	23.2	53.8	1011	"	"
19/0000	24.5	54.8	1012	"	"
0600	25.7	55.7	"	"	"
1200	27.0	56.8	"	25	"
1800	28.5	57.4	"	"	"
20/0000	30.2	56.0	"	"	"
0600	31.3	54.0	"	"	"
1200	32.1	51.7	"	"	"
1800	32.8	49.5	"	"	Extratropical

Maximum wind and minimum pressure

11/1800	12.8	28.5	1000	45	Storm
---------	------	------	------	----	-------

TROPICAL STORM DENNIS
08-20 Sept. 1987

●●●●●● depression stage
- - - - - storm stage
● 00 Z
○ 12 Z



SURFACE PRESSURE (MILLIBARS)

1020
1010
1000

TROPICAL STORM DENNIS
SEPTEMBER 1987

△ Recon - flt. lvl.

00Z 00Z 00Z 00Z 00Z 00Z 00Z 00Z 00Z 00Z 00Z
9 10 11 12 13 14 15 16 17 18 19 20

SEPTEMBER

