

TROPICAL STORM KIKA

7-12 August 2008

OVERVIEW. Tropical Depression (TD) 1-C formed far southeast of the main Hawaiian Islands, near 10N 147W, within a small area of convection tracked as Invest 92C since 4 Aug. This system developed sufficiently to warrant a first Central Pacific Hurricane Center (CPHC) bulletin at 0300 UTC 7 Aug, with an initial position at 10.3N 146.9W and an initial strength of 30 kt. Movement was generally towards the west within 27C sea surface temperatures (SST) and weak shear (around 6-8 kt). After achieving nominal tropical storm (TS) strength as Kika with the second bulletin at 0900 UTC 7 Aug, movement continued toward the west with no additional strengthening. TS Kika was not a well-organized system when, between the 1500 UTC and 2100 UTC 8 Aug bulletins, the system center reformed 90 to 100 miles to the south as noted in first visible imagery that day. Since this new position was separated from associated deep convection, Kika was downgraded to a depression with the 2100 UTC 8 Aug bulletin issuance. Subsequently moving towards the west at 10 to 15 kt, Kika slowly regained strength and was upgraded to a TS again with the 0900 UTC 9 Aug bulletin issuance. TS Kika continued moving toward the west, within 26.5C to 27.0C SSTs and less than 10 kt of shear. Shear across the system began to relax as Kika began to move over slightly cooler water south of the main Hawaiian Islands over the next few days, keeping Kika at minimal TS strength through 2100 UTC 10 Aug. Convection, always fluctuating in intensity, lost sufficient organization to prompt the final downgrading of Kika to a TD at 0300 UTC 11 Aug while this system was about 900 miles southwest of the main Hawaiian Islands. Kika continued to weaken within steadily increasing shear, with the last CPHC bulletin issued at 0900 UTC 12 Aug. The remnants of Kika crossed the dateline out of the CPHC area of responsibility around 0000 UTC 14 Aug and became too weak for CPHC to classify after 1200 UTC 14 Aug.

SYNOPTIC HISTORY. When the first CPHC bulletins were issued for TD 01C, then TS Kika, a strong high northeast of the main Hawaiian Islands and a ridge extending to the west of the high provided deep easterly trade wind steering flow. UW-CIMMS assessed favorable system development based on about 8 kt of southeasterly shear. Initial forecasts were for gradual system strengthening to 45 kt by 120 hours. Little change was expected with the strength and orientation of the ridge and, indeed, little change occurred. Shear remained in the 6 to 8 kt range, with favorable development conditions assessed by UW-CIMMS, as the system center reformed between 1500 UTC and 2100 UTC 8 Aug. Convection was persistent around the initial low level circulation center (LLCC) from TD designation through this reformation. After center reformation, convection was initially robust but began fluctuating within 24 hours after the shift. Shear decreased to 4 kt or less after 1200 UTC 9 Aug, increasing back into the 6 to 8 kt range after 1800 UTC 10 Aug. In short, Kika passed over 26.5 to 27.0C water through its lifecycle, with fluctuating but always favorable shear, yet could not sustain enough deep convection long enough after 2100 UTC 8 Aug to develop beyond minimal TS strength.

IMPACTS. There were no impacts since TS Kika, never a large system, passed well south of the main Hawaiian Islands.

Table 1. Best Track Data

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage/Notes
05/1200	10.2	140.7	1009	20	Disturbance
05/1800	9.8	141.8	1010	20	"
06/0000	9.7	142.5	1008	25	"
06/0600	9.9	143.6	1011	25	"
06/1200	10.1	144.8	1011	25	"
06/1800	10.1	145.9	1011	25	"
07/0000	10.2	146.3	1010	30	Tropical Depression
07/0600	10.4	147.2	1008	35	Tropical Storm
07/1200	10.6	147.9	1008	35	"
07/1800	11.0	149.3	1007	35	"
08/0000	11.2	150.6	1007	35	"
08/0600	11.3	151.6	1008	35	"
08/1200	9.9	152.4	1008	35	"
08/1800	9.6	153.4	1010	30	Tropical Depression
09/0000	9.8	154.6	1010	30	"
09/0600	10.0	155.9	1008	35	Tropical Storm
09/1200	10.1	157.2	1008	35	"
09/1800	10.2	158.2	1008	35	"
10/0000	10.2	159.3	1008	35	"
10/0600	10.0	160.3	1008	35	"
10/1200	9.8	161.5	1009	35	"
10/1800	9.8	162.4	1009	35	"
11/0000	10.1	164.2	1010	30	Tropical Depression
11/0600	10.3	165.6	1010	30	"
11/1200	10.4	166.9	1010	30	"
11/1800	10.7	168.2	1010	30	"
12/0000	10.8	169.6	1011	25	"
12/0600	11.0	170.4	1011	25	"
12/1200	11.0	171.5	1011	25	Disturbance
12/1800	11.0	172.8	1011	25	"
13/0000	10.9	174.2	1011	25	"

13/0600	10.9	175.3	1011	25	"
13/1200	10.9	176.6	1010	25	"
13/1800	11.0	177.8	1011	25	"
14/0000	10.6	179.3	1011	25	"
14/0600	10.0	179.4E	1011	20	Tropical Depression
14/1200	9.6	178.0E	1011	20	"
14/1800	9.5	176.6E	1011	20	"
15/0000	9.4	175.1E	1011	20	"
15/0600	9.4	174.4E	1011	20	"
15/1200	9.3	173.7E	1011	20	"
15/1800	9.1	173.0E	1010	15	Disturbance
16/0000	9.1	172.3E	1010	15	Tropical Depression
16/0600	9.1	171.4E	1010	15	"

Table 2. Track Verification Table entries are track forecast errors, measured in nautical miles. Values in parentheses indicate the number of forecasts. Values in bold represent guidance forecast errors equal to or less than the office CPHC forecast.

Forecast	12-hr	24-hr	36-hr	48-hr	72-hr	96-hr	120-hr
CPHC	42 (20)	61 (18)	79 (16)	102 (14)	156 (10)	220 (6)	248 (2)
CLP5	47 (20)	77 (18)	102 (16)	119 (14)	187 (10)	275 (6)	307 (2)
BAMD	37 (20)	62 (18)	90 (16)	121 (14)	194 (10)	295 (6)	321 (2)
BAMM	40 (19)	55 (17)	79 (15)	106 (13)	154 (9)	228 (5)	216 (2)
BAMS	42 (19)	66 (17)	93 (15)	122 (13)	190 (9)	288 (5)	331 (2)
GFDL	40 (19)	58 (17)	71 (15)	97 (14)	176 (10)	256 (6)	325 (2)
AVNO	57 (17)	68 (17)	79 (16)	98 (14)	124 (10)	160 (6)	n/a
NOGAPS	116 (1)	123 (1)	196 (1)	283 (1)	385 (1)	n/a	n/a

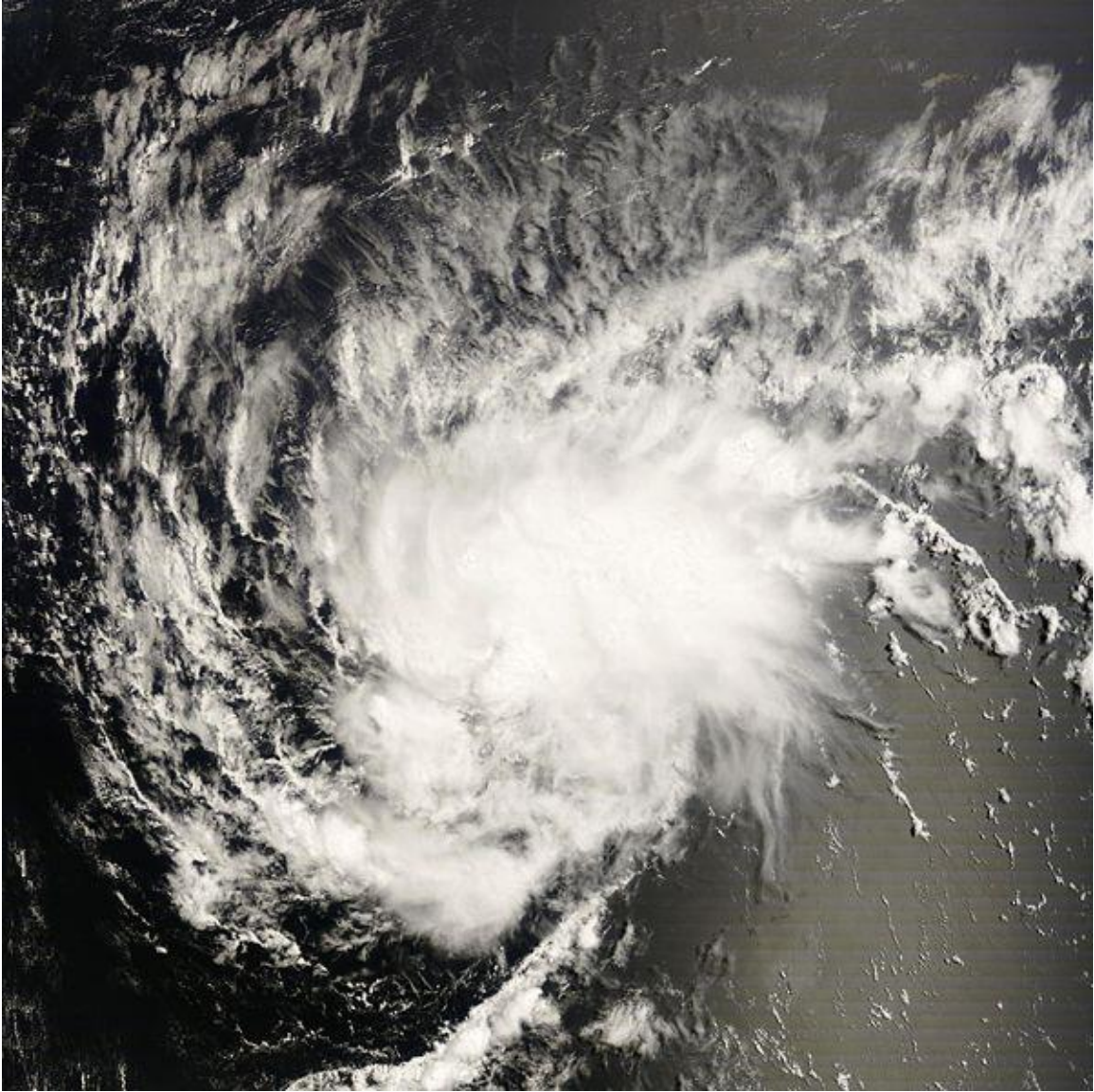


Image 1. TS Kika 2125 UTC 10 Aug 2008