

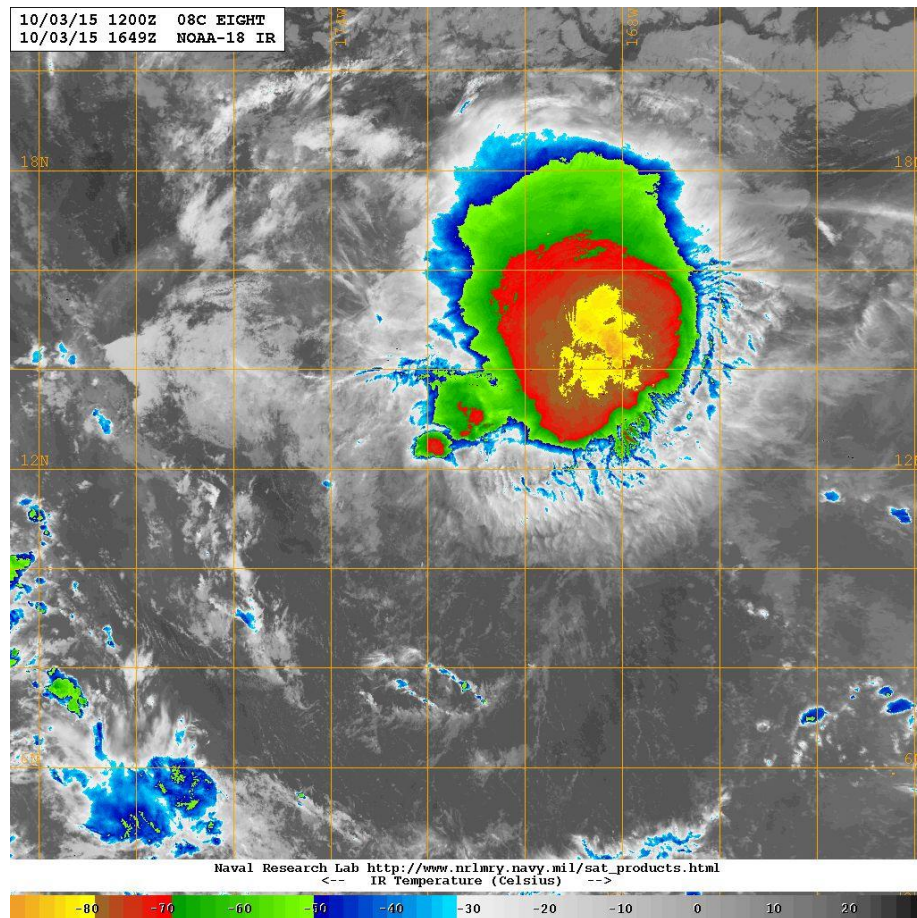


# CENTRAL PACIFIC HURRICANE CENTER TROPICAL CYCLONE REPORT

## TROPICAL DEPRESSION EIGHT-C (CP082015)

3 – 4 October 2015

Christopher Jacobson  
Central Pacific Hurricane Center  
10 October 2017



NOAA-18 INFRARED SATELLITE IMAGE OF TROPICAL DEPRESSION EIGHT-C AT 1649 UTC 3 OCTOBER 2015  
(COURTESY OF THE NAVAL RESEARCH LABORATORY)

Eight-C was a short-lived tropical depression that formed in the Central North Pacific basin during the historically active 2015 hurricane season.

# Tropical Depression EIGHT-C

3 – 4 OCTOBER 2015

## SYNOPTIC HISTORY

Tropical Depression Eight-C developed from a monsoon trough that extended from the Western Pacific across the International Date Line into the Central Pacific basin. This trough also produced Hurricane Oho further to the east in the Central Pacific basin, as well as Typhoon Choi-Wan in the Western Pacific, both of which developed into tropical cyclones shortly before Tropical Depression Eight-C did so. The disturbance which would develop into Eight-C was first identified on 30 September, located about 900 n mi southwest of Hawaii. This feature became somewhat better defined with a distinct low pressure area developing by 0000 UTC on 2 October. During the next 24 hours, deep convection gradually evolved from a linear pattern within the monsoon trough to a more discrete and persistent area located just to the north of the apparent low-level circulation center (LLCC), which was drifting slowly to the southeast. In post-analysis, the system is deemed to have become a 30 kt tropical depression at 0600 UTC 3 October, based on subjective Dvorak intensity estimates from all of the satellite fix agencies, persistence of the deep convection near the LLCC, and a subsequent 0820 UTC European Space Agency's Advanced Scatterometer (ASCAT) pass. The Central Pacific Hurricane Center commenced issuing advisories on Eight-C six hours later with the 1200 UTC synoptic time.

Deep convection persisted just to the north of the LLCC through the early morning hours of 3 October, but as the day progressed this convection collapsed. Southerly vertical wind shear over the system increased rapidly during this time, in response to a digging upper-level trough along the International Date Line. The LLCC moved slowly southward during the day, while fragmented thunderstorm activity became increasingly displaced to the north due to the increased wind shear. In post-analysis, Eight-C was deemed to have become a post-tropical low around 0600 UTC 4 October, when deep convection had been absent near the LLCC for more than 12 hours, making the system too weak to classify using the Dvorak technique. The remnant low subsequently tracked to the west-northwest with increasing forward speed, eventually dissipating soon after crossing the International Date Line by 1800 UTC 6 October.

The "best track" chart of the tropical cyclone's path is given in Fig. 1. The best track positions and intensities are listed in Table 1<sup>1</sup>.

---

<sup>1</sup> A digital record of the complete best track, including wind radii, can be found on line at <ftp://ftp.nhc.noaa.gov/atcf>. Data for the current year's storms are located in the *bt* directory, while previous years' data are located in the *archive* directory.

## METEOROLOGICAL STATISTICS

Observations of Eight-C include subjective satellite-based Dvorak technique intensity estimates from the Satellite Analysis Branch (SAB), the Central Pacific Hurricane Center (CPHC), and the Joint Typhoon Warning Center (JTWC) using satellite imagery from the Himawari and GOES-15 satellites. They also include objective Advanced Dvorak Technique (ADT) estimates from the Cooperative Institute for Meteorological Satellite Studies/University of Wisconsin-Madison. Data and imagery from NOAA polar-orbiting satellites including the Advanced Microwave Sounding Unit (AMSU), ASCAT, WindSat, and Defense Meteorological Satellite Program (DMSP) satellites, among others, were also useful in constructing the best track of Eight-C.

There were no surface observations of tropical-storm-force or greater winds from Eight-C.

## CASUALTY AND DAMAGE STATISTICS

There were no reports of damage or casualties associated with Eight-C.

## FORECAST AND WARNING CRITIQUE

The genesis of Tropical Depression Eight-C was reasonably well anticipated (Table 2), with the first mention of the precursor disturbance occurring in the Tropical Weather Outlook issued at 0600 UTC 1 October, or 48 h before the eventual development of the disturbance into a tropical cyclone at 0600 UTC 3 October. The 48 h tropical cyclone formation probability was assessed at 0% at that time. Formation probabilities were steadily increased thereafter, with the first “low” 48 h probability (10-30%) being mentioned at 1200 UTC 1 October (42 h prior to tropical cyclone development). This was followed by an increase to “medium” probability (40-60%) at 0600 UTC 2 October (24 h prior to tropical cyclone development), and a further increase to high probability (> 60%) at 1800 UTC 2 October (12 h prior to tropical cyclone development).

A verification of CPHC official track forecasts for Eight-C is provided in Table 3a. Since Eight-C existed as a tropical cyclone for less than 24 hours, and the time frame when it was considered to be a tropical cyclone was adjusted forward six hours in post-analysis compared to the real-time advisory issuances, there is only a single 12 h forecast point available for verification. The official forecast error of 36 n mi for this single point was slightly higher than the mean official error 12 h forecast error for the previous 5-yr period. A homogeneous comparison of the official track errors with selected guidance models is given in Table 3b. The HWFI, GFSI and consensus TVCE performed better than the official forecast, with the HWFI having the lowest error of any guidance model. The guidance generally depicted a west-southwest track, in contrast to the more southerly track which actually occurred. Only the HWFI predicted the southerly motion. The OFCL track was more southerly than much of the guidance, but was not as accurate as the HWFI or consensus TVCE.

A verification of CPHC official intensity forecasts for Eight-C is given in Table 4a. The official forecast intensity error was zero for the single 12 h forecast, which indicates that the CPHC forecast calling for no intensity change in the depression was correct. A homogeneous comparison of the official

intensity errors with selected guidance models is given in Table 4b. The official intensity forecast error was also lower than all of the intensity guidance, but since the guidance only recorded an error of 1 to 3 kt for the single 12 h forecast, the difference was not significant.

No coastal tropical cyclone watches or warnings were issued for Eight-C.

Table 1. Best track for Tropical Depression Eight-C, 3-4 October 2015.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
02 / 0000	12.9	172.7	1004	30	low
02 / 0600	12.8	172.6	1004	30	“
02 / 1200	12.7	172.5	1004	30	“
02 / 1800	12.6	172.3	1003	30	“
03 / 0000	12.4	171.9	1002	30	“
03 / 0600	12.3	171.5	1001	30	tropical depression
03 / 1200	12.0	171.2	1001	30	“
03 / 1800	11.8	171.6	1001	30	“
04 / 0000	11.2	171.8	1001	30	“
04 / 0600	10.7	171.6	1002	25	post-tropical low
04 / 1200	10.9	171.7	1002	25	“
04 / 1800	11.4	171.9	1002	25	“
05 / 0000	11.4	172.8	1002	25	“
05 / 0600	11.4	173.8	1002	25	“
05 / 1200	11.5	174.5	1003	25	“
05 / 1800	11.9	175.1	1004	25	“
06 / 0000	12.3	176.1	1004	25	“
06 / 0600	12.7	177.6	1004	25	“
06 / 1200	12.8	179.3	1004	25	“
06 / 1800					dissipated
03 / 0600	12.3	171.5	1001	30	maximum wind and minimum pressure

Table 2. Number of hours in advance of formation associated with the first CPHC Tropical Weather Outlook forecast in the indicated likelihood category. Note that the timings for the “Low” category do not include forecasts of a 0% chance of genesis.

Category	Hours Before Genesis
	48-Hour Outlook
Low (10-30%)	42
Medium (40%-60%)	24
High (>60%)	12

Table 3a. CPHC official (OFCL) and climatology-persistence skill baseline (OCD5) track forecast errors (n mi) for Tropical Depression Eight-C, 3-4 October 2015. Mean OFCL errors for the previous 5-yr period are shown for comparison. Official errors that are smaller than the 5-yr mean are shown in boldface type.

	Forecast Period (h)						
	12	24	36	48	72	96	120
OFCL	36.0						
OCD5	61.5						
Forecasts	1						
OFCL (2010-14)	27.9						

Table 3b. Homogeneous comparison of selected track forecast guidance models (in n mi) for Tropical Depression Eight-C, 3-4 October 2015. Errors smaller than the CPHC official forecast are shown in boldface type.

Model ID	Forecast Period (h)						
	12	24	36	48	72	96	120
OFCL	36.0						
OCD5	61.5						
HWFI	<b>21.4</b>						
GFSI	<b>30.6</b>						
AEMI	43.6						
CMCI	43.0						
EMXI	49.4						
TVCE	<b>24.0</b>						
GFEX	42.0						
Forecasts	1						

Table 4a. CPHC official (OFCL) and climatology-persistence skill baseline (OCD5) intensity forecast errors (kt) for Tropical Depression Eight-C, 3-4 October 2015. Mean OFCL errors for the previous 5-yr period are shown for comparison. Official errors that are smaller than the 5-yr means are shown in boldface type.

	Forecast Period (h)						
	12	24	36	48	72	96	120
OFCL	<b>0.0</b>						
OCD5	1.0						
Forecasts	1						
OFCL (2010-14)	4.8						

Table 4b. Homogeneous comparison of selected intensity forecast guidance models (in kt) for Tropical Depression Eight-C, 3-4 October 2015. Errors smaller than the CPHC official forecast are shown in boldface type.

Model ID	Forecast Period (h)						
	12	24	36	48	72	96	120
OFCL	0.0						
OCD5	1.0						
HWFI	1.0						
GFSI	3.0						
EMXI	1.0						
ICON	1.0						
IVCN	1.0						
DSHP	3.0						
LGEM	1.0						
Forecasts	1						

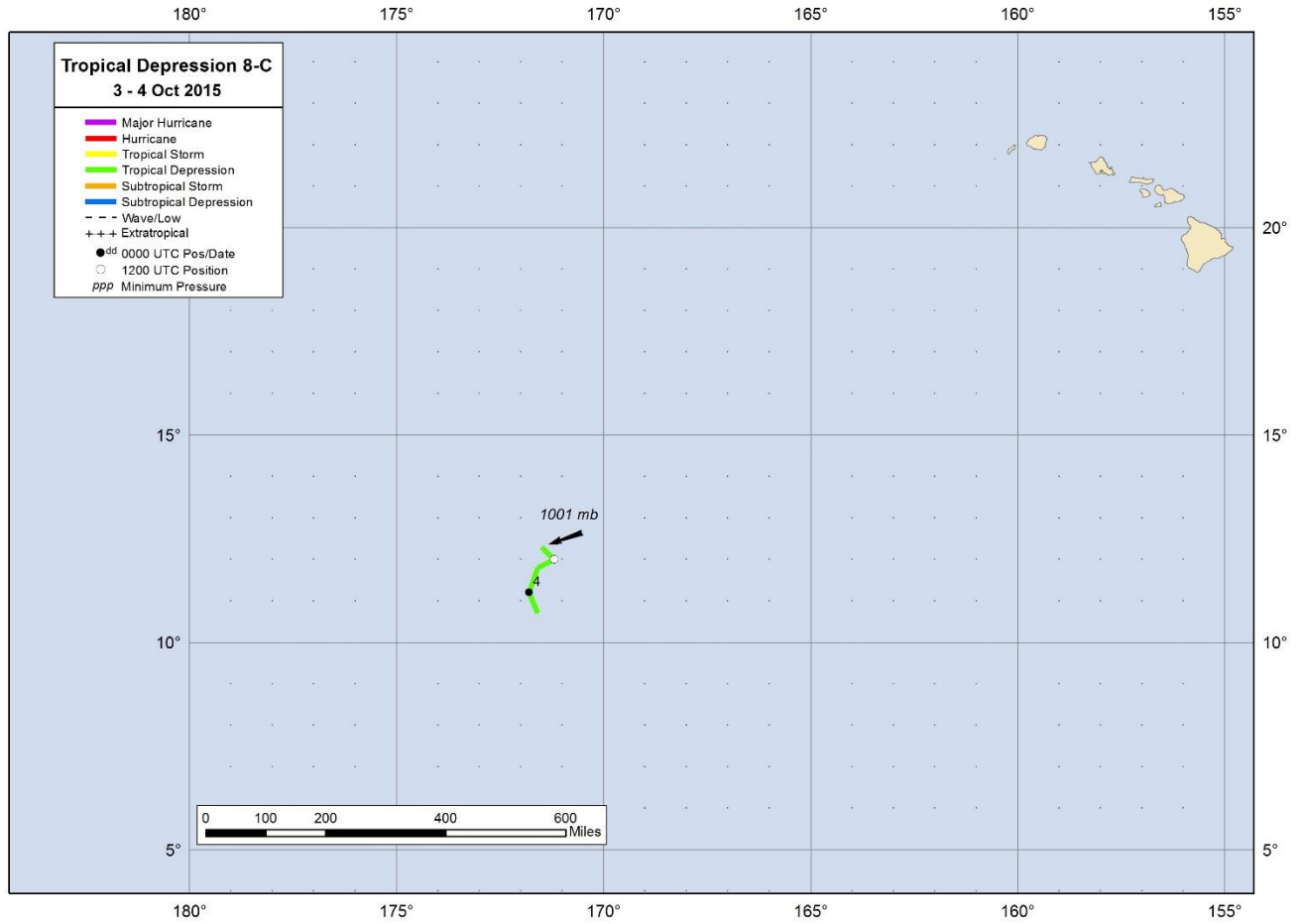


Figure 1. Map showing best track positions for Tropical Depression Eight-C, 3-4 October 2015.