भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

SPECIAL TROPICAL WEATHER OUTLOOK

DEMS–RSMC TROPICAL CYCLONES NEW DELHI 19-11-2013

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0300 UTC OF 19 NOVEMBER, 2013 BASED ON 0000 UTC OF 19 NOVEMBER, 2013.

LATEST SATELLITE IMAGERY AND OBSERVATIONS INDICATE THAT A DEPRESSION HAS FORMED OVER WESTCENTRAL BAY OF BENGAL AND LAY CENTRED AT 0000 UTC TODAY, THE 19TH NOVEMBER 2013 NEAR LATITUDE 14.5^{0}N AND LONGITUDE 86.5^{0}E, ABOUT 700 KM EAST-NORTHEAST OF CHENNAI (43279), 600 KM EAST-SOUTHEAST OF MACHILIPATNAM (43185) AND 500 KM SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD INTENSIFY INTO A DEEP DEPRESSION AND MOVE WEST-NORTHWESTWARDS TOWARDS ANDHRA PRADESH COAST DURING NEXT 72 HOURS.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 1.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH MODERATE TO INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 11.0^{0}N AND 18.5^{0}N LONG 84.0^{0}E AND 89.5^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 25 KNOTS GUSTING TO 35 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1004 HPA.

REMARKS:

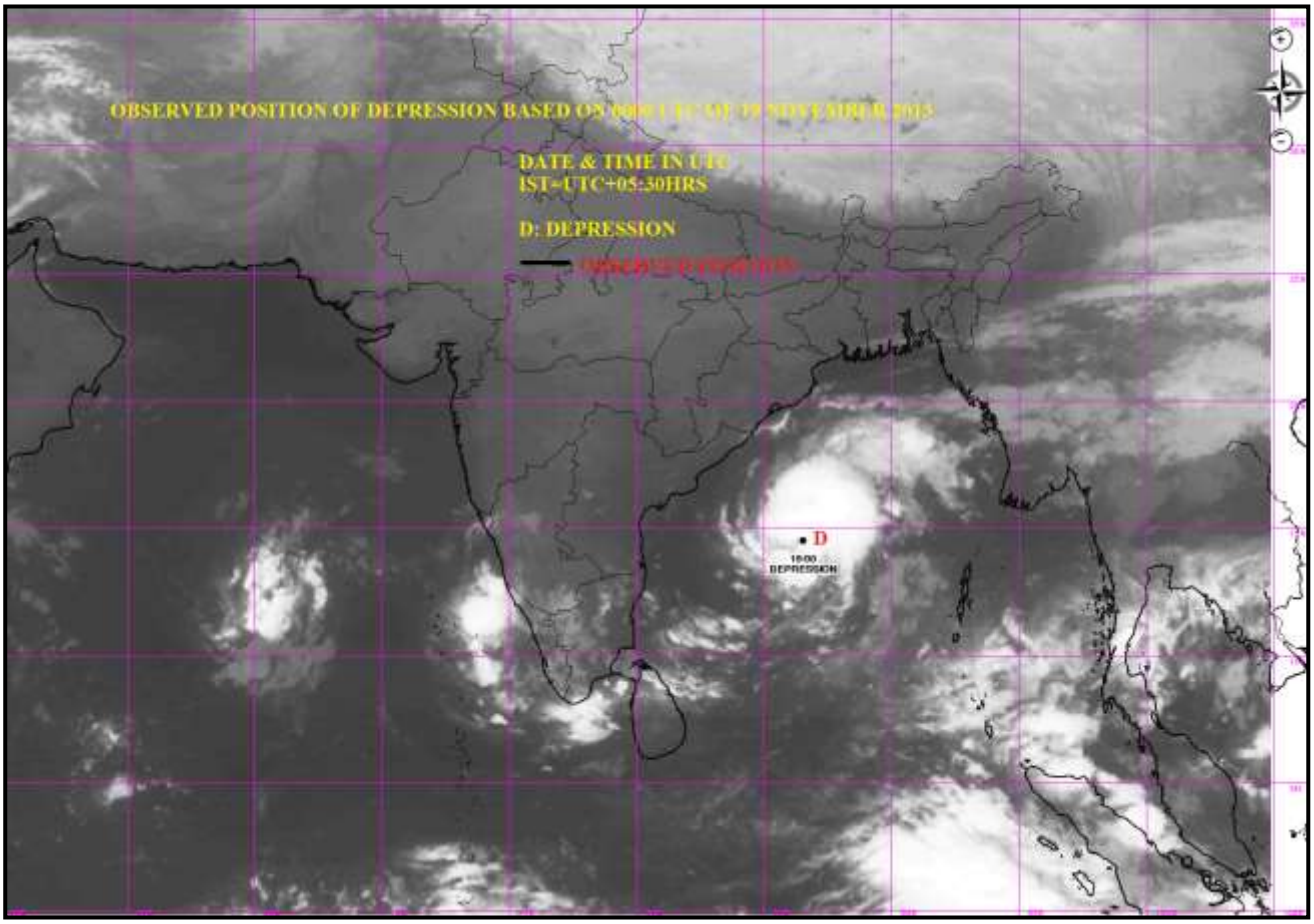
LATEST OCEANSAT-II DATA OF 1830 UTC OF 18TH NOVEMBER INDICATES THE CYCLONIC CIRCULATION OVER THE REGION AND ASSOCIATED WIND SPEED TO BE ABOUT 25-30 KNOTS TO THE NORTH AND SOUTHEAST SECTOR AND 15-20 KNOTS TO THE SOUTHWEST SECTOR OF THE SYSTEM. A BUOY LOCATED NEAR 14.0°N AND 87.0° E REPORTED MSLP OF 1007.1 HPA, 24 HR PRESSURE CHANGE OF -2.0 HPA AND SURFACE WIND OF 180/19 KNOTS, ANOTHER BUOY NEAR 13.5 °N AND 84.0°E REPORTED MSLP OF 1009.0 HPA, 24 HR PRESSURE CHANGE OF -1.5 HPA AND WIND OF 350/16 KNOTS AND ANOTHER BUOY NEAR 14.7 °N AND 85.8°E REPORTED MSLP OF 1007.8 HPA AND 24 HR PRESSURE CHANGE OF -4.3 HPA AT 0000 UTC OF 19TH NOVEMBER. A SHIP NEAR 15.9°N AND 86.8°E REPORTED MSLP OF 1009.6 HPA, 24 HR PRESSURE CHANGE OF -1.4 HPA AND WIND OF 100/26 KNOTS AT 0000 UTC OF 19TH NOVEMBER.

THE DEPRESSION LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 16^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS). THE MADDEN JULLIAN OSCILLATION (MJO) INDEX LIES OVER PHASE 2 WITH AMPLITUDE LESS THAN 1. NWP MODELS SUGGEST THAT MJO WOULD CONTINUE IN PHASE 2 DURING NEXT 3 DAYS WITH AMPLITUDE LESS THAN I. THE CURRENT PHASE AND AMPLITUDE ARE NOT VERY SUPPORTIVE FOR INTENSIFICATION.

THERE IS DIVERGENCE IN NWP MODELS GUIDANCE WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

(M.MOHAPATRA)
HEAD RSMC

TOO:0930 HRS IST


OBSERVED POSITION OF DEPRESSION BASED ON
DATE & TIME IN UTC
IST=UTC+05:30HRS
D: DEPRESSION
D
1800
DEPRESSION

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

SPECIAL TROPICAL WEATHER OUTLOOK

DEMS–RSMC TROPICAL CYCLONES NEW DELHI 19-11-2013

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0600 UTC OF 19 NOVEMBER, 2013 BASED ON 0300 UTC OF 19 NOVEMBER, 2013.

THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED WESTWARDS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 19TH NOVEMBER 2013 NEAR LATITUDE 14.5^{0}N AND LONGITUDE 86.0^{0}E, ABOUT 650 KM EAST-NORTHEAST OF CHENNAI(43279), 550 KM EAST-SOUTHEAST OF MACHILIPATNAM(43185) AND 450 KM. SOUTHEAST OF VISHAKHAPATNAM(43149). THE SYSTEM WOULD INTENSIFY INTO A DEEP DEPRESSION AND MOVE WEST-NORTHWESTWARDS TOWARDS ANDHRA PRADESH COAST DURING NEXT 72 HOURS.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 1.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH MODERATE TO INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 13.0^{0}N AND 17.5^{0}N LONG 84.0^{0}E AND 89.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -75^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHEAST SECTOR OF THE SYSTEM

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 25 KNOTS GUSTING TO 35 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1004 HPA.

REMARKS:

LATEST OCEANSAT-II DATA INDICATES THE CYCLONIC CIRCULATION OVER THE REGION AND ASSOCIATED WIND SPEED TO BE ABOUT 25-30 KNOTS TO THE NORTH AND SOUTHEAST SECTOR AND 15-20 KNOTS TO THE SOUTHWEST SECTOR OF THE SYSTEM. A BUOY LOCATED NEAR 14.0°N AND 87.0° E REPORTED MSLP OF 1010.1 HPA, 24 HR PRESSURE CHANGE OF -1.1 HPA AND SURFACE WIND OF 170/19 KNOTS, ANOTHER BUOY NEAR 13.5 °N AND 84.0°E REPORTED MSLP OF 1010.7 HPA, 24 HR PRESSURE CHANGE OF -2.0 HPA AND WIND OF 340/16 KNOTS AND ANOTHER BUOY NEAR 14.7 °N AND 85.8°E REPORTED MSLP OF 1006.2 HPA AND 24 HR PRESSURE CHANGE OF -8.6 HPA AT 0300 UTC OF 19TH NOVEMBER. A SHIP NEAR 15.9°N AND 86.8°E REPORTED MSLP OF 1011.9 HPA, 24 HR PRESSURE CHANGE OF -0.9 HPA AND WIND OF 110/25 KNOTS AT 0300 UTC OF 19TH NOVEMBER.

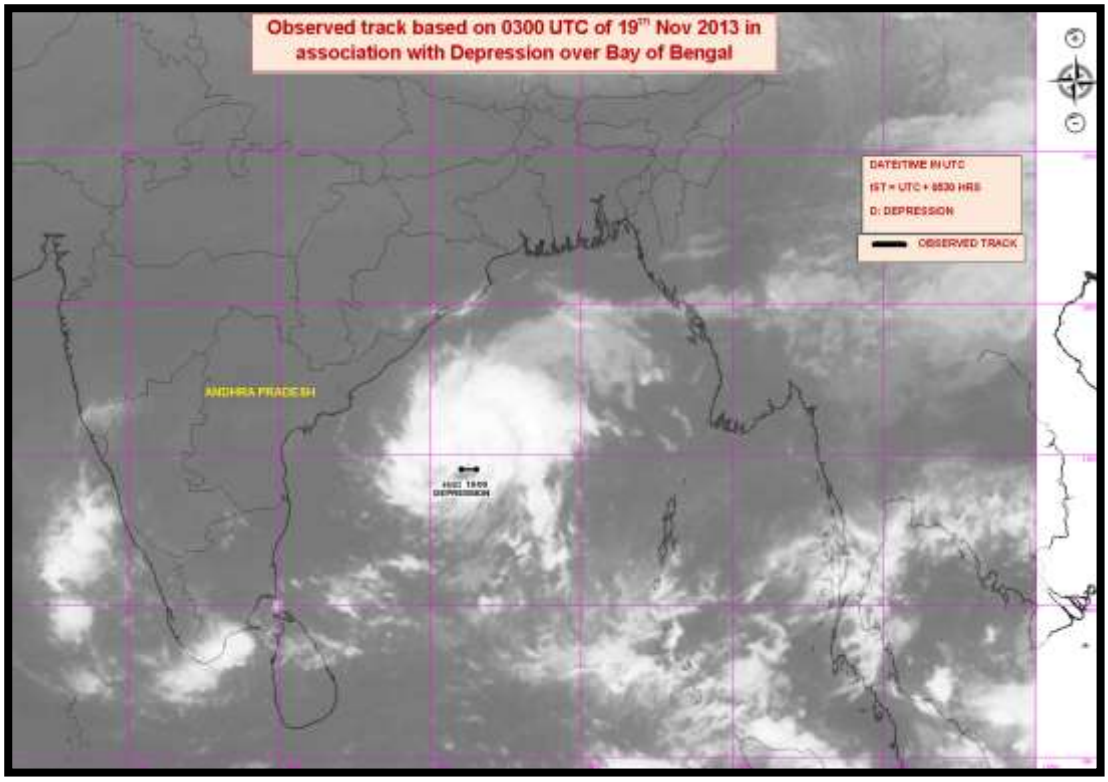
THE DEPRESSION LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 16^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS). THE MADDEN JULLIAN OSCILLATION (MJO) INDEX LIES OVER PHASE 2 WITH AMPLITUDE LESS THAN 1. NWP MODELS SUGGEST THAT MJO WOULD CONTINUE IN PHASE 2 DURING NEXT 3 DAYS WITH AMPLITUDE LESS THAN I. THE CURRENT PHASE AND AMPLITUDE ARE NOT VERY SUPPORTIVE FOR INTENSIFICATION.

THERE IS DIVERGENCE IN NWP MODELS GUIDANCE WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1500 UTC OF 19TH NOVEMBER 2013.

(M.MOHAPATRA)
HEAD RSMC

TOO:1130 HRS IST


Observed track based on 0300 UTC of 19TH Nov 2013 in association with Depression over Bay of Bengal
DATE/TIME IN UTC
IST = UTC + 0530 HRS
D: DEPRESSION
OBSERVED TRACK
ANDHRA PRADESH

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INDIA METEOROLOGICAL DEPARTMENT

SPECIAL TROPICAL WEATHER OUTLOOK

DEMS–RSMC TROPICAL CYCLONES NEW DELHI 19-11-2013

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 1500 UTC OF 19 NOVEMBER, 2013 BASED ON 1200 UTC OF 19 NOVEMBER, 2013.

THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED NORTHWESTWARDS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 19TH NOVEMBER 2013 NEAR LATITUDE 15.0^{0}N AND LONGITUDE 85.0^{0}E, ABOUT 550 KM EAST-NORTHEAST OF CHENNAI (43279), 430 KM EAST-SOUTHEAST OF MACHILIPATNAM (43185) AND 350 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 12HRS. IT WOULD MOVE WEST-NORTHWESTWARDS FOR SOME MORE TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH AND ADJOINING NORTH TAMIL NADU COAST BETWEEN CHENNAI (43279) AND ONGOLE (43221) AROUND NIGHT OF 21ST NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T2.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 13.5^{0}N AND 17.5^{0}N LONG 82.0^{0}E AND 87.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -75^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHEAST SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED DURING PAST SIX HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 25 KNOTS GUSTING TO 35 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS ROUGH TO VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1004 HPA.

REMARKS:

A BUOY LOCATED NEAR 14.7°N AND 86.0°E REPORTED MSLP OF 1009.3 HPA, 24 HR PRESSURE CHANGE OF -2.4 HPA AND A SHIP NEAR 16.0°N AND 87.0°E REPORTED MSLP OF 1010.5 HPA, WIND OF 080/21 KNOTS AT 1200 UTC OF 19TH NOVEMBER.

THE DEPRESSION LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS MODERATE TO HIGH (15-25 KNOTS). THE MADDEN JULLIAN OSCILLATION (MJO) INDEX LIES OVER PHASE 1 WITH AMPLITUDE LESS THAN 1. NWP MODELS SUGGEST THAT MJO WOULD CONTINUE IN PHASE 1 DURING NEXT 3 DAYS WITH AMPLITUDE LESS THAN I. THE CURRENT PHASE AND AMPLITUDE ARE NOT VERY SUPPORTIVE FOR INTENSIFICATION.

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0600 UTC OF 20TH NOVEMBER 2013.

(M.MOHAPATRA)
HEAD RSMC

TOO: 0830 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **ONE** ISSUED AT **0600** UTC OF **20TH NOVEMBER 2013** BASED ON **0300** UTC CHARTS of **20TH NOVEMBER 2013.**

THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL INTENSIFIED INTO A DEEP DEPRESSION AT 1500 UTC OF 19TH NOVEMBER. IT THEN MOVED WESTWARDS, INTENSIFIED FURTHER INTO A CYCLONIC STORM **'HELEN'** AND LAY CENTRED AT 0300 UTC OF TODAY, THE 20TH NOVEMBER 2013 NEAR LATITUDE 15.0^{0}N AND LONGITUDE 84.0^{0}E, ABOUT 460 KM EAST-NORTHEAST OF CHENNAI (43279), 430 KM EAST OF KAVALI (43243), 330 KM EAST-SOUTHEAST OF MACHILIPATNAM (43185) AND 310 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN SRIHARIKOTA (ANDHRA PRADESH) AND ONGOLE (43221), CLOSE TO KAVALI AROUND NIGHT OF 21ST NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 13.5^{0}N AND 18.5^{0}N LONG 82.0^{0}E AND 86.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 35 KNOTS GUSTING TO 45 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

DATE/TIME(UTC)	POSITION (LAT. ^{0}N/ LONG. ^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY
20-11-2013/0300	15.0/84.0	65-75GUSTING TO 85	CYCLONIC STORM
20-11-2013/0600	15.2/83.5	70-80 GUSTING TO 90	CYCLONIC STORM
20-11-2013/1200	15.2/83.0	75-85 GUSTING TO 95	CYCLONIC STORM
20-11-2013/1800	15.0/82.5	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.0/82.0	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/1200	14.8/80.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	14.7/79.5	80-90 GUSTING TO 100	CYCLONIC STORM
22-11-2013/1200	14.6/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/0000	14.5/77.0	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

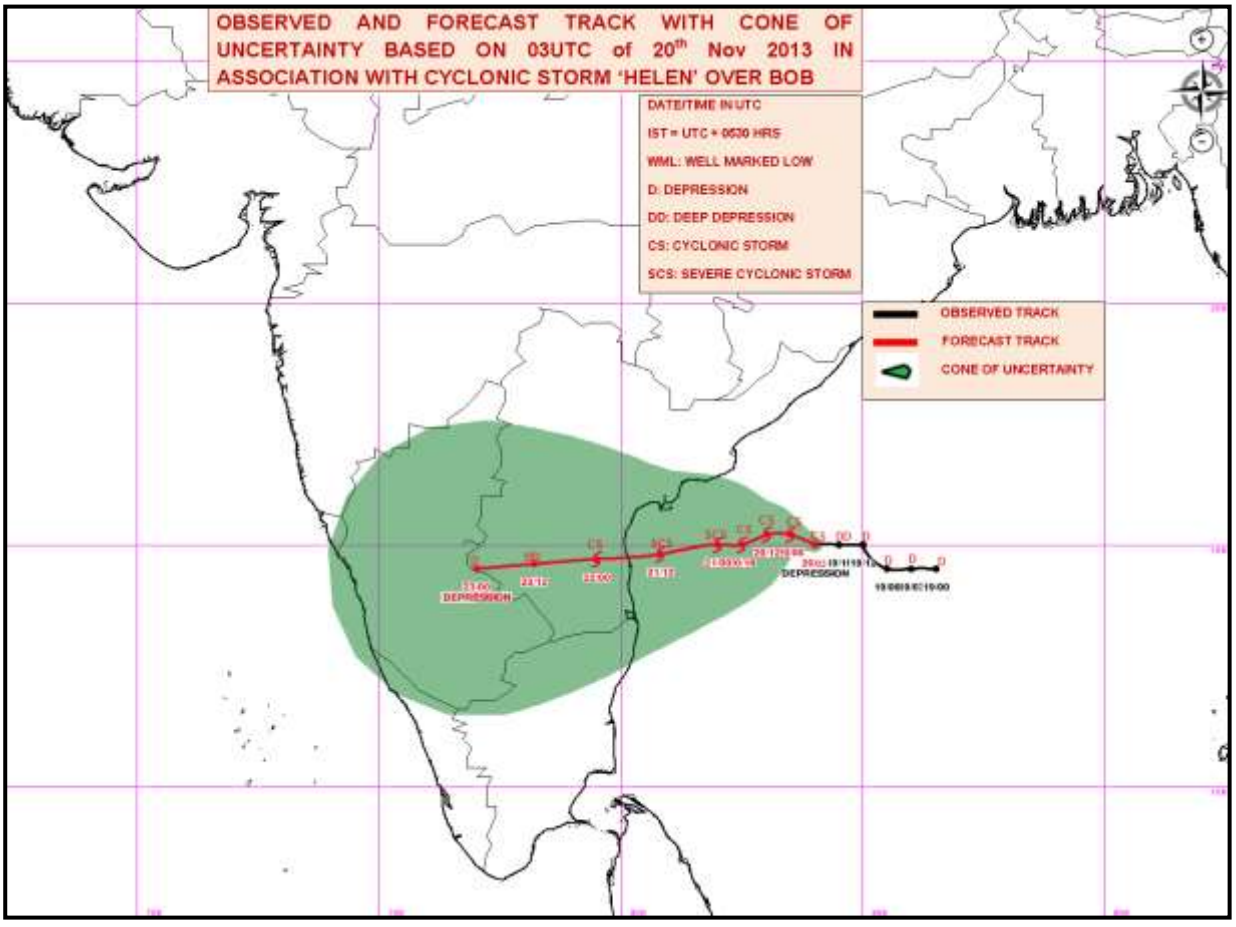
THE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^0N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0900 UTC OF 20TH NOVEMBER 2013.

(M.MOHAPATRA)
HEAD RSMC

TOO: 1140 HRS IST



भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **TWO** ISSUED AT **0900** UTC OF **20TH NOVEMBER 2013** BASED ON **0600** UTC CHARTS of **20TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS DURING PAST 6 HRS AND LAY CENTRED AT 0600 UTC OF TODAY, THE 20TH NOVEMBER 2013 NEAR LATITUDE 15.2^{0}N AND LONGITUDE 84.0^{0}E, ABOUT 470 KM EAST-NORTHEAST OF CHENNAI (43279), 430 KM EAST OF KAVALI (43243), 320 KM EAST-SOUTHEAST OF MACHILIPATNAM (43185) AND 290 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN SRIHARIKOTA (ANDHRA PRADESH) AND ONGOLE (43221), CLOSE TO KAVALI AROUND NIGHT OF 21ST NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 13.5^{0}N AND 18.0^{0}N LONG 82.0^{0}E AND 86.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
20-11-2013/0600	15.2/84.0	70-80 GUSTING TO 90	CYCLONIC STORM
20-11-2013/1200	15.4/83.5	75-85 GUSTING TO 95	CYCLONIC STORM
20-11-2013/1800	15.4/83.0	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.2/82.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.0/82.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1800	14.8/80.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	14.7/79.5	80-90 GUSTING TO 100	CYCLONIC STORM
22-11-2013/1800	14.6/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/0600	14.5/77.0	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE SYSTEM IS BEING MONITORED BY DWR- MACHILIPATNAM, VISAKHAPATNAM AND CHENNAI. ACCORDING TO THESE RADARS, THE SYSTEM IS LOCATED NEAR 15.2°N AND

84.0°E AT 0600 UTC. THE BUOY OBSERVATIONS NEAR 13.5°N AND 84.0°E SHOW MSLP OF 1007.3 HPA AND WINDS OF 270/16 KTS.

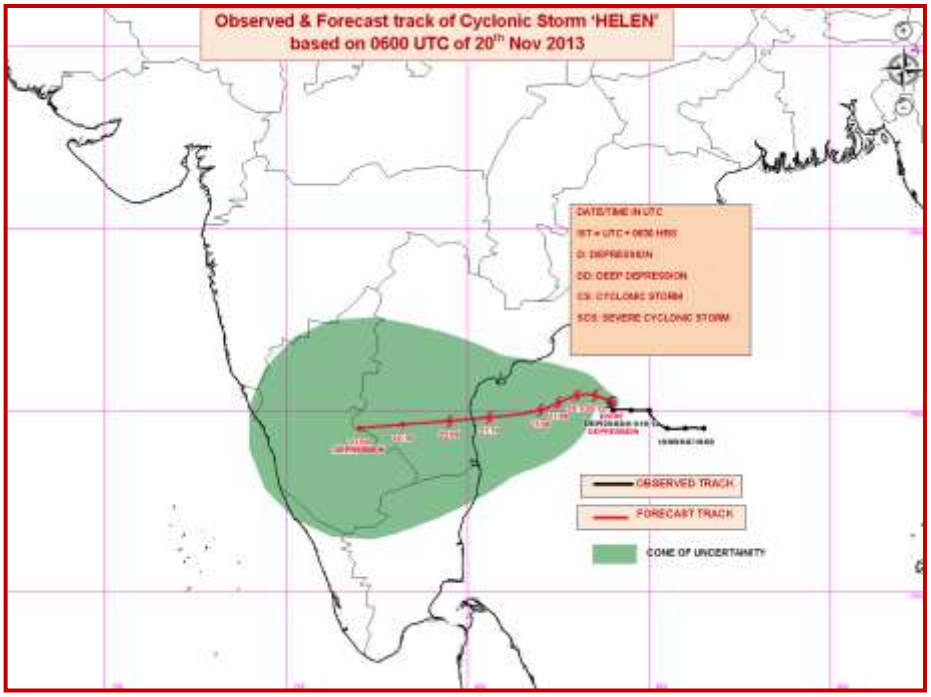
THE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^0N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^0C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

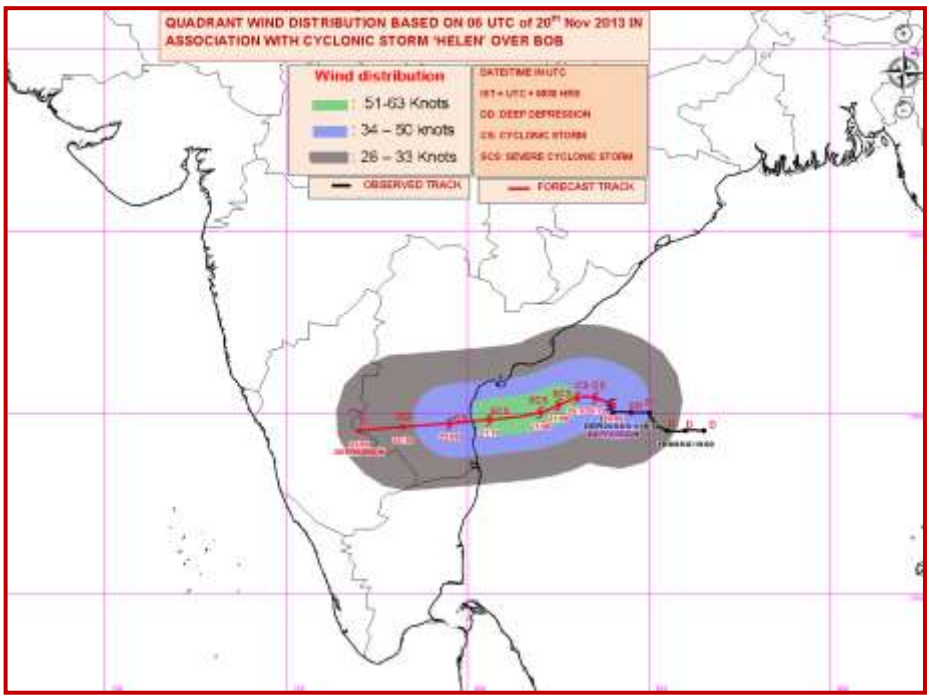
DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1200 UTC OF 20TH NOVEMBER 2013.

(M.MOHAPATRA)
HEAD RSMC

TOO: 1500 HRS IST





भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **THREE** ISSUED AT **1200** UTC OF **20TH NOVEMBER 2013** BASED ON **0900** UTC CHARTS of **20TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL REMAINED PRACTICALLY STATIONARY AND LAY CENTRED AT 0900 UTC OF TODAY, THE 20TH NOVEMBER 2013 NEAR LATITUDE 15.2^{0}N AND LONGITUDE 84.0^{0}E, ABOUT 470 KM EAST-NORTHEAST OF CHENNAI (43279), 430 KM EAST OF KAVALI (43243), 320 KM EAST-SOUTHEAST OF MACHILLIPATNAM (43185) AND 290 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE (ANDHRA PRADESH) AND MACHILLIPATNAM (43221), CLOSE TO ONGOLE AROUND MORNING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T 2.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 13.5^{0}N AND 18.5^{0}N LONG 81.5^{0}E AND 86.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 40 KNOTS GUSTING TO 50 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(IST)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
20-11-2013/0900	15.2/84.0	70-80 GUSTING TO 90	CYCLONIC STORM
20-11-2013/1200	15.4/83.5	75-85 GUSTING TO 95	CYCLONIC STORM
20-11-2013/1800	15.4/83.0	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.6/82.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.6/82.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1800	15.5/80.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	15.3/79.5	80-90 GUSTING TO 100	CYCLONIC STORM
22-11-2013/1800	15.1/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/0600	14.8/77.0	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

THE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^0N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^0C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1500 UTC OF 20^{TH} NOVEMBER 2013.

(M.MOHAPATRA)
HEAD RSMC

TOO: 1700 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **FOUR** ISSUED AT **1500** UTC OF **20TH NOVEMBER 2013** BASED ON 12**00** UTC CHARTS of **20TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY NORTHWESTWARDS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 20TH NOVEMBER 2013 NEAR LATITUDE 15.3^{0}N AND LONGITUDE 83.9^{0}E, ABOUT 470 KM EAST-NORTHEAST OF CHENNAI (43279), 420 KM EAST OF KAVALI (43243), 310 KM EAST-SOUTHEAST OF MACHILLIPATNAM (43185) AND 280 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE (43245) AND MACHILLIPATNAM (43185), CLOSE TO ONGOLE (43221) AROUND MORNING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 13.5^{0}N AND 18.5^{0}N LONG 81.5^{0}E AND 86.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
20-11-2013/1200	15.3/83.9	75-85 GUSTING TO 85	CYCLONIC STORM
20-11-2013/1800	15.4/83.7	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.6/83.2	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.6/82.8	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	15.6/82.2	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
22-11-2013/0000	15.5/80.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	15.3/79.3	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/0000	15.1/78.0	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/1200	14.8/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.3^{0}N AND LONG.83.9^{0}E AT 1200 UTC OF 20TH NOV. 2013 THE CYCLONIC STORM

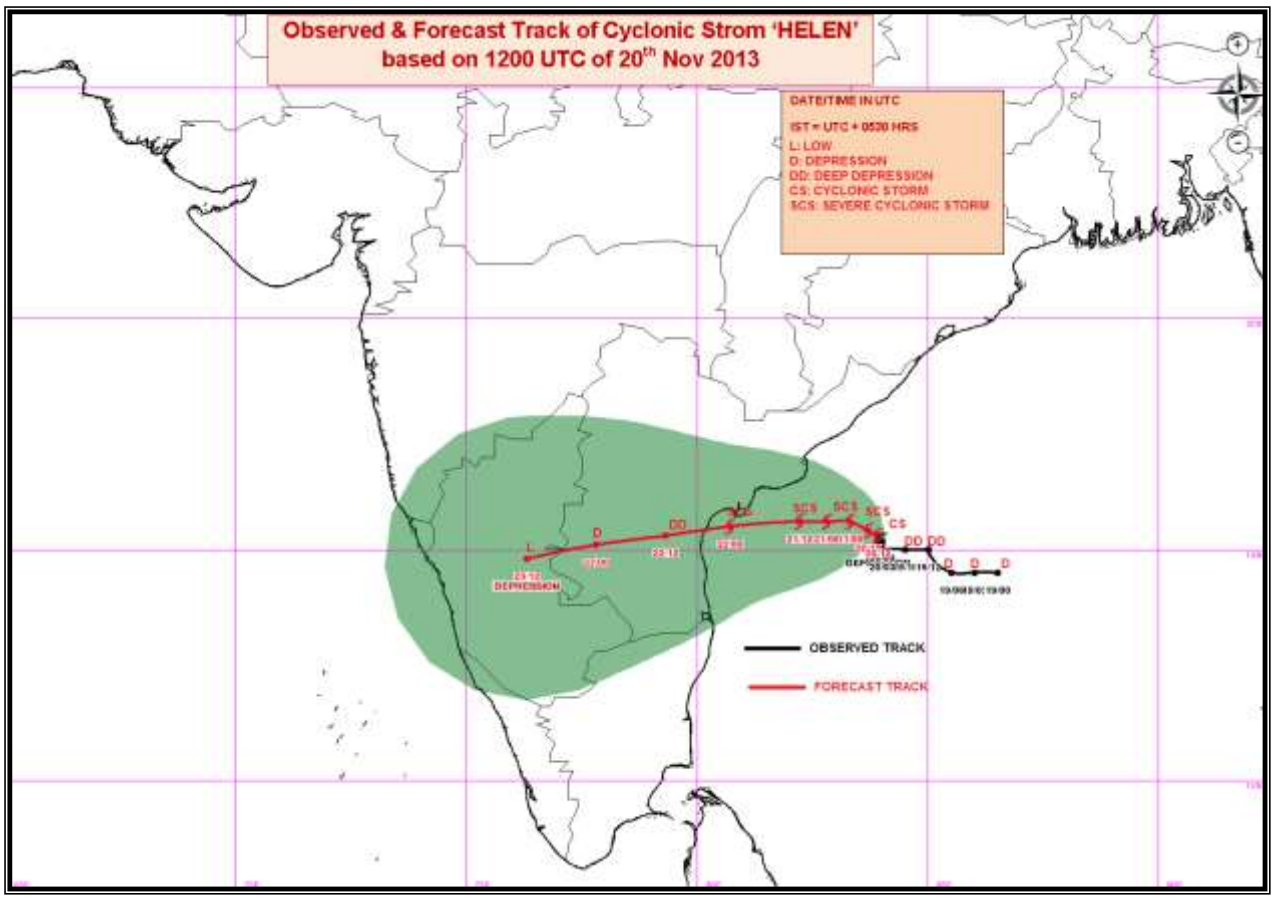
'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^0N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^0C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

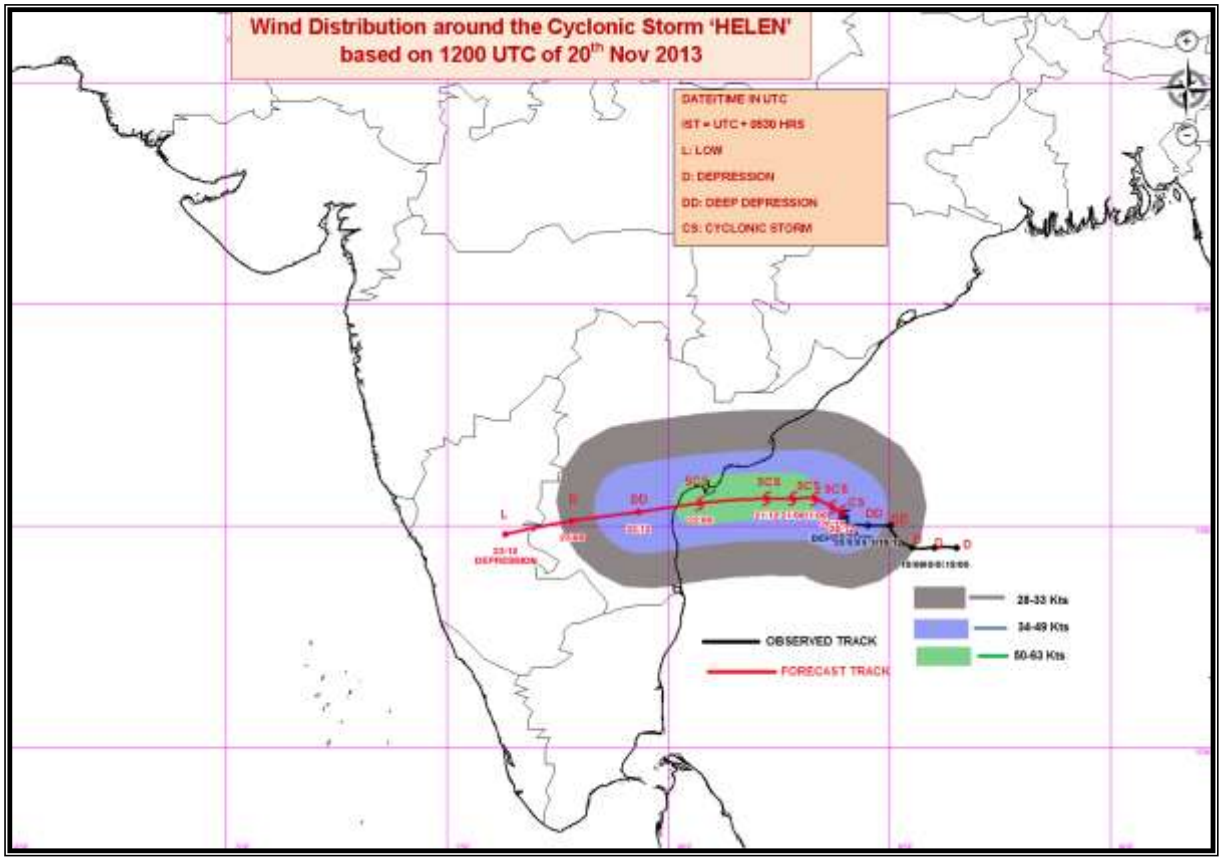
DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1800 UTC OF 20^{TH} NOVEMBER 2013.

(M.MOHAPATRA)
HEAD RSMC

TOO: 2000 HRS IST


Observed & Forecast Track of Cyclonic Strom 'HELEN'
based on 1200 UTC of 20th Nov 2013
DATE/TIME IN UTC
IST = UTC + 0530 HRS
L: LOW
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM
OBSERVED TRACK
FORECAST TRACK


Wind Distribution around the Cyclonic Storm 'HELEN'
based on 1200 UTC of 20th Nov 2013
DATE/TIME IN UTC
IST = UTC + 0530 HRS
L: LOW
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
OBSERVED TRACK
FORECAST TRACK
28-33 Kts
34-49 Kts
50-63 Kts

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **FIVE** ISSUED AT **1800** UTC OF **20TH NOVEMBER 2013** BASED ON 15**00** UTC CHARTS of **20TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL REMAIN PRACTICALLY STATIONARY AND LAY CENTRED AT 1500 UTC OF TODAY, THE 20TH NOVEMBER 2013 NEAR LATITUDE 15.3^{0}N AND LONGITUDE 83.9^{0}E, ABOUT 470 KM EAST-NORTHEAST OF CHENNAI (43279), 420 KM EAST OF KAVALI (43243), 310 KM EAST-SOUTHEAST OF MACHILLIPATNAM (43185) AND 280 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE((43245) AND MACHILLIPATNAM, CLOSE TO ONGOLE (43221) AROUND MORNING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 14.0^{0}N AND 18.5^{0}N LONG 81.5^{0}E AND 86.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
20-11-2013/1500	15.3/83.9	75-85 GUSTING TO 85	CYCLONIC STORM
20-11-2013/1800	15.4/83.7	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.6/83.2	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.6/82.8	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	15.6/82.2	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
22-11-2013/0000	15.5/80.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	15.3/79.3	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/0000	15.1/78.0	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/1200	14.8/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.3^{0}N AND LONG.83.9^{0}E AT 1200 UTC OF 20TH NOV. 2013 THE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N.

THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1800 UTC OF 20TH NOVEMBER 2013.

(RANJEET SINGH)
SCIENTIST-E

TOO: 2330 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **SIX** ISSUED AT 210**0** UTC OF **20TH NOVEMBER 2013** BASED ON 18**00** UTC CHARTS of **20TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND LAY CENTRED AT 1800 UTC OF TODAY, THE 20TH NOVEMBER 2013 NEAR LATITUDE 15.4^{0}N AND LONGITUDE 83.7^{0}E, ABOUT 460 KM EAST-NORTHEAST OF CHENNAI(43279), 400 KM EAST OF KAVALI(43243), 290 KM EAST-SOUTHEAST OF MACHILLIPATNAM(43185) AND 260 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM(43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE(43245) AND MACHILLIPATNAM, CLOSE TO ONGOLE(43221) AROUND AFTERNOON OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 14.0^{0}N AND 18.5^{0}N LONG 81.5^{0}E AND 86.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
20-11-2013/1800	15.4/83.7	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.6/83.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.6/83.1	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	15.6/82.6	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1800	15.6/82.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
22-11-2013/0600	15.5/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1800	15.3/79.7	85-95 GUSTING TO 105	CYCLONIC STORM
23-11-2013/0600	15.1/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/1200	14.8/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.3^{0}N AND LONG.83.9^{0}E AT 1800 UTC OF 20TH NOV. 2013 THE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE

FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0000 UTC OF 21ST NOVEMBER 2013.

(RANJEET SINGH)
SCIENTIST-E

TOO: 21/0230 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **SEVEN** ISSUED AT 000**0** UTC OF **21TH NOVEMBER 2013** BASED ON 2100 UTC CHARTS of **20TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND LAY CENTRED AT 2100 UTC OF 20/11/2013 NEAR LATITUDE 15.5^{0}N AND LONGITUDE 83.6^{0}E, ABOUT 460 KM EAST-NORTHEAST OF CHENNAI(43279), 390 KM EAST OF KAVALI(43243), 270 KM EAST-SOUTHEAST OF MACHILLIPATNAM(43185) AND 250 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). THE SYSTEM WOULD FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HRS. IT WOULD MOVE WEST-NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE AND MACHILLIPATNAM, CLOSE TO ONGOLE AROUND AFTERNOON OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 14.5^{0}N AND 19.0^{0}N LONG 82.0^{0}E AND 85.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 45 KNOTS GUSTING TO 55 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
20-11-2013/2100	15.5/83.6	85-95 GUSTING TO 105	CYCLONIC STORM
21-11-2013/0000	15.6/83.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.6/83.1	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	15.6/82.6	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1800	15.6/82.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
22-11-2013/0600	15.5/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1800	15.3/79.7	85-95 GUSTING TO 105	CYCLONIC STORM
23-11-2013/0600	15.1/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
23-11-2013/1200	14.8/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.3^{0}N AND LONG.83.9^{0}E AT 1800 UTC OF 20TH NOV. 2013 THE CYCLONIC STORM

'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^0N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^0C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0300 UTC OF 21^{ST} NOVEMBER 2013.

(RANJEET SINGH)
SCIENTIST-E

TOO: 21/0530 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **EIGHT** ISSUED AT 030**0** UTC OF **21TH NOVEMBER 2013** BASED ON 0000 UTC CHARTS of **21TH NOVEMBER 2013.**

THE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND INTENSIFIED INTO A SEVERE CYCLONIC STORM AND LAY CENTRED AT 0000 UTC OF TODAY, THE 21ST NOVEMBER 2013 NEAR LATITUDE 15.6^{0}N AND LONGITUDE 83.5^{0}E, ABOUT 460 KM EAST-NORTHEAST OF CHENNAI, 360 KM EAST OF ONGOLE, 260 KM EAST-SOUTHEAST OF MACHILLIPATNAM AND 230 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM. IT WOULD MOVE WEST-NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WEST-SOUTHWESTWARD AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE AND MACHILLIPATNAM, CLOSE TO ONGOLE AROUND AFTERNOON OF 22ND NOVEMBER 2013.

. ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 14.5^{0}N AND 19.0^{0}N LONG 82.0^{0}E AND 85.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.CONVECTIVE BANDING IS MORE PRONOUNCED IN NORTHERN SECTOR OF THE SYSTEM. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 50 KNOTS GUSTING TO 60KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 994 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/0000	15.6/83.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.7/83.2	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	15.7/82.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
21-11-2013/1800	15.6/82.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	15.6/82.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	15.5/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23-11-2013/0000	15.3/79.7	85-95 GUSTING TO 105	CYCLONIC STORM
23-11-2013/1200	15.1/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
24-11-2013/0000	14.8/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.3^{0}N AND LONG.83.9^{0}E AT 1800 UTC OF 20TH NOV. 2013 THE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N.

THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY ARE FAVOURABLE FOR INTENSIFICATION AND THEY HAVE INCREASED DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (05-15 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING SLOW INTENSIFICATION OR NO INTENSIFICATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0600 UTC OF 21ST NOVEMBER 2013.

(RANJEET SINGH)
SCIENTIST-E

TOO: 21/0830 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **NINE** ISSUED AT 060**0** UTC OF **21ST NOVEMBER 2013** BASED ON 0300 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY NORTHWESTWARDS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 21ST NOVEMBER 2013 NEAR LATITUDE 15.8^{0}N AND LONGITUDE 83.4^{0}E ABOUT 240 KM EAST-SOUTHEAST OF MACHILLIPATNAM (43185), 350 KM EAST-NORTHEAST OF ONGOLE (43221) AND 210 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). IT WOULD MOVE NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM (43185) AROUND 1200 UTC OF 22ND NOVEMBER 2013.

. ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 14.5^{0}N AND 19.0^{0}N LONG 82.0^{0}E AND 85.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 50 KNOTS GUSTING TO 60KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 992 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/0300	15.8/83.4	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
21-11-2013/0600	15.9/83.2	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	16.1/82.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
21-11-2013/1800	16.2/82.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23-11-2013/0000	16.0/79.7	85-95 GUSTING TO 105	CYCLONIC STORM
23-11-2013/1200	15.8/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
24-11-2013/0000	15.6/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.8^{0}N AND LONG.83.4^{0}E AT 0300 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS

ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0900 UTC OF 21ST NOVEMBER 2013.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 21/1200 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **TEN** ISSUED AT 090**0** UTC OF **21ST NOVEMBER 2013** BASED ON 0600 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY NORTHWESTWARDS AND LAY CENTRED AT 0600 UTC OF TODAY, THE 21ST NOVEMBER 2013 NEAR LATITUDE 15.9^{0}N AND LONGITUDE 83.3^{0}E ABOUT 230 KM EAST-SOUTHEAST OF MACHILLIPATNAM (43185), 340 KM EAST-NORTHEAST OF ONGOLE (43221) AND 200 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM (43149). IT WOULD MOVE NORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM (43185) AROUND AFTERNOON/EVENING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.0^{0}N AND 18.0^{0}N LONG 82.0^{0}E AND 85.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -75^{0}C. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/0600	15.9/83.3	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	16.1/82.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
21-11-2013/1800	16.2/82.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23-11-2013/0000	16.0/79.7	85-95 GUSTING TO 105	CYCLONIC STORM
23-11-2013/1200	15.8/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
24-11-2013/0000	15.6/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.9^{0}N AND LONG.83.3^{0}E AT 0600 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1200 UTC OF 21ST NOVEMBER 2013.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 21/1400 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **ELEVEN** ISSUED AT 120**0** UTC OF **21ST NOVEMBER 2013** BASED ON 0900 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND LAY CENTRED AT 0900UTC OF TODAY, THE 21ST NOVEMBER 2013 NEAR LATITUDE 16.0^{0}N AND LONGITUDE 83.1^{0}E ABOUT 210 KM EAST-SOUTHEAST OF MACHILLIPATNAM(43185), 320 KM EAST-NORTHEAST OF ONGOLE(43221) AND 190 KM SOUTH-SOUTHEAST OF VISHAKHAPATNAM(43149). IT WOULD MOVE WESTNORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM(43185) AROUND AFTERNOON/EVENING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.0^{0}N AND 18.0^{0}N LONG 82.0^{0}E AND 85.0^{0}E. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -75^{0}C. CONVECTION NEAR THE CENTRE HAS ORGANISED AND CONSOLIDATED FURTHER DURING PAST 12 HOURS.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/0900	16.0/83.1	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
21-11-2013/1200	16.1/82.8	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
21-11-2013/1800	16.2/82.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23-11-2013/0000	16.0/79.7	85-95 GUSTING TO 105	CYCLONIC STORM
23-11-2013/1200	15.8/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
24-11-2013/0000	15.6/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.0^{0}N AND LONG.83.1^{0}E AT 0900 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS).

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1500 UTC OF 21ST NOVEMBER 2013.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 21/1700 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **TWELVE** ISSUED AT 150**0** UTC OF **21ST NOVEMBER 2013** BASED ON 1200 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 21ST NOVEMBER 2013 NEAR LATITUDE 16.1^{0}N AND LONGITUDE 82.9^{0}E ABOUT 180 KM EAST-SOUTHEAST OF MACHILLIPATNAM(43185), 300 KM EAST-NORTHEAST OF ONGOLE(43221) AND 180 KM SOUTH-SOUTHWEST OF VISHAKHAPATNAM (43149). IT WOULD MOVE WESTNORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM (43185) AROUND AFTERNOON/EVENING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.0^{0}N AND 17.0^{0}N WEST OF LONG 85.0^{0}E NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/1200	16.1/82.9	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
21-11-2013/1800	16.2/82.5	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.1	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	16.2/81.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23-11-2013/0000	16.0/79.7	70-80 GUSTING TO 105	CYCLONIC STORM
23-11-2013/1200	15.8/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
24-11-2013/0000	15.6/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.1^{0}N AND LONG.82.9^{0}E AT 1200 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS). THE PAST MOVEMENT OF THE CYCLONE INDICATES THAT THE CYCLONE HAS GAINED IN WESTERLY COMPONENT OF MOVEMENT AND ITS NORTHERLY COMPONENT OF

MOVEMENT HAS BEEN RESTICTED DURING PAST SIX HOURS. IT IS MAINLY DUE TO THE ANTICYCLONIC CIRCULATION AT MIDDLE LEVELS LOCATED TO THE EAST & WEST OF THE SYSTEM CENTRE WHICH ARE BECOMING MORE FAVOURABLE FOR FURTHER GAINING OF WESTERLY COMPNENT OF MOVEMENT.

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1800 UTC OF 21ST NOVEMBER 2013.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 21/2000 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **THIRTEEN** ISSUED AT 180**0** UTC OF **21ST NOVEMBER 2013** BASED ON 1500 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WESTWARDS AND LAY CENTRED AT 1500 UTC OF TODAY, THE 21ST NOVEMBER 2013 NEAR LATITUDE 16.1^{0}N AND LONGITUDE 82.7^{0}E ABOUT 160 KM EAST OF MACHILLIPATNAM (43185), 290 KM EAST-NORTHEAST OF ONGOLE (43221) AND 180 KM SOUTH-SOUTHWEST OF VISHAKHAPATNAM (43149). IT WOULD MOVE WESTNORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM AROUND AFTERNOON/EVENING OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.0^{0}N AND 17.5^{0}N WEST OF LONG 85.0^{0}E AND ADJOINING NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/1500	16.1/82.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
21-11-2013/1800	16.2/82.5	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.1	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	16.2/81.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23-11-2013/0000	16.0/79.7	70-80 GUSTING TO 105	CYCLONIC STORM
23-11-2013/1200	15.8/78.2	55-65 GUSTING TO 75	DEEP DEPRESSION
24-11-2013/0000	15.6/76.6	30-40 GUSTING TO 50	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.0^{0}N AND LONG.82.7^{0}E AT 1500 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS). THE PAST MOVEMENT OF THE CYCLONE INDICATES THAT THE CYCLONE HAS GAINED IN WESTERLY COMPONENT OF MOVEMENT AND ITS NORTHERLY COMPONENT OF

MOVEMENT HAS BEEN RESTICTED DURING PAST SIX HOURS. IT IS MAINLY DUE TO THE ANTICYCLONIC CIRCULATION AT MIDDLE LEVELS LOCATED TO THE EAST & WEST OF THE SYSTEM CENTRE WHICH ARE BECOMING MORE FAVOURABLE FOR FURTHER GAINING OF WESTERLY COMPNENT OF MOVEMENT.

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 2100 UTC OF 21ST NOVEMBER 2013.

(T.NJHA)
SCIENTIST-E

TOO: 21/2330 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **FOURTEEN** ISSUED AT 210**0** UTC OF **21ST NOVEMBER 2013** BASED ON 1800 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND LAY CENTRED AT 1800 UTC OF 21ST NOVEMBER 2013 NEAR LATITUDE 16.2^{0}N AND LONGITUDE 82.5^{0}E ABOUT 140 KM EAST OF MACHILLIPATNAM (43185), 270 KM EAST-NORTHEAST OF ONGOLE (43221) AND 180 KM SOUTH-SOUTHWEST OF VISHAKHAPATNAM (43149). IT WOULD MOVE WESTNORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM (43185) AROUND AFTERNOON OF 22ND NOVEMBER 2013.

. ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.5^{0}N AND 18.0^{0}N WEST OF LONG 85.0^{0}E AND ADJOINING NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(IST)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/1800	16.2/82.5	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	16.2/81.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/80.7	80-90 GUSTING TO 100	CYCLONIC STORM
22-11-2013/1800	16.2/80.0	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/0600	16.0/78.8	20-30 GUSTING TO 40	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.2^{0}N AND LONG.82.3^{0}E AT 1800 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS). THE PAST MOVEMENT OF THE CYCLONE INDICATES THAT THE CYCLONE HAS GAINED IN WESTERLY COMPONENT OF MOVEMENT AND ITS NORTHERLY COMPONENT OF MOVEMENT HAS BEEN RESTICTED DURING PAST SIX HOURS. IT IS MAINLY DUE TO THE ANTICYCLONIC CIRCULATION AT MIDDLE LEVELS LOCATED TO THE EAST & WEST OF THE

SYSTEM CENTRE WHICH ARE BECOMING MORE FAVOURABLE FOR FURTHER GAINING OF WESTERLY COMPONENT OF MOVEMENT.

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0000 UTC OF 22ND NOVEMBER 2013.

(T.N.JHA)
SCIENTIST-E

TOO: 22/0230 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **FIFTEEN** ISSUED AT 000**0** UTC OF **22ND NOVEMBER 2013** BASED ON 2100 UTC CHARTS of **21ST NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WEST-NORTHWESTWARDS AND LAY CENTRED AT 2100 UTC OF 21ST NOVEMBER 2013 NEAR LATITUDE 16.2^{0}N AND LONGITUDE 82.3^{0}E ABOUT 120 KM EAST OF MACHILLIPATNAM (43185), 250 KM NORTHEAST OF ONGOLE (43221) AND 200 KM SOUTH-SOUTHWEST OF VISHAKHAPATNAM (43149). IT WOULD MOVE WESTNORTHWESTWARDS SLOWLY FOR SOME TIME, THEN WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM (43185) AROUND AFTERNOON OF 22ND NOVEMBER 2013.

. ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.5^{0}N AND 18.0^{0}N WEST OF LONG 85.0^{0}E AND ADJOINING NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
21-11-2013/2100	16.2/82.3	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0000	16.2/82.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	16.2/81.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.2/80.7	80-90 GUSTING TO 100	CYCLONIC STORM
22-11-2013/1800	16.2/80.0	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/0600	16.0/78.8	20-30 GUSTING TO 40	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.1^{0}N AND LONG.82.3^{0}E AT 2100 UTC OF 21ST NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE WHICH RUNS ALONG 17^{0}N. THE UPPER LEVEL DIVERGENCE, LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS ABOUT 28-29^{0}C. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS LOW TO MODERATE (10-20 KNOTS). THE PAST MOVEMENT OF THE CYCLONE INDICATES THAT THE CYCLONE HAS GAINED IN WESTERLY COMPONENT OF MOVEMENT AND ITS NORTHERLY COMPONENT OF MOVEMENT HAS BEEN RESTICTED DURING PAST 12 HOURS. IT IS MAINLY DUE TO THE ANTICYCLONIC CIRCULATION AT MIDDLE LEVELS LOCATED TO THE EAST & WEST OF THE SYSTEM CENTRE WHICH ARE BECOMING MORE FAVOURABLE FOR FURTHER GAINING OF WESTERLY COMPONENT OF MOVEMENT.

DIVERGENCE IN NWP MODELS GUIDANCE CONTINUES WITH RESPECT TO LANDFALL POINT AND TIME, AS THE TRACK FORECAST VARIES FROM WEST-SOUTHWEST TO NORTHWEST DIRECTION. WITH RESPECT TO INTENSIFICATION, THERE IS MORE CONSENSUS SUGGESTING

NO INTENSIFICATION. MOST OF THE MODELS COULD NOT CAPTURE THE INITIAL INTENSITY OF THE SYSTEM. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0300 UTC OF 22ND NOVEMBER 2013.

(T.N. JHA)
SCIENTIST-E

TOO: 22/0530 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **SIXTEEN** ISSUED AT 0300 UTC OF **22ND NOVEMBER 2013** BASED ON 0000 UTC CHARTS of **22nd NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WESTWARDS AND LAY CENTRED AT 0000 UTC OF THE 22nd NOVEMBER 2013 NEAR LATITUDE 16.2^{0}N AND LONGITUDE 81.9^{0}E ABOUT 035 KM SOUTHEAST OF NARSAPUR (43187) AND 085 KM EAST-NORTHEAST OF MACHILLIPATNAM (43185). IT WOULD MOVE NEARLY WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM BY AFTERNOON OF 22ND NOVEMBER 2013.

. ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.5^{0}N AND 18.0^{0}N WEST OF LONG 84.5^{0}E AND ADJOINING NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

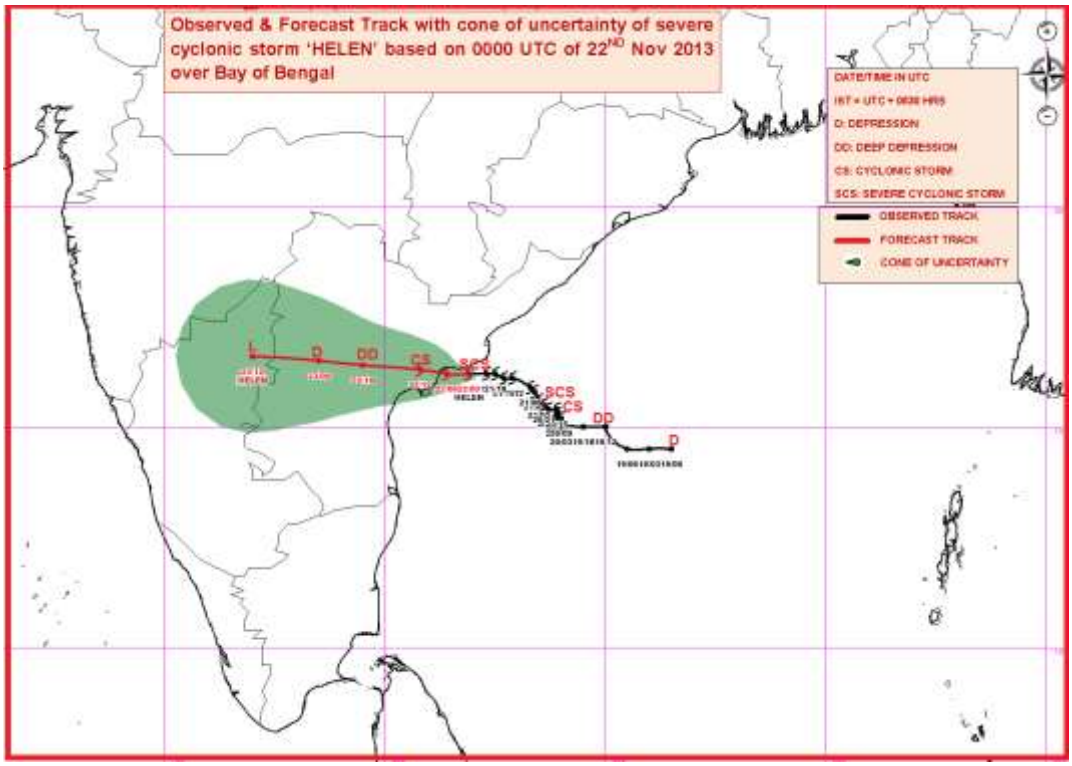
Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
22-11-2013/0000	16.2/81.9	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	16.2/81.4	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
22-11-2013/1200	16.3/80.8	70-80 GUSTING TO 90	CYCLONIC STORM
22-11-2013/1800	16.4/79.5	50-60 GUSTING TO 70	DEEP DEPRESSION
23-11-2013/0000	16.5/78.5	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/1200	16.6/77.0	20-30 GUSTING TO 40	LOW

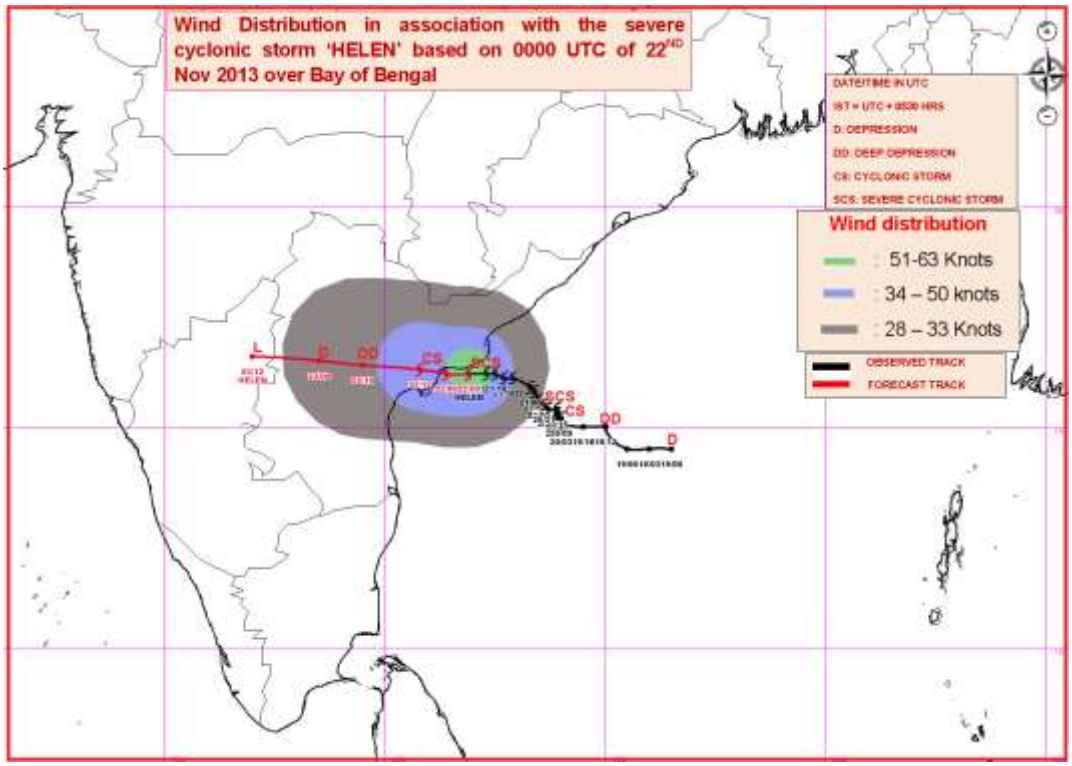
REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.1^{0}N AND LONG.81.9^{0}E AT 0000 UTC OF 22nd NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE. THE UPPER LEVEL DIVERGENCE, LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS COLDER. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS MODERATE TO HIGH (15-25 KNOTS). THE SYSTEM IS INTERACTING WITH LAND SURFACE.
CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.
NEXT BULLETIN WILL BE ISSUED AT 0600 UTC OF 22ND NOVEMBER 2013.

(T.N. JHA)
SCIENTIST-E

TOO: 22/0830 HRS IST





भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **SEVENTEEN** ISSUED AT 0600 UTC OF **22ND NOVEMBER 2013** BASED ON 0300 UTC CHARTS of **22nd NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WESTWARDS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 22ND NOVEMBER 2013 NEAR LATITUDE 16.2^{0}N AND LONGITUDE 81.7^{0}E ABOUT 025 KM SOUTH OF NARSAPUR (43187) AND 060 KM EAST OF MACHILLIPATNAM (43185). IT WOULD MOVE NEARLY WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM BY AFTERNOON OF 22ND NOVEMBER 2013.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.5^{0}N AND 18.5^{0}N & WEST OF LONG 84.5^{0}E AND NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
22-11-2013/0300	16.2/81.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/0600	16.2/81.4	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.3/80.8	70-80 GUSTING TO 90	CYCLONIC STORM
22-11-2013/1800	16.4/79.5	50-60 GUSTING TO 70	DEEP DEPRESSION
23-11-2013/0000	16.5/78.5	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/1200	16.6/77.0	20-30 GUSTING TO 40	LOW

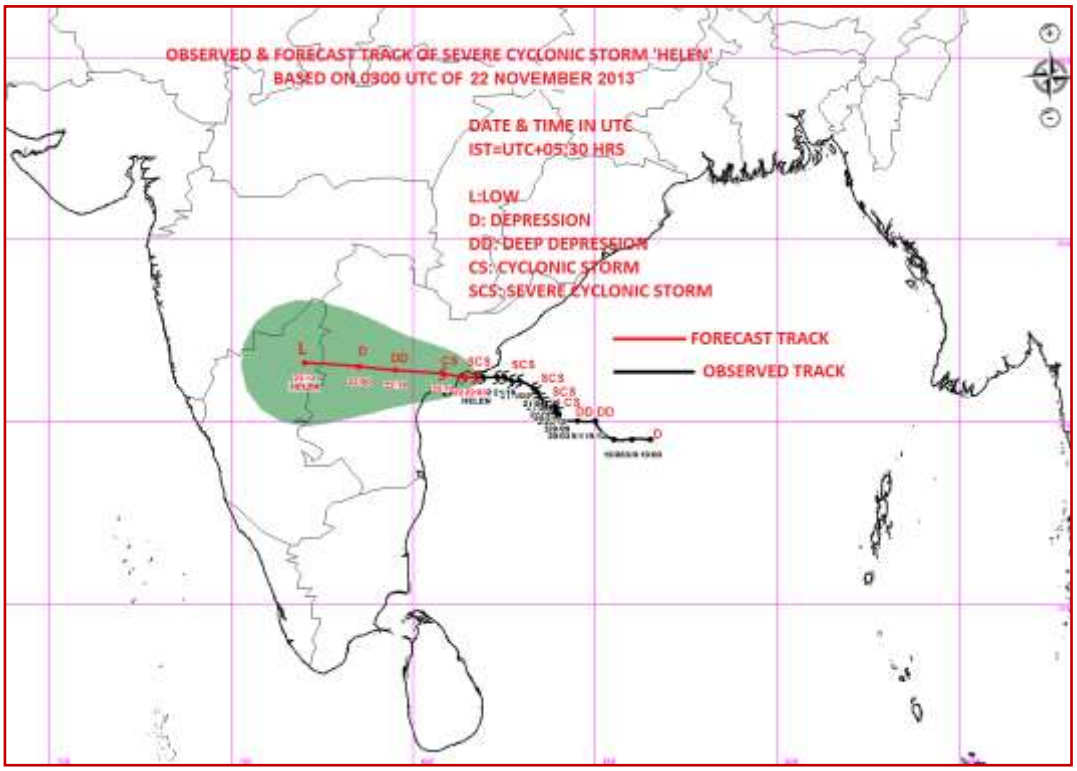
REMARKS:

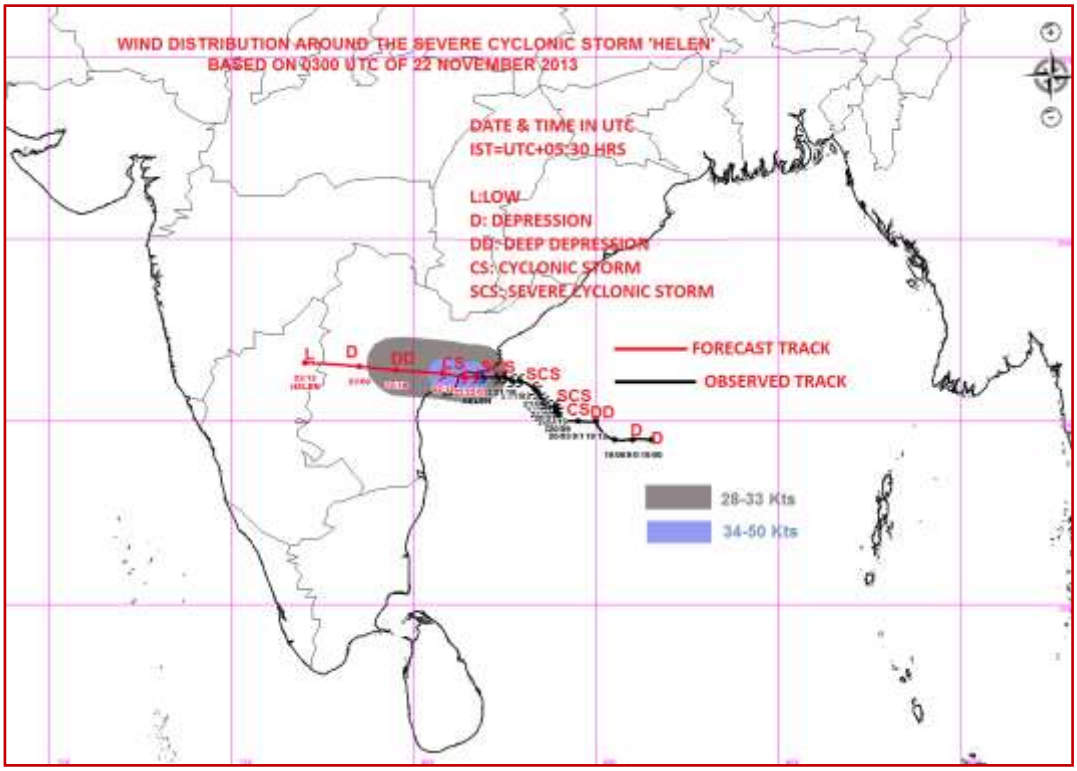
ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.02^{0}N AND LONG.81.8^{0}E AT 0230 UTC OF 22nd NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE. THE UPPER LEVEL DIVERGENCE, LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS COLDER. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS MODERATE TO HIGH (15-25 KNOTS). THE SYSTEM IS INTERACTING WITH LAND SURFACE. SYSTEM IS MOVING WESTWARDS AND WILL CONTINUE TO MOVE SO UNDER THE INFLUENCE OF MIDDLE TROPOSPHERIC ANTI-CYCLONIC CIRCULATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 0900 UTC OF 22ND NOVEMBER 2013.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 22/1030 HRS IST





भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **EIGHTEEN** ISSUED AT 0900 UTC OF **22ND NOVEMBER 2013** BASED ON 0600 UTC CHARTS of **22nd NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WESTWARDS AND LAY CENTRED AT 0600 UTC OF TODAY, THE 22ND NOVEMBER 2013 NEAR LATITUDE 16.2^{0}N AND LONGITUDE 81.3^{0}E VERY CLOSE TO ANDHRA PRADESH COAST (ABOUT 15 KM EAST OF MACHILLIPATNAM (43185)). IT WOULD MOVE NEARLY WESTWARD AND CROSS ANDHRA PRADESH COAST NEAR MACHILLIPATNAM (43185) WITHIN A FEW HOURS.

ACCORDING TO SATELLITE IMAGERIES, THE INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER BAY OF BENGAL BETWEEN LAT 15.0^{0}N AND 18.5^{0}N & WEST OF LONG 84.5^{0}E AND NORTH COASTAL ANDHRA PRADESH. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 55 KNOTS GUSTING TO 65 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 990 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
22-11-2013/0600	16.2/81.3	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
22-11-2013/1200	16.3/80.6	70-80 GUSTING TO 90	CYCLONIC STORM
22-11-2013/1800	16.4/79.8	50-60 GUSTING TO 70	DEEP DEPRESSION
23-11-2013/0000	16.5/78.0	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/1200	16.6/77.2	20-30 GUSTING TO 40	LOW

REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 16.2^{0}N AND LONG.81.3^{0}E AT 0600 UTC OF 22nd NOV. 2013 THE SEVERE CYCLONIC STORM 'HELEN' LIES TO THE SOUTH OF THE UPPER TROPOSPHERIC RIDGE. THE UPPER LEVEL DIVERGENCE, LOW LEVEL CONVERGENCE ALONGWITH LOW LEVEL RELATIVE VORTICITY REMAINED SAME DURING PAST 12 HRS. THE SEA SURFACE TEMPERATURE IS COLDER. THE VERTICAL WIND SHEAR OF HORIZONTAL WIND IS MODERATE TO HIGH (15-25 KNOTS). THE SYSTEM IS INTERACTING WITH LAND SURFACE. SYSTEM IS MOVING WESTWARDS AND WILL CONTINUE TO MOVE SO UNDER THE INFLUENCE OF MIDDLE TROPOSPHERIC ANTI-CYCLONIC CIRCULATION. CURRENT FORECAST IS BASED ON CONSENSUS NWP AND SYNOPTIC ANALYSIS.

NEXT BULLETIN WILL BE ISSUED AT 1200 UTC OF 22ND NOVEMBER 2013.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 22/1230 HRS IST

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI
TO: STORM WARNING CENTRE, YANGAON (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
WARNING CENTRE, DHAKA (BANGLADESH)
STORM STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
TROPICAL CYCLONE ADVISORY
RSMC – TROPICAL CYCLONES, NEW DELHI

TROPICAL STORM **'HELEN'** ADVISORY NO. **NINETEEN** ISSUED AT 1200 UTC OF **22ND NOVEMBER 2013** BASED ON 0900 UTC CHARTS of **22nd NOVEMBER 2013.**

THE SEVERE CYCLONIC STORM 'HELEN' OVER WESTCENTRAL BAY OF BENGAL MOVED SLIGHTLY WESTWARDS, CROSSED ANDHRA PRADESH COAST CLOSE TO SOUTH OF MACHILLIPATNAM (NEAR LATITUDE 16.1°N AND LONGITUDE 81.2°E BETWEEN 1330 AND 1430 HRS IST OF TODAY, THE 22ND NOV.2013 AS A CYCLONIC STORM WITH A WIND SPEED OF 80-90 KMPH. IT MOVED WESTWARD AND LAY CENTRED AT 0900 UTC OF TODAY, THE 22ND NOV.2013 OVER COASTAL ANDHRA PRADESH NEAR LATITUDE 16.1^{0}N AND LONGITUDE 81.0^{0}E, CLOSE SOUTHWEST OF MACHILLIPATNAM (43185). IT WOULD MOVE WEST-SOUTHWESTWARDS AND WEAKEN INTO A DEEP DEPRESSION DURING NEXT SIX HOURS.

ACCORDING TO SATELLITE IMAGERIES, ASSOCIATED BROKEN LOW/MEDIUM CLOUD EMBEDDED WITH INTENSE TO VERY INTENSE CONVECTION IS SEEN OVER NORTH COASTAL ANDHRA PRADESH BETWEEN LAT 15.0^{0}N AND 18.5^{0}N & WEST OF LONG 84.5^{0}E AND WEAK CONVECTION OVER CENTRAL PARTS OF COASTAL ANDHRA PRADESH ADJOINING TELANGANA. THE LOWEST CLOUD TOP TEMPERATURE (CTT) IS ABOUT -80^{0}C.

MAXIMUM SUSTAINED SURFACE WIND SPEED IS ESTIMATED TO BE ABOUT 35 KNOTS GUSTING TO 45 KNOTS AROUND THE SYSTEM CENTRE. THE STATE OF THE SEA IS VERY ROUGH TO HIGH ALONG AND OFF ANDHRA PRADESH COAST. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1000 HPA.

TRACK AND INTENSITY FORECASTS OF THE SYSTEM ARE GIVEN IN THE TABLE BELOW:

Date/Time(UTC)	Position (Lat. ^{0}N/ long. ^{0}E)	Maximum sustained surface wind speed (kmph)	Category
22-11-2013/0900	16.1/81.0	60-70 GUSTING TO 80	CYCLONIC STORM
22-11-2013/1200	15.9/80.7	50-60 GUSTING TO 70	DEEP DEPRESSION
22-11-2013/1800	15.8/80.3	40-50 GUSTING TO 60	DEPRESSION
23-11-2013/0000	15.7/79.7	20-30 GUSTING TO 40	LOW

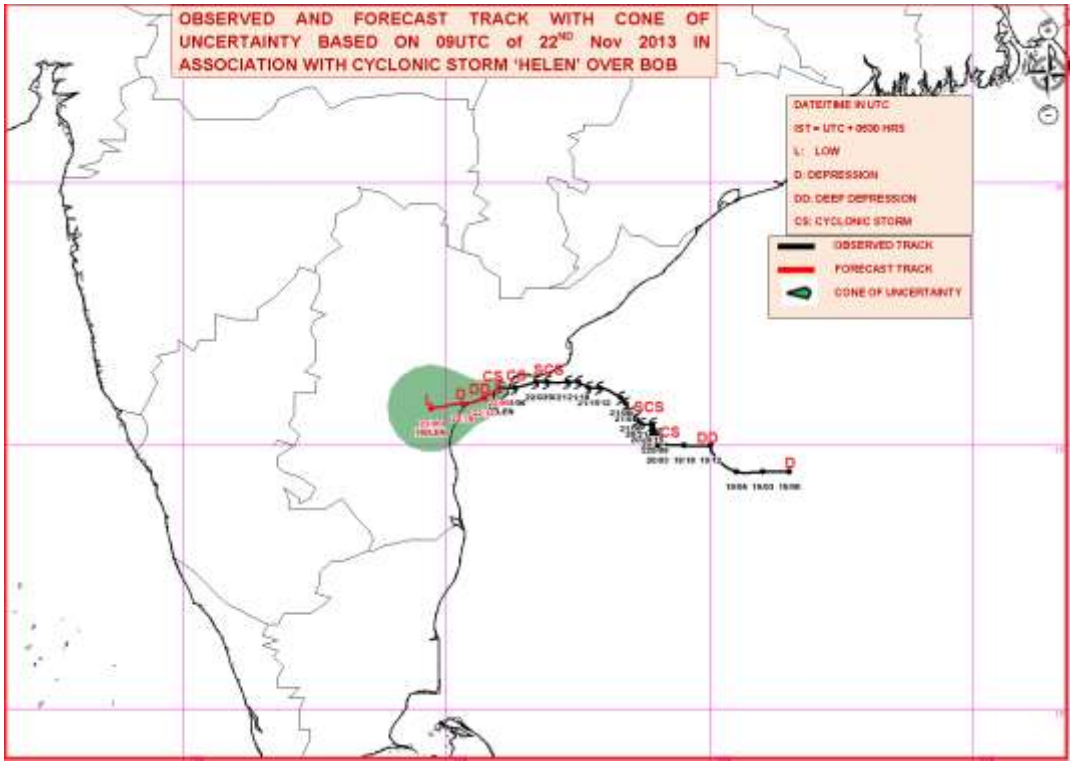
REMARKS:

ACCORDING TO DWR, MACHILIPATNAM, THE SEVERE CYCLONIC STORM WAS LOCATED NEAR LAT. 15.9^{0}N AND LONG.81.0^{0}E AT 0940 UTC OF 22nd NOV. 2013 SYSTEM IS MOVING WEST-SOUTHWESTWARDS AND WILL CONTINUE TO MOVE SO UNDER THE INFLUENCE OF MIDDLE TROPOSPHERIC ANTI-CYCLONIC CIRCULATION. DUE TO THE SLOW MOVEMENT OF THE CYCLONE OVER THE COLDER SEA AREA AND DUE TO INCREASE IN VERTICAL WIND SHEAR, THE SEVERE CYCLONIC STORM WEAKENED INTO A CYCLONIC STORM BEFORE LANDFALL.

THIS IS THE LAST BULLETIN FOR THIS SYSTEM.

(M.MOHAPATRA)
SCIENTIST-E

TOO: 22/1630 HRS IST


OBSERVED AND FORECAST TRACK WITH CONE OF UNCERTAINTY BASED ON 09UTC of 22ND Nov 2013 IN ASSOCIATION WITH CYCLONIC STORM 'HELEN' OVER BOB
DATE/TIME IN UTC
IST = UTC + 0530 HRS
L: LOW
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY
CS
SCS
DD
D