



Direction Interrégionale de La Réunion
BP 4
97491 Ste Clotilde Cedex
Tel: 0262 92 11 00
Fax exploitation: 0262 92 11 48
Fax direction: 0262 92 11 47



WTIO30 FMEE 301845

RSMC / TROPICAL CYCLONE CENTER / LA REUNION
TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 12/14/20132014

1.A VERY INTENSE TROPICAL CYCLONE 14 (HELLEN)

2.A POSITION 2014/03/30 AT 1800 UTC:

WITHIN 10 NM RADIUS OF POINT 15.0 S / 45.0 E

(FIFTEEN DECIMAL ZERO DEGREES SOUTH AND FORTY FIVE DECIMAL ZERO DEGREES EAST)

MOVEMENT : SOUTH-SOUTH-EAST 3 KT

3.A DVORAK ANALYSIS: 6.5/7.0/D 2.5/24 H

4.A CENTRAL PRESSURE: 925 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 125 KT

RADIUS OF MAXIMUM WINDS (RMW) :15 KM

6.A EXTENSION OF WIND BY QUADRANTS (KM):

28 KT NE: 110 SE: 180 SW: 180 NW: 130

34 KT NE: 70 SE: 90 SW: 100 NW: 90

48 KT NE: 60 SE: 60 SW: 70 NW: 60

64 KT NE: 50 SE: 50 SW: 50 NW: 50

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1008 HPA / 400 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION : DEEP

1.B FORECASTS:

12H: 2014/03/31 06 UTC: 15.7 S / 45.2 E, MAX WIND=110 KT, INTENSE TROPICAL CYCLONE

24H: 2014/03/31 18 UTC: 16.3 S / 44.8 E, MAX WIND=090 KT, INTENSE TROPICAL CYCLONE

36H: 2014/04/01 06 UTC: 16.7 S / 44.2 E, MAX WIND=070 KT, TROPICAL CYCLONE

48H: 2014/04/01 18 UTC: 17.1 S / 43.3 E, MAX WIND=080 KT, TROPICAL CYCLONE

60H: 2014/04/02 06 UTC: 17.3 S / 42.7 E, MAX WIND=090 KT, INTENSE TROPICAL CYCLONE

72H: 2014/04/02 18 UTC: 17.7 S / 41.4 E, MAX WIND=100 KT, INTENSE TROPICAL CYCLONE

2.B LONGER-RANGE OUTLOOK :

96H: 2014/04/03 18 UTC: 18.0 S / 38.7 E, MAX WIND=090 KT, INTENSE TROPICAL CYCLONE

120H: 2014/04/04 18 UTC: 18.0 S / 35.9 E, MAX WIND=050 KT, INLAND

2.C ADDITIONAL INFORMATION:

T=6.5+ AND CI=7.0

AFTER PRESENTING FROM 1100Z TO 1500Z A DT=7.0 ON METEOSAT7 ENHANCED INFRARED IMAGERY, HELLEN EYE IS COOLING FROM +19 DG AT 1300Z TO -36 FG AT 1800Z.

1710Z AND 1533Z SSMIS MICROWAVE IMAGERY STILL NOT SUGGEST ANY EYEWALL CYCLE REPLACEMENT.

HELLEN IS LIKELY TO BE ONE OF THE MOST POWERFULL TROPICAL CYCLONE EVER SEEN OVER THE NORTHERN CHANNEL SINCE THE SATELLITE ERA (1967).

GIVEN THE PAST TRACK OVER THE LAST 6 HOURS MORE SOUTH-EASTERN THAN PREVIOUSLY EXPECTED, THE LIKELIHOOD IS INCREASING FOR AN EXTREMELY DANGEROUS TROPICAL CYCLONE LANDFALL OVER THE NORTHWESTERN COASTLINE OF MADAGASCAR BETWEEN CAPE SAINT-ANDRE AND MAHAJONGA. GIVEN THIS POSSIBILITY, THE RSMC TROPICAL CYCLONE STORM SURGE NWP HAS BEEN RUN THAT SHOWS PHENOMENAL SEA ELEVATIONS IN THE AREA EXPOSED TO THE NORTHERLY WINDS (EAST OF THE FORECAST TRACK).

THIS POTENTIALLY STRENGTHEN AREA IS VERY SENSITIVE BECAUSE ITS BATHYMETRY (PLATEAU) AND STORM SURGE COULD REACH BETWEEN 2M AND 4M IN THE ESTUARY OF THE BETSIBOKA RIVER (MAHAJONGA), MORE THAN 7M IN THE BAY OF BALY (SOALALA) AND BETWEEN 1M AND 4M ON THE COASTLINE EAST OF CAPE SAINT-ANDRE.

ALL PREPARATIONS FOR A "WORST CASE" SCENARIO SHOULD BE UNDERWAY

THE SYSTEM IS LYING UNDER AN UPPER LEVEL RIDGE AXIS ALOFT. VERTICAL WINDSHEAR IS WEAK TO MODERATE (6.4 M/S ACCORDING TO CIMSS AT 1800Z) AND UPPER LEVEL DIVERGENCE IS GOOD MAINLY POLEWARD IN RELATIONSHIP WITH A WESTERLY SUBTROPICAL JET EXISTING SOUTH OF 18S. UNDER THE STEERING INFLUENCE OF THE MID-LEVELS RIDGE LOCATED NORTHWARD, HELLEN WILL KEEP ON TRACKING SLOWLY SOUTH-EASTWARDS DURING THE NEXT 6 TO 12 HOURS BEFORE BEING WITHIN A TOO SLOW STEERING ENVIRONMENT THAT SHOULD LEAD TO A QUASI-STAT MOTION. A WEAKENING TREND INITIATED BY INDUCED COLD SST MAY TAKEN PLACE BY THAT TIME. ON THE HAND SOME NWP MODELS SUGGEST A TEMPORARILY RISING OF THE VWS TONIGHT. THE INTENSITY FORECAST REMAINS UNCERTAIN ACCORDING TO THE SMALL SIZE OF THE SYSTEM AND ITS SENSIBILITY TO THE VARIATION OF THE ENVIRONMENTAL CONDITIONS.

ON AND AFTER MONDAY, THE MID-TROPOSPHERIC NEAR-EQUATORIAL RIDGE IS EXPECTED TO WEAKEN. HELLEN IS THEREFORE EXPECTED TO SLOW DOWN CLEARLY.

BEFORE RE-CURVING WESTWARDS THEN SOUTH-WESTWARDS UNDER THE STEERING INFLUENCE OF THE SUBTROPICAL RIDGE REBUILDING SOUTHWARD. IF AN OVERLAND TRACK OVER THE NORTHWESTERN MADAGASCAR OCCURS, IT SHOULD WEAKEN THE SYSTEM BUT IT IS EXPECTED TO BE BACK OVERSEA AT A SIGNIFICATIVE INTENSITY.

HELLEN SHOULD KEEP ON TRACKING ON THIS WEST-SOUTH-WEST PATH UP TO A NEW LANDFALL WEDNESDAY NIGHT OR THURSDAY ON THE MOZAMBICAN COASTLINES IN THE AREA OF QUELIMANE. GIVEN THE FAVOURABLE WINDS PATTERN SEEN ON NWP MODELS AT THIS LEAD TIME, THE INTENSITY FORECAST IS AGAIN SIGNIFICANTLY UPGRADED.

GIVEN THE VICINITY OF THE COMOROS ARCHIPELAGO AND MAYOTTE, THE INHABITANTS OF THIS ISLANDS SHOULD STILL CLOSELY MONITOR THE PROGRESS

OF THIS SYSTEM.