

WTIO30 FMEE 151213

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 18/2/20232024

1.A TROPICAL CYCLONE 2 (BELAL)

2.A POSITION 2024/01/15 AT 1200 UTC:

WITHIN 20 NM RADIUS OF POINT 21.4 S / 56.2 E

(TWENTY ONE DECIMAL FOUR DEGREES SOUTH AND
FIFTY SIX DECIMAL TWO DEGREES EAST)

MOVEMENT: SOUTH-EAST 9 KT

3.A DVORAK ANALYSIS: 4.0/5.0/W 1.0/12 H

4.A CENTRAL PRESSURE: 972 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 65 KT

RADIUS OF MAXIMUM WINDS (RMW): 37 KM

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

28 KT NE: 250 SE: 240 SW: 215 NW: 195

34 KT NE: 150 SE: 155 SW: 155 NW: 110

48 KT NE: 85 SE: 100 SW: 90 NW: 75

64 KT NE: 55 SE: 55 SW: 0 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1005 HPA / 1300 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2024/01/16 00 UTC: 21.9 S / 57.3 E, VENT MAX= 075 KT, TROPICAL CYCLONE

28 KT NE: 280 SE: 270 SW: 240 NW: 195

34 KT NE: 155 SE: 155 SW: 130 NW: 110

48 KT NE: 65 SE: 85 SW: 75 NW: 65

64 KT NE: 45 SE: 35 SW: 35 NW: 35

24H: 2024/01/16 12 UTC: 22.5 S / 59.1 E, VENT MAX= 075 KT, TROPICAL CYCLONE

28 KT NE: 295 SE: 220 SW: 220 NW: 215

34 KT NE: 165 SE: 130 SW: 120 NW: 120

48 KT NE: 65 SE: 85 SW: 75 NW: 45

64 KT NE: 45 SE: 45 SW: 45 NW: 35

36H: 2024/01/17 00 UTC: 22.6 S / 60.6 E, VENT MAX= 070 KT, TROPICAL CYCLONE

28 KT NE: 280 SE: 295 SW: 230 NW: 230

34 KT NE: 155 SE: 165 SW: 150 NW: 140

48 KT NE: 65 SE: 85 SW: 75 NW: 45

64 KT NE: 45 SE: 45 SW: 45 NW: 35

48H: 2024/01/17 12 UTC: 22.4 S / 62.0 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 240 SE: 240 SW: 195 NW: 195
34 KT NE: 130 SE: 140 SW: 130 NW: 110
48 KT NE: 55 SE: 85 SW: 75 NW: 55
64 KT NE: 45 SE: 35 SW: 45 NW: 45

60H: 2024/01/18 00 UTC: 22.3 S / 62.8 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 185 SE: 215 SW: 215 NW: 165
34 KT NE: 100 SE: 150 SW: 130 NW: 95
48 KT NE: 55 SE: 65 SW: 45 NW: 0

72H: 2024/01/18 12 UTC: 21.8 S / 63.2 E, VENT MAX= 050 KT, SEVERE TROPICAL STORM
28 KT NE: 150 SE: 165 SW: 140 NW: 120
34 KT NE: 75 SE: 110 SW: 110 NW: 75
48 KT NE: 45 SE: 65 SW: 45 NW: 0

2.B LONGER-RANGE OUTLOOK:

96H: 2024/01/19 12 UTC: 22.0 S / 62.7 E, VENT MAX= 040 KT, POST-TROPICAL
DEPRESSION
28 KT NE: 110 SE: 150 SW: 175 NW: 0
34 KT NE: 0 SE: 95 SW: 100 NW: 0

120H: 2024/01/20 12 UTC: 21.6 S / 61.8 E, VENT MAX= 025 KT, REMNANT LOW

2.C ADDITIONAL INFORMATION:

PT=4.0 CI=5.0

OVER THE PAST 6 HOURS, THE CLOUD CONFIGURATION OF TROPICAL CYCLONE BELAL HAS HEATED UP AND THE MINIMUM IS NO LONGER CENTERED IN THE CONVECTION. THE ABSENCE OF MICROWAVE IMAGERY AND ASCAT SWATH MAKES IT DIFFICULT TO LOCATE THE CENTER, WHICH HAS BEEN DETERMINED USING HRV IMAGES. IT HAS SHIFTED TOWARDS THE NORTHERN EDGE OF THE CONVECTION, INDICATING A WEAKENING DUE TO THE SYSTEM'S PASSAGE OVER REUNION. A DVORAK ANALYSIS IN CDO ESTIMATES A PT OF 4.0, AND BY INERTIA THE CI IS KEPT AT 5.0, I.E. WINDS OF THE ORDER OF 80KT. OBJECTIVE ANALYSES ESTIMATE WEAKER WINDS AT 45-50KT. A COMPROMISE WITH THESE ANALYSES IS THEREFORE MADE, AND THE ANALYZED WINDS ARE REVISED TO 65KT. THE BELAL SYSTEM IS THEREFORE STILL CLASSIFIED AS A TROPICAL CYCLONE.

THE EYEWALL HITS REUNION. AFTER PASSING OVER THE ISLAND, BELAL CONTINUES ITS GENERAL EAST-SOUTHEAST MOVEMENT UNTIL TUESDAY, AS THE NEAR-EQUATORIAL RIDGE TO THE NORTHEAST OF THE SYSTEM STRENGTHENS. IN MID-WEEK, WITH A NEW RIDGE BUILDING TO THE WEST AND SOUTH-WEST OF THE SYSTEM, IT MOVES EASTWARDS. THEN, MORE CONTRADICTIONARY STEERING FLOWS SHOULD LEAD TO A SLOWDOWN IN MOVEMENT: A LOOP TO THE NORTH OR EVEN A QUASI-STATIONARY PHASE IS THEN POSSIBLE, WHILE REMAINING IN THE TROPICAL DOMAIN. ON LONGER TIMESCALES, CONTRADICTIONARY DIRECTING CURRENTS CONTINUE TO MAKE TRACK FORECASTS HIGHLY UNCERTAIN, AND THE RSMC IS CURRENTLY OPTING FOR AN ERRATIC TRACK ON THESE TIMESCALES, WHICH MAY CHANGE CONSIDERABLY.

AS IT MOVES AWAY FROM REUNION, BELAL RETURNS TO GOOD ENVIRONMENTAL

CONDITIONS, WHICH SHOULD ENABLE IT TO MAINTAIN ITS INTENSITY, OR EVEN INCREASE IT SLIGHTLY IN THE SHORT TERM. BY MID-WEEK, BELAL'S ERRATIC TRACK COULD TAKE IT BACK TO WATERS WITH LOWER POTENTIAL. IN ADDITION, THE INTRUSION OF DRY AIR CLOSE TO THE CENTER AND THE INCREASE IN VERTICAL SHEAR WOULD CAUSE IT TO BEGIN AN INITIAL SLOW DECREASE IN INTENSITY, WHICH WOULD ACCELERATE TOWARDS THE END OF THE WEEK. BELAL IS EXPECTED TO ENTER THE POST-CYCLONIC STAGE FROM FRIDAY, SUBSEQUENTLY EVOLVING INTO A FILLING LOW.

EXPECTED IMPACT ON REUNION AND MAURITIUS OVER THE NEXT 72 HOURS :

REUNION:

- END OF STORM FORCE ON MONDAY NIGHT. END OF NEAR GALE FORCE WINDS FOR TUESDAY MORNING.
- HIGH RAINFALL TOTALS IN THE ORDER OF 250-300MM IN 24H OVER THE SOUTHEAST HEIGHTS AND IN THE ORDER OF 200-250MM IN 24H IN THE SOUTH.
- WAVES OF AROUND 6-8M IN THE EAST AND SOUTH-EAST ON MONDAY EVENING, QUICKLY SUBSIDING. THE HIGHEST WAVES MAY REACH 2 TIMES THESE HEIGHTS.

MAURITIUS:

- MAURITIUS NO LONGER AFFECTED BY DIRECT IMPACT.
- GALE FORCE WINDS LIKELY UNTIL TUESDAY MORNING.
- WAVES 4 TO 6M ON MONDAY, WEAKENING TIMIDLY ON TUESDAY.