

WTIO30 FMEE 190041

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 19/7/20222023

1.A VERY INTENSE TROPICAL CYCLONE 7 (FREDDY)

2.A POSITION 2023/02/19 AT 0000 UTC:

WITHIN 10 NM RADIUS OF POINT 16.7 S / 67.0 E

(SIXTEEN DECIMAL SEVEN DEGREES SOUTH AND
SIXTY SEVEN DECIMAL ZERO DEGREES EAST)

MOVEMENT: WEST-SOUTH-WEST 12 KT

3.A DVORAK ANALYSIS: 7.0/7.0/D 1.0/6 H

4.A CENTRAL PRESSURE: 931 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 120 KT

RADIUS OF MAXIMUM WINDS (RMW): 31 KM

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

28 KT NE: 185 SE: 240 SW: 220 NW: 150

34 KT NE: 120 SE: 150 SW: 140 NW: 110

48 KT NE: 95 SE: 110 SW: 100 NW: 95

64 KT NE: 75 SE: 85 SW: 85 NW: 75

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1008 HPA / 600 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2023/02/19 12 UTC: 17.2 S / 64.2 E, VENT MAX= 125 KT, VERY INTENSE TROPICAL
CYCLONE

28 KT NE: 195 SE: 260 SW: 215 NW: 155

34 KT NE: 130 SE: 150 SW: 155 NW: 110

48 KT NE: 75 SE: 85 SW: 95 NW: 75

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

24H: 2023/02/20 00 UTC: 17.9 S / 60.8 E, VENT MAX= 125 KT, VERY INTENSE TROPICAL
CYCLONE

28 KT NE: 205 SE: 325 SW: 240 NW: 155

34 KT NE: 130 SE: 185 SW: 175 NW: 110

48 KT NE: 75 SE: 95 SW: 95 NW: 75

64 KT NE: 55 SE: 65 SW: 65 NW: 55

36H: 2023/02/20 12 UTC: 18.7 S / 57.3 E, VENT MAX= 120 KT, VERY INTENSE TROPICAL
CYCLONE

28 KT NE: 205 SE: 315 SW: 260 NW: 155

34 KT NE: 120 SE: 185 SW: 175 NW: 110

48 KT NE: 75 SE: 85 SW: 95 NW: 75
64 KT NE: 55 SE: 65 SW: 65 NW: 55

48H: 2023/02/21 00 UTC: 19.5 S / 53.7 E, VENT MAX= 110 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 205 SE: 350 SW: 270 NW: 150
34 KT NE: 120 SE: 215 SW: 185 NW: 110
48 KT NE: 75 SE: 95 SW: 100 NW: 75
64 KT NE: 55 SE: 65 SW: 55 NW: 45

60H: 2023/02/21 12 UTC: 20.3 S / 50.1 E, VENT MAX= 110 KT, INTENSE TROPICAL CYCLONE

28 KT NE: 215 SE: 315 SW: 250 NW: 155
34 KT NE: 130 SE: 185 SW: 175 NW: 110
48 KT NE: 75 SE: 85 SW: 100 NW: 75
64 KT NE: 45 SE: 45 SW: 45 NW: 45

72H: 2023/02/22 00 UTC: 20.8 S / 47.0 E, VENT MAX= 050 KT, OVERLAND DEPRESSION

28 KT NE: 215 SE: 260 SW: 140 NW: 95
34 KT NE: 120 SE: 155 SW: 110 NW: 65
48 KT NE: 45 SE: 55 SW: 85 NW: 45

2.B LONGER-RANGE OUTLOOK:

96H: 2023/02/23 00 UTC: 21.0 S / 40.9 E, VENT MAX= 040 KT, MODERATE TROPICAL STORM

28 KT NE: 140 SE: 260 SW: 220 NW: 95
34 KT NE: 75 SE: 165 SW: 155 NW: 0

120H: 2023/02/24 00 UTC: 19.9 S / 35.7 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM

28 KT NE: 215 SE: 260 SW: 285 NW: 100
34 KT NE: 130 SE: 155 SW: 130 NW: 65
48 KT NE: 60 SE: 80 SW: 100 NW: 50

2.C ADDITIONAL INFORMATION:

T=CI=7.0-

DURING THE LAST 6 HOURS, CONVECTION HAS SIGNIFICANTLY INTENSIFIED ALL AROUND THE CYCLONE'S CENTER AND THE EYE'S TEMPERATURE HAS WARMED UP, LEADING UP TO A REMARKABLE ANNULAR STRUCTURE. THE 2323Z SSMIS-F18 MW PASS CONFIRMS A VERY SOLID AND SYMMETRICAL CONVECTIVE RING. DVORAK ANALYSES HAVE CLIMBED UP AROUND 7.0- SINCE 21UTC. WE CAN THUS ASSUME THAT FREDDY HAS REACHED VERY INTENSE TROPICAL CYCLONE STAGE WITH WINDS ESTIMATED AT 120KT AT 00UTC. THIS INTENSIFICATION HAS PROBABLY BEEN FAVORED BY DECREASING WIND SHEAR AS THE STORM'S FORWARD SPEED HAS ALSO PICKED UP A BIT. FREDDY IS MOVING SLIGHTLY SOUTH OF PREVIOUS FORECASTS AND SLIGHTLY FASTER THAN THE AVERAGE GUIDANCE : AMONG THE MAIN MODELS, THE GFS SEEMS THE CLOSEST TO THE STORM'S ACTUAL MOVEMENT.

FREDDY WILL KEEP HEADING WEST-SOUTHWESTWARDS UNTIL TUESDAY, MOVING ALONG THE NORTHERN EDGE OF A STRONG SUBTROPICAL MID-TROPOSPHERIC HIGH. MODEL GUIDANCE CONTINUES TO DISPLAY LITTLE DISPERSION AND

REMAINS QUITE STABLE, LEADING TO GOOD CONFIDENCE ON A TRACK PASSING TO THE NORTH OF THE MASCARENE ISLANDS AND ACCELERATING TOWARDS A TUESDAY EVENING LANDFALL OVER THE MALAGASY COAST. DISPERSION INCREASES AFTER THE EXIT ON THE MOZAMBIQUE CHANNEL. THE RSMC FORECAST FOLLOWS A MEDIAN SCENARIO.

CONDUCTIVE ENVIRONMENTAL CONDITIONS SHOULD ALLOW FREDDY TO MAINTAIN A VERY STRONG INTENSITY UNTIL TUESDAY, WITH GOOD EQUATORWARD UPPER DIVERGENCE, HIGH OCEANIC POTENTIAL AND NOT ENOUGH WIND SHEAR TO DISRUPT THE SYSTEM WITH DRY AIR INTRUSIONS. FREDDY COULD THEREFORE REMAIN AT VERY INTENSE TROPICAL CYCLONE STAGE IN THE SHORT TERM. A POSSIBLE EYEWALL REPLACEMENT CYCLE COULD MAYBE LATER MAKE THE INTENSITY FLUCTUATE OR DROP A BIT BEFORE LANDFALL. FROM WEDNESDAY, AFTER CLASSIC RAPID WEAKENING OVER MALAGASY LANDS, FREDDY'S INNER CORE SHOULD GRADUALLY REORGANIZE THEN REINTENSIFY OVER THE MOZAMBIQUE CHANNEL, UNDER CONDUCTIVE CONDITIONS THERE AGAIN.

IMPACTS ON INHABITED LANDS DURING THE NEXT 72 HOURS :

- RODRIGUES ISLAND : VERY ROUGH SEA (4-6M) SUNDAY AFTERNOON AND THE FOLLOWING NIGHT.

- MAURITIUS ISLAND : GALE FORCE WINDS LIKELY FROM MONDAY 09-12UTC UNTIL 21UTC. HIGH SEA (6-8M) FROM MONDAY AROUND NOON UNTIL THE FIRST PART OF THE FOLLOWING NIGHT.

- REUNION : GALE FORCE WINDS FROM MONDAY EVENING UNTIL TUESDAY EARLY MORNING. HIGH SEA (4-6M) MONDAY NIGHT.

- MADAGASCAR : LANDFALL EXPECTED TUESDAY EVENING AROUND 18UTC, PROBABLY SOMEWHERE BETWEEN THE SOUTH OF TOAMASINA PROVINCE AND FIANARANTSOA PROVINCE. ONSET OF GALE FORCE WINDS FROM TUESDAY 15UTC AND OF HURRICANE FORCE WINDS AROUND 18UTC. VERY HIGH SEA AND LOCALLY PHENOMENAL SEA LIKELY NEAR THE LANDFALL AREA (10 TO 15M WAVES), WITH STORM SURGE POSSIBLY REACHING 1 TO 2M LOCALLY. HEAVY RAINFALL TUESDAY NIGHT, AMOUNTING UP TO AROUND 200MM NEAR THE CYCLONE'S TRACK, WITH RISK OF LOCAL FLASH-FLOODS.