

WTIO30 FMEE 011929

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 12/1/20232024

1.A SEVERE TROPICAL STORM 1 (ALVARO)

2.A POSITION 2024/01/01 AT 1800 UTC:

WITHIN 20 NM RADIUS OF POINT 21.4 S / 43.9 E

(TWENTY ONE DECIMAL FOUR DEGREES SOUTH AND  
FORTY THREE DECIMAL NINE DEGREES EAST)

MOVEMENT: EAST 9 KT

3.A DVORAK ANALYSIS: NIL

4.A CENTRAL PRESSURE: 989 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 50 KT

RADIUS OF MAXIMUM WINDS (RMW): 35 KM

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

28 KT NE: 95 SE: 95 SW: 175 NW: 155

34 KT NE: 0 SE: 35 SW: 130 NW: 110

48 KT NE: 0 SE: 0 SW: 0 NW: 85

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 900 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2024/01/02 06 UTC: 21.5 S / 45.6 E, VENT MAX= 030 KT, OVERLAND DEPRESSION

28 KT NE: 0 SE: 130 SW: 150 NW: 0

24H: 2024/01/02 18 UTC: 21.6 S / 47.7 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

36H: 2024/01/03 06 UTC: 22.0 S / 49.3 E, VENT MAX= 035 KT, MODERATE TROPICAL  
STORM

28 KT NE: 110 SE: 165 SW: 150 NW: 100

34 KT NE: 0 SE: 100 SW: 0 NW: 0

48H: 2024/01/03 18 UTC: 23.1 S / 51.0 E, VENT MAX= 040 KT, MODERATE TROPICAL  
STORM

28 KT NE: 0 SE: 130 SW: 110 NW: 0

34 KT NE: 0 SE: 85 SW: 0 NW: 0

60H: 2024/01/04 06 UTC: 24.3 S / 52.9 E, VENT MAX= 030 KT, POST-TROPICAL  
DEPRESSION

28 KT NE: 120 SE: 130 SW: 0 NW: 0

72H: 2024/01/04 18 UTC: 25.2 S / 54.7 E, VENT MAX= 025 KT, FILLING UP

2.B LONGER-RANGE OUTLOOK:  
NIL

2.C ADDITIONAL INFORMATION:

\*\*\*HAPPY NEW YEAR 2024 FROM RSMC LA REUNION\*\*\*

T=CI=/

ALVARO REACHED THE WEST COAST OF MADAGASCAR, CLOSE TO MOROMBE (TULEAR PROVINCE) AT AROUND 16Z. SINCE 12Z, ALVARO'S CLOUD PATTERN HAS GRADUALLY DETERIORATED AS IT APPROACHED THE MALAGASY MAINLAND, BUT ALSO DUE TO PERSISTENT AND SUSTAINED MID-TROPOSPHERIC WESTERLY SHEAR ACCORDING TO THE LATEST CIMSS DATA, AND THE LATEST WATER VAPOR IMAGES SHOWING AN ARC OF SHEAR IN THE WESTERN SEMICIRCLE. THE CLOUD TOPS GRADUALLY WARMED UP, AND THE CHALKY EYE OBSERVED THIS AFTERNOON GRADUALLY DISAPPEARED BENEATH THE MAIN CONVECTION A LITTLE BEFORE 13Z. HOWEVER, A SKETCH OF AN EYE REAPPEARED SURREPTITIOUSLY AROUND 17Z, PROVIDING FAIRLY RELIABLE DATA FOR THE OBSERVATION POINT AND STILL SUGGESTING HIGH INTENSITY. THE LATEST SSMIS F-16 AND SSMIS F-17 IMAGES FROM 1516Z AND 1608Z SUPPORT THIS VIEW AND STILL SHOWED A SOLID, WELL-CONSTITUTED 89 GHZ HOT CORE. THE FINAL INTENSITY WAS RAISED TO 50KT IN THE LIGHT OF THESE ELEMENTS AND THE LATEST OBJECTIVE AND SUBJECTIVE DATA.

NO CHANGE IN TERMS OF TRAJECTORY, ALVARO IS FOLLOWING THE WESTERLY FLOW DRIVEN BY A NEAR-EQUATORIAL RIDGE LOCATED FURTHER NORTH AND A WEAK TROUGH PASSING FURTHER SOUTH. AFTER CROSSING THE MADAGASCAN MAINLAND ON TUESDAY, THE VORTEX SHOULD EMERGE OVER THE EAST COAST OF MADAGASCAR IN THE MANAKARA SECTOR (FIANARANTSOA PROVINCE) ON TUESDAY NIGHT. IT SHOULD BE NOTED THAT THERE IS STILL SOME UNCERTAINTY AS TO THE SPEED AT WHICH ALVARO WILL MOVE OVER LAND, LEAVING CONSIDERABLE UNCERTAINTY AS TO THE TIMING OF ITS EMERGENCE AT SEA. THEREAFTER, GUIDED BY THE RIDGE OF HIGH PRESSURE FORTIFYING ITSELF OVER THE NORTHERN MASCARENE ISLANDS AND BY THE FLOW FURTHER SOUTH, ALVARO WILL CONTINUE ITS COURSE IN A GENERAL SOUTH-EASTERLY DIRECTION, BRINGING IT UNDER INCREASINGLY UNFAVORABLE ENVIRONMENTAL CONDITIONS, WITHIN WHICH THE SYSTEM WILL GRADUALLY LOSE ITS PURELY TROPICAL CHARACTERISTICS.

DUE TO ITS MARKED INTERACTION WITH THE MALAGASY LANDS, ALVARO HAS ABRUPTLY LEFT THE WARM WATERS OF THE MOZAMBIQUE CHANNEL, ALONG THE TULEAR PROVINCE. MOREOVER, THE SHEAR IS SET TO CONTINUE UNDERMINING THE SYSTEM TO SOME EXTENT. IN SPITE OF EVERYTHING, CONVECTIVE ACTIVITY SHOULD REMAIN HIGH DUE TO INERTIA. THE VORTEX SHOULD RECONSOLIDATE LATE ON TUESDAY NIGHT AND EMERGE TO THE EAST OF MADAGASCAR, THANKS TO GOOD SURFACE LOW LEVEL CONVERGENCE AND A TEMPORARY RETURN TO COASTAL WARMTH. THIS POTENTIAL FOR REINTENSIFICATION COULD BE REDUCED IF THE VORTEX WEAKENS MORE MARKEDLY AS IT CROSSES MADAGASCAR. IN THE CASE OF THE CURRENT FORECAST, REINTENSIFICATION IS THEN POSSIBLE FOR ALMOST 24 HOURS, BUT THE INCREASE IN SHEAR AND THE INTRUSION OF DRY AIR

FROM THE NORTH-WESTERN SECTOR OF THE SYSTEM SHOULD THEN CONTINUALLY WEAKEN ALVARO FROM WEDNESDAY EVENING.

IMPACTS ON MADAGASCAR (BY DEFAULT, THE CHRONOLOGY OF EVENTS IS GIVEN IN UTC):

- GALE FORCE TO STRONG GALE FORCE WINDS CURRENTLY AFFECTING THE PROVINCE OF TULEAR UNTIL MID-NIGHT ON MONDAY TO TUESDAY. GALE FORCE WINDS MAY OCCASIONALLY BLOW OVER FIANARANTSOA PROVINCE ON TUESDAY MORNING.
- HEAVY RAIN AND RISK OF LOCAL FLOODING THIS EVENING ON THE WEST COAST OF TULEAR PROVINCE, OF THE ORDER OF 100 TO 200MM SPREADING EASTWARDS ON TUESDAY, AS FAR AS FIANARANTSOA PROVINCE. ACCUMULATIONS IN THE ORDER OF 100-200MM UP TO LOCALLY 300MM DURING THE PASSAGE OF ALVARO. IN THE MANAKARA AREA, RAINFALL COULD BE HEAVIER (LOCALLY 400/ 500 MM) DUE TO EXISTING CONVECTIVE ACTIVITY GENERATED BY THE CONVERGENCE OF COASTAL FLOWS, AFTER THE PASSAGE OF THE SYSTEM.
- AVERAGE WAVES OF THE ORDER OF 4 TO 6M THIS EVENING BETWEEN 12UTC AND 21UTC, CLOSE TO THE IMPACT ZONE, ALONG THE COASTS OF TULEAR PROVINCE. RESIDUAL WAVES OF THE ORDER OF 4M ARE ALSO POSSIBLE ON THE PROVINCE'S NORTHERN COAST UNTIL 00Z.
- A SURGE OF THE ORDER OF A METRE IS POSSIBLE AROUND THE ALVARO LANDING POINT.