

WTIO30 FMEE 171214

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 1/8/20202021

1.A MODERATE TROPICAL STORM 8 (JOSHUA)

2.A POSITION 2021/01/17 AT 1200 UTC:

WITHIN 20 NM RADIUS OF POINT 18.3 S / 89.1 E

(EIGHTEEN DECIMAL THREE DEGREES SOUTH AND
EIGHTY NINE DECIMAL ONE DEGREES EAST)

MOVEMENT: WEST 8 KT

3.A DVORAK ANALYSIS: 3.0/3.0/S 0.0/12 H

4.A CENTRAL PRESSURE: 994 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 40 KT

RADIUS OF MAXIMUM WINDS (RMW): 56 KM

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

28 KT NE: 0 SE: 185 SW: 185 NW: 95

34 KT NE: 0 SE: 110 SW: 110 NW: 55

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1004 HPA / 400 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2021/01/18 00 UTC: 18.8 S / 87.6 E, VENT MAX= 045 KT, MODERATE TROPICAL
STORM

28 KT NE: 35 SE: 100 SW: 95 NW: 100

34 KT NE: 30 SE: 65 SW: 55 NW: 35

24H: 2021/01/18 12 UTC: 18.9 S / 85.8 E, VENT MAX= 040 KT, MODERATE TROPICAL
STORM

28 KT NE: 35 SE: 100 SW: 95 NW: 85

34 KT NE: 30 SE: 65 SW: 65 NW: 35

36H: 2021/01/19 00 UTC: 18.9 S / 83.9 E, VENT MAX= 035 KT, MODERATE TROPICAL
STORM

28 KT NE: 35 SE: 100 SW: 85 NW: 55

34 KT NE: 30 SE: 55 SW: 35 NW: 35

48H: 2021/01/19 12 UTC: 19.0 S / 81.6 E, VENT MAX= 030 KT, TROPICAL DEPRESSION

28 KT NE: 10 SE: 45 SW: 65 NW: 55

60H: 2021/01/20 00 UTC: 19.6 S / 79.3 E, VENT MAX= 030 KT, TROPICAL DEPRESSION

28 KT NE: 10 SE: 75 SW: 45 NW: 55

72H: 2021/01/20 12 UTC: 20.3 S / 77.2 E, VENT MAX= 025 KT, FILLING UP

2.B LONGER-RANGE OUTLOOK:

96H: 2021/01/21 12 UTC: 22.1 S / 73.4 E, VENT MAX= 020 KT, REMNANT LOW

2.C ADDITIONAL INFORMATION:

T=CI=3.0-

INITIALLY FOLLOWED BY THE BOM THROUGH THE IDW27600 BULLETINS, THE MODERATE TROPICAL STORM JOSHUA ENTERED THE SOUTHWESTERN INDIAN OCEAN BASIN FOR WHICH THE RSMC OF THE REUNION HAS THE RESPONSIBILITY. THIS SYSTEM THUS DEFINES THE 8TH SYSTEM FOLLOWED BY THE RSMC OF THE REUNION BUT KEEPS ITS AUSTRALIAN NAME: JOSHUA. DURING THE LAST 6 HOURS AND COMPARED TO THE PREVIOUS ANALYSIS MADE BY THE BOM, JOSHUA PRESENTS A CLOUDY CONFIGURATION THAT IS REGAINING STRENGTH WITH CLOUD TOPS THAT ARE COOLING. THE CLOUD PATTERN HAS ALSO SPREAD IN THE SOUTHERN SECTOR OF THE SYSTEM DEFINING A CONFIGURATION CLOSE TO THE CDO WITH A CENTER AT THE NORTHERN EDGE OF THE CONVECTION, MOST CERTAINLY RELATED TO THE PRESENCE OF DRY AIR ROLLING FROM THE WESTERN SECTOR TO THE NORTHERN SECTOR OF THE MODERATE TROPICAL STORM. IN THE ABSENCE OF ANY EXPLOITABLE ASCAT SWATH DURING THE LAST HOURS, THE DVORAK ANALYSIS ALLOWS TO ESTIMATE WINDS OF THE ORDER OF 40KT.

IN TERMS OF TRACK FORECASTS, JOSHUA IS UNDER THE INFLUENCE OF THE END OF THE SUBTROPICAL RIDGE PRESENT ON THE WESTERN PART OF THE AUSTRALIAN BASIN AND WHICH IS SHIFTING WESTWARD IMPOSING A GLOBAL DIRECTIONAL FLOW TOWARDS THE WEST. ALL THE GUIDES ARE IN GOOD AGREEMENT WITH THIS TRACK WHICH SHOULD EVOLVE LITTLE DURING THE NEXT 48 HOURS. THEREAFTER, IN CONNECTION WITH THE WEAKENING OF JOSHUA, THE GUIDING FLOW WILL BE LOCALIZED MORE IN LOW LAYERS AND WILL TAKE A WEST-SOUTHWEST AND AFTER SOUTHWEST DIRECTION DURING THE END OF JOSHUA'S LIFE.

FOLLOWING THIS TRACK, JOSHUA FINDS ITSELF WITH marginally favorable intensification conditions (low wind shear and good polar divergence) with a maintenance or even a slight intensification for the next 12 hours. THEREAFTER, THE DRY AIR ALREADY PRESENT IN THE WESTERN AND NORTHERN SECTOR WILL PROGRESSIVELY ERODE THE CONVECTION AND GRADUALLY WEAKEN THE SYSTEM. THE OMNIPRESENT DRY AIR AND THE INCREASE OF THE ALTITUDE SHEAR DUE TO THE PASSAGE OF THE TROUGH FURTHER SOUTH WILL LEAVE JOSHUA AT THE STAGE OF REMNANT LOW AT THE END OF 4/5 DAYS.