



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI TROPICAL WEATHER OUTLOOK

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 22.10.2023

FROM: RSMC -TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR) STORM WARNING CENTRE, BANGKOK (THAILAND) STORM WARNING CENTRE, COLOMBO (SRILANKA) STORM WARNING CENTRE, DHAKA (BANGLADESH) STORM WARNING CENTRE, KARACHI (PAKISTAN) METEOROLOGICAL OFFICE, MALE (MALDIVES) OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH) YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH) PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH) IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH) QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 10 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 22.10.2023 BASED ON 0300 UTC OF 22.10.2023.

SUB: (A) VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) INTENSIFIED INTO EXTREMELY SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA.

(B) DEPRESSION OVER WESTCENTRAL BAY OF BENGAL.

(A) VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) INTENSIFIED INTO EXTREMELY SEVERE CYCLONIC STORM OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA.

THE VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA INTENSIFIED INTO AN EXTREMELY SEVERE CYCLONIC STORM, MOVED NORTHWESTWARDS WITH A SPEED OF 16 KMPH DURING PAST 6 HOURS, AND LAY CENTERED AT 0300 UTC OF TODAY, THE 22ND OCTOBER OVER THE SAME REGION, NEAR LATITUDE 12.3°N AND LONGITUDE 55.4°E ABOUT 160 KM EAST-SOUTHEAST OF SOCOTRA (YEMEN), 540 KM SOUTH-SOUTHEAST OF SALALAH (OMAN, 41316) AND 550 KM SOUTHEAST OF AL GHAIDAH (YEMEN, 41398).

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS YEMEN-OMAN COASTS BETWEEN AL GHAIDAH (YEMEN, 41398) & SALALAH (OMAN, 41316), CLOSE TO EAST OF AL GHAIDAH (YEMEN, 41398) AROUND 0600 UTC OF 24TH OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH WIND SPEED OF 115-125 KMPH GUSTING TO 140 KMPH.

| Date/Time(UTC) | | Maximum sustained surface | Category of cyclonic |
|----------------|---------------------|---------------------------|---------------------------------|
| | (Lat. ⁰N/ long. ⁰E) | wind speed (Kmph) | disturbance |
| 22.10.23/0300 | 12.3/55.4 | 170-180 gusting to 200 | Extremely Severe Cyclonic Storm |
| 22.10.23/0600 | 12.6/54.9 | 180-190 gusting to 210 | Extremely Severe Cyclonic Storm |
| 22.10.23/1200 | 13.2/54.3 | 190-200 gusting to 220 | Extremely Severe Cyclonic Storm |
| 22.10.23/1800 | 13.8/53.9 | 180-190 gusting to 210 | Extremely Severe Cyclonic Storm |
| 23.10.23/0000 | 14.4/53.5 | 170-180 gusting to 200 | Extremely Severe Cyclonic Storm |
| 23.10.23/1200 | 15.1/53.1 | 150-160 gusting to 175 | Very Severe Cyclonic Storm |
| 24.10.23/0000 | 16.0/52.5 | 125-135 gusting to 150 | Very Severe Cyclonic Storm |
| 24.10.23/1200 | 16.8/52.0 | 90-100 gusting to 110 | Severe Cyclonic Storm |
| 25.10.23/0000 | 17.6/51.6 | 60-70 gusting to 80 | Cyclonic Storm |
| 25.10.23/1200 | 18.6/51.1 | 30-40 gusting to 50 | Depression |

FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN BELOW:

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 5.0 AND RAGGED EYE IS SEEN IN VISIBLE/INFRARED IMAGERY. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST & ADJOINING WESTCENTRAL ARABIAN SEA BETWEEN LAT 9.0N TO 16.0N LONG 53.0E TO 60.0E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 93°C. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN NORTHEAST & ADJOINING NORTHWEST SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE. DRY AIR INCURSION IS EXPECTED FROM ARABIAN PENINSULA AS THE SYSTEM MOVES NEAR THE YEMEN-OMAN COASTS.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 95 KNOTS GUSTING TO 105 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 964 HPA.

SEA CONDITION:

• SOUTHWEST ARABIAN SEA:

PHENOMENAL SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 23RD OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY BECOMING **HIGH TO VERY HIGH** FROM 0000 UTC OF 24TH AND CONTINUE TILL 1200 UTC. THEREAFTER, IT WOULD IMPROVE GRADUALLY.

• WESTCENTRAL ARABIAN SEA:

PHENOMENAL SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 1200 UTC OF 24TH OCTOBER. IT WOULD IMPROVE GRADUALLY THEREAFTER BECOMING **VERY HIGH TO HIGH** FROM 1200 UTC OF 24TH AND VERY ROUGH TO ROUGH BY 1200 UTC OF 25TH OCTOBER. THEREAFTER, IT WOULD IMPROVE GRADUALLY.

• STORM SURGE GUIDANCE:

STORM SURGE ABOUT 2 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREA NEAR THE LANDFALL POINT AT THE TIME OF LANDFALL.

(B) DEPRESSION OVER WESTCENTRAL BAY OF BENGAL.

THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 06 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 22ND OCTOBER OVER THE SAME REGION, NEAR LATITUDE 15.0°N AND LONGITUDE 86.2°E ABOUT 590 KM SOUTH OF PARADIP (INDIA, 42976), 740 KM SOUTH OF DIGHA (INDIA, 42901), AND 880 KM SOUTH-SOUTHWEST OF KHEPUPARA (BANGLADESH, 41984).

IT IS LIKELY TO FURTHER INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 12 HOURS. IT IS LIKELY TO MOVE NORTHWESTWARDS DURING NEXT 12 HOURS, THEN RECURVE AND MOVE NORTH-NORTHEASTWARDS DURING SUBSEQUENT 3 DAYS TOWARDS BANGLADESH AND ADJOINING WEST BENGAL COASTS.

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 1.5. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING NORTH BAY OF BENGAL BETWEEN LAT 14.0[°]N TO 20.0N LONG 84.0[°]E TO 90.0[°]E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 85[°]C. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN NORTHEAST & ADJOINING NORTHWEST SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1006 HPA.

| Date/Time(IST) | Position (Lat. ⁰ N/ long. ⁰ E) | Maximum sustained surface wind speed (Kmph) | Category of cyclonic disturbance |
|----------------|---|--|-------------------------------------|
| 22.10.23/0300 | 15.0/86.2 | 40-50 gusting to 60 | Depression |
| 22.10.23/1200 | 15.4/85.7 | 50-60 gusting to 70 | Deep Depression |
| 23.10.23/0000 | 16.0/85.7 | 50-60 gusting to 70 | Deep Depression |
| 23.10.23/1200 | 17.1/86.3 | 55-65 gusting to 75 | Deep Depression |
| 24.10.23/0000 | 18.4/87.1 | 60-70 gusting to 80 | Cyclonic Storm |
| 24.10.23/1200 | 19.5/88.0 | 60-70 gusting to 80 | Cyclonic Storm |
| 25.10.23/0000 | 20.6/88.9 | 60-70 gusting to 80 | Cyclonic Storm |

FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN BELOW:

REMARKS:

ARABIAN SEA:

MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 8 WITH AMPLITUDE LESS THAN 1. IT WOULD CONTINUE IN SAME PHASE DURING NEXT 5 DAYS. SEA SURFACE TEMPERATURE IS 28-30°C OVER SOUTH & WESTCENTRAL ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS AROUND 75 KJ/CM² OVER SOUTHWEST ARABIAN SEA NEAR THE SYSTEM LOCATION. IT WOULD DECREASE GRADUALLY BECOMING 15-35 KJ/CM² OVER WESTCENTRAL ARABIAN SEA & ALONG & OFF OMAN-YEMEN COASTS.

THE LOW LEVEL POSITIVE VORTICITY IS AROUND 150-200 X10⁻⁶S⁻¹ AROUND THE

SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30X10⁻⁵S⁻¹ TO THE SOUTHEAST OF SYSTEM AREA. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 50 X10⁻⁵ S⁻¹ TO THE SOUTHWEST OF THE SYSTEM AREA. STRONG OUTFLOW IS SEEN IN UPPER LEVELS. WIND SHEAR IS MODERATE (10—15 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK AND IT IS MODERATE TO HIGH OVER WSTERN PARTS OF WESTCENTRAL ARABIAN SEA. UPPER TROPOSPHERIC RIDGE RUNS NEAR 14⁰N IN ASSOCIATION WITH ANTICYCLONIC CIRCULATION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA. AS SUCH, TC TEJ LIES ON THE PERIPHERY OF THIS ANTICYCLONE AND HENCE, ACCORDINGLY SHOWS WEST-NORTHWESTWARDS MOVEMENT. AS IT MOVES AWAY FROM THIS ANTICYCLONE, ALONG THE PERIPHERY, IT'S DIRECTION OF MOVEMENT WOULD GRADUALLY CHANGE FROM WEST-NORTHWESTWARDS TO NORTHWESTWARDS TO NORTH-NORTHWESTWARDS LEADING TO LANDFALL OVER YEMEN AND ADJOINING OMAN.

FURTHER DURING NEXT 24 HOURS, HIGHER SST, HIGHER OCEAN THERMAL ENERGY, LOW-MODERATE VERTICAL WIND SHEAR, STRONG OUTFLOW IN UPPER LEVELS WOULD MAKE CONDITIONS FAVOURABLE FOR RAPID INTENSIFICATION. TEMPORARILY, IT MAY ALSO INTENSIFY INTO AN EXTREMELY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA WITH WIND SPEED REACHING UPTO 90-95 KNOTS AROUND 0600 UTC OF 22ND OCTOBER. AS IT MOVES CLOSER TO COAST, IT WILL ENCOUNTER DRY AIR INCURSION AND COLDER SST AND HENCE MAY EXHIBIT WEAKENING PRIOR TO LANDFALL.

THE MULTI MODEL GUIDANCE IS INDICATING THE SYSTEM TO MOVE NORTHWESTWARDS TILL 0000 UTC OF 24TH & THEN NORTH-NORTHWESTWARDS. MOST OF THE MODELS ARE INDICATING THE SYSTEM TO CROSS OMAN – YEMEN COASTS (ECMWF, UKMO, IMD HWRF TOWARDS YEMEN AND IMD MME, NCEP, CMC, NCUM, IMD GFS, SLIGHTLY TOWARDS OMAN) AROUND 1200 UTC OF 24TH OCTOBER. BUT THERE IS CONSENSUS THAT CROSSING WOULD BE OVER YEMEN & ADJOINING OMAN COASTS. MODELS ARE ALSO SUGGESTING SLIGHT WEAKENING PRIOR TO LANDFALL. THIS IS SUPPORTED BY DECREASING OCEAN THERMAL ENERGY AND INCREASING WIND SHEAR OVER WESTCENTRAL ARABIAN SEA ALONG & OFF OMAN-YEMEN COASTS.

IN VIEW OF ABOVE, THE VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) IT IS VERY LIKELY TO INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM IN THE 0600 UTC OF 22ND OCTOBER. IT IS VERY LIKELY TO MOVE NORTHWESTWARDS TILL 0000UTC OF 24TH & THEN NORTH-NORTHWESTWARDS. IT IS LIKELY TO CROSS YEMEN-OMAN COASTS BETWEEN AL GHAIDAH (YEMEN, 41398) & SALALAH (OMAN, 41316) BY 1200 UTC OF 24TH OCTOBER 2023.

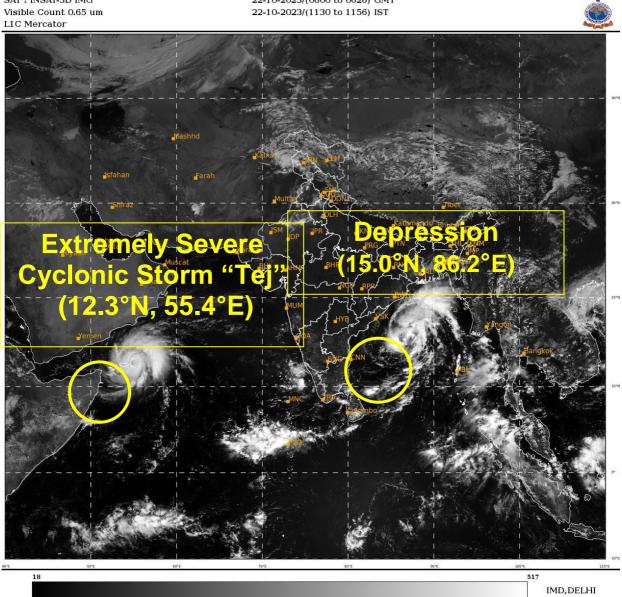
BAY OF BENGAL:

MJO IS NOT SUPPORTIVE FOR CYCLOGENESIS OVER BOB. HOWEVER, WARM SST AND LOW TO MODERATE VERTICAL WIND SHEAR OVER SOUTH & CENTRAL BOB ARE LIKELY TO SUPPORT THE DEVELOPMENT OF DEEP DEPRESSION OVER BOB. THE GLOBAL MODELS ARE IN AGREEMENT THAT THE LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEEP DEPRESSION DURING NEXT 24 HOURS. AND FURTHER INTENSIFY INTO A CYCLONIC STORM AROUND 1800 UTC OF 23RD OCTOBER 2023.

THERE IS CONSENSUS AMONG VARIOUS MODELS WRT MOVEMENT TOWARDS BANGLADESH. MOST OF THE MODELS ARE INDICATING INTENSIFICATION UPTO DEEP DEPRESSION STAGE, HOWEVER CMC AND IMDGEFS IS INDICATING HIGHER INTENSITY.

CONSIDERING ALL THESE, THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL IS LIKELY TO FURTHER INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 24 HOURS. IT IS LIKELY TO MOVE NORTHWESTWARDS DURING NEXT 12 HOURS, THEN RECURVE AND MOVE NORTH-NORTHEASTWARDS DURING SUBSEQUENT 3 DAYS TOWARDS BANGLADESH AND ADJOINING WEST BENGAL COASTS.

> (SHASHI KANT) SCIENTIST-D RSMC, NEW DELHI



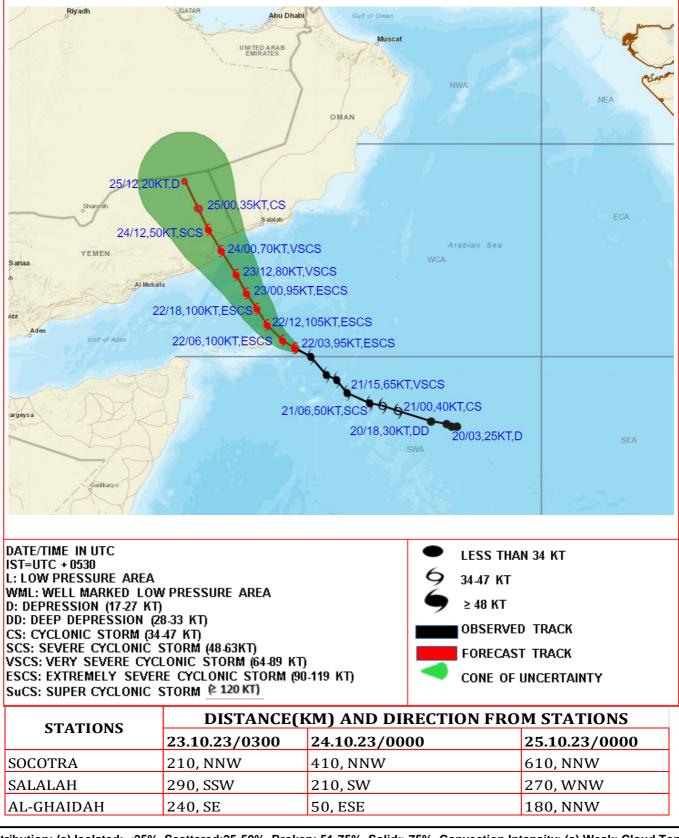
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100% This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

SAT : INSAT-3D IMG

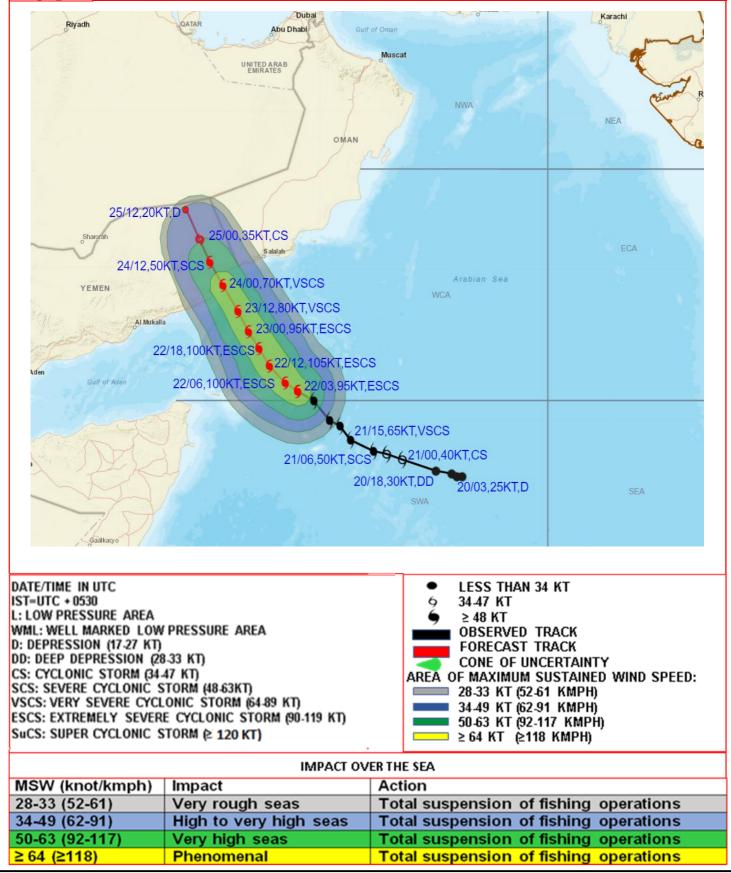
22-10-2023/(0600 to 0626) GMT



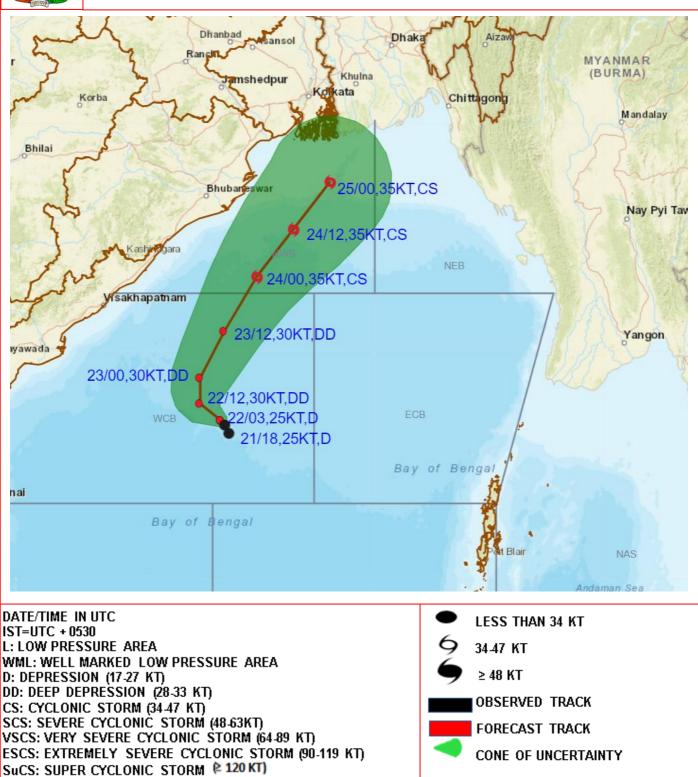
OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF EXTREMELY SEVERE CYCLONIC STORM "TEJ" OVER WESTCENTRAL AND ADJOINING SOUTHWEST ARABIAN SEA BASED ON 0300 UTC (0830 IST) OF 22ND OCTOBER 2023.



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF EXTREMELY SEVERE CYCLONIC STORM "TEJ" OVER WESTCENTRAL AND ADJOINING SOUTHWEST ARABIAN SEA BASED ON 0300 UTC (0830 IST) OF 22ND OCTOBER 2023.

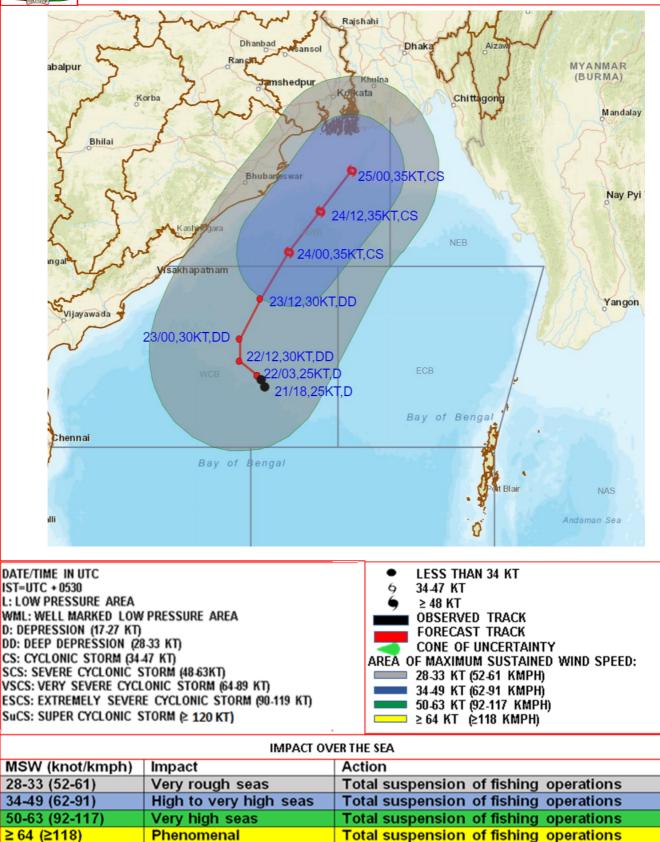


OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 22ND OCTOBER 2023.





OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 22ND OCTOBER 2023.



WEATHER WARNING GRAPHICS

