



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. 13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 22.10.2023 BASED ON 1200 UTC OF 22.10.2023.

SUB: (A) EXTREMELY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER WESTCENTRAL ARABIAN SEA AND (B) DEPRESSION INTENSIFIED INTO DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL

(A) EXTREMELY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER WESTCENTRAL ARABIAN SEA

THE EXTREMELY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER WESTCENTRAL & ADJOINING SOUTHWEST ARABIAN SEA MOVED NORTHWESTWARDS WITH A SPEED OF 18 KMPH DURING PAST 6 HOURS, AND LAY CENTERED AT 1200 UTC OF TODAY, THE 22ND OCTOBER OVER WESTCENTRAL ARABIAN SEA, NEAR LATITUDE 13.3°N AND LONGITUDE 54.4°E ABOUT 90 KM NORTH-NORTHEAST OF SOCOTRA (YEMEN, 41494), 410 KM SOUTH OF SALALAH (OMAN, 41316) AND 390 KM SOUTHEAST OF AL GHAIDAH (YEMEN, 41398).

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS YEMEN COAST CLOSE TO AL GHAIDAH DURING 1800-2100 UTC OF $23^{\rm RD}$ OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH WIND SPEED OF 125-135 KMPH GUSTING TO 150 KMPH (70 KNOTS GUSTING 80 KNOTS).

FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN BELOW:

DATE/TIME (UTC)	POSITION (LAT. ⁰ N/ LONG. ⁰ E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
22.10.23/1200	13.3/54.4	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM
22.10.23/1800	13.9/53.8	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM

23.10.23/0000	14.5/53.3	165-175 GUSTING TO 195	EXTREMELY SEVERE CYCLONIC STORM
23.10.23/0600	15.0/52.9	150-160 GUSTING TO 175	VERY SEVERE CYCLONIC STORM
23.10.23/1200	15.5/52.5	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
24.10.23/0000	16.0/52.0	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
24.10.23/1200	16.4/51.5	70-80 GUSTING TO 90	CYCLONIC STORM
25.10.23/0000	16.8/50.9	30-40 GUSTING TO 50	DEPRESSION

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 5.0 AND RAGGED EYE IS SEEN IN BOTH VISIBLE AND IR IMAGERIES. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL & SOUTHWEST ARABIAN SEA BETWEEN LAT 9.0N TO 16.5N LONG 51.0E TO 60.0E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 80°C. SYSTEM IS CHARACTERISED BY GOOD EQUATOR-WARD OUTFLOW. THE OUTERMOST OUTFLOW BANDS ARE SEEN OVER N SOMALIA EAST YEMEN AND SOUTH OMAN.

MULTISATELLITE WINDS INDICATE STRONGER WINDS IN THE EASTERN 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 FROM 23RD OCTOBER.

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 0000 UTC OF 23^{RD} OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY BECOMING **HIGH TO VERY ROUGH** TILL 1200 UTC OF 23^{RD} , VERY ROUGH TO ROUGH TILL 1200 UTC OF 24^{TH} OCTOBER AND WOULD IMPROVE THEREAFTER.

• WESTCENTRAL ARABIAN SEA:

PHENOMENAL SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 1200 UTC OF 23RD OCTOBER. IT WOULD IMPROVE GRADUALLY THEREAFTER BECOMING **HIGH TO VERY ROUGH** BY 2100 UTC OF 23RD OCTOBER. THEREAFTER, IT WOULD IMPROVE GRADUALLY.

(B) DEPRESSION OVER WESTCENTRAL BAY OF BENGAL.

THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 17 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTERED AT 1200 UTC OF TODAY, THE 22ND OCTOBER OVER THE SAME REGION, NEAR LATITUDE 16.2°N AND LONGITUDE 86.4°E ABOUT 450 KM SOUTH OF PARADIP (ODISHA, 42976), 560 KM SOUTH-SOUTHWEST OF DIGHA (WEST BENGAL, 42901), AND 750 KM SOUTH-SOUTHWEST OF KHEPUPARA (BANGLADESH, 41984).

IT IS LIKELY TO INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS LIKELY TO MOVE NEARLY NORTHWARDS TILL 0000 UTC OF 23RD OCTOBER, THEN NORTH-NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA AND CHITTAGONG AROUND 1200 UTC OF 25TH OCTOBER AS A DEEP DEPRESSION.

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 2.0. SHEAR PATTERN IS SEEN IN CLOUD IMAGERY. CLOUDS ARE SHEARED IN NORTHEAST SECTOR. BANDING FEATURES ARE APPEARING IN CLOUD IMAGERY ALONGWITH INCREASE IN CONVECTIVE CLOUDS IN CORE AREA, INDICATING FURTHER INTENSIFICATION OF THE SYSTEM. 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 AND LONG 84.0°E TO 91.0°E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 84°C. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN EASTERN SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1003 HPA.

FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN BELOW:

DATE/TIME(UTC)		MAXIMUM SUSTAINED	CATEGORY OF CYCLONIC
	LAT. ⁰N/ LONG. ºE		DISTURBANCE
		WIND SPEED (KMPH)	
22.10.23/1200	16.2/86.4	50-60 GUSTING TO 70	DEEP DEPRESSION
22.10.23/1800	16.6/86.4	50-60 GUSTING TO 70	DEEP DEPRESSION
23.10.23/0000	17.3/86.5	55-65 GUSTING TO 75	DEEP DEPRESSION
23.10.23/0600	17.9/86.6	55-65 GUSTING TO 75	DEEP DEPRESSION
23.10.23/1200	18.6/86.9	60-70 GUSTING TO 80	CYCLONIC STORM
24.10.23/0000	19.5/87.7	60-70 GUSTING TO 80	CYCLONIC STORM
24.10.23/1200	20.4/88.8	60-70 GUSTING TO 80	CYCLONIC STORM
25.10.23/0000	21.2/89.7	55-65 GUSTING TO 75	DEEP DEPRESSION
25.10.23/1200	21.9/90.5	50-60 GUSTING TO 70	DEEP DEPRESSION
26.10.23/0000	22.8/91.0	40-50 GUSTING TO 60	DEPRESSION

WIND GUIDANCE (WARNING GRAPHICS ENCLOSED):

- WESTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH IS PREVAILING AND LIKELY TO INCREASE BECOMING 55-65 KMPH GUSTING TO 75 KMPH FROM 1200 UTC 23RD TILL 0000 UTC OF 24TH OCTOBER. IT IS LIKELY TO DECREASE GRADUALLY THEREAFTER BECOMING SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING 60 KMPH BY 1200 UTC OF 24TH
- ADJOINING EASTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL TILL 0000 UTC OF 23RD OCTOBER AND BECOMING 50-60 KMPH GUSTING TO 70 KMPH ON 24TH AND DECREASE FROM 25TH ONWARDS.
- NORTH BAY OF BENGAL:
 - SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY ON 22ND and likely to increase gradually becoming **Gale Wind** speed reaching 60-70 kmph gusting to 80 kmph on 24TH october.
- ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS:
 - SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY FROM 1200 UTC OF 23RD TO 24TH ALONG & OFF ODISHA COAST. SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO COMMENCE ALONG & OFF WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS FROM 0000 UTC OF 24TH. IT WOULD GRADUALLY INCREASE BECOMING 55-65

KMPH GUSTING TO 75 KMPH ALONG & OFF BANGLADESH COAST, 50-60 KMPH GUSTING TO 70 KMPH ALONG & OFF NORTH MYANMAR COAST AND 45-55 KMPH GUSTING TO 65 ALONG & OFF WEST BENGAL COAST ON 25TH OCTOBER.

SEA CONDITION

- WESTCENTRAL BAY OF BENGAL: ROUGH TO VERY ROUGH SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 25TH OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- ADJOINING EASTCENTRAL BAY OF BENGAL: MODERATE TO ROUGH SEA CONDITION IS PREVAILING AND LIKELY TILL 24TH OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- ADJOINING SOUTHWEST BAY OF BENGAL: MODERATE TO ROUGH SEA CONDITION IS PREVAILING AND LIKELY TILL 1800 UTC OF 22ND OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- NORTH BAY OF BENGAL: ROUGH SEA CONDITION IS LIKELY ON 23RD AND BECOMING VERY ROUGH TO HIGH FROM 24TH AND VERY ROUGH ON 25TH OCTOBER.
- ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS: ROUGH SEA CONDITION IS LIKELY ON 23RD AND BECOMING ROUGH TO VERY ROUGH SEA CONDITION FROM 24TH TO 25TH OCTOBER.

REMARKS:

ARABIAN SEA:

MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 8 WITH AMPLITUDE LESS THAN 1. IT WOULD CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. SEA SURFACE TEMPERATURE IS 28-30°C OVER WESTCENTRAL ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS AROUND 20-30 KJ/CM² OVER WESTCENTRAL ARABIAN SEA NEAR THE SYSTEM LOCATION AND ALSO ALONG & OFF OMAN-YEMEN COASTS. THE LOW LEVEL POSITIVE VORTICITY HAS DECREASED AND IS AROUND 200 X10-6S-1 TO THE SOUTH OF THE SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 40X10-5S-1 TO THE NORTHEAST OF SYSTEM CENTER. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 50 X10-5 S-1 TO THE SOUTH OF SYSTEM CENTRE. WIND SHEAR IS LOW TO MODERATE (15-20 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK.

EXISTING FEATURES INDICATE THAT THE SYSTEM IS IN FAVOURABLE ENVIRONMENT AND HENCE IT IS LIKELY TO MAINTAIN ITS INTENSITY TILL 23RD/0000 UTC. THEREAFTER, IT WOULD ENTER AN AREA OF LOW OCEAN THERMAL ENERGY AND DRY COLD AIR INCURSION INTO THE CORE FROM ARABIAN PENINSULAR REGION.

MOST OF THE MODELS ARE INDICATING THE SYSTEM TO CROSS YEMEN (EXCEPT IMD GEFS). IMD MULTI MODEL GUIDANCE IS ALSO INDICATING LANDFALL OVER YEMEN. MOST OF THE MODELS ARE INDICATING WEAKENING PRIOR TO LANDFALL. THIS IS SUPPORTED BY DECREASING OCEAN THERMAL ENERGY AND INCREASING WIND SHEAR AND COLD DRY AIR ENTRAINMENT WHEN SYSTEM WILL APPROACH COAST.

IN VIEW OF ABOVE, THE VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS YEMEN COAST CLOSE TO AL GHAIDAH (YEMEN) DURING 1800-2100 UTC OF $23^{\rm RD}$ OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH WIND SPEED OF 125-135 KMPH GUSTING TO 150 KMPH (70 KNOTS GUSTING 80 KNOTS).

BAY OF BENGAL:

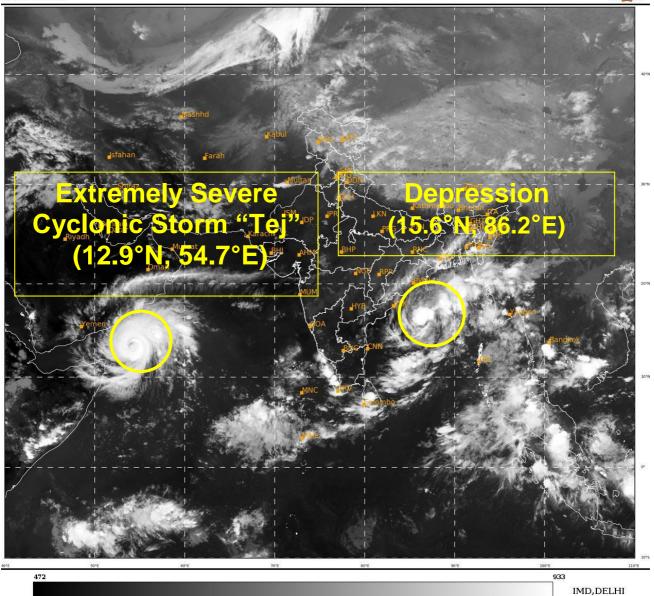
MJO IS NOT SUPPORTIVE FOR CYCLOGENESIS OVER BOB. HOWEVER, WARM SST AND LOW TO MODERATE VERTICAL WIND SHEAR OVER SOUTH & CENTRAL BOB ARE LIKELY TO SUPPORT THE DEVELOPMENT OF DEEP DEPRESSION OVER BOB. THE GLOBAL MODELS ARE IN AGREEMENT THAT THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEEP DEPRESSION DURING NEXT 06 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 IMDGFS ARE INDICATING SLIGHTLY HIGHER INTENSITY.

CONSIDERING ALL THESE, THE DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL IS VERY LIKELY TO INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 24 HOURS. IT IS LIKELY TO MOVE NEARLY NORTHWARDS TILL 0000 UTC OF 23RD OCTOBER, THEN NORTH-NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA AND CHITTAGONG AROUND 1200 UTC OF 25TH OCTOBER AS A DEEP DEPRESSION.

(M SHARMA) SCIENTIST-D RSMC, NEW DELHI

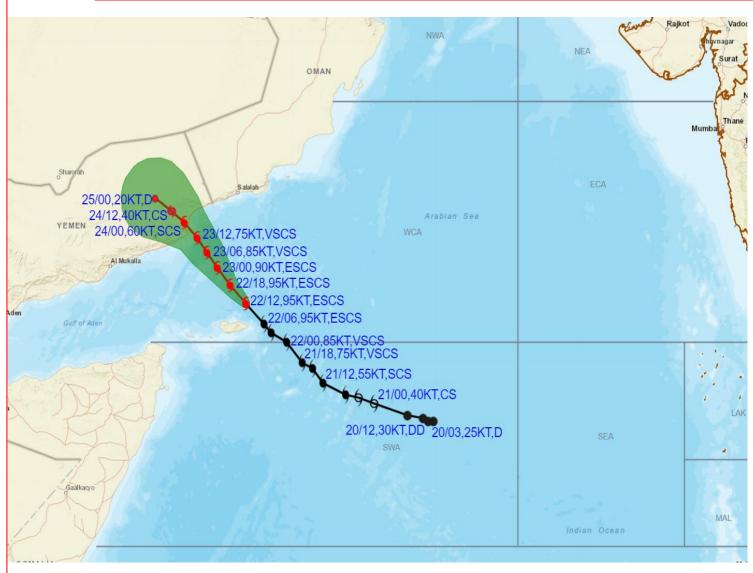








OBSERVED AND FORECAST TRACK ALONGWITH CONE OF **UNCERTAINITY OF EXTREMELY SEVERE CYCLONIC STORM "TEJ" OVER** WESTCENTRAL ARABIAN SEA BASED ON 1200 UTC (1730 IST) OF 22ND **OCTOBER 2023.**



DATE/TIME IN UTC IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

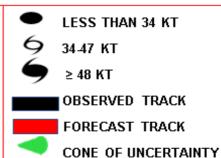
D: DEPRESSION (17-27 KT)

DD: DEEP DEPRESSION (28-33 KT) CS: CYCLONIC STORM (34-47 KT)

SCS: SEVERE CYCLONIC STORM (48-63KT) VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

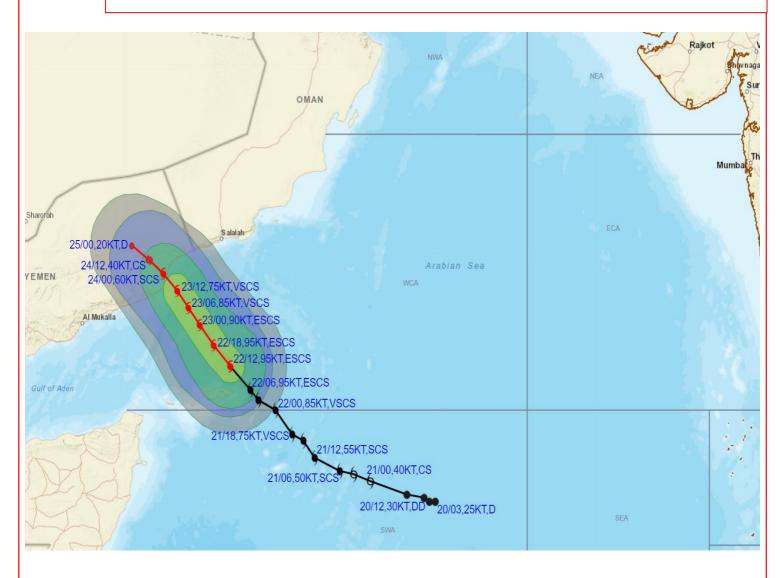
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM € 120 KT)



Forecast	DISTANCE(KM) AND DIRECTION FROM STATIONS			
Date and Time	SOCOTRA	SALALAH	AL-GHAIDAH	
23.10.23/1200	360, NNW	250, SW	70, SE	
24.10.23/1200	490, NNW	280, WSW	70, WNW	

OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF EXTREMELY SEVERE CYCLONIC STORM "TEJ" OVER WESTCENTRAL ARABIAN SEA BASED ON 1200 UTC (1730 IST) OF 22ND OCTOBER 2023.



DATE/TIME IN UTC IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)

SCS: SEVERE CYCLONIC STORM (48-63KT)

VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM @ 120 KT)

LESS THAN 34 KT

5 34-47 KT

2 48 KT

OBSERVED TRACK

FORECAST TRACK

CONE OF UNCERTAINTY

AREA OF MAXIMUM SUSTAINED WIND SPEED:

28-33 KT (52-61 KMPH)

34-49 KT (62-91 KMPH)

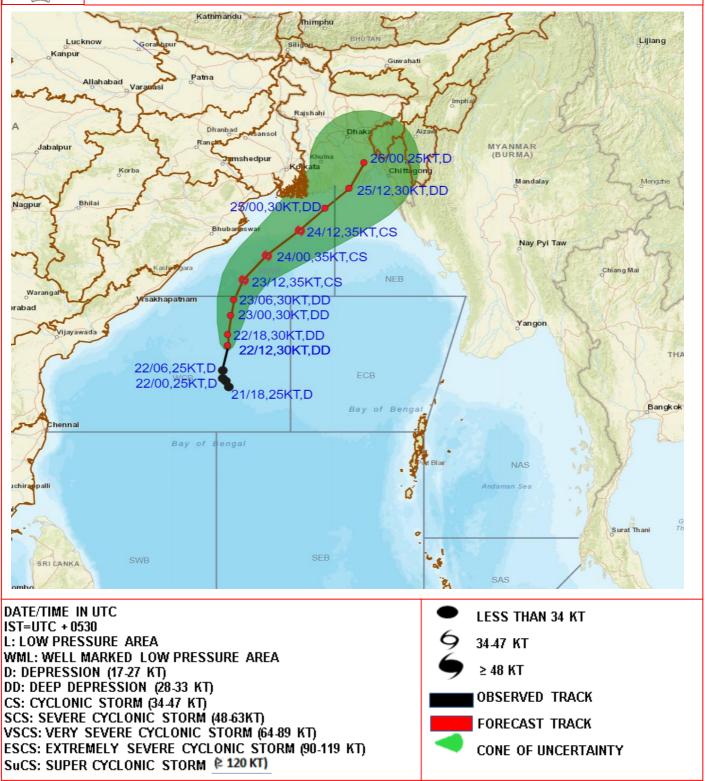
50-63 KT (92-117 KMPH)

≥ 64 KT (≥118 KMPH)

IMPACT OVER THE SEA			
MSW (knot/kmph)	Impact	Action	
28-33 (52-61)	Very rough seas	Total suspension of fishing operations	
34-49 (62-91)	High to very high seas	Total suspension of fishing operations	
50-63 (92-117)	Very high seas	Total suspension of fishing operations	
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations	

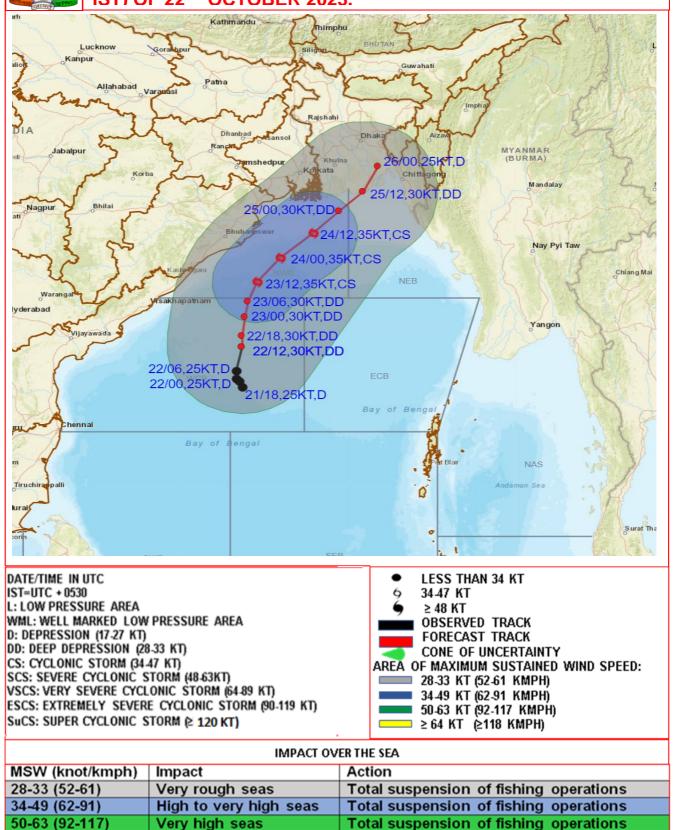


OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 22ND OCTOBER 2023.





OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 22ND OCTOBER 2023.



Total suspension of fishing operations

Phenomenal

≥ 64 (≥118)

WEATHER WARNING GRAPHICS

