



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

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 24.10.2023

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. 25 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 24.10.2023 BASED ON 0000 UTC OF 24.10.2023.

SUB: (A) VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) CROSSED YEMEN COAST AND WEAKENED INTO A SEVERE CYCLONIC STORM OVER COASTAL YEMEN AND (B) SEVERE CYCLONIC STORM "HAMOON" (PRONOUNCED AS HAMOON) OVER NORTHWEST BAY OF BENGAL.

(A) VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) CROSSED YEMEN COAST AND WEAKENED INTO A SEVERE CYCLONIC STORM OVER COASTAL YEMEN

THE LATEST OBSERVATIONS INDICATE THE VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) CROSSED YEMEN COAST NEAR LATITUDE 15.9°N AND LONGITUDE 52.15°E CLOSE TO SOUTH OF AL GHAIDAH (YEMEN, 413198) BETWEEN 2100 UTC AND 2200 UTC OF 23RD OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED REACHING 125-135 KMPH GUSTING TO 150 KMPH. IT THEN CONTINUED TO MOVE NORTH-WESTWARD, WEAKENED INTO A SEVERE CYCLONIC STORM AND LAY CENTERED AT 0000 UTC OF 24TH OCTOBER, OVER COASTAL YEMEN, NEAR LATITUDE 15.9°N AND LONGITUDE 52.1°E, ABOUT 20 KM SOUTH OF AL GHAIDAH (YEMEN, 413198) AND 240 KM WEST-SOUTHWEST OF SALALAH (OMAN, 41316).

IT IS VERY LIKELY TO MOVE FURTHER NORTH-WESTWARD AND WEAKEN INTO A CYCLONIC STORM DURING NEXT 6 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION LAT. [®] N/ LONG. [®] E	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
24.10.23/0000	15.9/52.1	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
24.10.23/0600	16.2/51.6	70-80 GUSTING TO 90	CYCLONIC STORM
24.10.23/1200	16.4/51.1	30-40 GUSTING TO 45	DEPRESSION

AS PER INSAT 3D IMAGERY, ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL ARABIAN SEA BETWEEN LATITUDE 13.0°N TO 17.0°N AND LONGITUDE 49.0°E TO 55.5°E & EAST YEMEN & OMAN. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 81°C. THE SATELLITE IMAGERY SHOWS GRADUAL WEAKENING OF SYSTEM. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN THE NORTH & EASTERN SECTOR. TOTAL PRECIPITABLE WATER IMAGERY SHOWS THAT DRY AIR INCURSION IS TAKING PLACE FROM THE SOUTHWEST SECTOR OF THE SYSTEM.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 990 HPA.

LATEST OBSERVATIONS INDICATE THAT GALE WIND SPEED REACHING 60 KNOTS GUSTING TO 70 KNOTS ARE PREVAILING OVER EAST YEMEN AND SOUTH OMAN COASTS. IT WILL DECREASE GRADUALLY

STORM SURGE GUIDANCE FOR YEMEN COAST:

STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN AL GHAYDAH AND AL FAYDAMI DURING NEXT THREE HOURS.

SEA CONDITION:

WESTCENTRAL ARABIAN SEA:

VERY HIGH SEA CONDITION IS PREVAILING AND WILL BECOME HIGH BY 0600 UTC OF 24^{TH} OCTOBER. IT WOULD IMPROVE GRADUALLY THEREAFTER BECOMING ROUGH TO VERY ROUGH BY 1200 UTC OF 24^{TH} OCTOBER. THEREAFTER, IT WOULD IMPROVE GRADUALLY.

(B) SEVERE CYCLONIC STORM "HAMOON" (PRONOUNCED AS HAMOON) OVER NORTHWEST BAY OF BENGAL

THE SEVERE CYCLONIC STORM "HAMOON" (PRONOUNCED AS HAMOON) OVER NORTHWEST BAY OF BENGAL MOVED NORTHEASTWARDS WITH A SPEED OF 21 KMPH DURING PAST 6 HOURS, AND LAY CENTERED AT 0000 UTC OF 24TH OCTOBER OVER THE SAME REGION, NEAR LATITUDE 19.8°N AND LONGITUDE 88.9°E, ABOUT 230 KM EAST-SOUTHEAST OF PARADIP (ODISHA, 42976), 240 KM SOUTH-SOUTHEAST OF DIGHA (WEST BENGAL, 42901), 280 KM SOUTH-SOUTHWEST OF KHEPUPARA (BANGLADESH, 41984) AND 410 KM SOUTHWEST OF CHITTAGONG (BANGLADESH, 41977).

IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM FOR A FEW HOURS DURING NEXT 6 HOURS. THEREAFTER, IT IS LIKELY TO WEAKEN GRADUALLY WHILE MOVING NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA AND CHITTAGONG AROUND 1200 UTC OF 25TH OCTOBER AS A CYCLONIC STORM WITH WIND SPEED OF 65 TO 75 KMPH GUSTING TO 85 KMPH.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME (UTC)		MAXIMUM SUSTAINED SURFACE	
	(LAT. ⁰ N/ LONG. ⁰ E)	WIND SPEED (KMPH)	DISTURBANCE
24.10.23/0000	19.8/88.9	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
24.10.23/0600	20.3/89.5	115-125 GUSTING TO 135	VERY SEVERE CYCLONIC STORM
24.10.23/1200	20.7/90.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
24.10.23/1800	21.1/90.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.10.23/0000	21.5/90.9	80-90 GUSTING TO 100	CYCLONIC STORM
25.10.23/1200	22.3/91.4	65-75 GUSTING TO 85	CYCLONIC STORM
26.10.23/0000	23.5/92.1	40-50 GUSTING TO 60	DEPRESSION

AS PER INSAT 3D IMAGERY, THE INTENSITY OF THE SYSTEM IS CHARACTERISED AS T3.5. IT SHOWS CENTRAL DENSE OVERCAST(CDO). ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING NORTHEAST BAY OF BENGAL BETWEEN LATITUDE 16.5N TO 21.5N AND LONGITUDE 85.0E TO 90.5E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 93 DEGREE CELSIUS. OUTFLOW CLOUD BANDS ARE OBSERVED OVER NORTH ODISHA, WEST BENGAL AND NORTHEASTERN STATES OF INDIA. 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 60 KNOTS GUSTING TO 70KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 990 HPA.

WIND GUIDANCE (WARNING MAP ENCLOSED):

- NORTH BAY OF BENGAL:
 - GALE WIND SPEED REACHING 100-110 KMPH GUSTING TO 120 KMPH IS PREVAILING AND LIKELY TO BECOME 115-125 KMPH GUSTING 135 KMPH DURING NEXT 6 HOURS. IT WOULD DECREASE GRADUALLY THEREAFTER BECOMING GALE WIND SPEED REACHING 90-100 KMPH GUSTING TO 110 KMPH BY 1800 UTC OF 24TH NIGHT, AND SQUALLY WIND SPEED REACHING 70-80 KMPH GUSTING TO 90 KMPH BY 25TH 0600 UTC AND WOULD DECREASE THEREAFTER.
- ADJOINING WESTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 75-85 KMPH GUSTING TO 95 KMPH IS PREVAILING AND LIKELY TO CONTINUE TILL 24TH OCTOBER 0600 UTC. IT IS LIKELY TO DECREASE GRADUALLY THEREAFTER BECOMING SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH BY 24TH EVENING AND 30-40 KMPH GUSTING TO 50 KMPH TILL 0000 UTC OF 25TH OCTOBER.
- ADJOINING EASTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH IS PREVAILING AND LIKELY TO INCREASE GRADUALLY BECOMING 55-65 KMPH GUSTING TO 75 KMPH ON 0900 UTC OF 24TH AND CONTINUES TILL 25TH OCTOBER.
- ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS: SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY ON 24TH ALONG & OFF ODISHA COAST. SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS PREVAILING ALONG & OFF WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS FROM 24TH 0000 UTC. IT WOULD GRADUALLY INCREASE BECOMING 65-75 KMPH GUSTING TO 85 KMPH ALONG & OFF BANGLADESH COAST, 55-65 KMPH GUSTING TO 75 KMPH ALONG & OFF NORTH MYANMAR COAST AND 45-55 KMPH GUSTING TO 65 KMPH ALONG & OFF WEST BENGAL COAST ON 25TH OCTOBER.

 MIZORAM, TRIPURA, SOUTH ASSAM AND MANIPUR: SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL OVER MIZORAM AND TRIPURA AND STRONG WIND SPEED REACHING 30-40 KMPH GUSTING TO 50 KMPH OVER SOUTH ASSAM & MANIPUR ON 25TH OCTOBER.

STORM SURGE GUIDANCE FOR BANGLADESH COAST:

STORM SURGE OF ABOUT 1.0-1.5 METRE HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN KHEPUPARA AND CHITTAGONG AROUND THE TIME OF LANDFALL.

SEA CONDITION:

- NORTH BAY OF BENGAL:
 - VERY HIGH TO PHENOMENAL SEA CONDITIONS ARE PREVAILING AND LIKELY TO CONTINUE TILL 24^{TH} 0600 UTC AND VERY HIGH TO HIGH THEREAFTER TILL 25^{TH} OCTOBER 1200 UTC.
- ADJOINING WESTCENTRAL BAY OF BENGAL: HIGH SEA CONDITION IS LIKELY TO PREVAIL TILL 24TH OCTOBER 0600 UTC AND ROUGH TO VERY ROUGH THEREAFTER TILL 25TH OCTOBER 0000 UTC. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- ADJOINING EASTCENTRAL BAY OF BENGAL: ROUGH TO VERY ROUGH SEA CONDITION
 IS PREVAILING AND LIKELY TO CONTINUE TILL 25TH OCTOBER 1200 UTC. IT IS LIKELY TO
 IMPROVE GRADUALLY THEREAFTER.
- ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS: ROUGH TO VERY ROUGH SEA CONDITIONS ON 24TH AND 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 3 DAYS. SEA SURFACE TEMPERATURE IS 28-29°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 IS AROUND 150 X10-6S-1 TO THE SOUTHEAST OF THE SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30X10-5S-1 TO THE SOUTH OF SYSTEM CENTER. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 30 X10-5 S-1 EAST OF THE SYSTEM CENTRE. WIND SHEAR IS HIGH (25-30 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK.

BAY OF BENGAL:

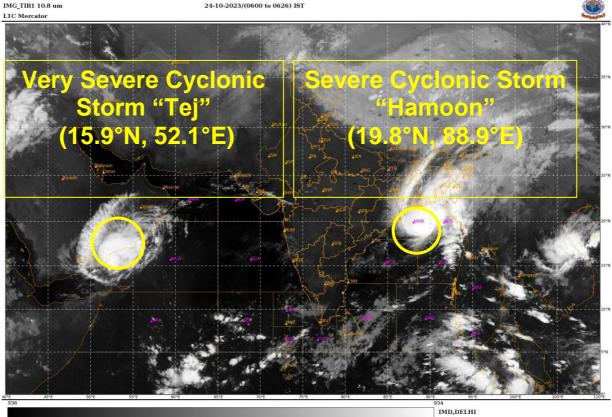
MODELS ARE IN AGREEMENT THAT THE SEVERE CYCLONIC STORM "HAMOON" WOULD CROSS BANGLADESH COAST. THERE IS ALSO CONSENSUS AMONG VARIOUS MODELS WITH RESPECT TO WEAKENING BEFORE LANDFALL.

SEA SURFACE TEMPERATURE IS 28-30°C OVER NORTH BAY OF BENGAL. THE LOW LEVEL POSITIVE VORTICITY IS AROUND 150 X10⁻⁶S⁻¹ SOUTHEAST OF THE SYSTEM CENTER. THE POSITIVE LOW LEVEL CONVERGENCE LIES TO THE EAST OF THE SYSTEM CENTRE AND IS ABOUT 10X10⁻⁵S⁻¹. POSITIVE UPPER LEVEL DIVERGENCE IS

ABOUT 20-30 $\times 10^{-5}$ S⁻¹ ALONG THE FORECAST TRACK OF SYSTEM. THE SYSTEM IS ENTERING INTO A ZONE OF MODERATE (20 KNOTS) WIND SHEAR WHICH IS HIGH ALONG THE FORECAST TRACK. THE SYSTEM IS UNDER UNFAVOURABLE CONDITIONS.

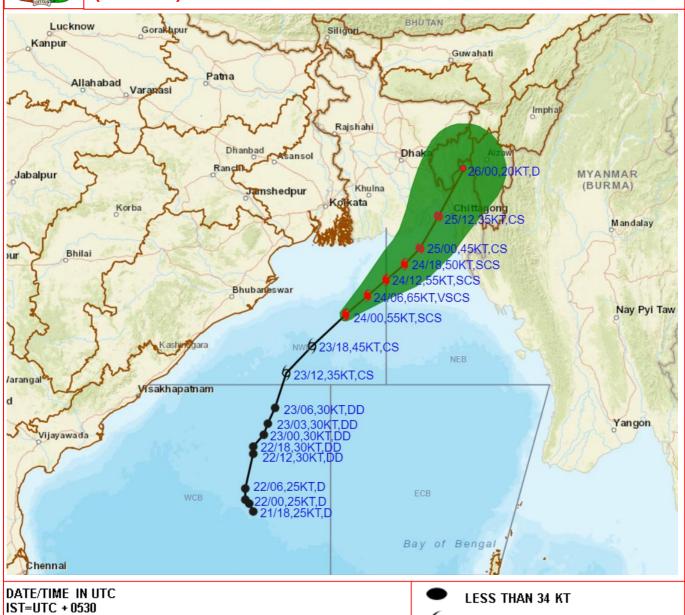
CONSIDERING ALL THESE, THE SEVERE CYCLONIC STORM "HAMOON" OVER NORTHWEST BAY OF BENGAL IS VERY LIKELY TO REACH PEAK INTENSITY OF 65 KNOTS GUSTING TO 75 KNOTS WILL OCCUR BETWEEN 0300 UTC TO 0600 UTC OF 24TH. THEREAFTER, IT IS EXPECTED TO WEAKEN GRADUALLY WHILE MOVING NORTHEASTWARD TOWARDS BANGLADESH COAST. IT IS LIKELY TO WEAKEN UNDER THE INFLUENCE OF HIGH VERTICAL WIND SHEAR IN ASSOCIATION WITH THE UPPER AIR TROUGH IN WESTERLY WITH EMBEDDED JET STREAM OVER THE REGION. IT IS VERY LIKELY TO MOVE NEARLY NORTH-NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA AND CHITTAGONG AROUND 1200 UTC OF 25TH OCTOBER AS A *CYCLONIC STORM* WITH WIND SPEED OF 65-75 GUSTING TO 85 KMPH (40 GUSTING TO 50 KNOTS).

(SHASHI KANT) SCIENTIST-D RSMC, NEW DELHI





OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM "HAMOON" OVER NORTHWEST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 24TH OCTOBER 2023.



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)

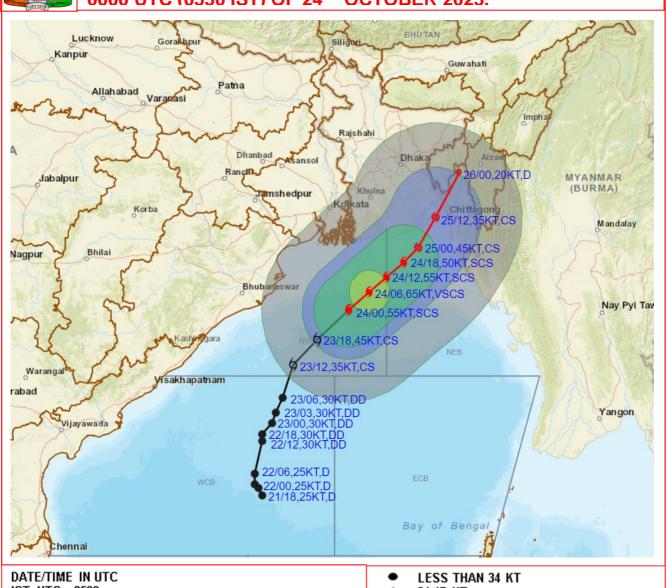
Sucs: SUPER CYCLONIC STORM ≥ 120 KT)

	ESS THAN 34 KT
6 :	84.47 KT
9	≥ 48 KT
	DBSERVED TRACK
	FORECAST TRACK
•	CONE OF UNCERTAINTY

Forecast	DISTANCE(KM)			
Date and Time	PARADIP (CWR)	DIGHA	KHEPUPARA	CHITTAGONG (AMBAGAN)
25.10.23/0000	460, ENE	360, E	90, SE	130, SW
25.10.23/1200	540, ENE	410, ENE	130, ENE	50, W
26.10.23/0000	660, ENE	520, ENE	260, NE	130, NNE



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT DISTRIBUTION OF SEVERE CYCLONIC "HAMOON" OVER NORTHWEST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 24TH OCTOBER 2023.



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)

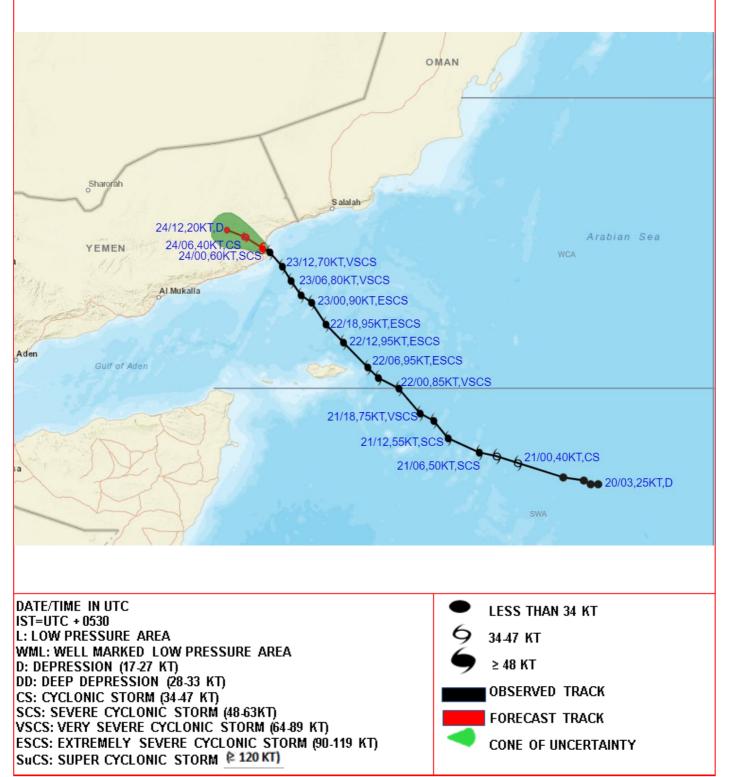
Sucs: SUPER CYCLONIC STORM (≥20 KT)

•	LESS THAN 34 KT
6	34.47 KT
6	≥ 48 KT
	OBSERVED TRACK
	FORECAST TRACK
<u> </u>	CONE OF UNCERTAINTY
AREA C	F 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

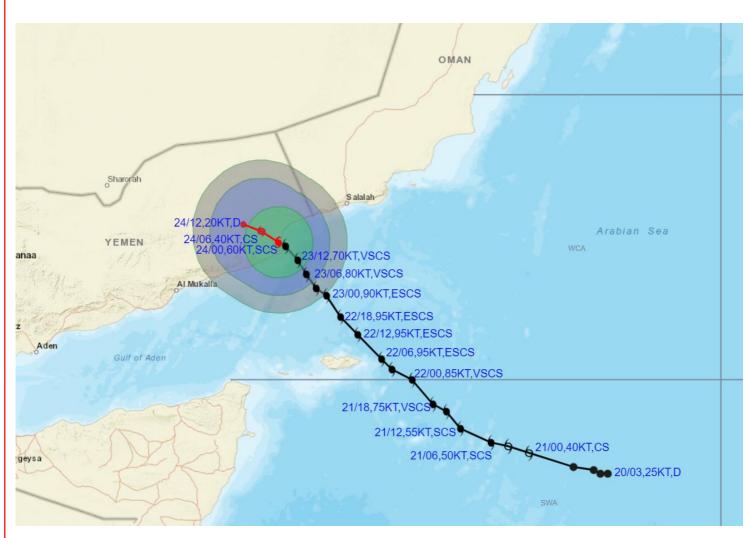


OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "TEJ" OVER COASTAL YEMEN BASED ON 0000 UTC (0530 IST) OF 24TH OCTOBER 2023.





OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM "TEJ" OVER COASTAL YEMEN BASED ON 0000 UTC (0530 IST) OF 24TH 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

9 34-47 KT • ≥ 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)

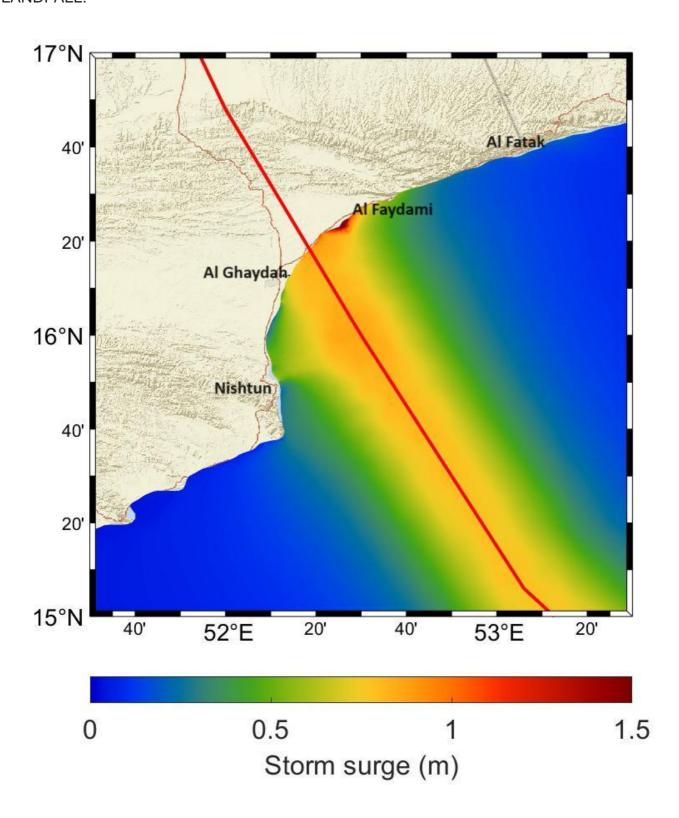
30-63 KT (92-117 KMPH) ≥ 64 KT (≥118 KMPH)

IMPACT	OVER	THE	CEV.

IMPACT VALITIES 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

STORM SURGE GUIDANCE FOR YEMEN:

STORM SURGE OF ABOUT 2 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN AL GHAYDAH AND AL FAYDAMI NEAR THE LANDFALL POINT AT THE TIME OF LANDFALL.



STORM SURGE GUIDANCE FOR BANGLADESH:

STORM SURGE OF ABOUT 1.0-1.5 METRE HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN KHEPUPARA AND CHITTAGONG AROUND THE TIME OF LANDFALL.

