



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI TROPICAL
TROPICAL CYCLONE ADVISORY BULLETIN NO. 13**

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)
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 ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 02.10.2021 BASED ON 1200 UTC OF 02.10.2021.

SUB: SEVERE CYCLONIC STORM ‘SHAHEEN’ OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN

THE **SEVERE CYCLONIC STORM ‘SHAHEEN’** OVER NORTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 19 KMPH, DURING PAST 6 HOURS, LAY CENTRED AT 1200 UTC OF 2ND OCTOBER, 2021 OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN NEAR LATITUDE 24.5°N AND LONGITUDE 60.7°E, ABOUT 890 KM WEST-NORTHWEST OF DEVBHOO MI DWARKA (42731), 90 KM NEARLY SOUTH OF CHABA HAR PORT (IRAN) AND 250 KM EAST-NORTHEAST OF MUSCAT (OMAN).

IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS SKIRTING MAKRAN COAST DURING NEXT 12 HOURS. THEREAFTER, IT IS LIKELY TO RE-CURVE WEST-SOUTHWESTWARDS, MOVE TOWARDS OMAN COAST ACROSS GULF OF OMAN AND WEAKEN GRADUALLY. IT IS VERY LIKELY TO CROSS OMAN COAST BETWEEN LONG.56°E & 58°E, AROUND 57°E, DURING EARLY HOURS OF 4TH OCTOBER 2021, AS A CYCLONIC STORM WITH A MAXIMUM SUSTAINED WIND SPEED OF 80–90 KMPH GUSTING TO 100 KMPH.

Forecast track and intensity are given in the following table:

DATE/TIME(IST)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
02.10.21/1200	24.5/60.7	110-120 gusting to 130	Severe cyclonic storm
02.10.21/1800	24.6/60.3	110-120 gusting to 130	Severe cyclonic storm
03.10.21/0000	24.6/59.6	105-115 gusting to 125	Severe cyclonic storm
03.10.21/0600	24.4/58.9	95-105 gusting to 115	Severe cyclonic storm
03.10.21/1200	24.2/58.3	85-95 gusting to 105	Cyclonic storm
04.10.21/0000	23.9/57.0	70-80 gusting to 90	Cyclonic storm
04.10.21/1200	23.5/55.8	45-55 gusting to 65	Depression

AS PER INSAT-3D IMAGERY AT 1200 UTC, RAGGED EYE IS OBSERVED. MINIMUM CLOUD TOP TEMPERATURE IS -93°C . INTENSITY OF THE SYSTEM IS CATEGORISED AS T 3.5. BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER ARABIAN SEA AREA BETWEEN LATITUDE 21.5N & 25.0N AND LONGITUDE 60.0E & 63.5E AND MAKRAN COAST.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH OVER THE SYSTEM AREA. THE ESTIMATED CENTRAL PRESSURE IS 986 HPA.

STORM SURGE GUIDANCE: STORM SURGE OF HEIGHT ABOUT 1M ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF COASTAL OMAN AT THE TIME OF LANDFALL (MODEL OUTPUT GRAPHICS ATTACHED).

REMARKS:

SEA SURFACE TEMPERATURE (SST) IS ABOUT $28-29^{\circ}\text{C}$ OVER NORTHWEST ARABIAN SEA. HOWEVER, A WARM TONGUE OF SST ($29-30^{\circ}\text{C}$) PREVAILS OVER GULF OF OMAN. TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT $60-70\text{ KJ}/\text{CM}^2$ OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN. POSITIVE VORTICITY IS ABOUT $200 \times 10^{-6}\text{S}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA. POSITIVE LOWER LEVEL CONVERGENCE AND UPPER LEVEL DIVERGENCE ARE BOTH ABOUT $20 \times 10^{-5}\text{S}^{-1}$ OVER THE SYSTEM CENTRE. STRONG EQUATORWARD OUTFLOW IS ALSO SEEN IN THE UPPER LEVEL. LOW LEVEL VERTICAL WIND SHEAR (VWS) OF 10-15 KTS IS PREVAILING AROUND THE SYSTEM CENTRE AND ALONG THE FORECAST TRACK OVER ENTIRE GULF OF OMAN. DECREASING SHEAR TENDENCY PREVAILS OVER THE GULF OF OMAN AND OVER THE OMAN COAST.

THE TOTAL PRECIPITABLE WATER VAPOUR IMAGERY INDICATES THAT THE SYSTEM IS UNDER FAVOURABLE ENVIRONMENT OF WARM MOIST AIR. DRY AIR INTRUSION TAKING PLACE SINCE MORNING HOURS OF TODAY HAS CEASED AND AS PER SATELLITE WATER VAPOUR IMAGERIES CURRENTLY NO DRY AIR INTRUSION IS BEING OBSERVED. OTHER DYNAMIC & THERMODYNAMIC PARAMETERS INCLUDING WARM SEA, LOW VERTICAL WIND SHEAR, STRONG EQUATORWARD OUTFLOW ARE FAVOURABLE FOR THE SYSTEM TO MAINTAIN ITS INTENSITY DURING NEXT 12 HOURS. THEREAFTER, THE SYSTEM WILL BEGIN TO WEAKEN GRADUALLY AND MOVE WEST-SOUTHWESTWARDS. THE EAST-SOUTHEASTERLY WINDS IN THE MIDDLE & UPPER TROPOSPHERIC LEVELS IN ASSOCIATION WITH AN ANTICYCLONE OVER WESTERN PARTS OF INDIA, WILL STEER THE SYSTEM WEST-NORTHWESTWARDS DURING NEXT 12 HOURS. THEREAFTER, THE SYSTEM WILL BE STEERED WEST-SOUTHWESTWARDS GRADUALLY UNDER THE INFLUENCE OF EAST-NORTHEASTERLY WINDS IN THE PERIPHERY OF ANOTHER ANTICYCLONE OVER IRAN.

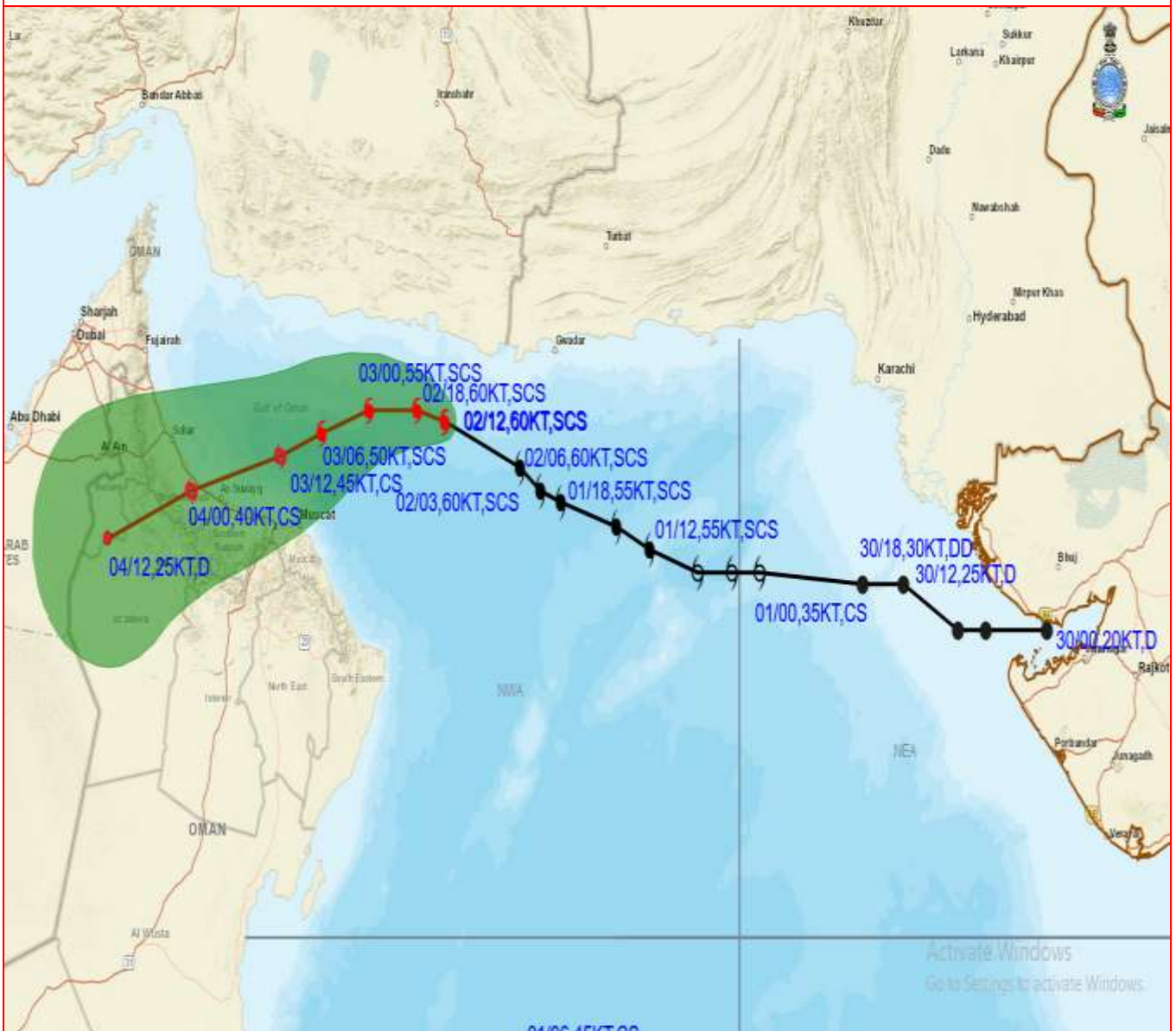
MOST OF THE MODELS ARE INDICATING THAT THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS FOR SOME MORE TIME, RECURVE WEST-SOUTHWESTWARDS, WEAKEN GRADUALLY AND CROSS NORTH OMAN COAST AROUND 4TH EARLY MORNING (0000 UTC).

HENCE IT IS CONCLUDED THAT, SEVERE CYCLONIC STORM "SHAHEEN" WOULD MAINTAIN ITS INTENSITY AND MOVE WEST-NORTHWESTWARDS SKIRTING MAKRAN COAST DURING NEXT 12 HOURS. THEREAFTER, IT IS LIKELY TO RE-CURVE WEST-SOUTHWESTWARDS, WEAKEN GRADUALLY AND MOVE ACROSS GULF OF OMAN AND CROSS NORTH OMAN COAST AROUND LONG. 57°E DURING 2100 UTC OF 3RD OCTOBER – 0000 UTC OF 4TH OCTOBER AS A CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 80-90 KMPH GUSTING TO 100 KMPH.

(SUNITHA DEVI S)
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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM "SHAHEEN" OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN BASED ON 1200 UTC OF 2ND OCTOBER, 2021

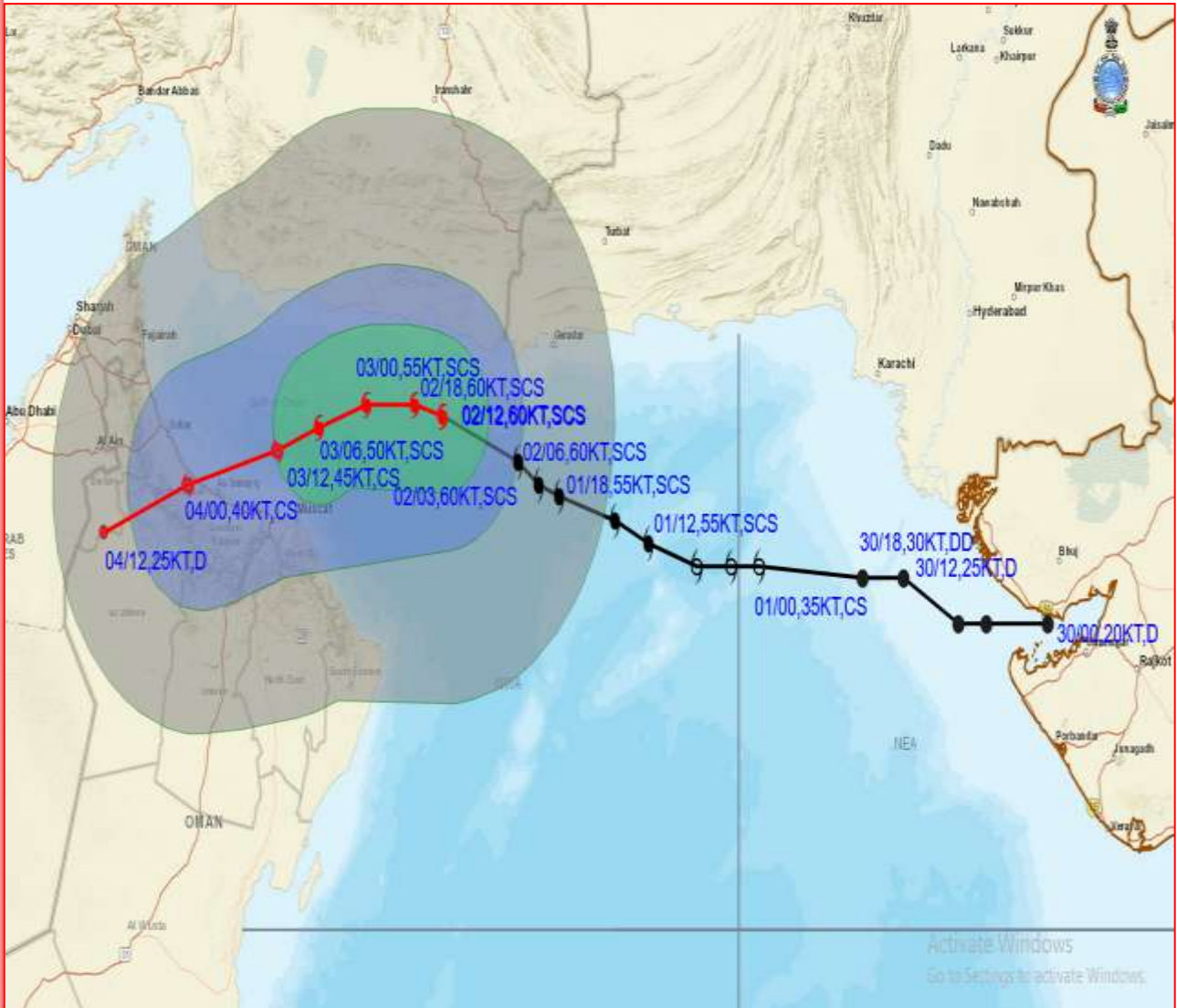


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

	LESS THAN 34 KT
	34-47 KT
	≥ 48 KT
	OBSERVED TRACK
	FORECAST TRACK
	CONE OF UNCERTAINTY



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM "SHAHEEN" OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN BASED ON 1200 UTC OF 2ND OCTOBER, 2021



DATE/TIME IN UTC

IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

D: DEPRESSION (17-27 KT)

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

SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

- LESS THAN 34 KT
- 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)
- ≥ 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

