



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI TROPICAL
TROPICAL CYCLONE ADVISORY BULLETIN NO. 10**

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. 10 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND
ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0600 UTC OF 02.10.2021 BASED ON 0300
UTC OF 02.10.2021.**

SUB: SEVERE CYCLONIC STORM 'SHAHEEN' OVER NORTHWEST ARABIAN SEA

THE **SEVERE CYCLONIC STORM 'SHAHEEN'** OVER NORTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 12 KMPH, DURING PAST 6 HOURS, LAY CENTRED AT 0300 UTC OF 2ND OCTOBER, 2021 OVER NORTHWEST ARABIAN SEA, NEAR LATITUDE 23.9°N AND LONGITUDE 62.1°E, ABOUT 740 KM WEST-NORTHWEST OF DEVBHOOMI DWARKA (42731), 210 KM EAST-SOUTHEAST OF CHABAHAH PORT (IRAN) AND 370 KM EAST-NORTHEAST OF MUSCAT (OMAN).

IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS SKIRTING MAKRAN COAST DURING NEXT 24 HOURS. THEREAFTER, IT IS LIKELY TO RE-CURVE WEST-SOUTHWESTWARDS, MOVE TOWARDS OMAN COAST ACROSS GULF OF OMAN AND WEAKEN GRADUALLY. **IT IS 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 70 – 80 KMPH GUSTING TO 90 KMPH.**

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
02.10.21/0300	23.9/62.1	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
02.10.21/0600	24.1/61.7	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
02.10.21/1200	24.3/61.0	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
02.10.21/1800	24.4/60.3	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
03.10.21/0000	24.4/59.6	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
03.10.21/1200	24.2/58.3	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
04.10.21/0000	23.9/57.0	80-90 GUSTING TO 100	CYCLONIC STORM
04.10.21/1200	23.5/55.8	30-40 GUSTING TO 50	DEPRESSION

AS PER INSAT 3D IMAGERY AT 0300 UTC, THE SYSTEM HAS SLIGHTLY MOVED NORTHWARDS DURING LAST 03 HOURS. MAXIMUM CONVECTION IS SEEN IN THE SOUTHERN SECTOR OF THE SYSTEM. RAGGED EYE IS OBSERVED IN THE VISIBLE IMAGERY. 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 21.0N & 24.5N AND LONGITUDE 60.0E & 63.5E.

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.

REMARKS:

SEA SURFACE TEMPERATURE (SST) IS ABOUT 28-29°C OVER NORTHWEST ARABIAN SEA. HOWEVER, A WARM TONGUE OF SST (29-30°C) PREVAILS OVER GULF OF OMAN. TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT 60-70 KJ/CM² OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN. POSITIVE VORTICITY HAS DECREASED AND IS ABOUT $200 \times 10^{-6}\text{S}^{-1}$ OVER NORTHWEST ARABIAN SEA WITH VERTICAL EXTENSION UPTO 200 HPA. POSITIVE LOWER LEVEL CONVERGENCE ZONE EXTENDS OVER THE ENTIRE NORTHWEST ARABIAN SEA AND IS ABOUT $5-10 \times 10^{-5}\text{S}^{-1}$. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5}\text{S}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. STRONG EQUATORWARD OUTFLOW IS SEEN IN THE UPPER LEVEL. LOW VERTICAL WIND SHEAR (VWS) ABOUT 10-15 KTS IS PREVAILING AROUND THE SYSTEM CENTRE AND ALONG THE FORECAST TRACK UPTO GULF OF OMAN. SHEAR TENDENCY IS NEUTRAL ALONG THE FORECAST TRACK.

SATELLITE DERIVED TOTAL PRECIPITABLE WATER VAPOUR IMAGERY INDICATES THAT THE SYSTEM IS UNDER FAVOURABLE ENVIRONMENT OF WARM MOIST AIR. HOWEVER, DRY AIR INTRUSION FROM IRAN-AFGHANISTAN REGION HAS COMMENCED IN THE SOUTHERN SECTOR OF THE SYSTEM SINCE PAST THREE HOURS. OTHER DYNAMIC & THERMODYNAMIC PARAMETERS INCLUDING WARM SEA, HIGH OCEAN THERMAL ENERGY, LOW VERTICAL WIND SHEAR AND STRONG EQUATORWARD OUTFLOW ARE FAVOURABLE FOR THE SYSTEM TO MAINTAIN ITS INTENSITY DURING NEXT 12 HOURS. THE EAST-SOUTHEASTERLY WINDS IN THE MIDDLE & UPPER TROPOSPHERIC LEVELS WILL STEER THE SYSTEM WEST-NORTHWESTWARDS DURING NEXT 24 HOURS. THEREAFTER, THE SYSTEM WILL BE STEERED WEST-SOUTHWESTWARDS UNDER THE INFLUENCE OF EAST-NORTHEASTERLY WINDS IN THE PERIPHERY OF ANTICYCLONE OVER IRAN.

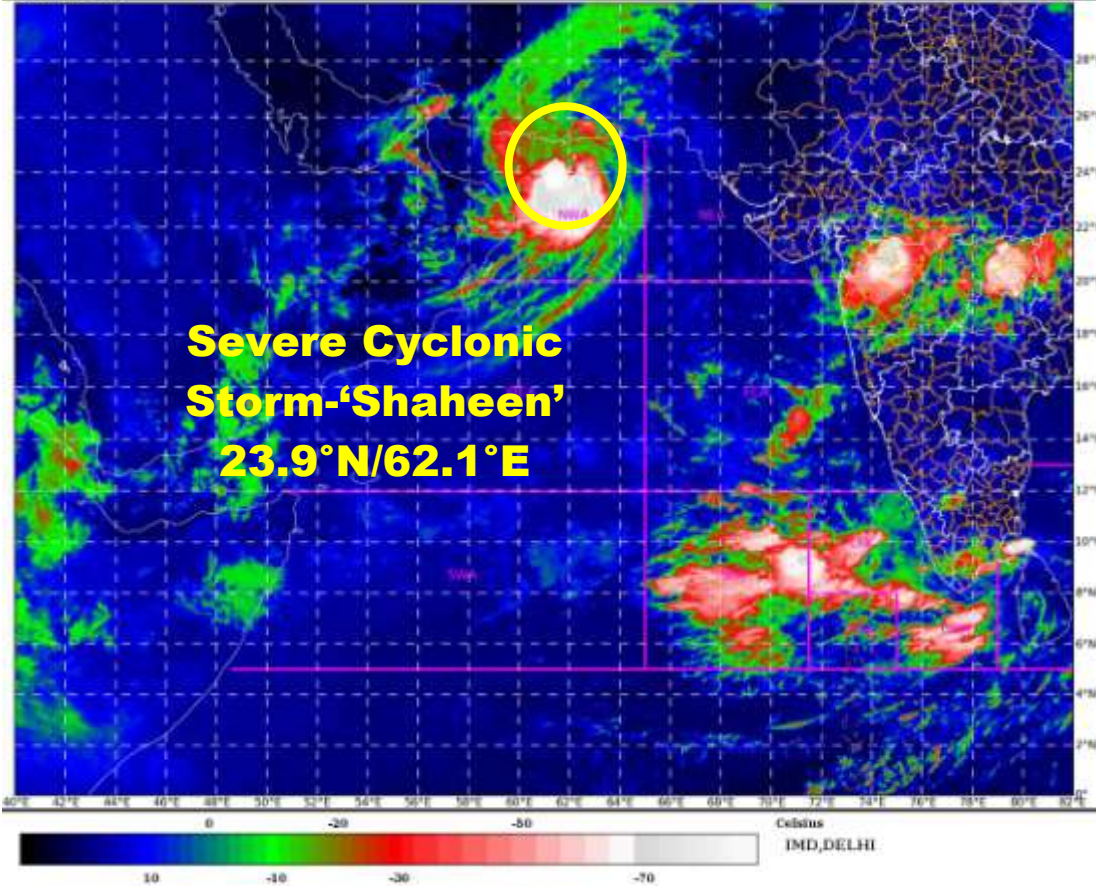
MOST OF THE MODELS ARE INDICATING THAT THE SYSTEM WOULD MARGINALLY INTENSIFY FURTHER DURING NEXT 12 HOURS WHILE MOVING WEST-NORTHWESTWARDS. MODELS ARE ALSO INDICATING THAT THE SYSTEM WOULD RECURVE WEST-SOUTHWESTWARDS, WEAKEN GRADUALLY AND CROSS NORTH OMAN COAST AROUND 4TH EARLY MORNING (0000 UTC).

HENCE IT IS CONCLUDED THAT, SEVERE CYCLONIC STORM "SHAHEEN" WOULD MAINTAIN ITS INTENSITY DURING NEXT 12 HOURS AND MOVE WEST-NORTHWESTWARDS SKIRTING MAKRAN COAST DURING NEXT 24 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 DEG. E DURING 2100 UTC OF 3RD OCTOBER – 0000 UTC OF 4TH OCTOBER AS A CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH.

(SUNITHA DEVI S)
SCIENTIST-F, RSMC, NEW DELHI

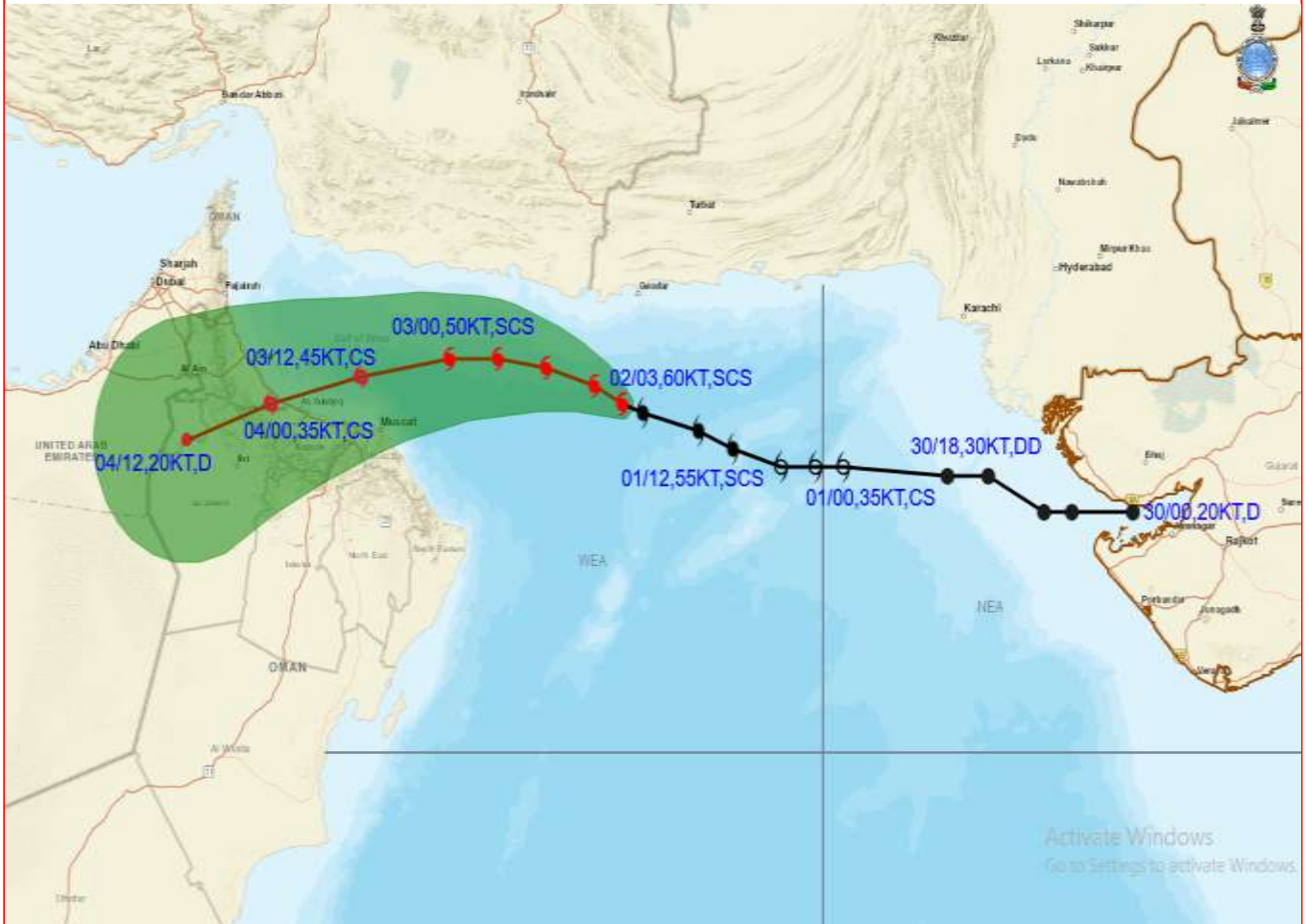
SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

02-10-2021(0400 to 0426) GMT
02-10-2021(0930 to 0956) IST





OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM "SHAHEEN" OVER NORTHWEST ARABIAN SEA BASED ON 0300 UTC OF 2ND OCTOBER 2021

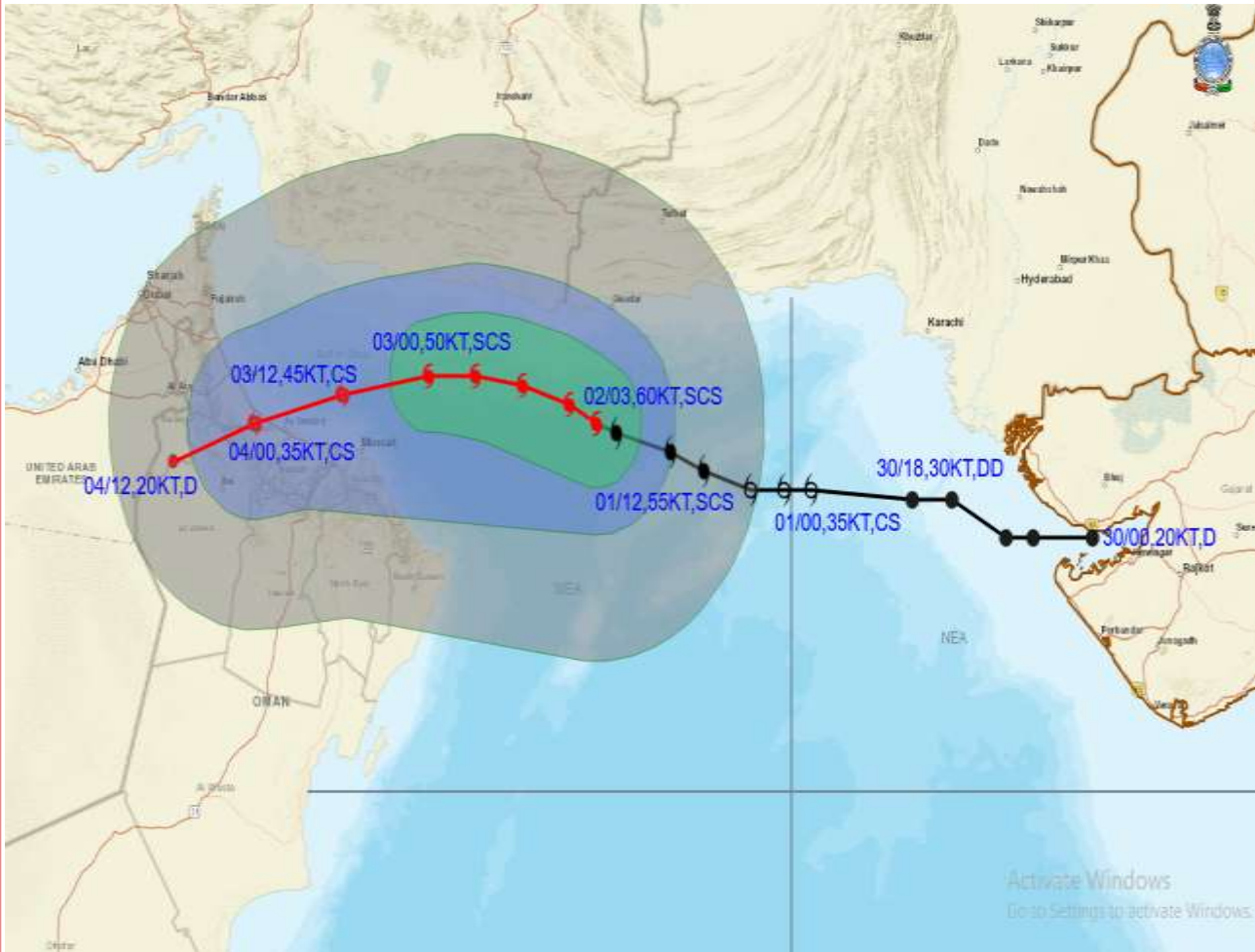


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM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

- LESS THAN 34 KT
- 34-47 KT
- \geq 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 BASED ON 0300 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
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