



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 30.09.2021**

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 30.09.2021 BASED ON 1200 UTC OF 30.09.2021.**

**SUB: DEPRESSION OVER NORTHEAST ARABIAN SEA OFF GUJARAT COAST**

THE DEPRESSION OVER NORTHEAST ARABIAN SEA OFF GUJARAT COAST MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 15 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 30<sup>TH</sup> SEPTEMBER, 2021, OVER NORTHEAST ARABIAN SEA OFF GUJARAT COAST, NEAR LATITUDE 23.1°N AND LONGITUDE 67.4°E, ABOUT 190 KM WEST-NORTHWEST OF DEVBHOOMI DWARKA (42731), 200 KM SOUTH-SOUTHEAST OF KARACHI (41780) AND 730 KM EAST-SOUTHEAST OF CHABAHAH PORT (IRAN).

IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEEP DEPRESSION OVER NORTHEAST ARABIAN SEA DURING NEXT 12 HOURS. THEN IT IS VERY LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM DURING THE SUBSEQUENT 12 HOURS. THEREAFTER IT IS LIKELY TO CONTINUE TO MOVE WEST-NORTHWESTWARDS TOWARDS PAKISTAN – MAKRAN COASTS.

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
30.09.21/1200	23.1/67.4	45-55 gusting to 65	Depression
01.10.21/0000	23.4/66.0	55-65 gusting to 75	Deep Depression
01.10.21/1200	23.8/64.9	75-85 gusting to 95	Cyclonic Storm
02.10.21/0000	24.4/63.5	90-100 gusting to 110	Severe Cyclonic Storm
02.10.21/1200	25.0/62.4	85-95 gusting to 105	Severe Cyclonic Storm
03.10.21/0000	25.0/61.1	70-80 gusting to 90	Cyclonic Storm

AS PER INSAT 3D IMAGERY AT 1200 UTC, INTENSE CONVECTION IS SEEN OVER NORTHEAST ARABIAN SEA AND NEIGHBOURHOOD AROUND THE SYSTEM AREA. ASSOCIATED MINIMUM CLOUD TOP TEMPERATURE IS -93°C. INTENSITY OF THE SYSTEM IS CATEGORISED AS T1.5. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WEST GUJARAT, GULF OF KUTCH, NORTH AND ADJOINING EASTCENTRAL ARABIAN SEA.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 30 KNOTS. THE SEA CONDITION IS ROUGH TO VERY ROUGH AROUND THE SYSTEM AREA. THE ESTIMATED CENTRAL PRESSURE IS 998 HPA.

A SHIP NEAR 22.9°N/65.1°E REPORTED MEAN SEA LEVEL PRESSURE (MSLP) 998.0 HPA AND MSW OF 360°/22KT.

**REMARKS:**

SEA SURFACE TEMPERATURE (SST) OF ABOUT 28-29°C OVER NORTHEAST AND EASTCENTRAL ARABIAN SEA WITH DECREASING TREND TOWARDS WEST. SIMILARLY, TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT 80-90 KJ/CM<sup>2</sup> OVER NORTHEAST ARABIAN SEA WITH DECREASING TREND TOWARDS THE NORTHWEST ARABIAN SEA. POSITIVE VORTICITY ABOUT 120 X10<sup>-6</sup>S<sup>-1</sup> LAY OVER NORTHEAST ARABIAN SEA AND ADJOINING GULF OF KUTCH WITH VERTICAL EXTENSION UPTO 200 HPA. AN ELONGATED ZONE OF POSITIVE LOWER LEVEL CONVERGENCE OF 10 X10<sup>-5</sup>S<sup>-1</sup> IS SEEN OVER NORTHEAST ARABIAN SEA FROM GUJARAT TO MAKARAN COASTS. POSITIVE UPPER LEVEL DIVERGENCE OF 20 X10<sup>-5</sup>S<sup>-1</sup> IS SEEN TO THE SOUTHWEST OF THE SYSTEM CENTER. LOW VERTICAL WIND SHEAR (VWS) ABOUT (5-10 KTS) IS PREVAILING AROUND THE SYSTEM CENTER.

SATELLITE DERIVED TOTAL PRECIPITABLE WATER VAPOUR IMAGERY INDICATES THAT THE SYSTEM IS UNDER FAVOURABLE ENVIRONMENT OF WARM MOIST AIR. ALSO OTHER DYNAMIC & THERMODYNAMIC PARAMETERS INCLUDING WARM SEA, HIGH OCEAN THERMAL ENERGY AND LOW VERTICAL WIND SHEAR ARE FAVOURABLE FOR GRADUAL INTENSIFICATION OF THE SYSTEM. THE EASTERLY WINDS IN THE MID & UPPER TROPOSPHERIC LEVELS ARE STEERING THE SYSTEM WESTWARDS.

MOST THE MODELS ARE INDICATING THAT THE SYSTEM WOULD INTENSIFY FURTHER WHILE MOVING WEST-NORTHWESTWARDS ACROSS NORTH ARABIAN SEA. HOWEVER, THERE IS LARGE VARIATION W.R.T. THE PEAK INTENSITY AS WELL AS THE LANDFALL OF SYSTEM. SOME OF THE MODELS ARE INDICATING THAT THE SYSTEM WOULD CROSS MAKRAN COAST AS A CYCLONIC STORM WITH SUBSEQUENT RAPID WEAKENING, WHILE A FEW MODELS ARE INDICATING THE SYSTEM WILL SKIRT ALONG PAKISTAN – MAKRAN COASTS, MOVE INTO GULF OF OMAN AND WEAKEN THERE AROUND 5<sup>TH</sup> OCTOBER.

**IT MAY BE CONCLUDED THAT THE SYSTEM IS LIKELY TO INTENSIFY GRADUALLY INTO A CYCLONIC STORM DURING NEXT 24 HOURS AND MOVE WEST-NORTHWESTWARDS TOWARDS PAKISTAN – MAKRAN COASTS DURING THE SUBSEQUENT 24 HOURS.**

THE NEXT BULLETIN WILL BE ISSUED AT 2100 UTC OF 30<sup>TH</sup> SEPTEMBER, 2021.

**(D R PATTANAIK)**  
**SCIENTIST-F, RSMC, NEW DELHI**



**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEPRESSION OVER NORTHEAST ARABIAN SEA OFF GUJARAT COAST BASED ON 1200 UTC OF 30TH SEPTEMBER, 2021**

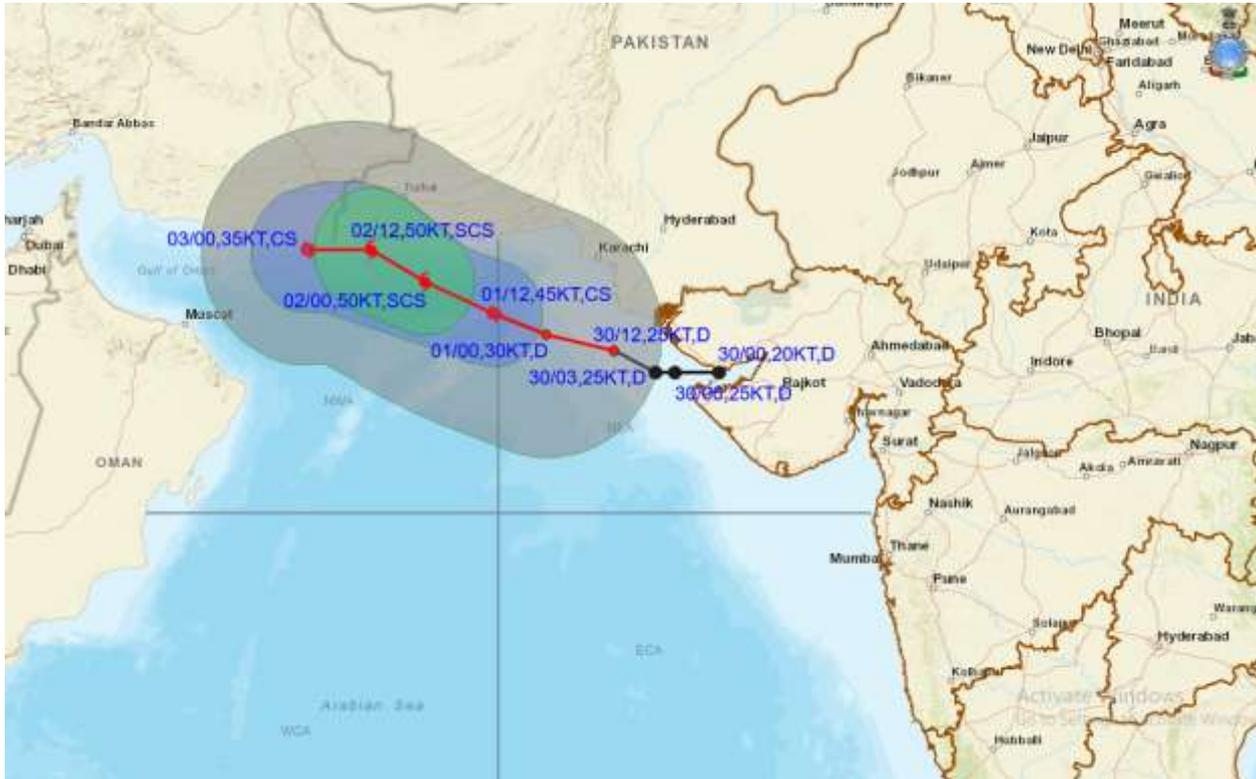


DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE 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 DEPRESSION OVER NORTHEAST ARABIAN SEA OFF GUJARAT COAST BASED ON 1200 UTC OF 30TH SEPTEMBER, 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

