



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 16.09.2024**

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 1500 UTC OF 16.09.2024 BASED ON 1200 UTC OF 16.09.2024.**

**SUB: DEEP DEPRESSION OVER JHARKHAND**

THE DEEP DEPRESSION OVER GANGETIC WEST BENGAL AND ADJOINING JHARKHAND MOVED WESTWARDS WITH A SPEED OF 20 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 1200 UTC OF TODAY, THE 16<sup>TH</sup> SEPTEMBER 2024, OVER JHARKHAND NEAR LATITUDE 23.3° N AND LONGITUDE 85.2° E, CLOSE TO WEST OF RANCHI (42701, JHARKHAND), AROUND 140 KM SOUTHEAST OF DALTONGANJ (4587, JHARKHAND), 200 KM EAST OF AMBIKAPUR (42693, CHHATTISGARH) AND 260 KM SOUTHEAST OF CHURK (42589, UTTAR PRADESH).

IT IS LIKELY TO CONTINUE TO MOVE WEST-NORTHWESTWARDS ACROSS JHARKHAND AND WEAKEN INTO A DEPRESSION DURING NEXT 12 HOURS. THEREAFTER, IT WILL CONTINUE TO MOVE WEST-NORTHWESTWARDS ACROSS NORTH CHHATTISGARH AND EAST MADHYA PRADESH DURING SUBSEQUENT 24 HOURS.

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
16.09.24/1200	23.2/85.2	50-60 GUSTING TO 70	DEEP DEPRESSION
17.09.24/0000	23.5/83.3	45-55 GUSTING TO 65	DEPRESSION
17.09.24/1200	24.0/81.6	40-50 GUSTING TO 60	DEPRESSION
18.09.24/0000	24.7/80.2	25-35 GUSTING TO 45	WELL MARKED LOW PRESSURE AREA

AT 1200 UTC, AS PER INSAT 3DR IMAGERY, SPIRAL BAND ORGANISATION OF CLOUDS CONTINUES. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EAST UTTAR PRADESH, EAST MADHYA PRADESH, JHARKHAND, NORTH CHHATTISGARH, NORTH ODISHA, GANGETIC WEST BENGAL, NORTH

BANGLADESH (MINIMUM CLOUD TOP TEMPERATURE MINUS 70-90 DEG CELSIUS) AND MODERATE TO INTENSE CONVECTION LAY OVER BIHAR, SUB-HIMALAYAN WESTBENGAL, SOUTH CHHATTISGARH, AND SOUTH ODISHA (MINIMUM CLOUD TOP TEMPERATURE MINUS 50-70 DEG CELSIUS).

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED (MSW) IN ASSOCIATION WITH THE SYSTEM IS 30 KTS GUSTING TO 40 KTS. ESTIMATED CENTRAL PRESSURE IS 993HPA.

AT 1200 UTC, RANCHI REPORTED LOWEST MEAN SEA LEVEL PRESSURE (MSLP) OF 994.0 HPA, PAST 24 HOUR PRESSURE CHANGE (P24) OF -2.1 HPA, AND MAXIMUM WIND SPEED (MSW) OF 140°/09KT. JAMSHEDPUR REPORTED MSLP OF 996.4 HPA, P24 OF 3.4 HPA AND MSW OF 140°/08KT. CHURU REPORTED MSLP OF 996.5 HPA, P24 OF 0.1 HPA AND MSW OF 320°/04KT.

**WIND WARNING:**

SQUALLY WEATHER WITH WINDSPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL OVER NORTHWEST BAY OF BENGAL AND ALONG AND OFF NORTH ODISHA COASTS TILL 1800 UTC OF 16<sup>TH</sup> SEPTEMBER AND DECREASE FURTHER.

**SEA CONDITION:**

ROUGH SEA CONDITION IS LIKELY TO PREVAIL OVER NORTHWEST BAY OF BENGAL AND ALONG & OFF WEST ODISHA COASTS AND IMPROVE THEREAFTER.

**FISHERMEN WARNING:**

FISHERMEN ARE ADVISED NOT TO VENTURE INTO NORTH BAY OF BENGAL AND ALONG & OFF BANGLADESH, WEST BENGAL, AND ODISHA COASTS TILL 16<sup>TH</sup> SEPTEMBER.

**REMARKS:**

MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 5 WITH AMPLITUDE GREATER THAN 1. IT IS LIKELY TO MOVE TO PHASE 6 FROM TOMORROW, THE 17<sup>TH</sup> SEPTEMBER, 2024. THE NCICS BASED FORECAST INDICATES PERSISTENCE OF STRONG WESTERLY WINDS (5-7 MPS) OVER CENTRAL PARTS OF INDIA WITH STRONG EASTERLY WINDS (5-7 MPS) OVER NORTHEASTERN PARTS OF INDIA, PRESENCE OF EQUATORIAL ROSSBY WAVES OVER CENTRAL INDIA, KELVIN WAVES OVER NORTHEASTERN AND MJO WAVES OVER SOUTH BOB. GRADUALLY, THE EQUATORIAL WAVES ARE DRIFTING AWAY. FROM TOMORROW ONWARDS, THEY MAY NOT SUPPORT THE CONVECTION OVER CENTRAL PARTS OF INDIA.

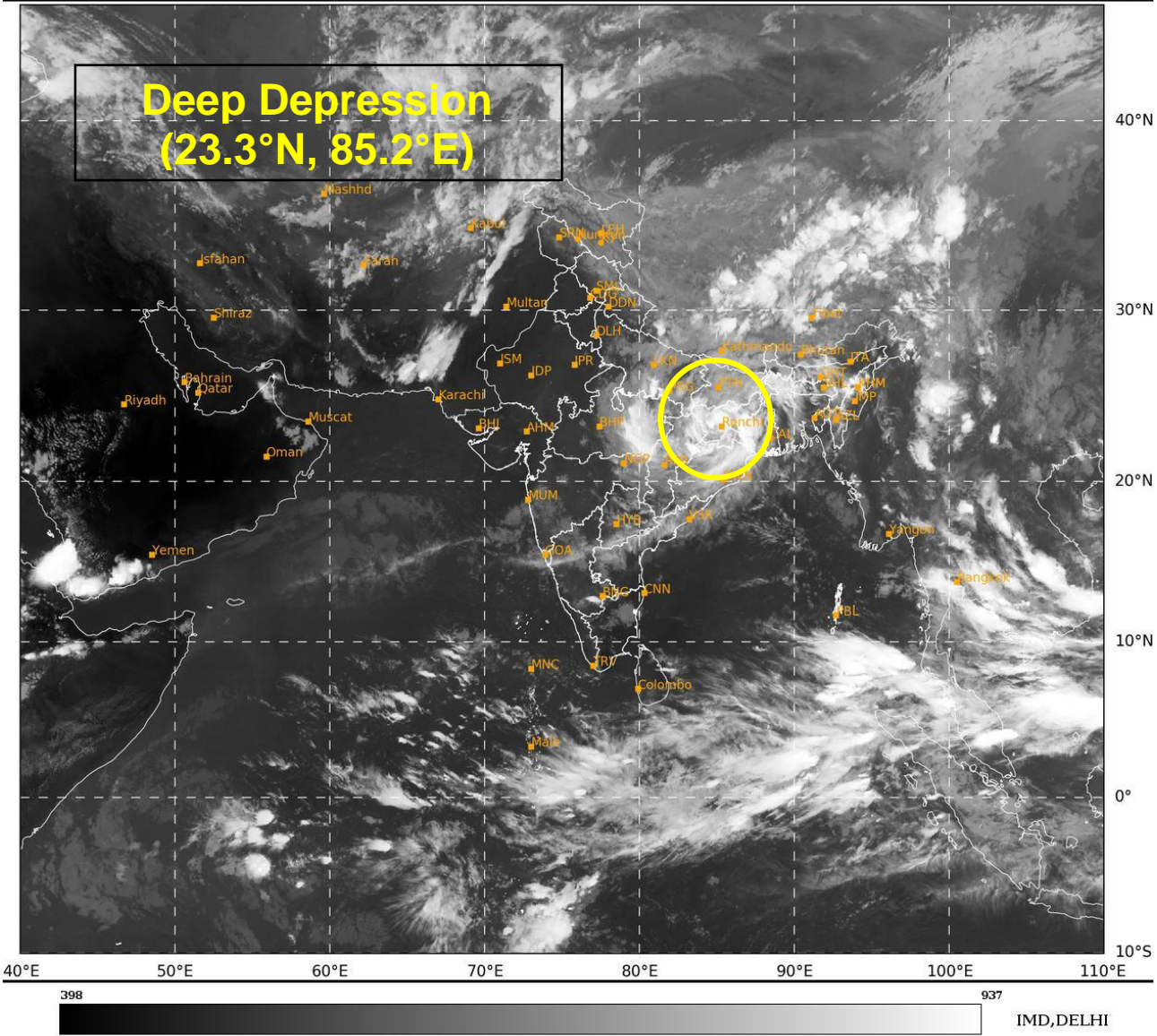
THE LOW LEVEL CONVERGENCE IS CIRCULAR AND AROUND  $10 \times 10^{-5} \text{ S}^{-1}$  OVER SOUTH OF THE SYSTEM AREA. UPPER LEVEL DIVERGENCE ALSO AROUND  $10 \times 10^{-5} \text{ S}^{-1}$  AND IS EAST-WEST ORIENTED AROUND THE SAME AREA. THE WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER SYSTEM AREA AND ALONG THE FORECAST TRACK. VORTICITY AT 850 HPA LEVEL IS AROUND  $200 \times 10^{-5} \text{ S}^{-1}$  TO THE SOUTH OF SYSTEM CENTRE AND EXTENDS UP TO 200 HPA ( $40-50 \times 10^{-5} \text{ S}^{-1}$ ),

INDICATING DEEP CONVECTION PERSISTING OVER THE AREA. ANTICYCLONIC MID SHEAR IS PREVAILING OVER THE SYSTEM AREA. THESE FEATURES INDICATE THAT THE SYSTEM IS STILL LYING IN A FAVOURABLE ENVIRONMENT AND THUS IT IS EXPECTED TO MAINTAIN ITS INTENSITY DURING NEXT 12 HOURS OVER THE LAND. SYSTEM IS EMBEDDED IN SOUTHWEST MONSOON WESTERLIES. DEEP LAYER MEAN WIND SUGGEST WEST-NORTHWESTWARD MOVEMENT UPTO 80°E. APPROACHING TROUGH IN WESTERLY IS SLOWING DOWN THE SYSTEM SPEED AND MAY LEAD TO NEAR NORTH-NORTHWESTWARDS MOVEMENT OF SYSTEM FROM 17<sup>TH</sup> MORNING ONWARDS.

MOST OF THE NWP MODELS INDICATE THAT THE SYSTEM IS LIKELY TO MOVE SLOWLY NEARLY WEST-NORTHWESTWARDS INITIALLY TILL 0000 UTC OF 17TH SEPTEMBER AND NORTHWESTWARDS THEREAFTER. MOST OF THE MODELS ARE INDICATING THE EXISTING INTENSITY AS THAT OF DEPRESSION WITH WEAKENING INTO WELL MARKED LOW PRESSURE AREA AROUND 1200 UTC OF 17<sup>TH</sup> SEPTEMBER. HOWEVER, NCUM IS INDICATING SLIGHTLY HIGHER INTENSITY AND VERY SLOW WEAKENING OF SYSTEM. IMD MME IS INDICATING INITIAL WEST-NORTHWESTWARDS MOVEMENT FOLLOWED BY NORTHWESTWARDS MOVEMENT AND WEAKENING AROUND 0000 UTC OF 17<sup>TH</sup>.

IN VIEW OF ALL THE ABOVE, THE DEEP DEPRESSION OVER JHARKHAND IS LIKELY TO MOVE WEST-NORTHWESTWARDS ACROSS JHARKHAND AND WEAKEN INTO A DEPRESSION DURING NEXT 12 HOURS. THEREAFTER, IT WILL CONTINUE TO MOVE WEST-NORTHWESTWARDS ACROSS NORTH CHHATTISGARH AND EAST MADHYA PRADESH DURING SUBSEQUENT 24 HOURS.

M. T. BUSHAIR  
SC.-C, RSMC NEW DELHI



Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C  
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%  
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**OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER JHARKHAND  
BASED ON 1200 UTC (1730 IST) OF 16<sup>TH</sup> SEPTEMBER 2024.**



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 ALONG WITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER JHARKHAND BASED ON 1200 UTC (1730 IST) OF 16<sup>TH</sup> SEPTEMBER 2024.**



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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

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### Fishermen Warning Graphics

