



**Government of India
Ministry of Earth Sciences
India Meteorological Department**



Press Release

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Heavy rainfall activity over Delhi NCR during early hours of 28th June 2024

1. Realised rainfall over Delhi NCR

Delhi NCR experienced intense thunderstorm and heavy to extremely heavy rainfall activity during early hours of 28th June, 2024. The 24 hr cumulative rainfall ending at 0830 hrs IST of today, the 28th June over different locations in Delhi NCR are given below.

Safdarjung-228.1mm (8.98 Inch), Lodhi Road, Mausam Bhavan -192.8mm (7.6 Inch), Lodhi Road, Mausam Bhavan -192.8mm (7.6 Inch), Ridge 150.4mm (5.9 Inch), Delhi University 139mm(5.5inches); Pitampura 138mm(5.4inches); Palam- 106.6mm (4.2 Inch), PUSA 89mm(3.5inches); Salwan Public School, Mayur Vihar 75mm(3.0inches); Pharma Science and Research University, Tughalakabad 70.5(2.8inches); Ayanagar 66.3mm (2.6 Inch). IGNOU, mehrauli 45.5(1.8 inches); Narayna 42mm(1.7inches); Air Force station, Hindon 10.5(0.4inches); Kamala Nehru Nagar, Ghaziabad 12mm(0.5inches); Northcap University, Gurugram 39mm(1.5inches); Ujwa 11mm(0.4inches), CRPF campus, Jharoda Kalan 5mm(0.2inches).

The rainfall mostly occurred over Delhi NCR during 0300 to 0600 IST of 28th June 2024 with maximum intensity around 0500-0600 IST.

2. Comparison with past rainfall records

Considering 24 hrs cumulative daily rainfall during June based on data of 1901-2024, the 24 hrs cumulative daily rainfall recorded over Safdarjung at 0830 IST of 28th June 2024 has been the second highest as compared to highest value of 235.5 mm recorded at 0830 IST of 24th June 1936 as shown in Table below.

Table 1. The highest 24-Hours Cumulative Rainfall amount (In mm) Recorded over Safdarjung in the month of June during 1901-2024:

Rainfall (mm)	Recorded on	Rank
235.5	24.06.1936	1st
228.1	28.06.2024	2nd
191.6	30.06.1981	3rd
139.7	24.06.1933	4th

Total Monthly rainfall over Safdarjung during June 2024 (till 28th) has been compared with earlier record of 1901-2023. It indicates that rainfall during June, 2024 so far has been 3rd highest with total rainfall of 234.5mm against the highest value of 415.8mm during June, 1936 followed by 399 mm during June, 1933 as shown in Table below.

Table 2. Highest ever monthly total rainfall recorded over Safdarjung for the month of June during 1901-2024

Year	Rainfall in mm	Rank
1936	415.8	1 st
1933	399.0	2 nd
2024(1 June till 28 June 2024)	234.5	3 rd

3. Causes of heavy rainfall over Delhi NCR on 28th June 2024

The heavy rainfall activity over Delhi NCR during early hours of 28th June 2024 can be attributed to the following:

✓ Considering the monsoon circulation the advance of monsoon was stalled over the eastern India for quite a long time due to weaker monsoon current over the Bay of Bengal.

It revived becoming stronger gradually from 25th June onwards with the development of an upper air cyclonic circulation over central and adjoining north Bay of Bengal in middle tropospheric levels.

✓ At the same time the Southwest Monsoon current over the Arabian Sea also strengthened with increase in wind speed and strengthening of off-shore west coast trough. An east-west Shear Zone lay across northern peninsular India at the middle troposphere.

✓ The above situation continued on 26th and 27th leading to strong southeasterly winds blowing from Bay of Bengal towards Northwest India. The upper air cyclonic circulation

which developed in the middle tropospheric levels extended from surface to middle tropospheric levels over Westcentral & adjoining Northwest Bay of Bengal on 27th June.

✓ Under its influence a Low Pressure Area formed over Northwest Bay of Bengal and adjoining north Odisha-Gangetic West Bengal coasts in the midnight of 27th which further enhanced the advection of warm & moist air from Bay of Bengal towards Northwest India including Delhi.

✓ At the same time, an upper air cyclonic circulation lay over Northwest Madhya Pradesh in the lower tropospheric levels and another one over Haryana & neighbourhood in the middle tropospheric levels leading to convergence of warm moist winds upto middle tropospheric levels.

✓ An Anticyclone lay centered to the northeast of Delhi at the height of 9-12 km above mean sea level and provided strong upper level divergence which supported lower level convergence of wind.

✓ Under such large scale monsoonal synoptic weather systems prevailing over the region, the mesoscale (10-100 km size) convective activity occurred over Delhi NCR leading to intense thunderstorm and heavy rainfall activity during early hours of 28th June. This mesoscale activity was supported by thermodynamic instability in the atmosphere favorable for thunderstorm.