

at 4 observatories in Delhi area and had come to the conclusion that the rainfall at Delhi is localised even at short distances, the differences being greater in the rainy months than in the drier months. There was heavy rainfall in and around Delhi in the month of August 1961 and a study of certain aspects of this rainfall has been made in the present note. For this purpose, the total monthly rainfall as well as the daily rainfall values during the month of August 1961 as recorded at a number of raingauge stations situated in the Delhi area and neighbourhood have been taken into consideration. The raingauge stations are (1) Meteorological Observatory, Safdarjung Airport, (2) Hydrometeorological Observatory at Lodi Road, (3) Meteorological Observatory at Palam Airport and Raingauge Stations at (4) Delhi University, (5) Chandravall, (6) Gurgaon and (7) Ghaziabad. The locations of the above seven raingauges are indicated in Fig. 1.

2. The total amounts of rainfall recorded during the month of August 1961 at these stations are given in Table 1.

It will be seen that the space variations in the August 1961 rainfall are very appreciable. While the highest value of 583.3 mm was recorded at Safdarjung, the lowest value of 426.1 mm was recorded at Gurgaon which is at a distance of 22 km from Safdarjung. The variation for different localities in comparison to Safdarjung ranges from 0.2 to 27 per cent in the August 1961 rainfall. Another noteworthy feature is that the rainfall during this month (583.3 mm) as recorded at the Safdarjung Airport Observatory surpassed the previous August rainfall record of 582.9 mm in August 1908. Heavy rainfall during the 24 hours ending 0830 IST on 2 August 1961 amounting to 184.0 mm was recorded at the Safdarjung Observatory and this single day's noteworthy heavy downpour constituted 33 per cent of the total rainfall of the month; on the same day Lodi Road, Palam, Delhi University and Chandravall recorded 181.6, 136.8, 110.4 and 130.2 mm respectively. This heavy rain on 2 August was

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CERTAIN ASPECTS OF HEAVY RAINFALL IN AND AROUND DELHI DURING AUGUST 1961

In a previous paper (Agarwala 1961), the author has discussed the results of analysis of mean monthly rainfall recorded

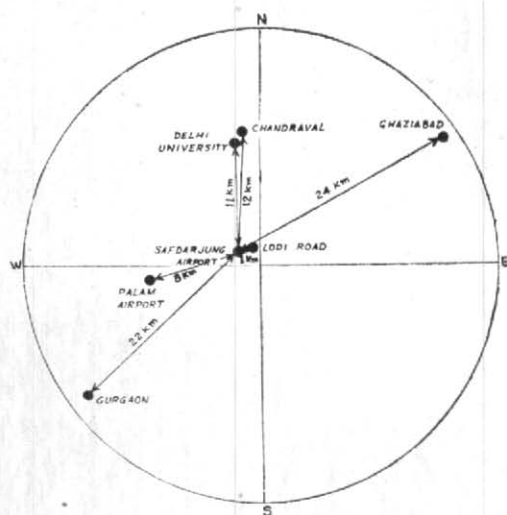


Fig. 1. Locations of seven rain gauge stations in and around Delhi

associated with an active Western disturbance which was moving across the extreme northern parts of the country at that time.

3. The space variations of rainfall over a shorter period, *i. e.*, for a day have also been examined for the month of August 1961. The daily rainfall values for certain selected days during August 1961 as recorded at 5 observatories in the Delhi area are given in Table 2.

It will be seen from this table that the space variations in daily rainfall are very striking. The downpour on 2 August was particularly heavy; rain amounting to 178 mm out of a total of 184 mm on that day fell during a period of four and half hours only (0345 to 0815 IST). The Self-recording Intensity Rain gauge record at the Safdarjung Observatory indicates that the highest intensity of rainfall was 160 mm per hour at 0535 IST and on seven occasions the intensity of rain crossed the value 75 mm per hour during the period 0420 to 0645 IST on that day. After the above heavy downpour there was a decrease in rainfall and for the 24 hours ending 0830 IST on 3 August the rainfall recorded at Safdarjung amounted to 78.2 mm; the intensity of this rainfall was 65 mm per hour at 0125 IST and 83 mm per hour at 0440 IST as revealed by the Self-recording Intensity Rain gauge record. On 16 August the Palam rain gauge recorded rainfall of 103.1 mm while the rain gauges at Safdarjung, Lodi Road, Delhi University and Chandraival recorded much smaller amounts, *viz.*, 26.4, 23.9, 14.4 and 12.2 mm respectively. On the other hand, on 17 August the rainfall recorded at Chandraival was the heaviest and that at Safdarjung lowest. On 18 August while no rain was recorded at Palam, there were rainfalls of 45.6 mm at Safdarjung, 36.4 mm at Lodi Road, 34.6 mm at Delhi University and 23.0 mm at Chandraival. The self-recording rain-gauge chart at Safdarjung for 17-18 August shows that there was a downpour on that day lasting for about two hours and that

Table 1

Rainfall (mm) during August 1961 in Delhi area

Serial No.	Name of Observatory	Amount of rainfall (mm)
1	Safdarjung	583.3
2	Lodi Road	582.1
3	Palam	485.1
4	Delhi University	559.6
5	Chandraival	497.6
6	Gurgaon	426.1
7	Ghaziabad	430.6

TABLE 2
Daily rainfall (mm) in Delhi area

Date August 1961	S	L	P	U	C
1	2.0	0.6	0.4	17.2	8.0
2	184.0	181.6	136.8	110.4	130.2
3	78.2	79.9	50.5	21.8	13.2
16	26.4	23.9	103.1	14.4	12.2
17	22.6	38.7	32.9	49.0	56.2
18	45.6	36.4	0	34.6	23.0
21	25.6	22.6	13.2	47.6	51.2
25	21.4	20.0	4.0	35.2	21.8

S—Safdarjung, L—Lodi Road, P—Palam, U—University and C—Chandraval

about 30 mm out of the total rainfall of 45.6 mm occurred during an interval of one hour only. On 21 August there was more rainfall at Chandraval and University and less rain at the other three sites, the lowest being at Palam, on 25 August while the raingauges at Safdarjung, Lodi Road and Chandraval recorded almost equal readings, there was more rain at the University site and very little rain at Palam.

4. It would appear from the above examination of the rainfall data that rainfall at Delhi is highly localised even at short distances. It also brings out the fact that the forecaster is handicapped in the matter of issuing daily local weather forecasts for Delhi even for an area within 80 km because while such a forecast may be found

to be 100 per cent correct in one locality, it may prove to be unsuccessful for another locality only a few kilometres away.

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