

## Letters to the Editor

551·582 (541)

### A CLIMATOLOGICAL STUDY OF THUNDERSTORMS OVER TEZPUR AIRFIELD

Tezpur airfield (Lat.  $26^{\circ}43'N$ , Long.  $92^{\circ}48'E$ ), situated on the right bank of the *Brahmaputra* river in Assam, is an important airfield from the aviation point of view. A study of various aviation hazards affecting aircraft flights is considered to be of great importance. Generally speaking the weather is usually fine during the winter season. The visibility, however, decreases occasionally due to fog or mist in the morning hours. As a result of the passage of western disturbances across Assam, the airfield experiences thunderstorms associated, on some days, with squalls during the pre-monsoon months, March to May. During the monsoon season, thunderstorms, very heavy at times with persistent low clouds and accompanied on one or two occasions by hail and/or squall constitute the main hazard to flying. Southwest monsoon withdraws from this area in the second week of October and the weather improves considerably. This note is a study of thunderstorm activity over Tezpur airfield based on the data for 6 years from 1960 to 1965, similar to that of Gupta and Chorghade (1961).

The average annual frequency of days of occurrence of thunderstorms is 85. If two or three thunderstorms occurring in a day are counted separately, the average per year is 96. This is about 80 per cent of the thunderstorm activity over Agartala airfield, in south Assam. The thunderstorms occur over Tezpur throughout the year. No month is free from their occurrence. The thunderstorm activity starts perceptibly in March and is almost equally predominant during the

months April to September. On an average there are 1 to 3 days of thundery activity from October to February, 6 days in March and 10 to 12 days from April to September. The breaks in monsoon and the passage of the axis of monsoon trough through-Tezpur area stimulate considerable thundery activity over Tezpur airfield during the monsoon season.

As a result of the study of periods for which various thunderstorms lasted, it is found that 37 per cent of the thunderstorms have an average duration of less than 2 hours and 84 per cent less than 4 hours. Only 7 per cent of the thunderstorms persist for more than 6 hours. The thunderstorms are of longer duration from March to September than during the rest of the year. The thundery activity is mainly predominant during the period from 1800 to 0600 IST of the next day during the months March to May and from 1500 to 0900 IST during the months June to August. During September all the periods are favourable for occurrence of thunderstorms. From October to February no particular period can be specified.

Squalls occurring over Tezpur are few and occur mainly during the pre monsoon months, the direction of wind varying from SW'y to ENE'y. No squalls have been reported from the southerly or southeasterly directions. The wind speed rarely exceeds 35 kt. There are one or two occasions of squalls occurring during the monsoon months.

A few thunderstorms are accompanied by hail, which can occur at any time of the year from March to September. In the year 1961 hailstorms occurred on 6 days during the months of August and September, three days in each month.

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5 June 1969

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#### REFERENCE

Gupta, H. N. and Chorghade, S. L.

1961 *Indian J. Met. Geophys.*, 12, 1, p. 109