Letters to the Editor

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PREDICTION OF FOG OVER SAFDARJUNG AERODROME (DELHI) FROM LOCAL WEATHER CONDITIONS OF THE PREVIOUS NIGHT

In northwest India, the weather in winter is generally dry, but occasionally due to incursion of moist easterlies in the lower levels or due to rain caused by the passage of western disturbances, the air becomes humid and widespread fog occurs in the morning. In view of the effect of morning fog on air operations, an attempt was made to see if, apart from the study of synoptic charts, any simple prediction diagram could be developed for the prediction of fog at Safdarjung Aerodrome. The winter of 1961-62 (1 November 1961 to 28 February 1962) was considered for the study and various meteorological elements recorded at 2100 IST on the previous night were tried as predictors. It was found that the dry bulb and the dew point temperatures at 2100 IST could be used successfully to predict the fog on most of the occasions.

In Fig. 1 are plotted the 215 observations relating to 2100 IST during the period studied. From considerations of occurrence or non-occurrence of fog, the area of the diagram has been divided into 3 regions marked A, B and C. In region A, fog has occurred only on 2 cases out of 77 (about 3 per cent). In region B, fog has occurred on 17 cases out of 22 (77 per cent). Even out of the remaining 5 occasions, mist occurred on 3 occasions. On one of the two occasions when neither fog nor mist occurred, overcast skies and intermittent drizzle prevailed throughout the night and the following morning; on the other occasion winds of speed 5 to 7 knots started blowing from midnight and continued till noon of the following day. In region C, out of 16 cases falling within it, fog occurred on 5 occasions

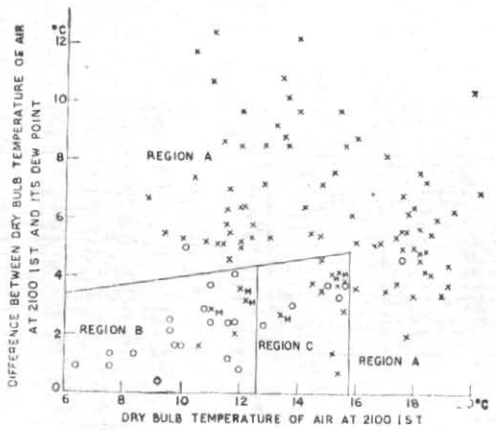

Fig. 1

O—cases in which fog has occurred
× —cases in which fog has been absent
$\times_M$ —cases lying in regions B and C in which fog has not occurred but mist has occurred

and mist on 3 occasions and the remaining 8 occasions were free from fog or mist.

It thus appears that the simple prediction diagram based only on the dry bulb and dew point temperatures at 2100 IST could give a useful indication of the occurrence or otherwise of fog on the next morning. When the point falls in region A of the diagram it is reasonably certain that fog would not occur. When the point falls within region B, fog can be expected on the next morning on a large majority of occasions, except when overcast skies or stronger than normal winds are expected to prevail. When the temperature and moisture conditions are represented by point falling in region C the chances of fog or mist are about 50 per cent—in other words we have to look to other considerations for making a forecast. It may be pointed out that such an indeterminate condition has occurred in the 1961-62 winter season on only 16 occasions out of 215, *i.e.*, 7 per cent of the days.

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