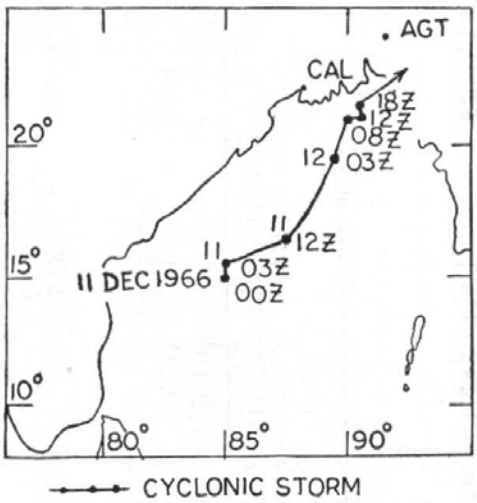

Fig. 1. Track of the cyclonic storm during 11—13 December 1966

551.578/576(541.2)

UNUSUAL AND PROLONGED FOG AND STRATUS CLOUD OVER AGARTALA AIRFIELD ON 13-14 DECEMBER 1966

Instances of occurrence of fog over Agartala airfield and neighbourhood during the winter months are quite common. During these months fog generally commences during the late hours of night and early morning hours and continues for 3-4 hours. Occasionally the fog is associated with low stratus clouds. A rare instance of sudden development of fog followed by low stratus clouds over Agartala airfield during early night of 13 December 1966 which continued till afternoon of 14 December is reported. On this occasion, the visibility was reduced to less than 100 m and the cloud base was as low as 60 m a.g.l.

The special features of the topography of Agartala airfield and neighbourhood are hilly terrain towards east and rivers towards west, the nearest river Titas being at a distance of about 2-3 n. miles from the airfield. There is no workshop or mill in the vicinity of the airfield and as such sources of atmospheric pollution due to industrial smoke and existence of condensation nuclei for the formation of fog are mainly absent.

From the current weather records of the Meteorological Observatory at Agartala airfield it is seen that the fog commenced as early as 1550 GMT on 13 December and continued upto 0345 GMT of 14th. Thereafter, the fog had gradually lifted and stratus cloud appeared. Within 15 minutes, 7/8 sky was covered by *St*, the lowest base being 150 m a.g.l. During the next 15 minutes the sky was completely covered with *St*, the base lowering to 60 m. At 0630 GMT, the blue sky was visible with 7/8 sky being covered with *St* at 180 m a.g.l. At 0830 GMT the sky was covered with 3/8 *St* at 210 m, 4/8 *Sc* at 360 m and 1/8 *Cu* at 750 m a.g.l.

Agartala airfield and neighbourhood had a good amount of continuous rainfall during 1440 GMT of 11th to 1430 GMT of 12th in association with a cyclonic storm over the Bay of Bengal which crossed the East Pakistan coast near Chittagong in the early morning of 13 December. The storm track is shown in Fig. 1. Rainfall recorded at Agartala during 24 hours ending 0300 GMT on 12 December was 206 mm and on 13 December 158 mm. As a result, there was considerable amount of

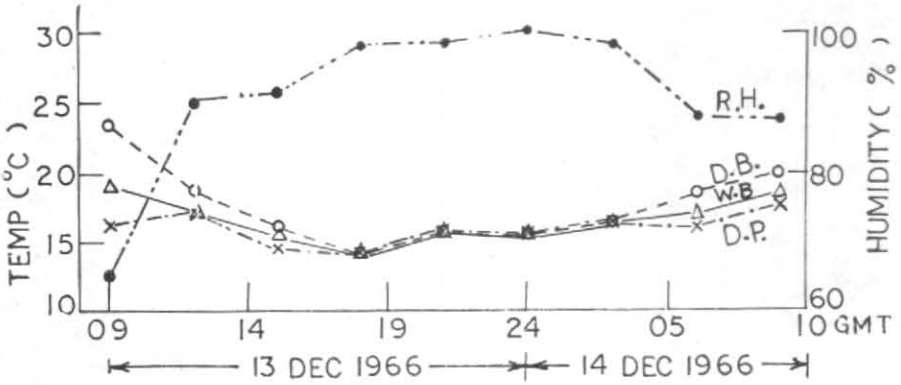

Fig. 2. Temperatures (D.B., W.B. and D.P.) and Relative Humidity as recorded at Agartala Observatory during 13—14 December 1966

moisture present in the lower atmosphere over Agartala airfield and neighbourhood. The sky became absolutely clear from 2130 GMT of 12 December and there was probably very quick nocturnal radiational cooling. The conditions, therefore, became favourable for the formation of fog and stratus clouds over Agartala airfield and neighbourhood.

The surface wind at Agartala airfield during the occurrence of fog was either calm or light N/NE'ly (2 kts). A study of the upper wind over Agartala airfield and neighbourhood at different heights revealed that strong westerly wind prevailed practically at all levels upto 6 km a.s.l. The westerly dry air might have helped in accelerating the cooling of the lower troposphere over the area. The hourly values of dry bulb, wet bulb and dew point temperatures and relative humidity over Agartala are shown in Fig. 2. It was found that there was a sharp rise in percentage humidity during 0900-1200 GMT on 13 December and thereafter, it gradually increased and air was completely saturated at 0000 GMT on 14 December.

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April 1, 1967

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