

NEW ZEALAND METEOROLOGICAL OFFICE CIRCULAR NOTE NO.3.NOTE ON CLOUD TRAILS FORMED BY AIRCRAFT AT CHRISTCHURCH.

By C.G. Green, Wigram Aerodrome.

On Friday the 11th July, distinct cloud trails were seen from Wigram at about 2.30p.m.

These were made by an Oxford aircraft flying at a height of 6,300 feet with an indicated temperature of -3°C . At about that time the machine was flying in very thin cloud which gave slight ice accretion on the wind-screen for a short time and also blocked the pitot head temporarily. From beneath the cloud had a fibrous appearance resembling cirrus (type 7 in the International Cloud Atlas) but was obviously much lower than normal cirrus while thicker parts were more like altocumulus. The water drop structure was confirmed by a small portion of a rainbow which appeared about the same time in the part of the cloud where the trails had been.

At about 3 p.m. another instructor went up to 6000 feet in a Harvard in the same region and left further trails not so clearly defined. Although he went up with the intention of repeating the effect he was not keeping a close watch behind and did not know when he was making them.

I have been unable to find anyone who actually saw the trails forming, most having noticed them later, but one instructor who has frequently seen them in England said they were much less sharply defined than usual.

The first set at least seem to have formed in very tenuous cloud. This is confirmed by the fact that there were two complete circles while the instructor reported that, while visibility was reduced he could see the horizon sufficiently well to be giving the pupil instruction in steep turns. It was this that enabled the machine responsible to be identified. There is no doubt about the height and identity of the Harvard which made the second set.

As water drops were present the air cannot have been super-saturated and so the trails must have been due to the condensation of exhaust vapours in air which was already saturated. This is probably why they were less distinct than the ones reported from overseas which have formed in a clear sky.

Unfortunately owing to dislocation of schedules by the recent bad weather the training squadrons are exceptionally busy and I was unable to get a trip up myself.

The aircraft thermometer, checked later on the ground, appeared to read a trifle high, but less than 1°C .
