

LOCAL WEATHER CONDITIONS NEAR ASHBURTON AIRFIELD.

By Corporal P.B. Aldridge.

This airfield is situated on the Canterbury Plains about 9 miles from the coast and $2\frac{1}{2}$ miles from the Ashburton River. The Ranges to the NW are approximately 24 miles away and rise to 5000 feet with isolated peaks to 7666 feet. The three gorges in these ranges - Rakaiia, Ashburton and Rangitata - directly influence the surface wind at the airfield during NW conditions.

WIND:

Being centrally situated on the plains, the wind exposure is excellent except for the ranges mentioned above. The strongest winds come from NE, NW and S.

Northeasterly: When there is a NE gradient, this wind becomes quite strong with gusts up to 40 m.p.h. It freshens in the afternoon making flying conditions most unpleasant and turbulence may be worse than in NW conditions.

Northwesterly: This Föhn wind may have three distinct directions - N, NW, WNW - according to the gorge from which it comes. Strangely enough the wind from the Rakaiia Gorge is due N, although the gorge itself is NNW of the airfield. The nor'wester may spring up at any time of the day, but it commonly arrives between 0900 and 1030 following a period of light and variable winds. The speed usually builds up quite rapidly to gusts 35-40. The maximum recorded gust is 65 m.p.h. Flying conditions are invariably too rough for the handling of light aircraft and turbulence is increased opposite the mouth of the Rakaiia Gorge. Nor'westers are most common between October and April.

Southerly: A southerly squall is often, but not necessarily, preceded by a nor'wester. The wind shift is abrupt with little or no cloud. Line squalls are not common. Low cloud, base 200-300 feet soon follows if the front is of moderate strength, at first more of the strato-cumulus variety and towering later. Showers will follow later, if at all.

Katabatic winds and sea breezes: When a wedge of high pressure or an anticyclone covers the area, the surface wind at the airfield follows the following cycle:-

1. A katabatic nor'wester blows during the night and early morning. The cooling effect of the snow on the ranges increases the normal airflow down the slopes in winter and the wind reaches the airfield as a very steady breeze showing little or no gustiness. At Methven this wind is stronger and occurs more frequently.
2. A very variable wind blowing from 0-10 m.p.h. and direction sometimes tending NE. This sets in about 0900 in spring and 0700 in summer.
3. The sea breeze which varies in direction between E and SE, speed 10 m.p.h. gusts to 20 in spring, speed 15 m.p.h. gusts to 25 in summer, comes in between 1030 and 1400, though usually just before noon. It freshens till 1600 to 1800 according to the season, backing steadily; later lulling and often persisting for a while at NE for a few hours before and after sunset before it finally backs to the NW.

Owing to the location of the airfield, it is frequently difficult to decide whether the local weather will be that characteristic of an inland or coastal district. Being so placed, this probably accounts for the irregularity of time in the arrival of the sea breeze.

FOG:

Fogs are not so frequent as in Wigram but radiation fogs do form, especially along the coast and over the Ashburton and the Rakaiia Rivers. At times, there forms what appears at first to be a bank of cloud in the direction of Hororata; but actually it is a fog bank which may extend along the foot of the ranges and gradually spread towards the coast, slowly lifting as it moves and dispersing about 0900.

LOW CLOUD often as low as 400-600 feet causes much inconvenience to aircraft. Quite a good deal of the loss of flying time at Ashburton is due to this cloud. The layer of stratocumulus lifts slowly during the day if there is no precipitation and may break in the afternoon.

CONVECTION CLOUD:

In the early morning following the passage of a southerly, there is often 10/10 stratocumulus. This clears, to be followed by the formation of convective cumulus which increases over the plains while it is clear over the sea. By noon this may have increased to 6/10 when it will slowly disappear or else form a layer of stratocumulus. It is very rare for this cumulus to form on the second day following a southerly.