

DEPARTMENT OF NATIONAL DEFENCE

DEFENCE RESEARCH BOARD



DEFENCE RESEARCH TELECOMMUNICATIONS ESTABLISHMENT

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A I R M A I L

Dr. Grote Reber,
Commonwealth Scientific and Industrial
Research Organization,
"Stowell", Stowell Avenue,
Hobart, Tasmania,
Australia.

Dear Dr. Reber:

Thank you for your letter of July 7. I am very sorry for not having answered it much earlier. I had hoped to have some hard facts to give you, but as it seems that it may be a while yet before these will be available, I had best let you know the present state of affairs.

A considerable amount of data about northern hemisphere troughs has now been extracted from the records, and Mr. Muldrew is in the process of writing a paper on the subject. The study turned out to be a much larger task than we had anticipated; it involved the scaling of several thousand ionograms. As might be expected, some of our original ideas about the location and behaviour of the troughs have changed as a result of the detailed analysis, but the general picture seems to be about the same. The paper has not yet received clearance for publication, but Mr. Muldrew has agreed to send you a copy as soon as preprints are available.

The southern hemisphere troughs have not yet been studied in detail. For this reason, I hesitate to pass along any of my present impressions as to their behaviour in case they may be misleading. For example, my impression is that in the southern hemisphere, the troughs are much broader than in the northern hemisphere. However, as this impression is obtained from a look at only a few satellite passes, and since our northern hemisphere data indicates a longitudinal variation in the depth and width of the troughs, I cannot at present say how valid the impression is, or what it means. The full scale statistical study will have to be made in order to sort out the characteristics. However, as I stated in my letter of last December, if you can indicate some specific times in which you are particularly interested, we can probably give you some preliminary information which will be of use to you.

Thank you for your interested in the Alouette experiment. I hope that we will soon be able to send you a preprint of the Muldrew paper, which should answer most of your questions about the Northern hemisphere troughs.

Yours truly,

G.I. Nelms