

# LISTENER

Incorporating N.Z. RADIO RECORD

Every Friday Price Threepence

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## Let Us Keep Cool

**L**ONG before this article is seen by any reader it may have lost all relation to fact. We write, as we must keep on repeating, a week, and sometimes longer, before we publish. But if it continues to be the case that Denmark lies under the heel of Germany, that Germany controls all the ports and railheads of Norway, that Sweden is afraid to mobilise, and that the foundations of Finland's security have collapsed north and west as well as south and east, it would be foolish to pretend that the situation is not disturbing. It is.

But it is also stimulating. For months we have been wondering when the war would become real. Some have even been wondering whether it is necessary and worth while. The situation has been dangerously encouraging to fanatics and mischief-makers, dangerously discouraging to realists. Now all that confusion has passed. We know where we stand. The limits of German tyranny may not have been reached, but the end of British complacency certainly has been. We are not merely blind and deaf if we require further evidence of the necessity of winning the war. We are too soft and simple to survive.

But there are almost none in that category any longer. We not only know where we stand, we know what we feel. Our nerves and muscles have come tight. If we must suffer, we will; but we will not bicker and wobble and ask why we are fighting. We can get along now without a formula. Our war aim is to smash the German machine before it smashes Europe and liberty. There will be time enough afterwards, and sorrow and humility enough, to bring us to peace.

In the meantime we must not weaken our hands by overheating our heads. Victory is a long way off. We shall not bring it nearer by rushing violently down a steep place. We have men. We have materials. The enemy himself has flood-lit the goal. We shall reach it by using our strength relentlessly and our reason calmly. Fortune favours the brave who keep cool.

## WHEN THE SUN HAS SPOTS The Short Wave Doesn't Go Far

**S**ERIOUS interruptions in shortwave reception last month set radio engineers as well as astronomers looking at the sun. They saw spots, remembered that there is a close relationship between the best frequencies for long-distance radio communication over shortwave circuits and the average number of spots on the sun, and had announcers inform you at the other end of the transmitter that conditions were too bad for you to be given your usual dose of Davenport.

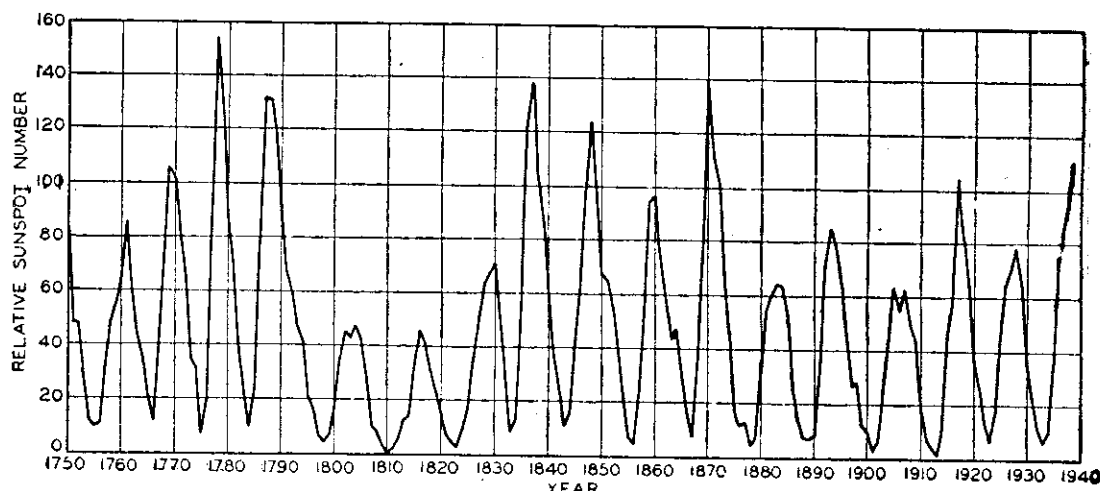
It happened, to be exact, between 3.15 and 4.15 p.m. on March 21 and again between 11.15 and 11.55 o'clock on March 23. No one worried very much about these brief intervals, but on March 25 the trouble started again at 4 a.m. and lasted until 6

It also affects telegraph communication, and telephones, for the earth potential is boosted abnormally and plays great havoc with anything going along the lines close to its surface.

And that, if you see what it means, is what happened last month when New Zealand was cut off from Davenport and Davenport from Europe, and America from everywhere. All the shortwave stations, we must presume, fired off their propaganda as fast as they could during the day and night and following day, confident that no one could hear them while they made such good use of a golden opportunity to practise.

### Once Every Eleven Years

The sun plays these nasty tricks at fairly regular intervals. Although observations have been taken for



Variations in sunspot activity since 1750

p.m. on March 26. This was serious, and everyone hoped that the sun would quickly get over its measles. It did, of course, and by now is brighter and merrier, above the long white cloud that is all it knows of New Zealand this summer.

### The "Ionized Layers"

The frequencies which give the best transmission are considerably higher during periods of great sunspot activity than at times when sunspots are few. That is, for those who tune to kw/s instead of mc/s, wavelengths should be shorter.

A very long way up in the atmosphere, higher even than they fight aerial battles to-day, there is what they call the ionized layers. In time of trouble on the sun, the theory goes, these become more ionized than usual, with the result that the shorter radio waves are more effectively returned to the earth.

In years of high solar activity the earth's magnetic field is disturbed, and nearly always this disturbance affects shortwave transmission.

little short of two centuries, astronomers and other interested persons say that sunspot activity reaches a peak about once in every eleven years. This year it is climbing to a new peak. It is a little late, for the last one was about 1928-29; but it is making a good job of it this time. In September of last year the sun had another try at making a nuisance of itself. There was considerable disturbance of radio communications over long distances, and in New Zealand we saw a magnificent display of Aurora Australis.

### The Short Ones Go Further

These short waves that the sun so easily puts out of joint travel, paradoxically, much longer distances than long waves. They leave the transmitters at much shorter intervals, or higher frequencies, than long waves, make for the upper air, and coast nicely along through the ether until they get tired, or until the sun frightens them down, as it has been doing lately.

Radio engineers keep an eye on this sort of thing. Each season they regularly alter their frequencies to keep pace with the change in the position of the earth in relation to the sun. Now that the importance of sunspot activity is also recognised, they periodically adjust their frequencies to suit. Now, for instance, frequencies are being raised. As the sun regains his even temper, they will be lowered again.

He's a long way off to be making so much trouble; but then, so is Hitler.