

CORRESPONDENCE MUST BE
ADDRESSED TO AN OFFICER
BY HIS OFFICIAL TITLE, NOT
BY HIS NAME.

Telephone No.



IN REPLYING PLEASE QUOTE
THE NUMBER HEREUNDER.

C.E. 1/34/5.

General Post Office,
WELLINGTON C. I.,

20th February, 1952.

Mr Grote Reber,
212W Seminary Ave.,
Wheaton, Illinois,
U.S.A.

Dear Sir,

Observations on solar noise.

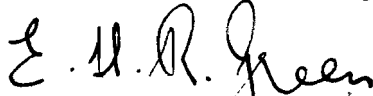
Receipt of your letter of the 19th January is acknowledged. The observations referred to were conducted by the operating staff of Awarua Radio on their own initiative and without any previous knowledge of the existence of detectable solar radiations on the frequencies concerned. Consequently the observations were mainly directed at establishing the solar origin of the noise. Detailed observations of all characteristics of the radiations were not possible under the circumstances. No recordings were taken.

After February, 1946, the Superintendent was asked to report any further such noises and take note of peak frequencies, so far as this could be done without interfering with the normal work of the station. Solar radiations have now been observed on a number of occasions but no series of observations is as large as the original one. All relevant information has been extracted from the logs, including those of February, 1946, and a summary attached for your information. In most cases the frequencies shown are those on which a watch was being maintained at the time. They should not be regarded as peak frequencies unless stated.

No accurate measurement of the strength of the noise signals has been possible. From the fact that many bearings are classified as First Class it would appear that many of the surges must have been of the order of 100 microvolts per meter or more. With a direction finder of the aural nul type a really sharp nul can only be obtained when the signal strength is about 100 times greater than that required to give clear reception at the goniometer maximum, and the signal required for this would be of the order of one microvolt per meter.

The details given in the attached summary represent all the information obtained from observations at Awarua Radio. I have, however, sent a copy of your letter to the Director, Dominion Physical Laboratory, C/o Carter Observatory, Wellington, who may have information available from other sources.

Yours faithfully,



(E. H. R. Green).
Chief Engineer.

Encl.

<u>Date.</u>	<u>Time</u> (G.M.T.)	<u>Freq.</u>	<u>D.F.</u> <u>Bearing.</u>	<u>Operator's Remarks.</u>		
6th Feb., 1946.	0056	8523	007	Several short surges. Long surge.		
	0105		001			
	0128		352			
	0136					
	0152		340			
	0157		335			
	0203		332			
	0205		331			
	0208		331			
	0212		328			
	0224		324			
	0240		316			
	0255		312			
	0315		306			
	0330					
	2330		10450		034	The surge usually is of about a minute duration and is of greatest strength at certain frequencies. On this occasion the optimum frequency was in the vicinity of 10.45 Mc/s.
	7th Feb., 1946.		0140		10450	344
2140		6700	067			
2220		6700	055			
2232		8700	054			
2255		25600	057			
2347		20200	045			
8th Feb., 1946.	0024	20050	031			
	0048	20800	014			
	0056	20800	012			
	0107		004			
	0120		356			
	0135		351			
	0150		342			
	0202		334			
	0220		322			
	0236		314			
0255		307				
25th Sept., 1947.	0125	8420	350	Background noise level very high on 9-12 Mc/s but flat on D.F. No signals audible over this freq. range.		
	0138/50	10670				
	0148/ 0200				High background noise level 15.5-20 Mc/s but no apparent surges. Flat on D.F. Only a few signals audible over this range. Peak noise level 17-19.5 Mc/s. Surges not apparent from 1.5-6 Mc/s.	
	0200				Conditions returning to normal 8-12 Mc/s.	
	0204	8420	340	These surges not apparent on other bands and the noise		

18th Nov., 1948.	0135			Noise with definite peak at 8330 kc/s. Area limited to 8270-8400 kc/s approx. Duration of noise about 2 minutes.
	0139			Similar to 0135.
	0145		330	
	0204			Similar effects to those at 0135 and 0139, duration $\frac{1}{2}$ min.
	0215 to 0218			Noise level again surging and peaking on the following frequencies:- 10460, 9900, 9800, 9600, 8400, 7900, 7600 kc/s.
	0135		332	From D.F. log.
	0139			Similar surge at Auckland.
	0214		323	
	0303		296	
	0334		280	
	0149		337	30 seconds duration.
26th Dec., 1948.	2100	8523	076	Occasional faint surges.
	2147		072	Occasional surges to strength 5.
	0219		312	Mild surges.
	0222		317	Slightly stronger.
	0340		291	
27th Dec., 1948.	0050	8523	013	
	0100			Blackout conditions.
28th Dec., 1948.	0248			Strong background surge peaking at about 8470 kc/s and at frequencies of about 480 kc/s intervals. Also audible on broadcast frequencies. 2 minute duration.
	0353			Ditto.
21st Feb., 1950.	0116	8523	353	
	0210		337	Very brief.
	0231		333	
	0235		328	
	0328			Too brief for bearing.
	0344		302	
	0410		297	Brief.
	0440		281	
22nd Feb., 1950.	2313	8523	043	
	2342		032	Brief.