

FADING INVESTIGATION ROUSES GREAT INTEREST

HUNDREDS OF REPORTS ROLLING IN

The volume of replies and detailed reports that are rolling in from all quarters is very clear evidence of the interest taken in our combined investigation into fading, as staged on Monday and Tuesday last, September 26 and 27.

Sorting of the replies into provinces and areas is now proceeding for submission of the tabulated results to "Megohm," our technical contributor. It is too early yet to say what conclusions can be drawn, but the cursory investigation so far possible, leads us to hope that some interesting deductions will be possible. Mail from distant points is still coming in heavily, and will continue, we expect, for several days from this writing. When the sorting is completed, the whole of the material, including the meter readings from the station transmission, will be handed to "Megohm," whose report will be awaited with interest by both ourselves and readers. It will be published, together with diagrams, as soon as possible.

NO FADING FROM 2YA—IN AUSTRALIA, ANYWAY!

(By F. E. Baume, City Editor, "The Daily Guardian," Sydney.)

Listening in a couple of nights ago I heard 2YA's announcer mention that Monday, September 26, would be a special test night for New Zealand, 2YA in particular, that 1YA would be silent, and that New Zealand listeners who noticed fading should report to 2YA.

I am 1200 odd miles from your delightful station. On my four-valve auto-coupled expert set, I receive you on 'phones as strongly as I get 2YC, 2BL, 2UW, 2UE, 2KY, or 2GB, and on speaker better than Melbourne or Brisbane, always sufficient (electrical storms excluded!) to fill my very big living-room, which is really two fair-sized rooms.

Each night at 6 (7.30 your time), I get 2YA, 1YA, or 4YA, making 2YA my specialty. So I was disgusted to read in the "N.Z. Free Lance" what I term a ridiculous attack on your 5000 watts station.

Let me say now, that I have never experienced fading of any consequence from 2YA. On the other hand, I am content to plug in—it takes a fraction of a minute—adjust my rheostats and regeneration, and listen on a Sunday from 6 to 8.30, my time, without any appreciable fading whatever. I refer especially to some of the relayed programmes from His Majesty's Theatre, when the silver band plays.

I challenge the "Free Lance" to justify their statements. Our own ex-

pert, Flight-Captain Warneford, D.S.O., says 2YA is the best station outside 2FC and 4QG. Oswald Anderson, general manager of 2FC, my close friend, and Burbury, his chief engineer, swear by 2YA; from Queensland to Port Augusta your station is known.

I find you more reliable than 5CI, (Adelaide) for power. I like your volume better than 4QG; I like your programmes. What more can the "critic" of the "Free Lance," always so refreshingly general in his comments, require?

Here am I, hearing men like Anderson, Maclardy of 2BL, Warneford, Harry Turner the inventor, all except myself wireless celebrities, praise 2YA, and then I read the strange "Free Lance" complaint.

The only faults I find with 1, 2, 3 and 4YA are—

The words New Zealand should be included by announcers as "2YA, Wellington, New Zealand."

1YA and 4YA should have their wave-length altered, especially 1YA, which clashes with 2BL, so that only super-selective sets like my own can hear it at all—and last (a selfish thought):

Silent nights should be abolished for the sake of about 25,000 of us in New South Wales alone who like your programmes and your station.

My testimony for your inquiry: "No fading noticed in N.S.W.!" Sydney, September 16.

NEXT WEEK'S FEATURES FROM 4YA.

The afternoon session on Tuesday will include an address on "Interior Decoration" by Miss M. Puechegud, when she will describe how to make a living room up to date. Mr. H. Greenwood, of the Athenaeum, will talk on books and will describe the latest fiction of the week.

"Big Brother Bill," whose fame is growing every week, is at present conducting a limerick competition, and is receiving each day a large number of juvenile efforts in this direction. Some of them show real poetic promise, and others are highly amusing. The winner of this competition is to receive 5s. from "Big Brother Bill."

At 8 o'clock, following a relay of orchestral items under the conductorship of Mr. L. D. Austin, from the Octagon Theatre, a high-class studio concert has been arranged, when some of Dunedin's leading talent will be heard, comprising Mr. E. G. Bond (bass), Miss Mattie Edgar (mezzo-soprano), Mr. R. B. MacDonald (baritone), Miss Rita Holmes (mezzo-soprano), and recitations by Mr. and Mrs. Gordon Hendry.

Outstanding items at Tuesday's concert will be flute solos by Mr. J. Stewart. A particularly interesting number will be Guill-Popp's "Bogel Sang." This represents, in a remarkable way, pipe music being played under water.

Pastor W. D. More will on Tuesday again entertain listeners with a very amusing address entitled "In Praise of Cranks." It is understood that Mr. More has met a few of these and will proceed to tell you something about them.

Among the performers at Thursday's concert will be several well-known entertainers of the southern city. Mrs. J. Marshall (mezzo-soprano), Mr. Philip Marchant (baritone), Miss Winnie McPeak (contralto), Mr. J. Ferguson (bass), will contribute the vocal portion of the programme. Mrs. Atwell (vio-

linist), Miss Alice Muir (pianist), and Mr. Malcolm Robilliard (cellist) will provide the instrumental numbers from the studio.

At 8.45 on Thursday evening, Mrs. M. F. Primmer, who has lately relinquished the position of "Aunt Diana" at 4YA, will give a lecture on "Travels in China." Mrs. Primmer has had many years' residence in that troubled country and will have some very interesting things to say about it.

Most of the items on Friday night will be of the lighter type. Mr. Billy Gay will sing two of the latest popular hits. Mr. Norman Scurr will render Hawaiian solos; Mr. Jesse Benfield, the well-known local comedian, will entertain. Mr. Jack Clarke will sing baritone solos, and Mr. A. Roberts will be heard in violin solos. From 9 p.m. till 10 dance music will be relayed from the Savoy, being supplied by Mr. Ben Beecham and his orchestra.

Commenting on Saturday next, 4YA will again be heard on the air on Saturday nights, after many months of silence. The transmission will commence at 7.15 p.m., when the latest sporting information will be broadcast. A good programme is being arranged for the studio concert which will follow.

ENTERPRISE AT 3YA

The programme organiser at 3YA is arranging an "Irish Night." He has also in view a "Welsh Night" and an "Old-time Song Night." A "Maori Night" has already been fixed for October 29.

A vocal quartet will soon be heard at 3YA, and will be a regular feature in Thursday programmes. The quartet will comprise Misses Frances Hamerton (soprano), Belle Renault (contralto), Mr. Russell Sumner (tenor), and Mr. Fred Penfold (baritone). The combination should be excellent, and when associated with such talented artists as the Christchurch Broadcasting Trio the standard of music will be lifted to a high level. Thursday concerts will be of a fairly classical but varied nature, with quartets, trio, duets, and solos.

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MARVELLOUS ELECTRON

MINUTE BUT POWERFUL

Most people are familiar with some of the common facts of electricity. For example, perhaps you have noticed the peculiar behaviour of the hair when combed with a hard rubber comb, and have heard, if not seen, the tiny sparks of electricity that pass between the two. This is fundamentally identical with the electricity which heats the filaments in your valves. Each is made up of the same kind of electric particles, or electrons as they are called, and the difference in the two cases is much the same as the difference between a raindrop and a river. Both are made up of the same kind of molecules, but they manifest the energy tied up in them differently. In the same way all electrical phenomena are caused by the movements of electrons though the different phenomena may appear quite unrelated.

Smallest Electric Unit.

The electron is the smallest unit of electricity. With one exception it is the only thing in nature that cannot be broken up into smaller parts. We do not know absolutely its size and shape, but it is generally assumed to be a sphere of such size that if enough of them were laid in a row to make a line as long as the diameter of one of the hairs of your head, it would require more than seventy thousand million of them.

Can Be Measured.

In spite of the minuteness of the electrons, which is really far beyond the limit of human comprehension, the quantity of electricity associated with it has been measured so accurately that the error cannot be greater than about one part in four thousand—less than four hundredths of 1 per cent. This charge of the electron is, like its size, so small that a figure representing its magnitude is quite meaningless. Some

MASONIC SERVICE.

After our announcement appeared last week regarding the broadcasting of the Masonic Church service from the Wellington Pro-Cathedral, it was found impossible for the arrangement to be carried out.

idea, however, may be grasped by computing the number of electrons which are equivalent, in quantity of electricity, to that which flows through an ordinary 40-watt lamp in one second. This is found to be about two and a half quintillions—25 with 17 ciphers after it. This number is so enormous that if all the people on the earth—and there are about two billions of them—were put to the task of counting this number, and each man, woman and child counted at the rate of one electron per second for ten hours every day, it would take over seventy-five years to finish the job. This is the number of electrons flowing through the filament of a 40-watt lamp in a single second.

Movement of Electrons.

So much for the electron itself. We shall now consider its connections with the filament in a radio valve. It is now known that every atom of every element is made up partly of electrons and that, at least in metals, there are, in addition to the electrons tied up with each atom, other electrons which are free to move about. These "free" electrons, whether in a metal or outside in space always move toward a positively charged body and are repelled by a negatively charged one. A current of electricity in a wire is nothing more than the movement of these "free" electrons in the direction of a positive charge.

Electronic Emission.

About thirty-four years ago Sir J. J. Thomson discovered that, although electrons could not be drawn out into space from a cold body by the attraction of a positive charge, electrons could be drawn out from a filament when it was heated. This opened the door to the interesting field of thermionics, the emission of electrons from hot bodies, and a great deal of work has since been done by other physicists in determining the laws governing this phenomenon. It has been found that the emission of electrons from heated metals is quite analogous to the emission of vapours from heated liquids. The rate of evaporation from liquids is known to increase very rapidly as the temperature is raised and the same general law has been found to apply in the case of the "evaporation," if we may call it such, of electrons from hot bodies.

PLACE FOR BATTERIES

It is not good practice to place batteries far away from receiving sets. They should be either beside a set or directly beneath it in a cabinet or nearby on a shelf. A storage battery especially is most convenient in the cellar along with the charging apparatus, but unless you know the circuit you are using you may encounter losses through such an arrangement.

Heavy wire should be used for battery connections in all cases. They should be allowed to work at their maximum when needed, and they cannot do this with fine wire for connections.

No. 18 annunciator wire is practical for such connections and easy to procure. A stranded flexible wire, such as that used in house wiring, is even better.

AN EPIC MATCH TOLD IN EPIC WAY

2YA'S BRILLIANT DESCRIPTION OF NORTH v. SOUTH MATCH

A battle of giants was staged for decision at Athletic Park on Saturday, October 1, when the Rugby gem of the season was set down for decision by the match between the North and South Island representatives.

That game, we venture to think, will go down in history as one of the greatest ever played in the Dominion—and that means, probably one of the best in the world. It was fitting, therefore, that it should not only be seen by not fewer than 25,000, but "heard" by probably twice that number at least.

For this special occasion the Radio Broadcasting Coy's chief sports announcer, Mr. A. R. Allardyce, came north, and worthily did he maintain the reputation he established for himself, notably in the Hawke's Bay—Wairarapa Ranfurly Shield match. His quick eye and forceful descriptive touches portrayed the stirring battle to thousands in distant homes, and enabled them to enjoy the thrill. It was a great game and a great description.

ANSWERS TO CORRESPONDENTS

(By "Megohm.")

An inquiry from Nelson district asks for information regarding "adding one stage of neutralised R.F. to a three-coil regenerative set." This is not a very practicable proposition, and in these days the three-coil is scarcely worth hanging on to when the more sectional Browning-Drake can so easily be constructed, using the same audio stages if desired. Apart from giving better results, the properly neutralised Browning-Drake will always win the appreciation of neighbours when it replaces a three-coil tuner. The same correspondent is troubled with harsh tone, and has been endeavouring to improve it by utilising a three-to-one ratio transformer between set and speaker, taking output from the primary as a step-down, which has made an improvement in tone. Of course the obvious remedy is to replace the audio transformers in the set with more efficient ones, try a fixed condenser of .001 m.f.d. capacity or larger across the output, and also across the primary of first audio transformer. The smallness of these condensers or absence of them will often cause harsh tone.

H.T.H. (North Auckland) has a Browning-Drake set, number of valves not stated, but does not affect the first question much. He is unable to tune in 2YA when 1YA is on the air and wishes to know the reason. Your set is rather unselective for a Browning-Drake, and probably has closely-wound coils instead of the more selective "low-loss" or space-wound coils. Decreasing the value of the small condenser in the aerial circuit makes the set more selective, but too great a reduction is inclined to make the set unstable. The Browning-Drake of which you have read the description gets Auckland at two miles from 2YA without a wave-trap, only a negligible background of 2YA being heard. Situated where you are, you should easily get 2YA without more than a trace of 1YA at least. Careful tuning counts too in such a case. In answer to your second query as to whether you should be able to get Dunedin or Adelaide with the set much depends upon the number of valves. Dunedin, at your distance, would not be more than 'phone strength on four valves, except, perhaps, on odd occasions. Four valves will bring in Adelaide at very good speaker strength on occasions, but other times only on 'phones. You will find that skill in tuning-in soon comes with practice.

A.R.E. (Reefton) writes asking if the short-wave adapter can be used on a reflex set employing crystal detector. This is a case where the adapter will not suit, as there is no valve detector socket to which the adapter can be connected. A request is also made for a short-wave adapter to be designed for use with a valve reflex set. The short-wave adapter is really only a detector unit to be coupled to an audio amplifier, and by doing away with the old valve-base plug the three flex wires can be connected to the proper battery, and other leads of any type of amplifier, assisted by reference to the original diagram. Although "Megohm" will always give all assistance possible, it takes too much time to design special additions of valves to suit any circuit diagram that may be sent along.

J.W.C. (Puponga).—The 20's wire for the crystal set coil is intended to be S.W.G., but, although B. and S. gauge is slightly thinner than S.W.G., it would answer in this case. The equivalent would be 19's B and S.

B.F. (Wellington).—You would not be wise to increase the capacity of variable condensers in the set mentioned, as the capacity should not be too large. Why not take out two or three of the moving plates? The fixed ones can be left, and the moving ones replaced when the set is dismantled. This is the best way out of the difficulty. It is much better than altering coil values in this case.

H.A.R. (Havelock).—As you find a difficulty in getting reception of lower wave-lengths, it is necessary for you to bring your set down a little to cover the usual range. The wave-lengths as now arranged appear to be giving general satisfaction since the recent alterations were made. You give no particulars whatever, beyond the information that you have a set, so the only thing I can suggest is to take a few turns off the tuning coils, so that the range of the set will be lowered. If our correspondent cares to supply details as to tuning arrangements in the set, further particulars can be given as to what should be done.

ESPERANTO

It has been definitely decided that the Esperanto course, which is being conducted through these columns from station 2YA, will be comprised of twenty lessons. Therefore, this week's lesson, Lesson XI, which is published below, brings students to the commencement of the second half of the course. Provided that the present time-table is adhered to, the concluding lesson will be broadcast from the studio on the evening of December 15. This means that students will have completed the course before the holiday period has made itself felt.

Students and listeners should continue to forward inquiries to "The Esperanto Instructor," New Zealand Broadcasting Company, Wellington, or care of "Radio Record." With each inquiry a stamped addressed envelope must be enclosed, otherwise the instructor cannot guarantee a reply.

LESSON XI.

(To be broadcast from 2YA on October 13, from 7.30 to 7.54 p.m.),

Bonan vesperon!

THE CONJUNCTION.—In Esperanto, as in other languages, certain words are used merely to join words or sentences. Students have already used Esperanto conjunctions in this course, for such words as kaj, sed, ĉar, and ke are classified as such. It is not proposed to give herein an exhaustive list, space not permitting this, but the following will prove useful:—Kaj....kaj, both...and; au....au, either....or; ĉu....ĉu, whether....or; nek....nek, neither....nor; ĉe se, even if; same kiel, the same as; kaj tiel plu (k.t.p.), and so on; kaj cetera, and the rest (etc.).

INTERJECTIONS AND EXCLAMATIONS.—The following words are used to express joy, grief, surprise, etc.:—Adiaŭ! Farewell, good-bye! antaŭen, forward! Atentu! Look out! Take care! Aŭskultu! Hark, Hiss, Bone! Good! Ĉerte! Certainly! Ĉu ne? Isn't it? Efektive! Really! Fi! Fi! For shame! For! Be off! Haltu! Stop! Helpu! Helpu! Help! He ve! Alas! Ja! Indeed! Jen! Lo! Behold! Kompreneble! Of course! Rapide! Be quick!

CLOCK-TIME: The method of giving time of day:—To the question, Kion ora estas? (What time-hour is it?) the following answers may be given: La dua (2.0); La kvara kaj tri-dek (4.30). For "a.m." and "p.m." add matene, posttagmeze, vespere, nokte, in the morning, afternoon, evening, or night, as the case may be. Bonan nokton al ĉiuj.

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