

Questions and Answers

(Continued from page 10.)

pre stage to use two 247's in pushpull. At the most you should use the 171A class of valve in this pre-power stage. Generally speaking, the medium small power valves are quite satisfactory for this position. Your best plan would be to use an output transformer with a large number of variable taps, so that you may use the tap which best suits the combination.

S. W. FRIEND (Auckland): Please explain modulation, and unmodulated aerial power.

A.: For a full description of modulation, see the 1932 "Radio Guide." Modulation is that process by which the microphone current, which is sound waves turned into electric waves, is imposed on the high frequency current, generated by the transmitting station. This latter is the carrier wave, while the former are the carried waves. Unmodulated aerial power is the rating of the transmitter irrespective of modulation; that is, the output is the rating of the carrier wave of the station—that generated by the oscillators and associated apparatus.

2. Would a square or circular aerial be worth experimenting with?

A.: No; the directional effect of the average aerial is so small that it is not worth worrying about.

NEVA (Wellington): What length of brass tubing is required for the Hartley transmitter?

A.: Approximately 5½ feet.

CRONA (Napier): I recently coupled a pentode directly to my inductor dynamic speaker, and volume and tone were pleasing, but I read in the "Times" that it is not good for the speaker. I put an output transformer in the output lead, but had to de-couple the auxiliary grid and plate of the pentode to stop oscillation. The volume then dropped by half. What should I do?

A.: Apparently the impedance of the pentode and that of your inductor dynamic speaker—you do not say which one it is—more or less match. The best plan would be to incorporate an audio choke and a 4mf. blocking condenser in the output choke circuit in contrast to the output transformer circuit. The extra lead cannot be utilised except for valves in pushpull. See the "Radio Times" (May) for a fuller explanation.

CHARGER (West Coast): I wish to charge my wet "D" batteries in blocks of 45 volts from a 60 amperes dynamo. How could I break down the volts and amperes to suit my charging rate?

A.: You will require a rheostat of 1000 ohms that will pass 100 milliamps. Adjust this until you get the volts and amperes correct. Arrange your batteries in parallel blocks.

2. I erected a Beverage aerial, but find that it goes better without the earthed resistance in the end.

A.: This seems as though there is a leakage to earth in some part of the system, and the aerial is acting then only as an ordinary one. As far as your cable is concerned, "B—" is usually black, otherwise all right.

FISHERMAN'S luck is proverbial, but imitation is the order of the day. The chief Radio Engineer of Philips Lamp (N.Z.), Ltd., has received very interesting details of how radio is assisting the Norwegian herring fishermen. During the season a seaplane fitted with a transmitter scouts in regions where shoals are likely to be observed, and upon locating the fish a message is sent in to the waiting trawlers. The plane then scouts further afield and upon sighting another shoal forwards another message to other waiting vessels, and so the business proceeds. The herring season only lasts two months, and many seasons have been unprofitable owing to the fish escaping unseen. This last circumstance is now impossible, but what I want is a radio that will make the little beggars bite.

Half-Hours with the W.E.A.

THE following is the outline of Mr. Jellie's fourth talk, "The Testament of Bridges," to be broadcast from 1YA on Wednesday, May 4:—

1. Robert Bridges, Poet Laureate (1913-30), published "The Testament of Beauty," on his 85th birthday.

Picture the old man in his garden overlooking the city of Oxford, working at his last poetic will and testament. Having lived through the world's

The most important poetical work of our generation.

2. Its argument.

A question and an answer. The question: What are the Purpose and Destiny of Man, and what part does Beauty play therein? The answer is given in four books. Book one justifies the use of reason in the search for an answer, and traces the progress of human wisdom through the ages. Book two traces the working of the self-preserving instinct in humanity.

Book three deals with that other instinct by which Nature provides for the continuance of the race, and shows how, by association with the idea of beauty, it rises to supreme heights of spiritual love. In book four he traces the evolution of morality and religion, and shows how they culminate in a vision of love as the essence of the Divine Nature.

His conclusion is, that as man's life has been an evolution hitherto from humblest origins, so we have reason to hope that when mind and body are separated the evolution of spirit will go on, until it reaches a union of the human and divine in life everlasting; and that beauty is the divinely appointed guide by which mankind is directed in his wanderings to his true home in God.

THE following is the outline of Mr. Hollinrake's fourth talk on the Instruments of the Orchestra, to be broadcast on Thursday, May 5:—

Percussion instruments: Kettle-drums (timpani), sidedrum, cymbals, tambourine, castanets, glockenspiel, tubular bells, celesta; also the harp.

Each instrument described—its construction and appearance.

Sound of each instrument and its capabilities for use in the orchestra. Orchestral music demonstrating the use of percussion instruments by great composers.

"Radio Guide and Call Book"

Supplementary Service to Buyers

AT the time of printing the "N.Z. Radio Guide and Call Book" the details of certain New Zealand "B" stations, for one reason or another, were not fully available, and several stations were omitted. These were stations 1ZH, 2ZK, 3ZE, 3ZU, 4ZR, 2ZO, 2ZF, 1ZQ. The information desired is now in hand, and in order to give buyers of this "Guide and Call Book" the satisfaction of having a full list of these stations in the one publication we are having a slip printed giving the information, and will send this free on request to anyone who has bought a copy of the "Guide." "Guides" that leave our office after this will have this slip inserted, and copies will be made available to booksellers.

The May issue of the "N.Z. Radio Times" will also contain a full list of all N.Z. stations and hours of operation.

changes, 1850-1900, then through the war and its aftermath, he sums up his judgment on human life. An old man's wisdom.

1ZR Programmes

Friday, April 29.—10.30 a.m.: Devotional service, Uncle Scrim. 11.15: "Mensama," "Numerology." 11.40: Popular music programme. 5 p.m.: Dinner music. 6: Children's session, Fairy Princess and Uncle Sam. 7: Mr. Bill Hindman, "Sport." 7.30: Relay of community singing from Lewis Eady Hall. Song leader, Vernon Drew. 9 to 10: Popular programme.

Saturday, April 30.—10.30 a.m.: Devotional service, Sister Rita. 10.45: Music. 1.30: Close down. 5: Dinner music. 6: Children's session, Polly Flinders, Alice in Wonderland and Jack the Giant-Killer. 7.15: Mr. W. A. Moore, "An Article from the N.Z. Smalholder." 8: Popular programme. 10: Dance music. 11: Close down.

Sunday, May 1.—9 a.m.: Uncle Tom and his Children's Service. 9.45: Uncle Scrim conducting the studio church service, with 1ZR Broadcasting Choir under direction of J. Whitley Mc Elwain. 6 p.m.: Music. 6.15: Miss Baker and Church of England children's service. 7: Relay of A. H. Dallimore's Mission service from East Street Hall. 8.30: Studio standard classics.

9: "The Man Who Speaks." 9.30: Close down.

Monday, May 2.—10.30 a.m.: Devotional service, Mr. Garner. 11.15: "Maoriland," "Titbits." 11.40: Popular music programme. 5 p.m.: Dinner music. 6: Children's session, Goldilocks and Uncle Bern. 7: Music. 7.30: Close down.

Tuesday, May 3.—10.30 a.m.: Devotional service, Uncle Scrim. 11.15: Madame Milne, "Diet and Health." 5 p.m.: Dinner music. 6: Children's session, Aunts Ruth and Nina and Uncle Scrim. 7.15: Mr. I. Meltzer, A.P.A. (N.Z.), "Income Tax." 8: Popular programme.

Wednesday, May 4.—10.30 a.m.: Devotional service, Uncle Scrim. 11.15: Mr. Walter Smith, "Music Through Stringed Instruments." 5 p.m.: Dinner music. 6: Children's session, Miss Muffett. 7.15: Mr. Rod Talbot, "Motoring." 8: Close down.

Thursday, May 5.—10.30 a.m.: Devotional service, Uncle Scrim. 11.15: Miss B. Karnahan. 5 p.m.: Dinner music. 6: Children's session, Wendy. 7.15: Mr. J. W. Ballie, school debate, "Homework." (Four girls and four boys.) 8: Vacuum Oil Company's programme. 10: Dance session. 11: Close down.

Laboratory Jottings

New Osram Valves

THE British General Electric Company, Ltd., has introduced two more American replacement valves. These are the 235, the variable-mu, and the 247, the power pentode, thus bringing up to date their list of American replacements. They have now a complete series covering all valves likely to be required in a modern American set. These two valves were tested by our laboratory, the 235 mainly to see if it would fill the dual purpose of a 551 and 235 variable-mu valves, as was claimed by the manufacturers. Comparing the Osram 235 with the standard 235, we notice little difference in characteristics, and it was thus to be expected that the valves could be interchanged without any noticeable difference in the output. This was the case.

In the case of the 551 socket, designed for a valve which is really very little different to the 235, the replacement could likewise be made without any detriment to either quality or volume.

Whilst in our hands the valve was soundly thrashed by subjecting it to overload and rough handling, but it emerged after each test without showing any alteration in characteristic. It, together with a pentode, was worked in an American set for several months, then tested together with the other American valves in the set, and it measured up to all requirements.

The new Osram pentode also embodies double mica bonding, which not only ensures great strength and durability, but minimises microphonic noises.

The new valves have been produced by the Osram Valve Works after extensive experiments on the part of the Research Laboratory of the G.E.C., London, and in producing them they have completed their range of American replacement series.

On conclusion we might remark that, so far as our tests have gone, the valves have proved themselves to be equal in all respects to our American standards, and can be classed as first-grade valves.

Registration of Radio Servicemen

Delay Occasioned

SOME delay has been occasioned in the issuing of the certificates to those who passed the Radio Serviceman's Examination. In a circular letter to the successful candidates, the Electrical Wiremen's Board point out that owing to the fact that the term of office of the members of the Registration Board terminated on March 31, a new board has to be elected. It is anticipated that a meeting will be held early in May, when applications for registration will be dealt with.

An endeavour was made to have the applications dealt with before the end of March, and for that purpose a special meeting was held on the 29th, but owing to the large amount of business to be dealt with, all applications for limited registration were deferred to the next meeting.