



BROADCASTING.

Our Wireless Danger.

Why Instant Action should be Taken to prevent a Monopoly.

By G. A. Taylor.

Wireless telegraphy, which should be one of the greatest blessings to Australia, has been in a moulded condition ever since its Australian introduction, over 13 years ago. It was in 1909 that the writer, recognising the importance of wireless to Australia, the land of wide distances, established the first military station at Heathcote Artillery Camp, with the assistance of Messrs. Hannam and Wilkinson, and two years later the Federal Government, having decided to take it up, began its history of mismanagement.

A block of land of 40 acres was selected at Pennant Hills, and as it was covered with bush, a Sydney firm of felled to clear it for nothing and give £250 for the timber. The Government, however, resolved to do the work themselves, which cost £4,000, including erecting two small buildings. The Government then decided to make wireless sets, so purchased the Shaw Works at Randwick for £50,000 for the purpose, giving £25,000 more than the works were said to be worth. The history of these works under Government control is a story of muddle, bungle and money-wasting, until we find that up to December 1921 the annual loss had risen to about £75,000 per year. This scandalous state of affairs must have rushed Prime Minister Hughes to push forward the speedy adoption of an agreement with the Amalgamated Wireless (Australasia) Limited, by which the Federal Government is paying that Company £500,000 for its interest therein; the company increasing its capital to £1,000,000; the Federal Government to have an equal number of nominees to the Board of Directors with an independent chairman.

This proposal was pushed through the Federal Parliament, and now muddle came into the affair with the appointment of Sir Thomas Hughes, the Chairman of the Amalgamated Wireless Ltd., as the "independent" chairman. Owing to the wide public disapproval Sir Thomas Hughes resigned and Sir William Vickers was appointed Chairman, the vacancy thus occasioned in the directorate be-

ing taken by the Prime Minister himself, evidently in order that he may do his best to see that the Federal Government gets a fair deal, and that no monopoly will be created detrimental to the public and the best development of wireless; for Mr. Hughes is well aware that Australians are always opposed to a monopoly of any kind, as it is recognised that monopoly cripples development, hence there must not be given any possibility of the Amalgamated Wireless (Australasia) Ltd., to secure a monopoly over the wireless industry.

Whilst in Great Britain recently I noticed that the Marconi Co. were endeavouring to arrange for a great radio-conference that would control the world's wireless communication. It hoped to get the monopoly of the broadcasting stations of Great Britain, and to a number of more or less important patents to keep other manufacturers out of the field, and so secure a tremendous business of supplying the public with "listening" apparatus. The British Post-Master General, however, at the instance of a number of British manufacturers, entered into an arrangement to enable the manufacturers to work wireless broadcasting, and so enable the manufacturers to work wireless broadcasting, and so enable the British Empire to hold its own in the competition in the wireless with America, Germany, and other countries, at the same time giving the Marconi Co. their share in the manufacture and sale of "listening sets," and payment of license for the use of whatever patent rights they may hold that might be required.

Great Britain, therefore, has gone ahead in broadcasting, the arrangements for which should be carefully studied, as that similar arrangements be made as regards Australia.

Briefly put, the system in Great Britain is that the Post-Master General has divided the country into a number of areas, each having a station which will be worked by a responsible party. Manufacturers were called together and formed a committee of which Sir William Noble,

former Engineer-in-Chief of the G.P.O., is chairman. The manufacturers when called together, buried their individual jealousies, and six firms, namely, the General Electric Co., Marconi Co., Radio Communication Co., the British-Houston Co., Metropolitan Vickers Co., and the Western Electric Co., undertook to guarantee to find the necessary capital for erecting the requisite number of stations and develop broadcasting so as to best serve the public, and not interfere with the general transmission of messages; detailed particulars of which arrangement will appear in our next issue.

There is a clause in the agreement that the Australian Government has made with the Amalgamated Wireless Limited, that so long as the agreement remains in force the Commonwealth will not impose any conditions or restrictions of any kind upon the operations of the company, "calculated to obstruct the business of the company." This has been interpreted by some to give the company the right of saying that any movement in wireless outside of its control is "calculated to obstruct the business of the company," and as Mr. Massey Greene (for Mr. Hughes), in the Federal House, on the 7th July, 1922, stated that "the Amalgamated Wireless Co. had not been given a monopoly of wireless in the sale of apparatus and broadcasting," the leading Australian companies interested in wireless development should take advantage of the latter interpretation and get together without delay, as was done in Great Britain, in order to protect wireless as well as broadcasting from any chance of being a monopoly of any one company, and to frame conditions that will not hamper its best development.

There are wonderful possibilities of wireless entering into every branch of the electrical industry; in fact, the whole science of telephony has recently been revolutionised, and widest scope should therefore be given to Australian scientific firms in pushing forward devices calculated to improve wireless development.

THE FORMATION OF THE ASSOCIATION FOR THE BEST DEVELOPMENT OF WIRELESS IN AUSTRALIA.

The writer of the foregoing article, "Our Wireless Danger" (Mr. George A. Taylor) was the first military officer to be appointed in charge of Wireless and Aviation in Australia (1909) carrying out many successful experiments that are mentioned in the first paper on the subject before

the Australian Military Authorities in advocating its adoption for military purposes (vide Journal of the United Service Institution (N.S.W.) 1910.

Early in 1922, Mr. Taylor visited Europe, where he studied the development of Wireless, returning

to Australia in December 1922, and publishing the foregoing article "Our Wireless Danger," 19th January, 1923.

In reply to many letters received, the following letter was forwarded to the firms mentioned hereunder:—

February 2nd, 1923

WIRELESS WEEKLY

F

RADIO COMPANY.

Before making your set, both Transmitter and Receiver, consult us for Designs and Novel Apparatus.

Complete Valve Receiving Set

£14.

Comprising—Cabinet, 5 Volt C.A.V. Battery
Pair 2000 ohm Phones, 30 Volt "B" Battery,
and Mounted Honeycomb Coil.

COUNTRY ORDERS SPECIALLY CATERED FOR.

18 ELIZABETH STREET,
(Four doors from Hunter Street).

RADIO COLLEGE

POSTER HOUSE

Cr. Lang & Grosvenor Streets.

Special Morse Code Class price 5s per night

Full Correspondence Course £4 4s.

1 month Course fully Illustrated £1 10s.

Full 3 months Course including Morse
and Telephony £5 5s.

I have received the following request signed by a number of gentlemen interested in wireless:

"Pleased to note your article regarding the danger of a monopoly in the Australian Wireless World, and agree with you that to prevent same, instant action is necessary on the part of all interested in wireless.

"In view of your work in the initial history of Australian Wireless, and the fact that you have just returned from Europe, where, no doubt, you studied the latest development of Wireless Telegraphy and Telephony and the great possibilities of Broadcasting, and also because you have no personal interests to serve other than to see all connected with wireless have best opportunity for development, I feel I am voicing the opinion of all who desire the best development of Australian wireless, if you will address at an early date a meeting on the subject."

In accordance with the above request, a meeting has been arranged in the Library of the Royal Society's House, 5 Elizabeth St., Sydney, on Thursday next, 25th inst., at 4.30 p.m.

Amalgamated Wireless (Australasia) Ltd.

Mr. Hirst, British General Electric Co.

F. Basil-Cooke, F.R.A.S., Manager, Radio Co.

Western Electric Co. (Aust.) Ltd., (s) Australian General Electric.

William Adams & Co. Electricity House.

Humphreys, Ltd.

Universal Electric Co.

Lawrence & Hanson.

Colville & Moore.

W. G. Watson.

Anthony Hordern & Sons, Ltd.

L. P. R. Bean & Co.

W. Harry Wiles.

Electrical Department, Grace Bros.

Electric Supplies & Engineering Co.

Warburton Frankl, Ltd.

Burgin Electric Co.

New System Telephones.

Mr. Velich, Magnavox Co.

Pitt, Vickery, Ltd.

The Editor, "Australasian Wireless Review."

Siemens Bros. & Co., Ltd.

W. J. Maclardy, Editor, "Wireless Weekly."

Metro-Vickers.

The meeting was held at the Royal Society's House, Sydney, on 25th January, there being 22 present, amongst whom were:—

Mr. Cooke.

F. E. O'Sullivan, O'Sullivan Electric Shop, 296 Pitt St.

W. Harry Wiles.

O. F. Mingay, Burgin Electric Co.

J. Carron, New System Telephones Pty., Ltd.

G. W. Sturges, Western Electric Co.

A. Garrod, G. & R. Electrical Co., Ltd.

Edward Hirst, British General Electric Co.

J. Wilson, Amalgamated Wireless, Ltd.

E. Jackson, W. G. Watson & Co., Ltd.

V. G. Best, Australian Radio Supply Co.

F. R. Rudd, Electric Supplies & Engineering Co.

W. J. Maclardy, "Wireless Weekly" newspaper.

Continued on Page 8

A TALK WITH "WIRELESS WEEKLY."

BROADCASTING.

Is there a Solution?

POLDHU

The question on the tongue of every wireless enthusiast to-day is, "when are we going to have broadcasting?" While admitting that we are wireless experimenters—from the nature of our license—we all feel the need of the stimulus which music and speech broadcasts alone seem to give. We feel that it is quite unnecessary to point out in a wireless magazine the need for broadcasting. Many have purchased expensive sets in order to listen in to the concerts which have been promised. It does not need a very fertile imagination to foresee the tremendous boom which wireless telegraphy and telephony will receive when broadcasted music becomes an established fact in Australia. Let us consider the various interests concerned in the question and analyse as far as possible the reason for tardiness, and attempt to suggest a manner in which we ALL can help in the important work.

In the first place, let us lay no blame at one particular interest. It would be quite an easy matter to formulate a trade upon the broadcasting company but apart from the fact that it would serve no useful purpose—may perhaps hinder broadcasting—we would be guilty of taking the mote from our brother's eye, while ignoring the beam in our own. We must be fair, and consider in brief detail the interests concerned in broadcasting.

(a) **The Amateur.**—The amateur cries hard for music in the air. Listen at any wireless shop and hear the complaints aent the matter. Blame is laid on all and sundry, but little actual constructive criticism is indulged in. An advertisement appeared in this paper over a week ago, asking for comments and suggestions from amateurs on the subject of broadcasting, but in this, as in many other respects, the amateur is culpably apathetic. Very few amateurs think of contributing articles to the paper which has been founded to further their interests, but many can always be heard complaining vehemently about the lack of local colour in the paper. Now, what is a fair thing? It is up to ALL amateurs, those who are fledglings, and those who are more advanced to shoulder some responsibility in this matter. If you are not in a club, join one at once. If you are, select your responsible men and women, and then stand up with them, giving all the support, both moral and financial, of which you are capable. If only the enthusiasm of the amateur can be aroused over this matter, we can accomplish a great deal.

Now, I am not hitting at the other fellow, I mean YOU, Mr. Amateur. Only by sympathetic co-operation can we amateurs get broadcasting. Let us join forces now and get it.

(b) **The Dealer.**—A certain dealer recently complained that he found it difficult to advertise—"We are commencing to feel a slump," he said; "and have sold little since the Christmas rush." A little thought will easily reveal the reason. The wireless boom in Australia will synchronise with the advent of broadcasting. Naturally, then, it is to the advantage of the wireless dealer to agitate for broadcasting. Now, I have moved about a good deal amongst the shops in the last few months, and I have found, unfortunately, that the star item in the dealers' musical repertoire is a "Hymn of Hate" against the broadcasting company. I have no brief for dealer nor broadcaster, but I want broadcasting, and I fear that a constant tirade against the broadcasting company will have but one result: The dealers have at least two alternatives—meet the broadcasting company in conference and put a scheme before them by which some monetary support will be given to aid broadcasting finance, or else band together themselves and commence broadcasting. You must realise, dealers, that it is to your direct advantage to contribute a percentage of the cost of the actual work of broadcasting, seeing that it will benefit you so much.

(c) **The Broadcasting Company.**—Here, we feel, we have those who possess the key of the situation. They have the necessary power, both electrical and legal, they have the operators—good fellows, both—they have the music and can get more. But they won't start. We amateurs do not realise the whole position. We know that it costs money to run broadcasting stations, but we do not know how much. I have been informed that an expenditure in the vicinity of £10,000 annually will be necessary to commence and maintain a high standard broadcasting station. The authorities naturally want to give us

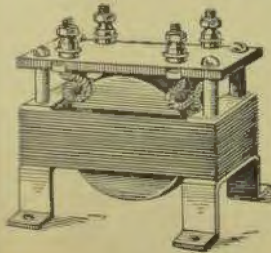
The best—canned music is good enough for the amateur broadcaster, who at great sacrifice of time and money has given us entertainment for eighteen months, but an official broadcasting will want to give us music by the best visiting artists, and lectures by men who say the last word on their subjects, and these demand high pay. It has been suggested that amateurs would willingly contribute music in order that broadcasting should eventuate, but that appears to be quite unsatisfactory. It is easy to start a person singing into the microphone, but it is difficult to stop an unsatisfactory one. No, the broadcasting company is going to give us the best music possible, and demands, legitimately, the financial support of the amateur and all concerned.

(d) **The Government.**—Until we know the attitude of the Government, we cannot hold out any hope of a definite broadcasting station in any of the principal cities of Australia. The policy of the Australian Government is naturally determined by affairs in England. The reason is not difficult to ascertain. Take up any American or English broadcasting magazine and note the complaints, particularly from the former, on the amount of interference by amateur transmitters, valve receivers and broadcasters. The aim of those in authority in Australia, is to profit by the errors of judgment of the officials in wireless in America and England, and to evolve a system by which interference will be at a minimum, while allowing a maximum of freedom to the amateur listener-in. Every amateur worthy of the name will concede a little discomfort to avoid a greater discomfort. We must give up the spoilt child attitude, and co-operate in a charitable manner to secure our present aim.

(e) **The Press.**—Newspapers in Sydney with few exceptions are becoming noted for their extreme timidity in reporting local wireless items. We occasionally see the word wireless in the daily papers but only to report some news of the tremendous success of telephony perhaps, in England or America. One leading paper featured the fact that all broadcasting in England on January 26th would be entirely Australian by arrangement with Mr. E. T. Plak, Managing Director of Amalgamated Wireless, Ltd. A good advertisement for Australia in England, but when is the local press going to advertise the potentialities of Australia in wireless to our own people in Australia? With one very creditable exception, wireless in Sydney and New South Wales does not exist as far as the Sydney papers are concerned. It is time some of the enterprising press managers realised what extremely fine sites they have for aerials on the roofs of their buildings, and gave us the benefit of a little "stop press news" by wireless. We must get the press behind us. We certainly feel like one—a very small one—crying in the wilderness. This article will no doubt—we flatter ourselves—be read by the great majority of amateurs, and we hope that some will be in a position to give wireless a good advertisement in their local paper, but all can assist in the matter by penning a letter to their special local paper. Wake up ourselves first, and then set the alarm for a sleepy press.

Well, what have we to offer in the way of suggestions? It would seem inevitable that monetary aid to the broadcasting company is necessary. A concrete proposal at this stage would probably be abortive, but I offer this as a working suggestion. Let all amateurs agree to pay for this year, at least, an additional 10/- broadcasting subsidy, and let this be supplemented by the dealers to the extent of 10 per cent. of their sales of complete sets. I cannot claim originality for this idea; the difficult matter would appear to be to get it into operation. From the train of the foregoing remarks, it would seem necessary that a conference should meet, composed of representatives of the various interests concerned namely, the amateur, the dealer, the broadcasting company, the Government, and the press, and this conference could surely come to some agreement which would satisfy all concerned.

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This Transformer, which is scientifically constructed, is of the shell type. It is simple, reliable and compact. Maximum results are assured. The complete measurements of this Transformer are 2½ x 11¼ x 11¼ in. It is provided with feet in order that it may be mounted in any desired position.

Price - 45s.
Postage 6d.

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P.H. McElroy.
211 SWANSTON STREET

ANOTHER WIRELESS TRIUMPH.

AN EPIC OF THE SEA.

That fact may be more dramatic than fiction is demonstrated by this graphic portrayal of the important part played by radio in the rescue of the passengers and crew of the ill-fated steamer "City of Honolulu," published in "Radio." Well-deserved tribute is paid to the former amateur operators who manned the vessel's radio cabin.

"CQ! CQ! CQ! de KUSD-fire aboard ship please stand by for position!"

This dramatic message flashed across the Pacific Ocean at 5.56 o'clock on the morning of October 12th last brought to a listening radio world the first intimation that the palatial steamer City of Honolulu was afloat 700 miles off the California coast with 262 persons, passengers and crew, aboard.

The vessel had cleared from Honolulu on October 7. It carried a standard Navy type Radio Corporation of America 2 k.w. spark set, in charge of Chief Operator Walter P. Bell of Oakland, Second Operator H. D. Hancock of Yreka, and Third Operator N. C. Kusler of Yakima, Wash.—all former amateurs. The radio staff worked in three shifts of four hours on and eight hours off duty.

Kusler was on duty when the fire broke out, but he knew nothing of it. He had the "dogwatch," from midnight until 4 a.m., and there had been plenty to keep him awake. A two-hour message from Pearl Harbour was one thing. Stale was another. Off to the westward "WML" the Lucine had been handling re-transmission stuff to "KHK"—Wahaiwa, Hawaiian Islands—when Kusler decided to clean up. He had one for the Manoa—"WMQ"—and reached for his key.

"WMQ de KUSD!" he called, signing the call for the City of Honolulu.

"Go ahead," sang out the Manoa, two hundred miles way.

Kusler reached for his key. . . . Into the radio room came the sudden ring of the bridge telephone. Kusler paused and glanced at his clock. It was 5.40 a.m., just before dawn. Instantly he knew that someth'ing had happened. Telling the Manoa to wait a minute, he answered the telephone.

Captain H. R. Lester, the vessel's commander, spoke to him from the bridge. "Wake the other operators and report to the bridge!" he commanded.

Kusler knew then that something serious had occurred. He immediately awakened Chief Operator Bell, who slept in an adjoining cabin, informed him of the captain's orders and rushed to the bridge. There he was told the ship was on fire and to ask all vessels to stand by until position computations were made.

When this was reported back to Chief Operator Bell, the latter sent out the "CQ" call, noted above, which shocked a whole West Coast into instant attention, and turned half a score of half-awake operators into competent, alert machines.

East and West sped the "CQ" call. It was caught at Pearl Harbour. It was picked up by three vessels—the Enterprise, the City of Los Angeles, and the U.S.A. Army Transport Thomas many miles away. It drummed into the ears of the night operator at KPH, the Radio Corporation station at Marshall, Calif., and throwing on his full power he flashed back an answer.

"Any report?" he asked.

"Not yet," said Bell, sighing with relief. For, even in the annals of quick radio, that was somewhat of a record—a matter of three seconds' response to a call from mid-ocean.

Two minutes after the "CQ" call went forth, Chief Operator Bell again broke the silence of the air with the vessel's position—"Latitude 31-07 North, Longitude 131-40 West."

Three acknowledgments came back from that position announcement—the Enterprise, the City of Los Angeles and the Thomas. In the meantime KPH took official charge of the air, broadcasting a

"QRT" to all vessels to "stop sending." NPG, Goat Island, similarly ordered all naval vessels into silence and a tomblike quietness dropped over 6,000 miles of busy night air.

Aboard ship, the battle against the flames had begun. The wireless operators stayed at their posts, oblivious to that portion of passing events. Bell took charge of the key work, the other two maintaining a messenger service between the radio room and bridge to facilitate orders from the ship's commander.

As all the world knows, the battle of the crew and the ship's officers against the encroaching flames was a losing one. Smoke was everywhere, swirling down upon the decks and the radio room in great billowing clouds. Passengers were running to and fro gathering up personal belongings. The crew were preparing the life-boats for the inevitable. Through it all, three radio operators, with impassive faces, played the game with Death—and won.

The City of Honolulu tilted over on her beam's ends as the fight went on. She wallowed with a list of thirty-five degrees to starboard. Bell braced his foot against the table. His pencil and message blanks went skidding downward. Articles fell out of the racks. The chairs slid the floor and banked against the wall. The switchboard was tilted at a crazy angle. But the outside radio world knew nothing of this until afterward. At the time Bell's sending was smooth, steady—as cool as his nerves.

At 7.20 with daylight full on, KPH snapped a query across the intervening space:

"Is the fire any worse?"

"About the same," retorted Bell nonchalantly.

By 8.00 the whole coast knew what was happening out in mid-ocean. Here and there distant boats had started a call, only to be shut up by KPH, NPG or some other station or boat, aware of the desperate struggle that the City of Honolulu was making. Gradually the facts became

known. Ashore, marine agencies, shipping interests, hundreds of radio operators—amateur and professional—were at their instruments, listening, listening . . .

Sharply at 8.30 a.m. there came the little three-letter call from KUSD that sent a shiver up the spine of every man that heard it: "SOS! SOS! SOS!"

It was followed by a direct call to "WMN" and a repeated position enumeration, "WMN"—the Enterprise answered immediately, the operator having been waiting momentarily for that very thing.

"Come to our aid!" came Chief Operator Bell's imperative command from the distant, burning City of Honolulu.

"Coming!" replied the Enterprise laconically.

A desperate time indeed was being experienced aboard the City of Honolulu. With the vessel tilted away over on its side and the ship itself threatening every minute to turn turtle, the work of launching the life-boats had begun. One by one, they were loaded up and swung clear—down into a sea that was mercifully calm, and reasonably smooth. There was no mishap—a tribute to the efficiency and training of the crew and the coolness of the ship's officers. Afterwards, when all the facts came out, it was learned that there had been no panic.

Again, later, on the air came the dash from the burning vessel:

"Enterprise—are you coming?"

"Yes—how is it?"

"Lowering boats now—very bad fire . . ."

Excitement sprang to a fever heat in all directions. Practically all radio business on the coast suspended. Would the Enterprise reach the scene in time? Would the race be of any avail whatever? Was another grim tragedy of the sea being enacted, out of reach of human help? These questions flitted through the heads of more than one radio operator, and no answer came out of the ether in unshakable operator on duty sitting unconcernedly above a seething furnace:

Three minutes after 9 o'clock came another radio laconic from the City of Honolulu—from the reply.

"Leaving ship any minute now . . ."

Bell's hand was steady, despite the angle at which he was working and the orderly excitement all around him. His assistants no longer relaying with the bridge, were helping with the work of loading the life-boats. The radio was his alone . . .

At ten minutes to 10 o'clock he sent the Enterprise a message that will live long on the Pacific Coast—a message that tells better than the ethical dissertations of a radio instructor that correct perspective of a wireless operator's job:

"All left but the captain, chief officer, chief engineer and myself!

On the heels of this, a shore station offered him a message addressed to Captain Lester. Bell accepted it, with his operating table pointed toward Neptune's locker. A moment later, his spark was again on the air to KPH—the answer trotting steadily out of the smoke billows that lay like a pall around his ship. And then . . .

"Leaving ship now, GD . . ."

The most dramatic farewell ever recorded in the history of Pacific wireless! terse, simple—he "kissed off" a fine deed of loyal service, with a casual "sine," as though departing from burning ships was a matter of daily routine. That final tag on the end of that last message from the City of Honolulu will remain long in the memories of those who heard it.

The rest of the story is marine history—the floating of the life-boats on the silent sea, awaiting the arrival of succor, the message that turned the freighter West Farallone about, to pick up the little colony of twenty boats at 4 o'clock in the afternoon, and their transfer to the more commodious Thomas at dawn the next day, and safe landing a few hours later at Los Angeles.

WIRELESS GOODS

At City prices.

Valves, crystals, siders, etc.,

P. L. Stonwell & Co.,

82 King St., Newtown.

G. Caletti, Wireless Manager.

Phone: L-1108.

LOOK AFTER YOUR BATTERY.

The storage battery is a tricky electrical appliance. Yet it is one of the most faithful if treated properly.

Do not permit it to fall below its normal charge. Even if you have no hydrometer to test it with, you can easily figure what the condition of your battery really is. Your dealer will tell you what is its rating in ampere-hours. Thus, if it is a 60-ampere-hour battery, and you are using a single tube in your receiver, the battery would be completely run down at the end of 60 hours if you ran it continuously. With two tubes it would run down in 30 hours.

The battery, however, does not hold the charge indefinitely. It gives off current all the time and therefore you should have the battery recharged when you have reached the point when half its charge has been consumed—that is, after 30 ampere hours in the case of a 60-hour battery.

MAGNAVOX RADIO.

The Rolls-Boyce of Reproducers.

The one loud speaker which will reproduce music and signals in any volume without distortion and without injury to the apparatus.

Dispense with the Head-Phones,

AND LET EVERYONE IN THE ROOM HEAR.

A BIG DEMAND HAS BEEN CREATED.

BE SURE OF GETTING ONE.

Call, write, or 'phone,

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17, THE BANKING HOUSE,

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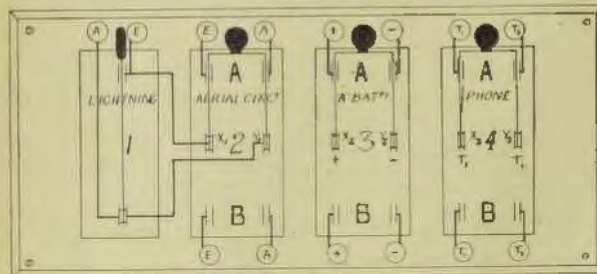
MAKE YOUR OWN.

A HANDY CHANGE OVER SWITCH.

By POLDHU

over switch. Those who have successfully set up Radio sets, whether crystal or valve, owe something to those who are attempting to build their own set.

made by comparison with the signals in each set. Few of us, however, are in possession of duplicate phones or accumulators and must work our change by



Testing a doubtful home-made set can best be accomplished by comparison with a set in good working order. Strength of micorning signals and etc., can readily be

disconnecting and reconnecting or by some more rapid means of rechange. The change-over must necessarily be rapid or the signals may end. The following sketch

and description aims at overcoming difficulties in change-over, by means of a series of change-over switches which can be purchased fairly cheaply. Switch No. 1 in diagram is the lightning arrester switch and is an essential in every set no matter how small it may be. It is connected as shown with the hinge of the double switch (No. 2) at X and Y. The switches are mounted on a wooden panel and all wiring is done underneath the panel. Be sure to get switches whose arms are insulated from each other. In each case the standard (working) set is connected to A terminal and the set to be tested is connected to B terminals. In switch No. 3 the leads from the battery go to X and Y and lead can then be taken off to the two sets. In switch No. 4 the phone leads go to X and Y and are taken to T and T2 from each set. In the case of crystal sets, switch No. 3 can be dispensed with. The lead allows of enlargement and a B Battery switch can easily be inserted.

De Forest Radio Equipment.

THE ROLLS-ROYCE OF RADIO EQUIPMENT.

We Stock Only Up-to-date and Efficient Material.

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Both of Perfect Design, Finish, Efficient and yet simple to operate.

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Telephone: City 141.

WIRELESS ENGINEERS & SUPPLIERS

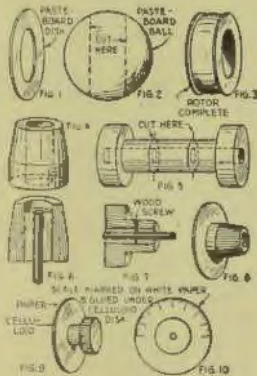
ECONOMICAL RADIO.

Many beginners hesitate to venture into the radio field because of the expense involved in buying parts. The majority of wireless fans in the long run purchase standard apparatus and parts because of the added efficiency which comes from expert designing and painstaking workmanship; but those who are experimenting with their first sets can save money by making use of materials that are obtainable for next to nothing (says a writer in an American contemporary).

Rotors for varlocouplers and variometers, for instance, may be constructed from toy pasteboard balls, from 2 to 3 1/2 in. in diameter,

such as can be found in many stores. The knobs should be cut off (Fig. 2) so as to leave about 1 1/2 in. of the middle portion, and 2 disks (Figs. 1, 11) more in diameter than the ends of the central portion of the ball, should be cut from stiff cardboard or, better, thin fibre, and glued into place (Fig. 3). The rotor is then ready for winding and mounting.

Half-pound wooden magnet-wire spools (Fig. 5) or the wooden cores found in the ends of wrapping paper rolls (Fig. 4) will make excellent substitutes for commercial knobs. If a spool end is used, the hole should be plugged and re-drilled to receive the rotor shaft. The shaft is screwed



in so that threads are formed in the wood and that is all that is necessary if the shaft holds firmly; otherwise a wood screw can be utilized as a setscrew. In adapting a core for use as a knob, the plug need come only to within 1/4 in. of the outside end, Fig. 6. After the knobs are carefully sand-papered, they should be placed in a vise and knurled with a three-cornered file, making the grooves about 1/4 in. apart. Then they are stained black and given a coat of varnish, or they can be coated with a mixture of shellac and lamp-black.

Excellent dials may be laid out on white paper, Fig. 10, and attached with transparent glue to disks cut from stiff celluloid. These can then be fastened to the wooden knobs with glue and small brads, Figs. 8 and 9. Stationary

dials may be mounted directly on the panel, if preferred, and metal pointers attached to the knobs.

Old phonograph records serve many purposes in radio construction because they can be cut readily with ordinary scissors, as well as bent, if first heated in a pan of water.

THE FILAMENT.

The filament of your vacuum tube is all-important in your set. The function of the filament in a vacuum tube is to emit the electrons, or negative particles of electricity, which form the pathway on which the current set up by the incoming electromagnetic waves can travel.

Now, the filament will only perform this function when the current passed through it heats it to just the right temperature. If it gets too hot, or is not hot enough, it refuses to do its job. And failure to humor it may cost you an evening's pleasure and the price of a new tube as well. Only by experiment, however, can you tell just how much current to pass through the filament. At a certain point, as the current is increased, there will be distortion of the signals. You will get best results by heating your filament to just below this distortion point.

MODELS.

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LIST 6D.

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BASEBALL IN CHURCH.

Attendance at our meeting house
Was limited to one starved mouse;
Until the thought struck Deacon
Snow
To make us good by radio.
The folks they all turned out for
fair
To get religion from the air;
But Deacon must have crossed his
wire—
'Cause that dern box up in the
choir
Yelled out, "Babe Ruth is now at
bat.
Dusted the plate off with his hat.
Strike one—the crowd in great
suspense;
Busted a homer to the fence."
A fool kid whoped right out,
"Eeyow!"
And Deacon mopped a clammy
brow;
But our folks 'ten church as they
should
Since science came to make us
good.

M. H. R. Louisville.
Courier-Journal.

OPERA IN AN AIR-PLANE.

The commercial passenger airplane that flies between Geneva to Paris installed a revolving set this fall and entertained its fourteen passengers with concerts broadcast from Lausanne. It is not inconceivable that members of Parliament, the French Senate and other legislative bodies will soon be enabled to attend the deliberations of their respective organizations, while they are in the air—they referring to the members only.

RADIO SETS
and Parts to make your own

Send for Price List.

ELECTRICAL UTILITIES SUPPLY CO
RADIO HOUSE

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Continued from Page 1

MINUTES OF MEETING HELD AT THE ROYAL SOCIETY'S HOUSE SYDNEY, JANUARY, 25th, 1923.

The meeting was first addressed by Mr. George A. Taylor, who said that he had the honour of being one of the earliest enthusiasts in wireless, and being the first military officer to have charge of wireless development, he had carefully studied the present position of wireless in Australia, and had expressed opinion in an article recently published, in which he gave certain points why he considered instant action was necessary to prevent any firm or firms obtaining a monopoly of the industry as a monopoly in any movement crippled industrial enterprise.

During his recent visit to Europe, he had carefully studied the wireless situation, and found that in France and Germany considerable attention was being given to the subject. In Great Britain, the industrial development of wireless had been greatly encouraged, and a number of firms interested in the manufacture of wireless apparatus and the various fittings, seeing the danger of not only monopolies being formed regarding control, and also seeing the danger of Government inaptitude with regard to permits, had got together to consider the best way by which the industry could be encouraged, at the same time help to prevent any interference with the sending of messages, in other words, to prevent "jamming."

Seeing the possibility of trouble and confusion without proper organisation, Mr. Taylor published the article on "Our Wireless Danger," following which he was the recipient of a number of letters supporting his view on the matter, one of which he read as follows:—

"Pleased to note your article regarding the danger of a monopoly in the Australian Wireless World, and agree with you that to prevent same, instant action is necessary on the part of all interested in wireless.

"In view of your work in the initial history of Australian Wireless, and the fact that you have just returned from Europe, where, no doubt, you studied the latest development of Wireless Telegraphy and Telephony and the great possibilities of Broad-

casting, and also because you have no personal interest to serve other than to see all connected with wireless have best opportunity for development, we feel we are voicing the opinion of all who desire the best development of Australian wireless, if you will address at an early date a meeting on the subject."

Mr. Taylor stated that the position in Great Britain was as follows:—

The Postmaster General had divided the country into eight or ten areas, each having a station, and giving the most responsible manufacturers the right to work such stations. Some 30 or 40 manufacturers applied for this right, many of whom did not realise the expense of erecting broadcasting stations and also the greater expense they would have to meet in the continuous supplying of programmes that would interest the public, for unless there was a good programme, people would take little interest in broadcasting, and the industry would not develop. Six firms, namely, the Marconi Co., General Electric Co., Radio Communication Co., the British Housion Co., Metropolitan Vickers, and the Western Electric Co., undertook to guarantee to find the necessary capital for erecting the requisite number of stations, and a company was formed with a nominal capital of £100,000 with the stipulation that if that capital was not sufficient they would find the remainder in debentures, the stations to be put up in the name of the British Broadcasting Co., and not in the names of the individual companies; so that the stations will not compete with each other as far as artists and programmes are concerned. The company had to be satisfied with a certain nominal dividend, and should there be any surplus after a reasonable depreciation of their plant, it had to be put at the disposal of the Postmaster General for reducing licenses.

Mr. Taylor explained clearly and concisely his reasons for calling the meeting and emphasized the necessity for co-operative action on the part of all those firms interested in the development of

wireless throughout Australia, and thus stated the tentative suggestions for the meeting to consider:—

- (1) That this meeting of wireless experts with power to add to the number form an Association for the best development of Australian Radio Science, and to consist of Radio Manufacturers and Traders in Radio materials.
- (2) That a President, Hon. Secretary, Hon. Treasurer, and a committee be elected to place before the Association a working scheme covering the following points:—
 - (a) To further the development of Radio Telegraphy, Telephony, and other forms of Radio Science.
 - (b) To protect the interests of radio-manufacturers and traders by arranging with Governments and other authorities regarding the earliest issue of regulations that will best assist the said radio manufacturers and traders as well as those who apply for licenses, at the same time protecting Governments and the public from any possible nuisance.
 - (c) To use every means to popularise the many advantages of radio science not only with regard to supplementing or assisting the wireless telegraphy or telephone, but also by the earliest establishment of a broadcasting station or stations.
 - (d) To see that a fair field be allowed firms making or trading in radio apparatus and that all contracts entered into by Governments and other public bodies be open to investigation in order to prevent any monopoly which would hamper competition and development.
 - (e) To provide technical and legal advice for members, specially dealing with patents

and licenses regarding radio apparatus.

- (f) To spread by means of lectures, pamphlets and other means information regarding Radio Science and act as a bureau of information in that respect.

3. That Interstate sections of this Association be formed without delay throughout Australasia each with its own officers, but with a central executive to ensure general uniformity of conditions, so that State boundaries will not handicap the best development of Radio Science.

In conclusion, Mr. Taylor said the foregoing were the principal points that appealed to him, and no doubt others would suggest themselves to those present, but he would recommend that in the appointment of the committee the example of Great Britain would be followed as far as possible, and to that committee there be elected the Australian representatives of those firms that had been elected in Great Britain.

Mr. Edward Hirst (Managing Director, British General Electric Co.) congratulated Mr. Taylor on the step he had taken in calling the meeting, and eulogised his good work in wireless affairs. He proposed that Mr. Taylor's suggestion be carried out.

Mr. J. F. Wilson (Amalgamated Wireless, Ltd.), in seconding Mr. Hirst's remarks, stated that such an organization as suggested by Mr. Taylor was necessary and should prove advantageous to Australia generally.

Mr. W. Harry Wiles also supported the previous speakers. He mentioned that although the firms suggested by Mr. Taylor to form a sub-committee showed good judgment they were not all manufacturers in Australia; Australian manufacturers and traders should also be included.

Mr. Mingay mentioned that wireless concerns in Great Britain had set a fine example in co-operating for the general good, and hoped that Australian manufacturers and traders would without delay arrive at an amicable settlement for definite development of radio sciences.

On the motion of Messrs. Wilson and Wiles, it was then unanimously resolved that those present, consisting of radio traders and manufacturers, form themselves into an Association for the

best development of Australian Wireless.

Mr. Edward Hirst then proposed "that Mr. George A. Taylor be elected as President of the Association," seconded by Mr. Basil-Cooke, and carried unanimously.

Mr. Taylor thanked the meeting for the honor conferred upon him.

Nominations for Hon. Secretary were then called for. Mr. O'Sullivan nominated Mr. Mingay; Mr. Wilson nominated Mr. Basil-Cooke. On show of hands, nine votes were recorded in favour of Mr. Mingay, and eight in favour of Mr. Cooke. The President then suggested that both gentlemen be made joint Hon. Secretaries as there was much to be done, and arrangements could be made between them as to which one should be Hon. Treasurer. This was unanimously agreed to.

The following gentlemen were then nominated to form a sub-committee to prepare Articles of Association, etc. for submission to a further meeting:—

Mr. Hirst, representing British General Electric Company.

Mr. Wilson, representing Amalgamated Wireless (a) Ltd.

Mr. Sturgess, representing Western Electric Company, and Mr. W. Harry Wiles.

This sub-committee was given power to add to their numbers including representatives of the

English companies mentioned.

The above resolution was carried unanimously. Mr. Wilson A.W. (A.) Ltd., in explanation, stated that his Company contended that a monopoly was not in favour with their policy, and stated that the British Broadcasting Co. had an absolute monopoly, he hoped that, such would not be the case with this Association.

Mr. Edward Hirst, British General Electric Co., remarked that he was of the opinion that no such monopoly existed in Britain, as the Postmaster General there had the final say.

Mr. Wilson replied that no firm could sell apparatus unless allowed by the British Broadcasting Co.

Mr. Hirst mentioned further that he would like this to be recorded so that in the future it could not be said that Mr. Wilson's statement was not contradicted.

The President, in conclusion, stated that he was pleased to hear Mr. Wilson state that his Company was not desirous of having any monopoly; in fact, he trusted that the word monopoly would be eliminated from all transactions. He wished all connected with wireless in Australia every prosperity with every protection to themselves and the public and declared the meeting closed.

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BIG RADIO EXHIBITION

Wireless Institute of Australia.
A meeting of the Council of the Wireless Institute of Australia (N.S.W. Division), was held on Tuesday, 16th inst., at the Wentworth, by courtesy of Mr. Chas. MacLurean. Mr. C. P. Bartholomew presided. After the general business was transacted, the matter of holding a radio exhibition was discussed. It was decided that the time was opportune to bring before the public the far-reaching possibilities of radio and in the interest of the Science an exhibition week should be held in the near future. Messrs. Croker, Basil Cooke, and Mingay were elected to constitute a committee to report to the Council at a very early date, as to the

advisability of and the arrangements necessary to feature such a public event. Members are duly notified that the meeting of the Institute will take the form of a demonstration and lecture by Mr. Edgar Booth, B.Sc. Mc., on "Sound Ranging in Peace and War," at the Sydney University, on February 1st, 8 p.m.

Mr. O. F. Mingay writes:—
Kindly permit me a line or two of comment on the Trans-Pacific Test arrangements. First of all I must congratulate the committee on taking up the stand of an entrance fee, and asking those who are not officially entering, to guarantee not to work their set during the test period. These ideas were both in operation in the British-American Test recently carried out and which is reported in full by Mr. Philip R. Comsey, in the "Wireless World" of recent issue. We will not benefit of having any reception checked by "Radio" as was done in England, neither will we have the benefit of much experience in short wave work, such as our British and American fellow radioites, so that it behoves all to play the game and make it a suc-

cess. Ignoring such requests will only render the project impossible. It is to be hoped satisfactory arrangements will be made for transmission of calibration waves beforehand. I wish the committee the best of luck.

LEICHHARDT & DISTRICT RADIO SOCIETY

The Leichhardt and District Radio Society held its fourteenth general meeting in the Club room, Victory Hall, rear of Methodist Church, Johnston Street, Annandale, on Tuesday, January 23rd. The main business of the evening was an address by Mr. Malcolm Perry, Chairman of the Trans-Pacific Radio Organisation Committee, and this gentleman spoke at length on this very important subject. Every phase of the forthcoming tests between experimental wireless stations in America and Australia was dealt with in detail, and members were supplied with much valuable and interesting information. At the conclusion of his address Mr. Perry was accorded a very

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February 2nd, 1923

WIRELESS WEEKLY

11

hearty vote of thanks by acclamation.

The next meeting will be held on Tuesday next, when all interested are invited to be present.

All inquiries relative to the Society's activities should be addressed to the Hon. Secretary, Mr. W. J. Zech, 145 Booth Street, Annandale.

KURING-GAI DISTRICT RADIO SOCIETY

The above Society meets every alternate Tuesday at 7.45 p.m. in the Memorial Hall, Chatswood. The last meeting was held on the 23rd inst. The President, being absent, Mr. Woolridge was elected chairman. After the minutes of the previous meeting had been read, Mr. Renshaw, armed with blackboard and chalk delivered another of his series of lectures. The lecturer this time attacked batteries, the primary, secondary and the lanche cells were pulled to pieces on the blackboard and fully explained. On resuming his seat Mr. Renshaw was accorded a vote of thanks by acclamation. Mr. Hinton brought up the subject of radio apparatus for the Society. His motion, which was carried, provided for a committee of three to go into the matter and advise the Society on the making and installing of such apparatus. As it is the aim of the Society to help members in whatever way possible, those interested in the Science are invited to bring their troubles along, and any of the advanced members will be only too pleased to put them on the right track. The next meeting of the Society is fixed for Tuesday, February 6th.

THE MARRICKVILLE & DISTRICT RADIO CLUB

A very interesting meeting was held in the new Club rooms on January 21st. Now that the matter of a club room has been finalised, and that the construction of the Club's set be gone on with, the committee have drafted a schedule which must appeal to members and others interested. A technical demonstration of a novel designed loose-coupler was given by Mr. W. L. Hamilton. Then followed a discussion on crystals. All interested should communicate with the Sec-

retary. The Club meets every Monday at 8 p.m. Congregational School Hall, Perry Street, Marrickville (Addison Road).

CAMPsie & DISTRICT RADIO CLUB

The second and general meeting of the Campsie and District Radio Club was held at the "Loch Vennachar," Evaline Street, Campsie, on Monday, 22nd inst. There was a very good attendance and another new member enrolled. It was proposed that the Club meet weekly instead of fortnightly, commencing from the 29th inst. A key and buzzer will be available for the use of members who so desire to practice Morse Code. The application for the Club's license has been left in the hands of the President, Mr. R. Shelton, who will hold the license on behalf of the Club. Mr. Steel has made extensive inquiries to try and obtain a hall for the Club meetings, and has been successful in obtaining the Scouts Hall, in 9th Avenue, Campsie. Members are requested to watch these columns for change of Club room.

Next meeting, Monday, 29th inst., 7.45, at Secretary's address. The Club extends a hearty welcome to other Clubs who so desire to visit it. "Don't only make it a Wireless Club, but a Wireless Brotherhood assisting all."

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AMATEUR CALLS

VICTORIA.

The following is a list of licenses issued to amateurs in the State of Victoria to the end of November, 1922:—

Call	Name.	Address.	Nature of Licence.
3 H H	F. H. Maughan	15 Staniland Avenue, Malvern	R.
3 H I	F. Rennie	23 Portland Place, South Yarra	R.
3 H J	P. D. Johnson	18 Boundary Road, Surrey Hills	R.
3 H K	W. G. Mephram	37 Hamburg Street, Richmond	R.
3 H L	A. T. Hutchings	"Bryn Aven," Callawadda, via Stawell	R.
3 H M	J. J. K. Grewar	Inkerman Street, St. Arnaud	R.
3 H N	N. C. Arnold	7 Tweedside Street, Essendon	R.
3 H O	H. A. Vincer	29 Charlotte Street, Richmond	R.
3 H P	W. L. Clark	70 Richmond Terrace, Richmond	R.
3 H Q	E. J. Good	"Rock Grove," Private Mall, Glenrowan	T.
3 H R	A. L. Waterhouse	212 Pigdon Street, Princess Hill, Melbourne	R.

SOUTH AUSTRALIA.

5 B R	W. V. Geake	Koorlinga	R.
5 B S	W. J. P. Matthews	Government Road, Toitess Park, Murray Bridge	R.
5 A H	F. L. Williamson	25 Dequetteville Terrace, Kent Town	T.
The following name has been cancelled:—			
5 A Z	D. C. Crawford		

QUEENSLAND.

4 B X	H. E. Lindner	Samford Road, Alderley	R.
4 R Y	V. J. Bouchard	River Road, Auchenflower, Brisbane	R.
4 B Z	E. S. Coutts	Cunningham Street, Dalby	R.

NEW SOUTH WALES.

The following is a list of licenses issued to amateurs in the State of New South Wales to the end of December, 1922:—

2 K Q	Miss M. Boag	"Warrane," Bunnerong Road, South Kensington	R.
2 K R	D. Williams	25 Winchester Road, Clovelly, Sydney	R.
2 K S	J. C. Rice	"Moombril," Holbrook	R.
2 K T	A. K. Leng	"Karoola," Waters Road, Watersleigh	R.
2 K U	D. D. Campbell	Ulmarra	R.
2 K Y	E. D. Gooch	112 Oxford Street, Woollahra	R.
2 K W	G. E. Elston	83 Dalhousie Street, Haberfield	R.
2 K X	R. B. Jones	26 Charlotte Street, Dulwich Hill	R.
2 K Y	O. Brown-Deverell	47 Harrow Street, Stanmore	R.
2 K Z	Navy League Sea Cadets	Windsor Street, Richmond	R.
2 L A	E. C. A. Nott	1 Eversley Flats, Carabella Street, Kirribilli	R.
2 L H	S. A. Landell	Boundary Street, Lithgow	R.
2 L C	A. Truscott	15 Thomas Street, Lavender Bay, North Sydney	R.
2 L D	G. R. Gannon	"Heather Bras," Hampden Road, Artarmon	R.
2 L E	F. W. Anderson	Carr Street, North Sydney	R.
2 L F	H. V. Gtner	1014 Military Road, Mosman	R.
2 L G	H. J. Rumsey	Adderton Road, Dundas	R.
2 L H	Geo. Rutherford	Hewlett Street, Waverley	R.
2 L I	Y.M.C.A. (Lydon)	325 Pitt Street, Sydney	R.
2 L K	R. W. S. Bailey	26 Bellevue Street, North Sydney	R.
2 L L	R. S. Smith	59 Blue's Point Road, North Sydney	R.
2 L M	H. B. Sunter	48 Darlinghurst Road, Darlinghurst	R.
2 L N	R. F. Smith	44 Musgrave Street, Mosman	R.
2 L O	L. N. Schultz	"Waraba," Burns Bay Road, Lane Cove	R.
2 L P	H. E. Rose	"Yanganbil," Warren	R.
2 L Q	J. Wetless	31 Connemarra Street, Dextley	R.
2 L R	F. L. Smith	2 Henson Street, Summer Hill	R.
2 L S	F. R. Kirk	23 Terrace Road, Dulwich Hill	R.
2 L T	T. Cox (Jnr.)	"Alvaston," Mackenzie St., Homebush	R.
2 L U	R. M. Baird	10 Mosman Street, Mosman	R.
2 L I	F. B. Cooke	23 Lang Street, Sydney	R.

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February 2nd, 1923

WIRELESS WEEKLY

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