

AUSTRALIAN

# RADIO

Vol. 1 No. 1

MAY, 1949

AND

# TELEVISION



NEWS

HOME INTERESTS  
AND  
HANDICRAFTS

1/.

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—DON. B. KNOCK.

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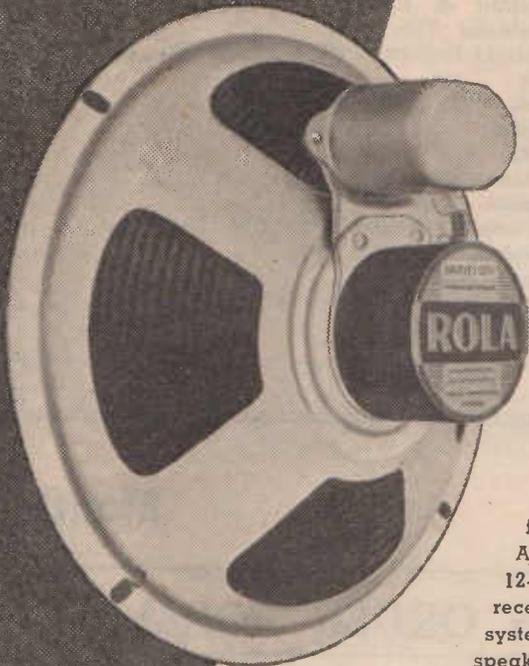
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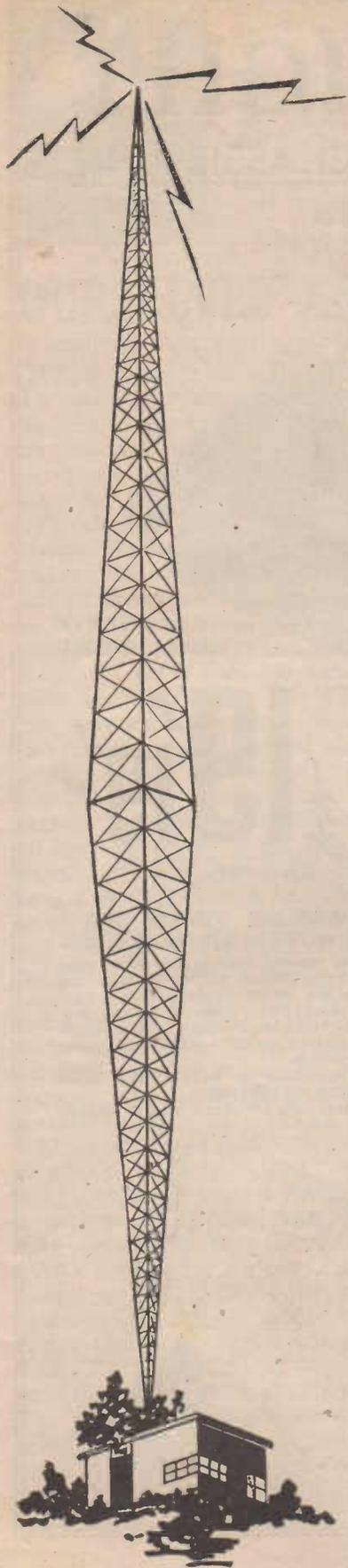
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# AUSTRALIAN RADIO AND TELEVISION NEWS

THE PROGRESSIVE NATIONAL  
JOURNAL FOR EVERYBODY

EDITED BY DON B. KNOCK

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THIS MONTH'S COVER ILLUSTRATION:—

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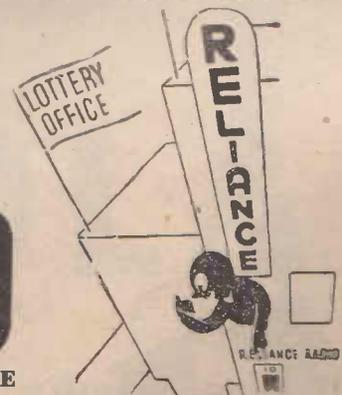
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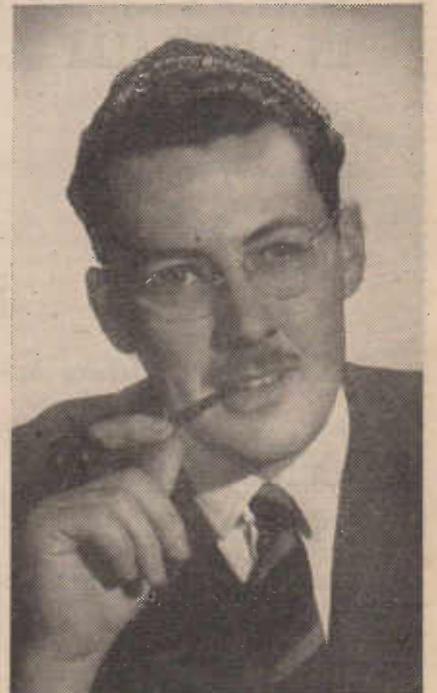


Managing Director and General business chief is A. E. (Bert) Hay. Recently returned to Australia after absence of 22 years. Hails from South Wales. As a young man joined Marconi Co., London as a Marine Radio Operator, 1916; W/T Offr., R.N.R., 1917-19; Subsequently was Research Engineer to Radio Communication Co., London, and Chief Engineer to Ultra Electric Ltd., London. Previous to Australian amateur radio license VK2AGW, was active at Aberdare as 2KG in 1920-21 and more recently in Barry (S. Wales) as GW3BHG. An industrialist with interests in radio and motion pictures he is a member of the Royal Society of Arts and I.R.E. (U.S.A.), and takes a keen interest in the hobby of amateur radio.



Co-Director and Editor is Don. B. Knock, known to radio men internationally as VK2NO. A Lancashireman; adopted Australia in 1925, after having been an airman (R.A.F., Middle East, World War 1), marine engineer, radio technician, and B.B.C. engineer. Commenced amateur radio activity 1911. In succession Tech. Editor "Wireless Weekly", "Radio in Aust. and N.Z.", "Radio Monthly", "Aust. Radio News" and radio Editor "The Bulletin". Five years Signals and Army Inspection, 2nd A.I.F., Major. Member I.R.E. (Aust.) and W.I.A. Resigned appointment Phillips Co. to launch and edit this magazine and others.

N.S.W. Country Rep.: for "R. & TV." News is H. P. (Peter) Mulligan. Until recently conducted prominent radio retail business at Bondi Junct., Sydney. Is an active radio amateur, callsign VK2ABH. Readers and business concerns in N.S.W. country areas will be seeing something of Peter from time to time.



## OURSELVES AND OUR POLICY

With this, the first issue of "Australian RADIO & TELEVISION News," we make our debut, not as timid newcomers in a whirl of publications, but as radio journalists backed by a life-time of experience in the likes and dislikes of readers. We are sure that you will like this magazine, and that you will wish to register as a subscriber. We know that there is plenty of scope for this type of publication . . . something to strike a different note in manner of presentation of reading material, whether for topical or technically-inclined reader. We make no apology for including the word TELEVISION in the title at a time when Australia has as yet no station in action . . . but we see no reason to avoid talking to the man-in-the-street about the form of entertainment and news dissemination which is destined to become one of the vital factors in daily life for generations to come. Be assured that TV WILL come to Australia; for scientific advancement cannot be disregarded; it is at last on its way around that mythical corner. Overseas there is now no question about its arrival. You will find other subjects of general reader interest from time to time in this new publication for the reason that it is not confined solely to the subjects embodied in the title; it is also a Home Interest and Handicraft magazine. The screen world, for example, will have a distinct bearing on certain aspects of TV in future years. In the field of radio, yet as young and healthy as ever, readers will find each month much of absorbing interest from all possible angles. The listening public, the short-wave listener to overseas stations and programmes, the hobbyist, and the transmitting radio amateur; these will find sections profuse with reading material to their liking. The scope of each section will be enlarged as much as possible with each issue, and readers will be encouraged to participate in the provision of their own kind of reading matter. In planning for the launching of "Australian RADIO & TELEVISION News" the publishers would have liked to give you a very "toney" art paper production, and to make it available to you at a shilling the copy. Economic considerations prevent us from using the highest grade paper consistent with our decision that the reader must not be asked to pay more than a shilling for his copy, but we have been able to strike the happy medium. Our printers have responded splendidly in assisting our determination that readers will get something better than average for these times. If you like "Australian RADIO & TELEVISION News" as much as we like the idea of publishing it for you, then our aims and objectives are mutual. You will keep well abreast of all that is interesting in radio, television and associated fields by reading about them in what we intend will become your favourite periodical. Best way to be sure of not missing a copy is to place your order, either by direct subscription or through your newsagency.

THE EDITOR.

Get These Facts Straight About

# **F.M.** AND **TV!**

**F. M.** ( **FREQUENCY  
MODULATION  
BROADCASTING** ) WILL **NOT**

Render Your Present Broadcast Receiver Obsolete.

**TELEVISION WILL NOT**

Take the Place of Radio Broadcasting.

**TV.** is Essentially a Different Technique and Service.

*The progress of Science cannot be retarded, and you may be sure that the time is not far distant when **TELEVISION WILL COMMENCE IN AUSTRALIA** with all the advantages of established overseas technique.*

## **BUT**

## **BE ASSURED**

*That your existing basic Broadcast or Short-Wave Receiver design will be the medium for long and average distance radio reception for all of **THIS GENERATION** and longer. You can purchase that new Broadcast or Dual-Wave Receiver with full **CONFIDENCE** that the Broadcasting services you enjoy to-day will be with you for your lifetime.*

*Don B. Knock*

# FREQUENCY MODULATION AND TELEVISION

## SOME EXPLANATORY POINTS

### ABOUT FM

There is nothing miraculous or startling about the method of radio broadcasting that is now known to most people through newspaper references as "FM". Those cryptic letters don't represent a panacea for all radio ills. Modulation (which means the impressing of the sound you hear on the transmitted carrier-wave) is used to vary the frequency instead of the amplitude and the method is useful, but only under certain considerations. The method is greedy—it bites into a lot of frequency territory, and for that very sound reason alone could not be applied in the broadcast band over which your normal broadcast receiver tunes to listen to the regular ABC and commercial stations. FM is therefore, applicable only at very short wavelengths, i.e., at very high frequencies, described in abbreviated parlance as "VHF's".

Special receivers are needed but reception can be secured by the use of attachments for use with your existing broadcast receiver, reminiscent of the early 1930's and the widespread application of special converters and adaptors in order to obtain short-wave reception. Because waves at very high frequencies don't travel far, the range of the FM transmitting station is limited: the receiver must be virtually within optical range of the transmitting station. Receivers on the fringe of the useful strong signal area will secure little of the inherent advantage of FM, which is the minimising of external and other background noise prevalent under some conditions with AM (amplitude modulation, i.e., normal broadcast modulation).

On the advantageous side, FM is, where full advantage can be taken of a really strong signal, productive of such a silent reception background that the illusion of reality is considerably enhanced. FM also, will show comparative immunity from static caused by electrical storms, but this is not because of it being FM, but mainly because of the VHF used.

Fidelity of reproduction has little to do with the fact that FM is applied, but undoubtedly good audio quality is helped considerably by noise-ignoring qualities of FM. None-the-less, equally faithful audio reproduction may be obtained through an AM channel whether at High or Very High frequencies.

Although there are obviously noise-eliminating advantages by the use of FM, it must be emphasised that it is not at all difficult to design an AM receiver with noise-limiting features resulting in equality of noise-free reception.

Because it represents a different and fully workable technique, FM as Broadcasting entertainment service will come very gradually into use as an adjunct to the existing AM services. Because the use of very short-wavelengths is imperative for FM, it will serve a useful purpose only where the population is dense.

Country radio listeners safely assume that FM is not likely to be of any importance to them for a considerable time, unless of course, governmental policy results in the granting of FM transmitting licenses for commercial broadcasters in country locations. On present indications no move seems likely in that direction for some time.

It is in connection with point-to-point commercial services that FM is most widely used at present. Police, Fire Departments, Ambulances, Taxis, Railways, and other mobile services are making full use of FM, particularly in U.S.A. Australian applications are increasing. At the same time, many, if not more, AM services are also in use, and giving complete satisfaction.

The tuning of an FM broadcast receiver for correct adjustment is not quite the same as with an AM receiver. Both can be mistuned so as to give poor reproduction, but more so in the case of FM.



### ABOUT TELEVISION

TV, to use the popular abbreviation now current in U.S.A. and Britain, is something to capture popular imagination more fully than FM. TV will be something brand new for Australia . . . an entirely new conception of broadcasting by means of radio. FM is but another method of communicating audible sound, but TV is the startling process of being able to see visually events, either at the same instant as they occur, or by delayed methods such as by the video-transmission of movie film. Paradoxically, TV has a much longer history than FM in its development. The first patents for a method of TV transmission were taken out in the latter part of the 19th century by an inventor named Nipkow.

His idea was to "scan" a scene or picture by mechanical means. Through the years there have been improvements in mechanical and optical scanning methods, until the modern era of electronic scanning has been reached. Modern TV is almost faultless technically; it has reached the stage where, if you can watch and enjoy a 16 millimetre sound film, you can enjoy TV even more so.

Improvements are being made constantly by scientists and technicians in the laboratories of the world's leading exponents of TV, and the position is that TV has reached the position of the modern motor car. It is no longer experimental *fundamentally*, and improvements are by way of being refinements. As yet, however, most TV reception as enjoyed in Britain and America is of the small screen variety, measuring about 12 by 8 inches, but large screen projection presents no really serious difficulties.

In Britain and America TV is accepted in the areas it serves, as an indispensable part of daily life, similarly to ordinary broadcasting.

There is every reason to anticipate that the motion picture industry will play an increasing part in the future of TV, because the one art is likely to be so closely associated with the other.

The day of full-sized projection screen newsreel theatres including TV in the programme as well as normal film projection, is not very far away, overseas.

Australian capital cities will, before long, have established TV stations which, for a start, will of necessity be of an experimental nature. P.M.G. tenders have recently been called for such stations; and in order that every consideration may be given to the advantages and possible disadvantages of various systems as established overseas, no definite standard has been insisted upon regarding what is known as the "line-frequency" of transmitted pictures. There is some variance in the number of lines making up the picture in British, American, and Dutch systems, but all provide good, clear pictures.

The "experimental" nature of the planned initial Australian stations may be taken as implying the need for a period of preliminary investigation by P.M.G. engineers to determine just what will give the best possible service to "viewers" in the various city areas.

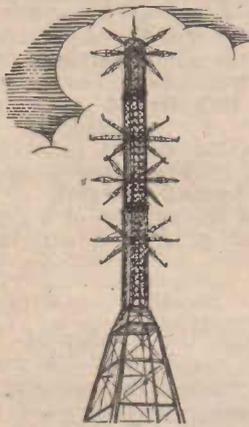
(Continued on page 11)



(Continued from page 9)

The idea that TV (and for that matter FM) MUST be restricted to city and immediate suburban areas is now quite fallacious. In pre-war times it would have been so, but war-time Radar practice has developed the use of micro-wave radio links and omni-directional antenna applications to a high degree. TV uses VHF's as does FM for the radio medium of propagation, but the initial line-of-sight range can be extended very considerably over the horizon range.

Wise planning, should, in the case particularly of the city of Sydney, benefit by the strategic position of the Blue Mountains, overlooking as they do the 60 miles extending to the coast-line. One problem however, is in connection with TV studios situated remotely from the transmitter position. The logical place for a TV transmitter for Sydney and also a considerable populous area of the coastwise and western districts, is somewhere highly elevated in the Blue Mountains. It would be possible for a reasonably powered station to put a workable signal level, not only into all of Sydney and suburbs, but also to such places as Newcastle, Lithgow, Bathurst, Maitland, the Coalfields, etc. This is no pipe-dream, for Australian radio amateurs have proved it fully since 1934, when VHF communication was first conducted over these areas, using home-made low-powered VHF gear.



Mount Victoria or some equally high point is well-worth consideration by planning authorities. For Victoria and South Australia there are equally important "jump-off" positions in the Dandenongs and the Mount Lofty region.

The home vacuum cleaner and the "frig" are quite separate entities in the home, but equally important to its welfare. So it is with TV and radio broadcasting. Where and when the opportunity offers, the logical thing to do will be to enjoy the utility and benefit of both.

The time will come.

—Don B. Knock.

# Telenews

## TV as lifesaver for Radio Industry.

Last December, one of Britain's most prominent Radar and TV engineers made a brief visit to Australia. He is Mr. B. J. Edwards, O.B.E., Chief of Research of Pye Laboratories, Cambridge; the parent Company of which is represented here by Electronic Industries. In Sydney, Mr. Edwards addressed an audience of radio engineers and executives on the evening of December 14th and left no doubt in the minds of those present that Television is the industry of the future. The radio industry of Australia has undoubtedly reached a stage where normal activity in the supply and demand of household radio receivers is at a low ebb—a not unexpected phase of business because of limited population and slowly-perishable commodity. Mr. Edwards answered many questions about Television that evening, but his most significant remark struck a warning note for many present. He said that the "Australian radio industry will be out of business in five years if it doesn't turn to Television." Surely ample warning enough to some who appear to view the advent of TV with unwarranted lack of imagination about its inevitability.

## Television—and the Movies

K.J. One wonders just what is the reaction to the arrival in Britain and America of Television by the film industry? In pre-war days it was regarded in some quarters as being a menace, whilst others have shown much keenness and enthusiasm. There appears to be little doubt that in the immediate future Television will play a very important part in the movie world and the fact is that no exhibitor can afford to overlook the vast field of entertainment the new art can and will offer. The box-office value is there. There is the possibility that specially equipped Television theatres may come into existence, using large screen pictures with projection. In Britain, the J. Arthur Rank organisation is particularly interested in the future relationship between Television and Movie screens as evidenced by the Cin-Tel concern. The immediate application for films in connection with home as distinct from theatre Television may be in the release by the producers of older films for TV purposes. Such films may have little box-office appeal at the theatre, but would be considered as first-rate new entertainment for the screens of home receivers.

## Telegossip

A.B.C.'s Harry Pringle, heard discoursing recently on the National programme about the workings of British Television, is well qualified to deal with the subject. His pre-war experience with the B.B.C.'s TV service from Alexandra Palace, London, included a particularly successful "Old Music Hall" show on the night of the Coronation of King George VI and Queen Elizabeth. Televiewers that night, saw Albert Whelan, well-known Australian entertainer, come on as usual, shed his gloves, hat, and overcoat whilst whistling his well-known signature tune. The studio arrangements were such that Harry Pringle's direction resulted in a complete re-capturing of the old time music hall atmosphere so dear to London theatre-goers of the late Victorian and early Edwardian era.

## A One-girl Fashion Show on TV

In Washington D.C., U.S.A., a Department store is sponsoring a novel TV Show which is keeping men and women close to their televisors around 7 p.m. each evening. An attractive model appears on the screen at this time, and behind her stands the National Capitol. Over to one side is a thermometer. The mercury reading represents the low point forecast for the following day, and this explained by the voice of an invisible announcer. Whilst the voice proceeds with the rest of the weather forecast the girl moves over to the thermometer and raises the reading to the predicted high for the next day. (Her proximity to the thermometer might put the temperature up a little, but the mercury is in reality raised manually). In accordance with the predicted weather the girl wears a creation to suit and the announcer describes it in detail. She might, for instance, wear a tailored suit for a cool day, and might appear in a bathing suit for a hot day. There are no predictions as to what she might appear in if the temperature soars around the 100 degree mark.

\* \* \*  
"Groundwave." A simple manner of determining just where "shadows" will fall in Television transmission is pictured in "Electronics," U.S.A. An electric lamp is placed at the transmitter position on a relief model of the City and surrounding country, and the illumination is photographed from above. The lighted areas show probable line-of-sight coverage by the proposed station in a most effective way.

# MORE TELENEWS

## Australian Television

Tenders were recently called by the Federal Government, through the Postmaster General's Department for the supply of two 5 kilowatt Television transmitters for erection in Sydney and Melbourne, and alternatively, for 500 watt stations in each of the six State Capital cities. A subsequent reference was made in Federal Parliament that the calling of the Tenders "does not commit the Government to Television."

Thus, the first moves have been made toward the establishment of Television for Australian Capital Cities, even though a lengthy period of experimental investigation by the engineers of the P.M.G. Department will no doubt be the primary consideration.

Commencement of any form of TV transmission will in particular provide a medium for experimental work in home-made receivers by the more advanced type of radio home-constructor and transmitting amateur.

—The Editor.

## TV under difficulties

Many people, reading in the daily press casual reference to television development overseas, get the mistaken impression that TV is solely a post-war science. There is actually very little difference between the brand of TV that was getting nicely into stride when Hitler and Co. kicked over the traces, and the 1948-49 version, excepting that progress in the way of improvement is likely to be speedy from now on.

The following is a press report which appeared in an overseas publication dealing with TV, in April 1939. It says — "More than 10,000 persons in Washington, U.S.A., witnessed television for the first time during a seven-day series of demonstrations by the Radio Corporation of America and the National Broadcasting Company. It was the first showing of high-definition pictures ever given in Washington. Scores of leading figures in the nation's political life and hundreds of outstanding members of the press, learned societies, the diplomatic, and the military, crowded into the viewing room at the National Press Club during the 90 odd programmes, each ten minutes long. In one demonstration a machine-gun platoon of the famous 'White Horse' battalion of Fort Myer manoeuvred before the Iconoscope camera. A 'stunt' programme, arranged in conjunction with the District Employment Service, was the world's first television appeal for a job. An unemployed statistician detailed his qualifications and made a bid for steady work to prospective

employers at the viewing point. The demonstrations gave the N.B.C. TV staff and the equipment a very severe test, for weather conditions were adverse. Light seldom remained constant for more than a few minutes at a time. The bitterly cold wind of the first two days was succeeded by downpours that continued practically from that time to the last day of the demonstration. Engineers were forced to wear rubber boots and oilskins. The TV camera was put under an oiled silk hood and the microphone shielded in a cellophane envelope. A platform had to be built to raise operators out of the mud and huge multi-coloured umbrellas were hurriedly brought to give shelter to announcers, programme directors, and people interviewed before the camera. Judged by audience reaction, the demonstration was a great success and most of the pressmen who saw the demonstrations in the Club thereafter spoke over the TV system and expressed surprise that the pictures appeared so clear and bright."



Micro-wave Parabolic antenna system as used for television relay links.

"Looksee." Transmitting radio amateurs who have for long years made good use of directional beam antenna arrays will be interested and somewhat amused to note how the Television and FM people in U.S.A. have now found the need to do likewise. Professional designers of antennae for TV and FM are waxing eloquent on the subject of driven elements, reflector and director spacing, and other factors making for forward concentration and high back-to-front ratio. The cycle thus returns to a starting point — a point where many of us kicked off.

## TV Standards

Australians who have visited Britain and America and seen recent television programmes, are divided in opinion as to which shows the better technique. America has more or less standardised on a line frequency of 525, but Britain has announced firmly that the standard there for many years to come will be the present one of 405 lines. Nevertheless engineers in both countries are able to provide for any possible future requirement in picture definition. There is no question that both British and American TV standards are extremely good from technical viewpoints, but there is considerable difference in the administrative sides. As with broadcasting, American TV must consist mainly of sponsored programmes, but examination of the programme material and the methods of presenting it shows that the advertising agencies and station production staffs do a first-class job. The "commercials" are there of course, but they become part and parcel of the programme material in clever manner. In Britain, TV is, like broadcasting, a matter for the government, and thus is the prerogative of the British Broadcasting Commission. Programmes are completely free from advertising matter and are versatile and attractive. Americans who were in London at the time of the Olympiad were very enthusiastic about the extreme steadiness and clarity of the pictures, and also the depth of focus obtainable. Those who will be responsible some day for the administering of Australian TV would do well to blend a mixture of both British and American methods of programming. They should avoid falling into the trap however, of portraying a surfeit of boxing, football matches, or horse-racing at the expense of a deficiency of matter of general entertainment interest.

\* \* \*

Although the number of TV receivers in use in the U.S.A. runs well into six figures, the majority is not to be found in private homes. By far the larger proportion is to be found in saloon bars of "pubs," restaurants, and even "hot-dog" stands. Which would seem to indicate that a majority of American city inhabitants spend more time out of their "all-electric push-button homes" than comfortably in them.

\* \* \*

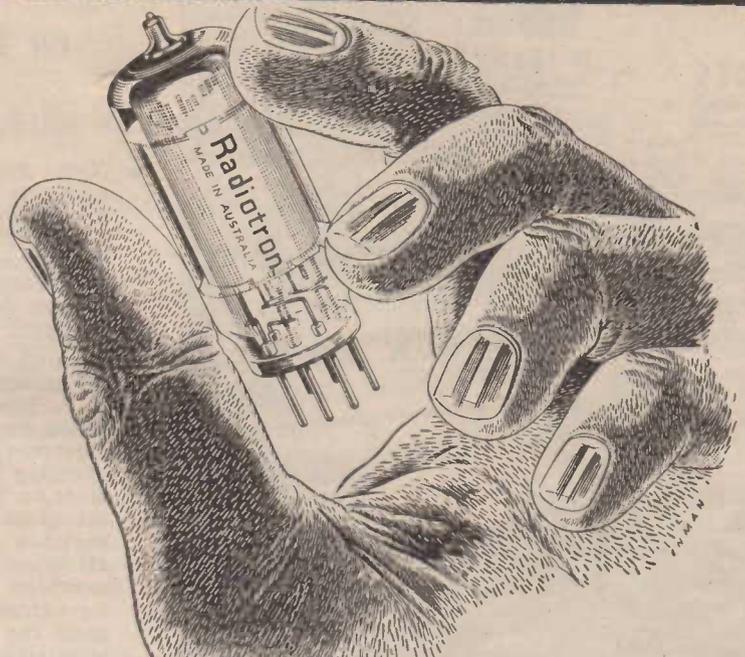
In U.S.A. American viewers recently watched a dramatic incident when a former Soviet spy appeared before the Television cameras and told of her experiences. Thousands saw and heard her urge them "not to let Communism fool you."

# RADIO CLUB NEWS

## Experimental Radio Society of New South Wales

In the pioneering days of amateur, and indeed *professional* radio in Australia, a Club name prominent as typifying a progressive group of experimenters was that of the "Lakemba Radio Club." Came the Axis war and along with all strictly amateur radio activity, that Club, in common with other similar bodies, virtually closed its portals. There were one or two officers, however, who were able to keep the Club from extinction by the holding of skeleton meetings throughout the war years. When guns and bombs ceased to bellow and men came back to "Civvy Street" status, their yearning for personal hobbies passed from pipe-dreams to realisation, and so the various radio clubs came to life again, and with renewed vigor. There were people who opined that suburban radio Clubs were not in the best interests of the hobby of Amateur Radio . . . . that they would run counter to the Wireless Institute. Time has proved such contention to be utterly wrong, and particularly so in the case of the "ERS of N.S.W." The post-war organisers decided that the new title should take the place of the pre-war "Lakemba" designation, and this was done. Since 1945 the "ERS of N.S.W." has grown very considerably. Meetings have been held at a hall location in Burwood, but as this issue of "RADIO and TELEVISION" was in process of editorial compilation, changes were announced in the "ERS of N.S.W." New club rooms have been selected, and the location is now at Greenwood Hall, Liverpool Road, Enfield, N.S.W. The hall is one stop from the intersection of Liverpool and Burwood Roads. Meetings are held on alternate Thursdays at 8 p.m. Plans are in hand for the Society's radiotelephony transmitter to go into action on the 7 Mc (40 metre) band and, additionally, gear is being constructed by members in readiness for operation on the 50 Mc (6 metre) band.

The call-sign for operation of the Society's transmitters is VK2LR. With the advent of summer, the ever-popular type of Field Days are being arranged by the Council and there will be a lengthy list of technical lectures and movie-film nights for the bi-weekly meetings. Visitors and new members are assured of a warm welcome at all times. The President of the Society is Ron Blades, VK2VP, 4 Service St., Ashfield, N.S.W. All communications should be addressed to the Hon. Secretary, Mr. B. Taylor, 31 James St., Lidcombe, N.S.W.



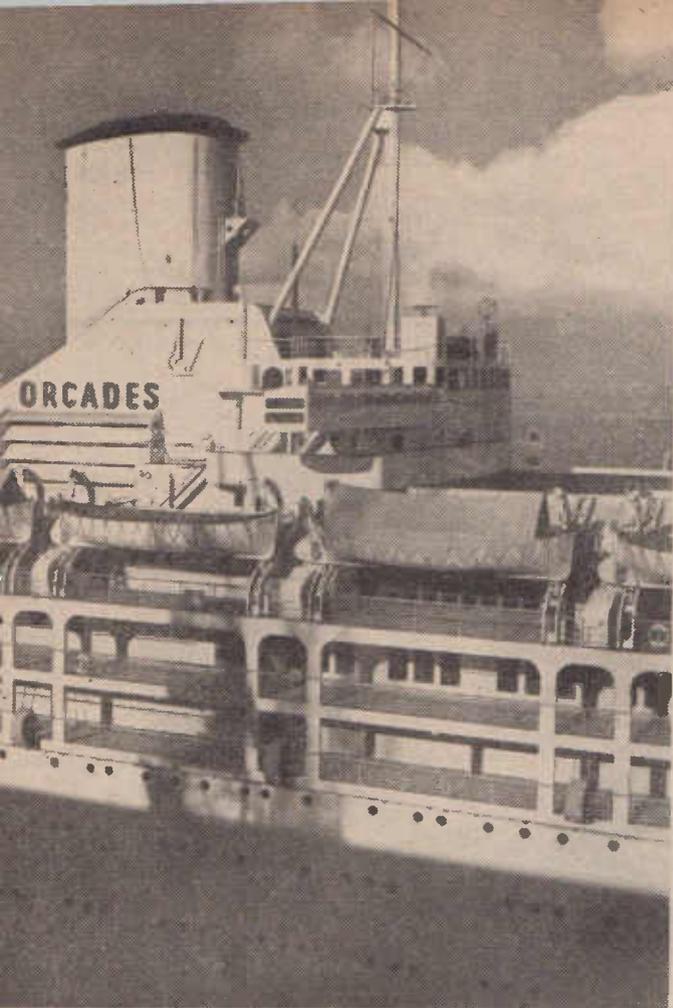
a **BIG** advance in design

Radiotron's latest valve release  
A.C. miniatures for 6.3 volt supply.

- Top performers on broadcasting.
- Outstanding on short waves.

# Radiotron



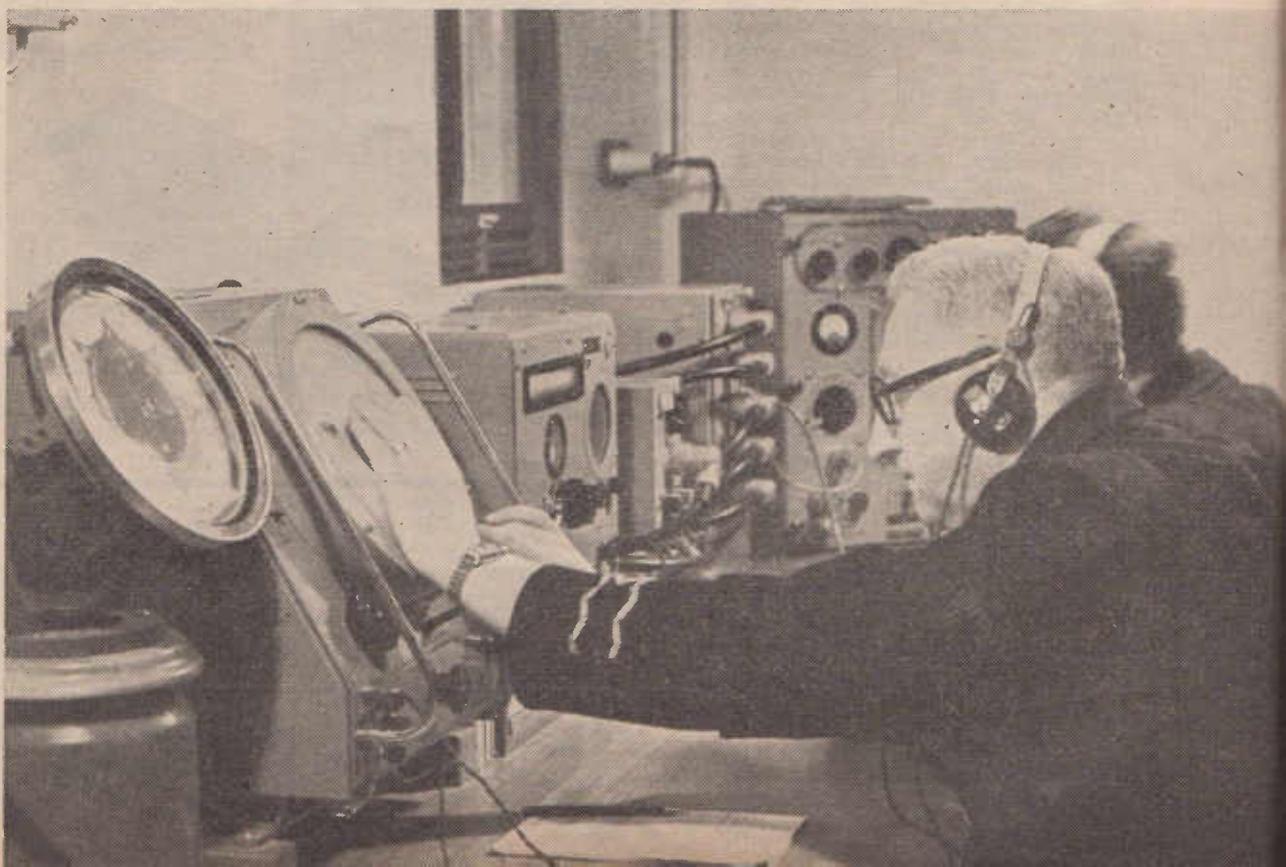


# Modern Marine Equipment

on the new Orient Liner

## "Orcades"

- (Left) Recently placed into service in the London-Australia fleet of Orient liners, the new "Orcades" is a magnificent example of the product of the British Shipbuilder. Successor to her two previous namesakes, "Orcades" is of 28,164 tons and 42,500 hp. Compared with all previous Orient liners, a distinct departure has been made in arrangement of upper decks, funnel, and bridge structure.
- (Below) Marconi marine radio and Radar apparatus is installed, and the Chief Radio Officer, Mr. N. A. Boone, is shown at the controls of the direction finder. Receivers in the installation include "Mercury" and "Electra" marine types; the former covering frequencies from 15 to 40 Kc/s and 100 Kc/s to 25 Mc/s. The "Electra" type is mainly for short-wave working but covers frequencies between 250 and 520 Kc/s as well as 1.5 to 25 Mc/s. A 15 watt ship-to-shore radiotelephone is provided for staff communication near ports and an extensive public address system is controlled from the radio office. In conjunction with this a wire recorder is used to ensure good reception of B.B.C. programmes at good reception periods, and the subsequent reproduction at times more convenient to passenger's enjoyment. A 3 cm Marconi marine Radar installation is fitted in the wheel-house.





# Do you want to be an Announcer?

**Y**OUR decision, like the old Ad about the baby and soap; has been made, and "you won't be happy until you get it." Rightly or wrongly, a conclusion has been reached; not on the spur of the moment but after plenty of thought . . . that you are just cut out for a job as a broadcast station announcer.

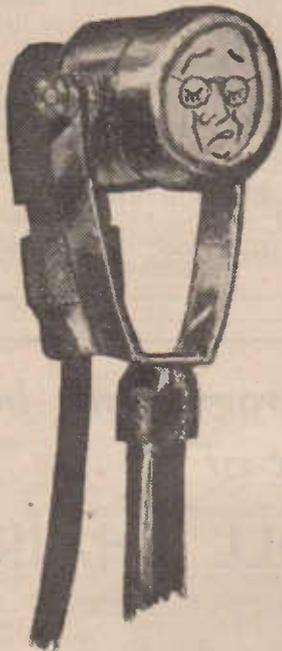
## Asks Michael Starr

A lively imagination is a valuable asset to the *experienced* announcer, but imagination can result in the dropping of plenty of "bricks" where it runs away in the case of the over — or not so — confident tenderfoot. That shiny spheroid to which you address remarks may appear suddenly to leer, with a cynical twist to its metallic countenance. Oh no! of course it won't *answer* you back, not verbally . . . but it may by some seemingly telepathic process convey a sudden shattering impression of "what was **THAT** you just said . . . you **BIG DOPE?**" That way lies "mike-fright," and lives there the announcer that *hasn't* been through a qualm or two in that direction at some time in his, or her career? But don't be scared brother (or sister) . . . all that appears to titter isn't bold and snooty little Mike can be disciplined by staring him full in his robot-like phiz and intimating "Uumps to **YOU!**" You don't say that of course, or anything not in the script . . . you just adopt an attitude of dumb insolence of the kind so infuriating to army sgt-majors. Whereas you wouldn't have Buckley's of getting away with it on the parade ground . . . the mike will "take it" and the episode may then be considered as closed. Let's examine the position, and see whether or not you really *are* at a stage of acceptance for a job as an announcer with some broadcasting organisation or network.

To prove how superb is your flow of controlled language you would like to *read* to me and thus emphasise what an irresistible voice it is your good fortune to possess. Maybe so . . . but the latter attribute is about the *last* thing looked for in most of the smaller stations, especially in some country areas. You don't fancy "small-time" outfits? Don't sniff at the idea of getting a start on such stations for that is just where you *should* break the ice. You'll have no regrets about it later, and the more you progress as small station announcer-cum-Manager-Ad salesman the easier things will come in other directions later on.

It is an advantage to be able to grab lunch and eat it in a matter of minutes without the need for those anti-acid tummy powders you've been plugging between discs . . . and there is also a need to be able to cope with successively broken night dates. On about the sixth night you phone calmly and say "Sorry Honey . . . gotta work again tonight."

Can you start the day, feeling so off colour that it would be a pleasure to lie down and expire, yet be the bright and sparkling early morning attraction you are *supposed* to be?



"A cynical twist to its metallic countenance."

This, in spite of the fact that mere announcers; and I don't mean "mere" in any derogatory sense, are, as distinct from quiz stars, big-time comedians and the like, very, very plentiful. But you've decided that you aren't going to be at all happy until you've broken into the game and taken charge of that little chromium-encased gadget (microphone to you) or more likely that the pitilessly silent gremlin inside the case will have assumed charge of **YOU!** Far be it from me to offer a deterrent to the aspirant for a job as disc-jockey, but the business of becoming established as a voice familiar to vast unseen but critical audiences, just isn't plain sailing.



What was that you just said you **BIG DOPE?**

Should you come in for a dressing down by the "boss" it calls for plenty of poise to be able to carry on with the job of reading a "commercial" without sounding like a liverish retired Indian Army Colonel. Should you be able to meet requirements so far, and assuming that you get a start, say with a metropolitan commercial station . . . then be prepared to acquire the nack of sleeping during the daytime, for nightwork will probably be the order of things quite frequently. Shift work? Yes . . . that sums it up. Once the ground has been broken, the rest is in your own hands; you'll have to be prepared to work night *and* day if necessary.

The successful announcer of this era is the embodiment of versatility;

(Continued overleaf)

(Continued from page 15)

for announcing is but a small portion of the likely activities. To get started for top-ranking studio work you need a flair for acting, direction, production, script writing and other things, and whilst being able to handle these angles with confidence, remuneration isn't so high as to be excessive.

### Qualifications

To get the idea that one *may* make a successful announcer is one thing, but without definite qualifications wasted time and disappointment may follow. First item for consideration is, naturally—the voice. Although it is a useful feature, tonal quality isn't rated as being imperative. There are people who are no great shakes so far as microphone-kindness to the voice is concerned, but what they lack in tonal quality is counterbalanced by outstanding personality and a keen wit. These people have a way of striking a friendly note in the responsive minds of listeners. There are "soap-opera" stars in this category—with voices that really aren't spell-binding, but as first-rate ad-libbers they lack nothing. Ingenuity is another useful point for a successful mikester—you are on the way to bigger things if in an emergency you can, with the key to vital advertising script mis-placed, ad-lib a programme for half an hour or so about nothing in particular; until the office



staff finds the missing key, and things get back to normal. That has happened in a case in mind, and its a particularly useful commercial announcer who in a jam, temporary or otherwise, can remember most of his plugs and thus keep on the ball enough to keep the station's flag at the mast. An average voice can be used to good effect by clear diction combined with smooth delivery. Even though time is a factor, the smart announcer can convey an impression of being quite unhurried. To gabble away as if talking against the clock can be disastrous, unless it is a case of action suiting words in the script.

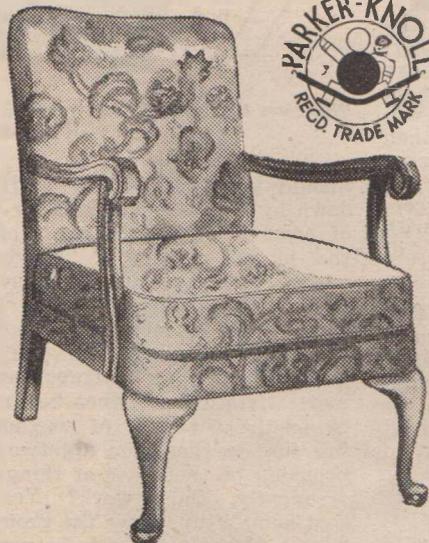
Speech impediments —, however small they may be—are a sad handicap to the aspiring announcer, for the chromium-plated gremlin has a habit of accentuating rather than hiding any unusual characteristics. Education means, for the announcer, the playing of an important role in certain directions. Whilst mathematics may seldom be of great assis-

tance, literature, drama, music, history, and languages—these are of the highest priority. You should be keenly interested in writing, because ability to deal with programmes, advertising "copy" and dramatic scripts makes you more valuable than a mere announcer, especially in the smaller stations. Knowledge of subject is essential before one can hope to paint a true verbal picture. A born sports announcer and an accomplished musical critic would, for example, be hopelessly out of depth if called upon suddenly to exchange roles. No business exists in this world where people are more closely associated than in broadcasting. What amount of glamour confronts the newcomer to the business is gone with the wind in a week or two, but there is a sense of personal achievement possible. An announcer can feel, as he reads a gag, that a spot of laughter may break out in some depressed atmosphere. His News bulletins may bring joy or sorrow to a world of listeners, but his profession is no longer a fumbling uncertainty made feasible by a technical novelty—it is a profession vital to the everyday life of Mr. and Mrs. Everybody and family.

### SUBSCRIBE NOW!

For 12/- a year you get  
"RADIO and TELEVISION"  
MAILED DIRECT

**RELAX — and enjoy your favourite programme in  
the Comfort of a**



## PARKER-KNOLL CHAIR

— WITH ENGLAND'S BEST FABRIC-COVERED SPRINGS —

Because Parker-Knoll chairs are sprung on an entirely new principle, they are a revelation in comfort. It is this exceptional comfort, in fact, that has made Parker-Knoll chairs so famous. Parker-Knoll chairs have fabric-covered, horizontal coil springs that give to every movement of the body. You enjoy complete relaxation in them . . . and they are available in a range of designs and coverings that are as modern as their springing.

Come in and let us demonstrate this new way to relax . . . and see these English-made, fabric covered, horizontal coil springs—made from super-toughened steel of untiring resilience. If you cannot call, write for descriptive leaflet of these very comfortable chairs. Parker-Knoll chairs should always be your choice when you want a really comfortable Easy Chair.

Made by and obtainable only at

# BEARD WATSON & CO. LTD.

GEORGE AND YORK STREETS (NEAR KING ST.), SYDNEY. PHONE: BX 3281.



# AUSTRALIA'S PROVINCIAL BROADCASTERS



"The story of the smaller broadcasting services throughout Australia is an interesting one, embodying as it does the history of the many stations serving the city and country areas. Each rural station has its essentially localised associations, bound up with the welfare and interests of the surrounding countryside. The success of the one is reflected in the prosperity of the other, and by virtue of the existence of the commercial systems of broadcasting, Australian country listeners possess an outstandingly beneficial news and entertainment service additionally to the indispensable stations of National character. From the city man's viewpoint, most of the country stations are a mere callsign on the frequency allocation list, and he knows little or nothing of the service given by these distant stations. The country listener also, may hear rural stations situated a few hundred miles from the immediate region served by his local broadcaster, but may like to know more intimate details of the service and the community life of the area. With the belief that many readers will welcome this feature each month, 'Australian RADIO & TELEVISION News' plans to tell the story of the country commercial stations in turn."

STATION  
2AY  
ALBURY  
NEW SOUTH  
WALES

THIS pioneer among country broadcasting stations of N.S.W. commenced operation on December 17, 1930, on the frequency of 1480 kilocycles, which still applies. Power rating is 200 watts, and the equipment responsible for the excellent utilisation of this modest rating is a product of the transmitter Division of Amalgamated Wireless (Australasia) Ltd. The transmitter is situated on Poole's Hill, a location approximately one mile distant from the Albury Post Office, and there the staff comprises three qualified technicians. The studios for Station 2AY occupy practically the whole of the first floor of the modern and commodious A.M.P. Buildings situated in Dean St., almost opposite to the Post Office. The staff at the studios and offices numbers twelve, five of whom are office staff; two salesmen . . . one of whom is a part-time announcer . . . four announcers and the Manager.

The studio equipment is the most modern available, having been installed quite recently. The two-channel A.W.A. equipment provides all the facilities that might at any time be considered necessary for the presentation of any type of programme. Included in the studio

offices is an auditorium with a seating capacity of 200, and this is used for regular community singing broadcasts. Recitals by the Albury City Band and the City of Albury Choral Society are also broadcast from the auditorium regularly with three microphones available for appropriate pick-up.



Administration of Station 2AY is in the capable hands of Mr. A. R. Kidd, Manager.

The station makes a feature of coverage with actuality broadcasts wherever possible, or failing that, comprehensive reports on all items of local interest. These activities

deal extensively with local football commentary covering both Australian Rules and Rugby, horse racing, trotting, tennis, proceedings from the annual show, direct broadcasts from factories, regular features of both old-time and modern dance music from separate halls, official openings of new ventures in the community, and recitals by local artistes. The management has objectives extending further than the radiation of these activities as a service and entertainment to the community in that space is provided for the dissemination of information pertaining to the local Red Cross Society, Far West Children's Health Scheme, Girl Guides and Boy Scouts, youth welfare, agricultural pursuits, stock reports, special reports on rise and fall of the river, general weather information, bush fire announcements and any other material considered essential to the needs of the community. Each Sunday Station 2AY makes available an hour of time with technical facilities for the Mimsters' Fraternal, who have established a roster by which Divine service is broadcast from different churches in rotation. An additional half-hour of

(Continued on page 19)

## COMMERCIAL BROADCASTING NEWS

The following extracts from the official Bulletin of the Australian Federation of Commercial Broadcasting Stations are made available through the courtesy of the President, Mr. J. E. Ridley.

From an editorial. "... Originality is a very fine thing, and very useful in presentation of advertising copy. But it can be carried to lengths of absurdity... the idea is to discourage the growing tendency towards noise and nerve-jarring stunts... a tendency that has been noted with irritation by listeners, and complained of as a purely destructive element in otherwise pleasing programmes. We know... how valueless this semi-hysterical type of announcement is... leave the stunt broadcasts to Norman Corwin."

Broadcasting news items from overseas:—

**Recording Ban Lifted.** The ban imposed in December, 1947, by the American Federation of Musicians on the use of Union instrumentalists in the making of gramophone records and transcriptions was lifted in December, 1948. Production of records and transcriptions has been resumed and is now in full swing.

**A.M. holds its own.** Reports from U.S.A. indicate that despite the development of FM and TV, radio engineers see AM as the basic broadcast medium for some time to come.

In the opinion of Dr. Kenneth H. Baker, N.A.B. Research Director:

"AM broadcasting is still delivering enormous audiences; it is still the effective medium that it has always been."

In a summary of operations of the F.C.C. for the year 1948, the Chairman, Mr. Wayne Coy, said:—

"The most notable fact in American broadcasting during the past year was the continued expansion of facilities. More than 300 AM stations, more than 300 FM, and more than 30 TV stations went on the air, so that at the year's end the nation was equipped with approximately 1,850 AM, 700 FM, and 500 TV stations."

**Introduction of Commercial Radio in South Africa.** South Africa is to start commercial broadcasting about the end of 1949. For 12 years South Africa has had a system of broadcasting patterned on that of the B.B.C. When commercial broadcasting is introduced, the present system will be retained and the commercial service will be a separate operation, conducted by the South African Broadcasting Corporation.



★ (Above) Lucille Lisle, an Australian born in Melbourne, is now a member of the British Broadcasting Corporation's Drama Repertory Company.

She made her first appearance on the stage when she was a child as a dancer in pantomime in Melbourne. When she grew up she went on the stage in Australia and then went to New York in 1930, going to England in 1932. She has appeared in a great many London stage productions and in films too, while she has been broadcasting for many years and has also been televised. She joined the Drama Repertory Company at the beginning of the war, and has been a member of it off and on ever since.

Her hobbies are mostly outdoor ones, motoring—when she has any petrol—golf and tennis, with bridge for wet days.

—Picture by courtesy of the B.B.C.

In a letter to Electronic Industries Ltd., Pye Radio Works at Cambridge, states that Britain's 100,000th television licence was taken up about the end of February for a Pye receiver.

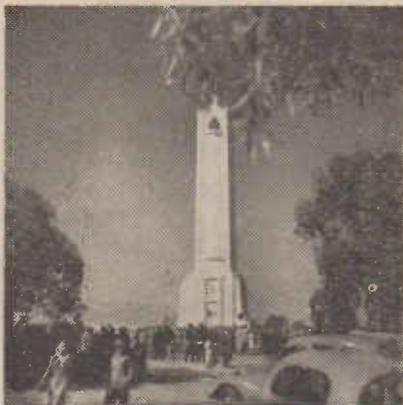
Pye also has the distinction of having supplied the receiver which was allotted the 50,000th licence.

It is pointed out, nevertheless, that there are undoubtedly quite a lot of viewers in England who have not yet applied for a Post Office licence.

Mr. L. M. Stuart, a Director of Electronic Industries Ltd. and Radio Corporation Pty. Ltd., left for England on the Stratheden on March 22nd, to study the latest developments overseas in television, radio and electronics generally. He will be absent for six months and plans to visit a number of European countries. His wife and daughter accompanied him on the trip.

(Continued from page 17)

the early afternoon on Sundays is devoted to the R.S.S.A.I.L.A. for the purpose of keeping members in touch with mutual activities. It is apparent that although Station 2AY is essentially a commercial station, and therefore must depend upon advertising revenue for continuance of operation, service to the community is a high priority, despite the fact that much of the material to which time is devoted is non-remunerative. It is a feature of country broadcast station operation that is inseparable and of such importance to the immediate and surrounding locations.



"The impressive War Memorial stands sentinel-like over the attractive city of Albury."

### The Entertainment Side

In the world of radio entertainment Albury's popular station lacks nothing, for 2AY takes in most of the big shows that are a feature of Australian commercial broadcasting. Amongst them are Australia's Amateur Hour, Lux Radio Theatre, the Atlantic Show, the Shell Show, Malvern Star Show, Vacuum Opera for the People, Maples P. & A. Parade, Ralph and Betty, Danger Unlimited, Juvenile Jury, The Blue Danube, My Husband's Love, Crossroads of Life, Mary Livingstone, M.D., Aunt Jenny's Stories, and Dr. Paul. In addition to the foregoing, many of the business people of Albury avail themselves of 2AY's advertising service, and at present the station is handling space for no less than 170 such advertisers. There are many occasions when local business and social organisations who do not use 2AY time as a regular feature avail themselves of the facilities available through the station.

### Outside Broadcast Facilities

That outside broadcasts are considered to be of importance to the stations' requirements is seen in the fact that twenty-two outside points

(Continued on page 21)

## S. LENZER

154 Castlereagh Street, Sydney

*Australian Representative*

Green, Hearn & Co., Ltd.  
London

Manufacturers of the famous  
"LYNDALE" Suits and Coats.



These two styles are representative of this Season's Stocks just opened up and which are NOW available for immediate delivery.

Showrooms at Above Address

and at

283a ELIZABETH ST., SYDNEY

Phone: M 3848



★ "I don't mind if I do!" Jack Train, shown in a smiling mood here, is well-known to listeners as a man of many voices and parts. He is perhaps best known in the role of "Colonel Chinstrap," one of the most amusing characters in the late Tommy Handley's never-to-be forgotten Show. Except for illness, Jack Train has taken part in every edition of "Itma" since the outbreak of war in 1939.

—B.B.C. Copyright Photograph.

### WELL-PLACED CONFIDENCE REWARDED

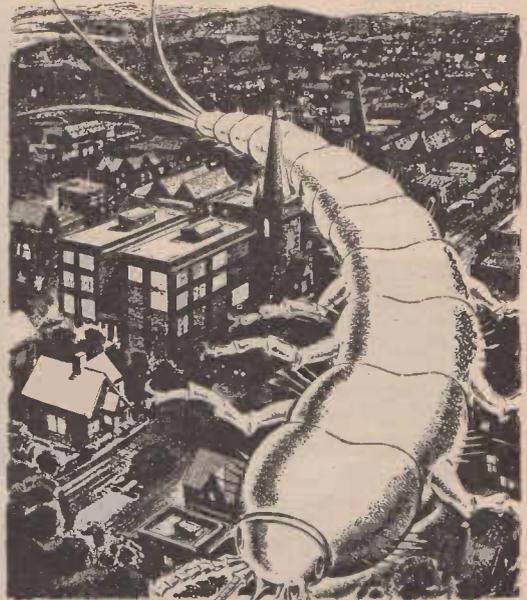
Honour of being the first subscriber on record for "Australian RADIO AND TELEVISION News" goes to Clifford A. Lloyd, of 79 Victoria Street, Lewisham, Sydney. Learning, in November, 1948, that the new magazine was having the keel laid on the stocks, Mr. Lloyd sent along a P.N. for six shillings as "a deposit on whatever the subscription might be." We are pleased to give our Number One subscriber a complimentary concession in that he will receive the first 12 issues without any extra charge. Fair enough?

### "BIG FUTURE FOR TELEVISION"

Says U.S. Industrialist

President of the Crosley Broadcasting Corporation, U.S.A., Mr. James D. House, said recently that Television will take the place of radio within five years and will become an integral part of the lives of 300,000,000 families.

IT STALKS BY NIGHT!



## Kill Silverfish with INSECTIBANE

The destructive Silverfish destroys white you sleep . . . ravaging in your wardrobes, your cupboards, your drawers and your carpets . . . lurking atop picture rails and under skirting boards—always destroying, unless you destroy him! Your best protection against Silverfish is double-action Insectibane. It spreads a thin lethal film of powder that contains Pyrethrum for quick killing, D.D.T. for delayed-action . . . any Silverfish that touches it is sure to die. Sold everywhere in 2-oz. tins with perforated shaker tops.

USE INSECTIBANE FOR:

CARPET BEETLES . . .

COCKROACHES . . .

FLIES . . . FLEAS . . .

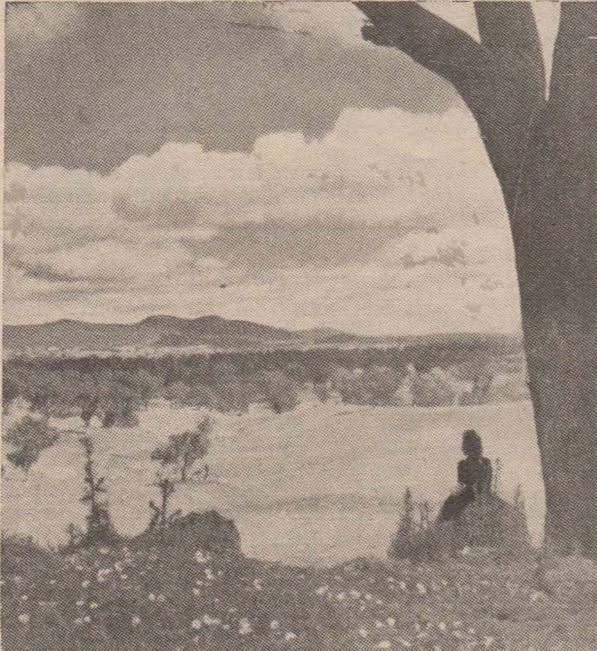
MOTHS . . . ANTS



A Product of the Laboratories of  
ROCKE TOMPSITT & COY. LTD., MELBOURNE

(Continued from page 19)

are permanently wired directly to the control room panel so that announcers and technicians may go to any one of the points, attach the portable equipment and broadcast at short notice.



"Albury is surrounded by undulating pasture country"

2AY embraces a district taking in such towns as Henty, Holbrook and Culcairn in the North, Tallangatta and Corryong in the East, Corowa and Wangaratta in the West, and Bright, Myrtleford and Mount Buffalo in the South and S.S. East. This district is vary varied in industrial and agricultural pursuits, and represents a broad section of Australian life.

### Some Figures

Postmaster-General's figures show that within a 50-mile radius of Albury there are 14,000 licensed radio receivers, representing 70,000 listeners. The musical library of 2AY, of both transcribed and ordinary commercial recordings, is very comprehensive. On the transcribed side the station is able to draw upon the extensive facilities of the A.W.A. Recording Studios. The commercial recordings cover the whole field of music from swing to symphony, and to provide a variety in all the individual phases the Management is able to draw upon approximately 20,000 items.

### Noteworthy Broadcasts

A unique broadcast from the station was on Christmas Day, 1947, when three announcers and a technician proceeded to the Albury District Hospital and, during a period of

45 minutes, went to the bedsides of most of the male and female patients in the public and the children's wards with a trailing microphone. Seasonal greetings were extended to each patient, who was in turn invited to send Christmas greetings to relatives

school activities. 2AY put into action an idea of conducting a session from the High School, in which pupils in their classes would be interviewed about their likes and dislikes, general feeling toward instruction, and their ideas about their future careers. Masters were interviewed regarding their own feelings about the job of imparting knowledge, and broadcasts were made of sections of lessons in progress from various classrooms. Interviews were held with the Headmaster, the School Counsellor and the Careers Adviser. The session occupied an hour and a half and proved to be remarkably popular.

A recent scoop was a ball-to-ball description of play in the tennis matches staged by the visiting professionals, Kramer, Riggs, Segura, and Dinny Pails . . . this was featured exclusively by 2AY.

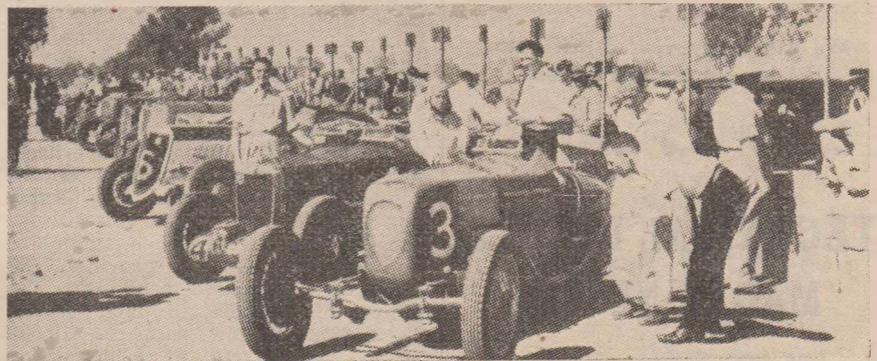
### Mayoral Commentator

The station is probably the only one in the Commonwealth graced by the Mayor figuring as a specialist commentator. Alderman Cleaver Bunton is Mayor of the City of Albury; he is also Station 2AY's official markets commentator, and handles additionally the descriptions of play in the Ovens and Murray League football matches (Australian Rules) each Saturday afternoon during the season. Also, he conducts an interview each Friday evening with prominent sporting, local and visiting personalities. On Saturday evenings he is in the studios to conduct the sporting resume. Mayor Bunton's qualifications for these activities are his keen interest in sport of all kinds. He has played in Australian Rules football himself in other days, and was considered to be an outstanding player.

(Continued overleaf)

**STATION  
2AY  
SERVES  
14,000  
RECEIVERS  
AND  
70,000  
LISTENERS**

or friends. This type of broadcast is another example of useful service to the public, and it is not surprising that a large number of appreciations were received by the staff of 2AY regarding this now regular Christmas hospital broadcast. Another broadcast of note for 2AY was from the Albury High School on the occasion of a week of celebration in con-



"Automobile races are sporting occasions of considerable interest to Albury people."

junction with the N.S.W. Centenary of Education. All broadcasting stations were invited to assist in promoting a better understanding and a greater interest by parents in

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(Continued from page 21)

### Station Staff

The personnel at 2AY comprises the following:—

Manager: Mr. A. R. Kidd.

Technicians: Messrs. R. A. Studert, W. C. Want, J. L. Proust.

Announcing Staff: Miss Anne Dean, Mr. George Jennings, Mr. Colin Yeo (Salesman-Announcer), Mr. Peter Spring, Mr. Ron Hillhouse.

Office Staff: Miss S. Vines (Manager's Secretary), Miss C. Nixon, Miss P. Nowland, Miss J. McBrien, Miss L. Lindner (Record Librarian), Mr. G. Bunton (Full-time Salesman).

### Points About Albury City

Long, warm summer months and moderate winter makes the Border City a delightful place in which to dwell. It is the natural halting place for travellers between Sydney and Melbourne. Most prominent feature visible to the visitor is the War Memorial, which, floodlit at night, is virtually a brilliant white beacon. Close to Albury is the magnificent Hume Dam, opened for service in 1934. This inland sea is a fascinating attraction, being as it is, three times larger than Sydney Harbour in water area. Albury became world-famous in 1934 because of assistance rendered to Netherlands airmen Parmentier and Moll during the London-Melbourne air race. The aircraft circled uncertainly overhead, and a quick-witted member of the community flashed the city lights on and off to spell in Morse A-L-B-U-R-Y. Cars then assembled on the racecourse and provided illumination by massed headlights, enabling the plane to land safely. Population is now past the 10,000 mark, and gazettal of Albury as a City was made on December 18, 1946, with a tablet unveiled to commemorate the proclamation by the Governor of N.S.W., Lieut.-General Northcott. Albury saw much military activity in the 1939-45 war, several large army encampments being established in the area.

Sporting events feature prominently in 2AY's service to the Albury and district community.

### No Kidding?

Extracts from the (obviously) non-technical Press about things radio. . . . We ran across these "sage" remarks in a Digest magazine: "Since those days, however, broad tuning has been eliminated by the introduction of the screen-grid valve, and frequency modulation, when introduced, will make overlapping impossible, with its extremely fine tuning and narrow broadcast band." . . .

As the late famous British comedian, Harry Tate, would remark . . . "words fail me."

### "Wot—No Garbage"?

Prince of practical jokers among amateurs in the Sydney area must be Graham Conolly, VK2ARR, who, when not engaged in amateur activities from his station in Roseville, N.S.W., is a member of the announcing staff of a commercial station, 2UW, Sydney. Graham has a few mild "booby traps" planted around his shack for the amusement of unsuspecting visitors, and himself; but his electronical ingenuity rose to Olympian heights recently. Perhaps with the idea of trying out the efficiency of micro-switches and relays, he laid a little surprise for the garbage tin collector. When, at somewhere around 0200 hours that worthy arrived to remove the doings, he walked through a fine wire which promptly broke. In so doing it let off a Klaxon hooter, whilst at the same time a series of powerful lamps lit up in a japonica tree, and focussed on the hapless GTC. Tis said that local Council demurred awhile before collecting further.

### DON'T MISS OUT!

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WITH YOUR  
NEWSAGENT



A Thought  
for an Idle  
Moment

## 'EARTH RETURN'

## WHAT'S IN A NAME?

IN planning a new publication, the first consideration for those responsible for the editorial matter is the choice of a title. What kind of subjects are to be dealt with, and under what heading shall they be covered? The result of such deliberation is shown in the title "Australian RADIO and TELEVISION news;" indicating clearly that the reader expecting to find appropriate articles between the covers will have plenty of interest. Those who have for more than two decades, read technical and topical radio articles by the undersigned, will recall the popular weekly "Australian Radio News," as published by The Bulletin Newspaper Company, Sydney, before the recent years of war. By courtesy of, and by arrangement with that Company, the title and copyright has been made available. The title chosen for this new publication has been derived from the old, and adapted to the immediate needs of the future. Television is an industry of the present, overseas, and for the near future similarly in Australia. We shall keep readers closely informed of just what is happening of interest in the world of Television, and in so doing, we do not consider the policy to be premature. We are not afraid to talk about Television and its future . . . why should we be? We know, that as time moves along, this publication will, as befits, become known simply as "RADIO and TELEVISION." It is easier to roll the title thus smoothly off the tongue, but it will be fully Australian in outlook and replete with news of wide diversity. Steps are being taken to ensure that our readers get progressive news about lots of things. Note that we refer, on the front cover, in a sub-title, to this being also "A Home interest magazine." There is a reason for

this, not at first apparent. The scope is enlarged to embrace subjects of wider interest, for there are aspects of the future in radio and Television which are associated. It is intended that "Australian RADIO and TELEVISION news" shall provide interesting reading material for young and old, of both sexes. We invite readers to submit articles for consideration, where they consider that there is fundamentally an appropriate measure of "home interest." It must be emphasised however, that this is NOT a technical magazine of the academic variety, and involved mathematical screeds will not be acceptable. It is a publication anxious to handle technicalities in radio, and Television, in a manner suited to the layman. Where constructional radio articles are featured, they will be presented in the plainest of language, to suit the man, who with a limited amount of electrical and mechanical knowledge, may buy his first book-stall copy, and not be disappointed. There will be other subjects to be covered, but you can see from this first issue the kind of reading to expect, covering Radio from all angles, Television similarly, the screen world, the overseas radio listener, and the amateur radio transmitter in all his activities.

We mean to *keep* you interested by striking a somewhat different note to the usual run of publications. If you appreciate the effort, we suggest you drop us a line and hand out the bouquet. If we haven't seemingly "done right by you," your correspondence brickbat will be also welcome. We "can take it" and would appreciate constructive (not destructive) criticism.

—Don B. Knock,  
Editor.

## What's in a name?

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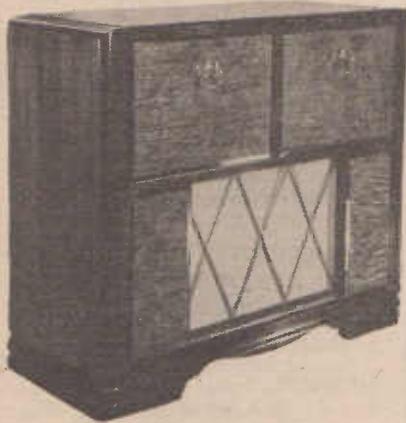
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striking new 5-valve dual wave console radio.

Production of these new models is well under way, and it is expected that they will be available from authorised Stromberg-Carlson retailers in the very near future.

RADIOGRAM MODEL 5A79

Illustrated at right is the new Stromberg-Carlson radiogram equipped with 5-valve, world range radio and automatic record-changer. Fine tonal quality is achieved with two synchronous matched 10" speakers. Other features include rubber mounted chassis, built-in aerial, low level tone compensation and Stromberg-Carlson "FULL SPAN TONE." A unique feature of the top lid is the "all-position" stay which holds the lid at any angle and cannot jam.



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# STORIES OF THE GREAT COMPOSERS.

## THE LIFE OF BACH

By RON BRADER

**I**N the year 1685 John Sebastian Bach and George Frederick Handel were born within a few weeks of each other, but throughout their lives they did not meet personally. Both were German by birth but Handel became a naturalised Englishman, and Bach remained in Germany. Their destinies were parallel in one respect in that they both suffered blindness in latter years after being operated on by the same surgeon. Bach came of a long line of musicians and it is likely that in the history of music there has never been a comparable family. The name of Bach was synonymous with the very suggestion of music for more than a century, and in the year 1740 the family numbered some hundreds. It is recorded that it was in Australia that the last of the family died a few decades ago. The records also show that there were many occasions when members of the Bach family, with Sebastian himself present; met together to enjoy music.

John Sebastian Bach was not, as some embryo composers were, a prodigy, but he developed quite early a very great personality. Before he was ten years old his parents had died and he went to live with an elder brother, John Christoph. This brother had promised the father that the responsibility for training Sebastian would be his, but jealousy of musical accomplishment brought friction between the two. Christoph did not have the power to assimilate quickly, a trait that was very much in evidence in Sebastian.

There was an occasion when Sebastian wished to have access to an album of organ music possessed by Christoph, but the latter refused. It was more than Sebastian could bear to be kept thus from studying the music, and so he broke into the bookcase wherein the album was lodged, and busily made a copy of the contents. This process would have been difficult enough by candle-light alone, but in order to avoid detection by his brother, it was necessary to do the copying in darkness, after the family had retired. Moonlight was the only illumination Sebastian could use, and so perforce he waited for suitable nights. The result was that the work took six months, and the chagrin of the young musician can be well imagined when nights were cloudy. The sad part of this episode in the life of Bach was that Christoph caught him with the completed script, and promptly confiscated it.

When Sebastian turned fifteen, the elder brother died, and the younger then had to face the world alone. His life scene changed to Luneberg, famous also in recent times as the surrender location where German military leaders signed the important document marking the end of hostilities in Europe of World War II. Here Bach joined the choir of St. Michael's Church, and whenever the opportunity presented itself, he travelled the 30 odd miles to Hamburg to hear a veteran Dutch organist, Reinken, play at St. Catherine's. That organist, by the way, was then 77-years-old, but he continued playing until he reached 97 years, and lived almost to the century.



JOHN  
SEBASTIAN BACH

### Weary Journeys

Having no money available to go any other way, Bach always made these journeys to Hamburg by foot, and usually allowed himself three days so that he would be unwearied enough to hear and enjoy the music. On one occasion he found that the old organist was giving two recitals on two successive days, and as he had no money, Bach was unable to pay for a night's lodging. The only thing he could do, was to trudge back home again and with sinking heart he set out to do this. Very lonely was that old road, and after fourteen miles of hard going, he sank down on a bench outside an inn and suffered pangs of intense hunger and despair as the aroma of cooking reached him from the kitchen. To try and forget his hunger he concentrated on thoughts of the music he had heard, and whilst so doing, something fell at his feet from an open window. It was food refuse, and with

it were two Spanish ducats. He never knew who was the benefactor, but he immediately entered the inn, ordered a substantial meal, and immediately afterward set off back to Hamburg. Thus did he hear the second organ recital. In later days, when Bach had become organist himself at Arnstadt, he heard of the famed playing of Buxtehude, at Lubeck. This was about 250 miles distant, but after having obtained permission to be absent for a month, he set off at 4 a.m. one cold October morn. One hopes that he secured a few lifts on that lengthy journey.

### Leave Over-stayed

His holiday period was for a month, but the attractions of Lubeck were too much for Bach, especially as Buxtehude helped him in every possible manner. Time fled, and toward the end of the month of January, a note came from the Consistory at Arnstadt ordering him to appear there at once. Bach considered that it would be unwise to ignore the summons and so he said farewell to his friend, and then trudged back to Arnstadt. Looking healthy after the long exercise, he faced his patrons and said that he had been to Lubeck to better his art. The complaint was made that his accompaniments were too long and elaborate and so he turned to the other extreme. He was somewhat surprised when the Consistory made another complaint with expressed "horror" that a strange maiden had been allowed to sing in his church. Bach explained that she was his cousin and that he planned to marry her. The records do not say whether or not this eventuated, but he got off with a reprimand.

### An Organist Unequaled

It was not long before J. S. Bach became famous as an organist and it is true to say that never then had an organ been played as he played it. In the autumn of 1717 he went to Dresden where the French organist Marchand was giving recitals to large congregations. In some manner Marchand had offended the organists of Dresden and these went out of their way to persuade Bach to enter a kind of contest. Both he and Marchand were afforded an opportunity of hearing each other secretly. So-fearful was Marchand of his own ability, after hearing Bach, that when the day of the contest arrived, Marchand could not be found anywhere.

(Continued on page 27)



★ B.B.C. Television Service. The well-known pianist Monia Liter before the cameras at Alexandra Place, London. The mask frames seen in front of two of the cameras are used when special effects are required for different parts of the televised picture (e.g. "vignetting"). —Photo by courtesy of the B.B.C.

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## LIFE OF BACH

(Continued from page 25)

### The Last Years

The last twenty years of Bach's life were spent as organist at St. Thomas' Church in Leipzig, a place that he liked, but complained that it was too healthy. He implied by this that there were not enough funerals among the population and so he lost fees! It is recorded that Frederick the Great appointed Carl Philip Emmanuel Bach as his personal organist, and requested that he persuade his famous father to visit Potsdam. Sebastian went along with Friedmann, another of his sons. As they arrived at the Palace the King was about to commence a flute concerto with his private orchestra, but when Bach entered, the King immediately gave up the idea and devoted himself to his guest. Bach's improvisations on the piano were sensational. They took the assembled company by storm and it was a natural result that he should be made much of. Nevertheless, it was not for nearly a hundred years after his death in 1750 that his fame reached England, and then it was Mendelssohn who discovered his music and popularised it.



A recent occasion at the station of Harry Cook, G6XR, Keresley, Coventry, England. The Mayor of Coventry, Mr. W. Malcom is seated. He is an amateur transmitter himself, holding the call sign G6WX. Here he is talking, with Harry and Ellen (G6XR's XYL) to George Gray, (VK2XG) Turramurra, N.S.W. during a centenary QSO on June 23, 1948. One hundred and forty-six consecutive contacts were made on 14 Mc telephone (daily).

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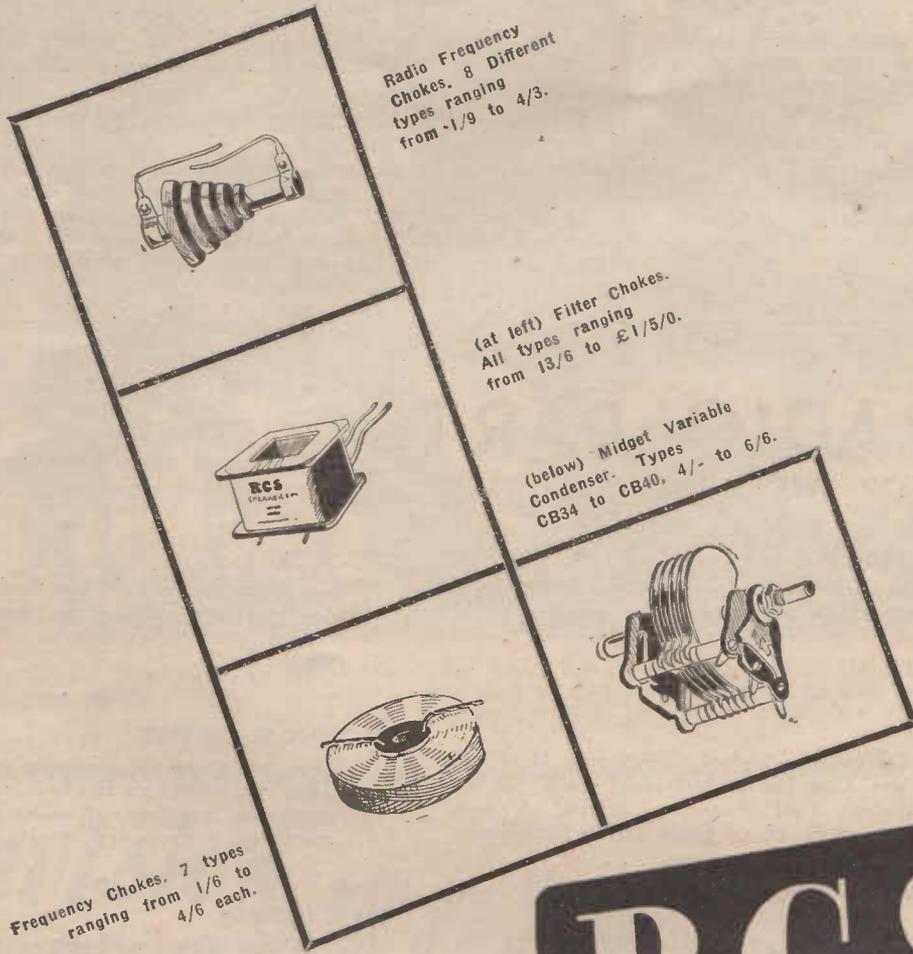
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174 CANTERBURY ROAD, CANTERBURY N.S.W.

# A REVERSIBLE BEAM ARRAY FOR THE 20 METRE BAND

By DON B. KNOCK (VK2NO)

PROBABLY no type of beam antenna system of interest to devotees of the 14 Mc band has attracted more attention during the last 24 months than the simple scheme widely referred to as "the G8PO antenna." This system, like others, is the result of a natural desire, particularly on the part of those who look to DX communication as the first priority . . . to obtain better and yet better results. If Joe, across in the next suburb, gets a report from that 12,000 mile distant station of another signal strength point above Bill's . . . Bill scratches the head a bit and wonders if "it may be conditions?" He decides "No . . . this antenna isn't doing its stuff" . . . so he pulls it down and tries something else in emulation of Joe . . . that is, if the antenna IS the kind that CAN be readily hauled down for adjustment or change. Rotary beam arrays are not usually in that class . . . they are of necessity so designed that they go up to stay . . . unless a hurricane decrees otherwise. The G8PO scheme, being fundamentally a simple structure normally slung on spreaders



The editor of "R & TV" atop the roof platform with VK2CM's Beam.

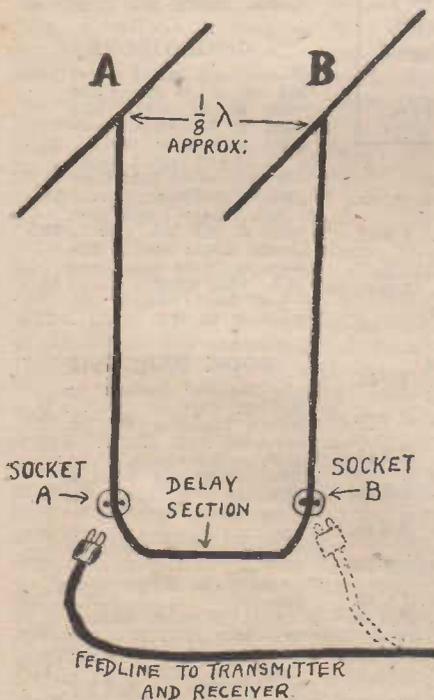
like the evergreen single or double-section 8JK, IS one of the creations of the amateur antennologist (what a creation THAT word is!) because where a humble "Zeppelin" type radiator has been the wherewithal for the quest of DX, such a system is easily slung between two masts in lieu thereof. In other words, where one has two masts arranged at convenient positions around the garden space, it is a simple enough matter to arrange for a fixed-direction beam of unpretentious structure. It can be of the simplest variety, such as the two-half waves in-phase of pre-war popularity for broadside directivity, or of the equally simple W8JK kind where directivity is of the same order, although achieved in a different fashion. Whilst on the subject, it is considered appropriate to clear up a misunderstanding about the W8JK systems, which have been, from their inception, referred to in the overseas Handbooks as being "end-fire." This has caused endless confusion in the minds of many amateurs who rightly think of "end-fire" as relating to directivity along the plane of a wire, i.e., off the ends of a wire. They query the 8JK reference and ask "how can that system be called end-fire when directivity is at right angles to the plane of the wires in the radiators?" The answer is, that because the two radiators are fed 180 degrees out of phase, and both are excited elements, the directivity is at right angles to the direction of the wires horizontally. Two excited elements fed IN phase, and

with the wires lying similarly side-by-side, would be radiating broadside to the wires, i.e., up and down, and of course, would be useless for amateur purposes, although perhaps suitable for a vertical marker beacon for aircraft. Systems such as the two-halves in-phase and the 8JK have been very popular for years, for the reason that they contribute material gain over a plain half-wave antenna. They are, however, fundamentally bi-directional in characteristics. The collinear array (two  $\frac{1}{2}$  W.I.P.) can be made uni-directional by the addition on one side, and at appropriate spacing, of a reflector or director system. Because of the principle of the 8JK, however, reflectors or directors are not readily applicable. The "square corner" reflector has been applied at VHF's, but for 14 Mc such a structure is quite out of the question for amateurs, and wouldn't be an easy task either for commercial application.

## Principle of the G8PO System

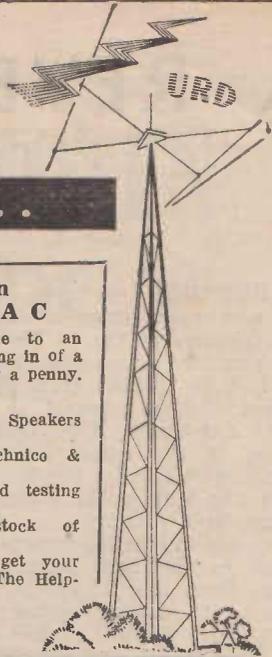
It was in mid-1946 that there appeared prominently on the phone portion of the 14 Mc band a British station which, despite any arguments to the contrary, put out one of the most consistently powerful signals from that part of the world. The owner-operator of the station, Lieut.-Cmdr. Ted Ironmonger, R.N., showed a marked degree of enthusiasm for his antenna array and, during many contacts with the

(Continued on page 31)



The fundamental arrangement of the G8PO reversible beam array.

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- 240 volt 50 cps. A.C. Contactors, 15 amp contacts 35/- ea.
- Maestro Adjustable Time Delay, 240 volt A.C. 50 cps. .... 25/- ea.
- 4-pin Wafer Sockets 3/- per doz.
- Aircraft S.P.D.T. Toggle Switches ..... 2/6 ea.
- Knife Switch, 100 amp. 12/6 ea.
- Yaxley Switch Wafers, 2 x 5 pos., 3 x 4 pos. 1/6 ea.
- Yaxley Clicker Plates, 2 x 5 pos., 3 x 4 pos. 2/3 ea.
- Oak Switch Wafers, 4 x 2 pos. .... 1/6 ea.
- Oak Clicker Plates, 4 x 2 pos. .... 2/3 ea.
- Phone Jacks and Plugs Pair 2/-; 1/- ea.
- Coaxial Connectors, pye type Pair 3/-; 1/6 ea.
- Vibrator "A." R.F. Chokes ..... 2/- ea.

- 685 Microhenry 500 MA Slot Wound R.F. Chokes High to low Impedance Headphone Adaptors .. 4/6 ea.
- Output Transformers to low impedance Headphones ..... 5/6 ea.
- Variable tone Buzzer Transformers ..... 3/- ea.
- Mike to Grid Transformers, carbon and dynamic ..... 6/- ea.
- Headphones, low impedance ..... 7/6 ea.
- Headphones, high impedance ..... 17/6 ea.
- Double Button Carbon Microphones ..... 7/6 ea.
- Carbon Throat Microphones ..... 7/6 ea.
- Carbon Microphone Inserts Carbon Diaphragm Dynamic No. 7 Microphone Inserts ..... 6/- ea.
- Westectors ..... 4/6 ea.
- Shielded Hook-up Wire Rubber covered Stranded Hook-up Wire per 100 ft. .... 5/-

### SPECIALS (Continued)

- SCR 522 Cables, complete set ..... 35/- ea.
- Ceramic Formers, 6 x 1 1/2 in. dia. .... 3/6 ea.
- Ceramic Formers, 6 x 3 in. dia. .... 5/- ea.
- Pressure Gauges, 2 1/2 in., 3,000lb. square in. .. 25/- ea.

### GENEMOTORS

- SCR522 28 volt input: output 300 volt at 26 amps; 150 volts at .01 amps, 14.5 volts at 5.0 amps. Complete with filter, etc. ... 45/-
- No. 11. 12 volt input: output 350 volts at 40 MA. Complete with filter ..... 30/-
- 28 volt input: output 550 volts at 350 MA ..... 70/-
- 14 volt input: output 220 volts at 70/80 MA, complete with filter ..... 50/-
- 28 volt input: output 250 volts at 60 MA ..... 32/6

### BOOK BARGAINS

- Radio Receiver Design, by Sturley, Part 1 ..... 15/-
- Wireless Direction Finding, by Keen ..... 12/6
- U.H.F. Techniques, by Brainerd Koehler Reich & Woodruff ..... 20/-
- Testing Radio Sets, by Reynier ..... 5/-
- Mathematics of Wireless, by Strange ..... 3/6
- Foundation of Wireless, by Sowerby ..... 3/6
- Practical Wireless Circuits, by Camm ..... 3/6
- High Frequency Thermionic Tubes, by Harvey ..... 12/6
- Standard Notes for R.A.A.F. Wireless Mechanics ..... 5/-

# ELECTRONIC EQUIPMENT CO.

LM3555. 29b WEST STREET, LEWISHAM, SYDNEY.

(Opposite end of Lewisham Hospital, adjoining railway line).

LM3555

(Continued from page 29)

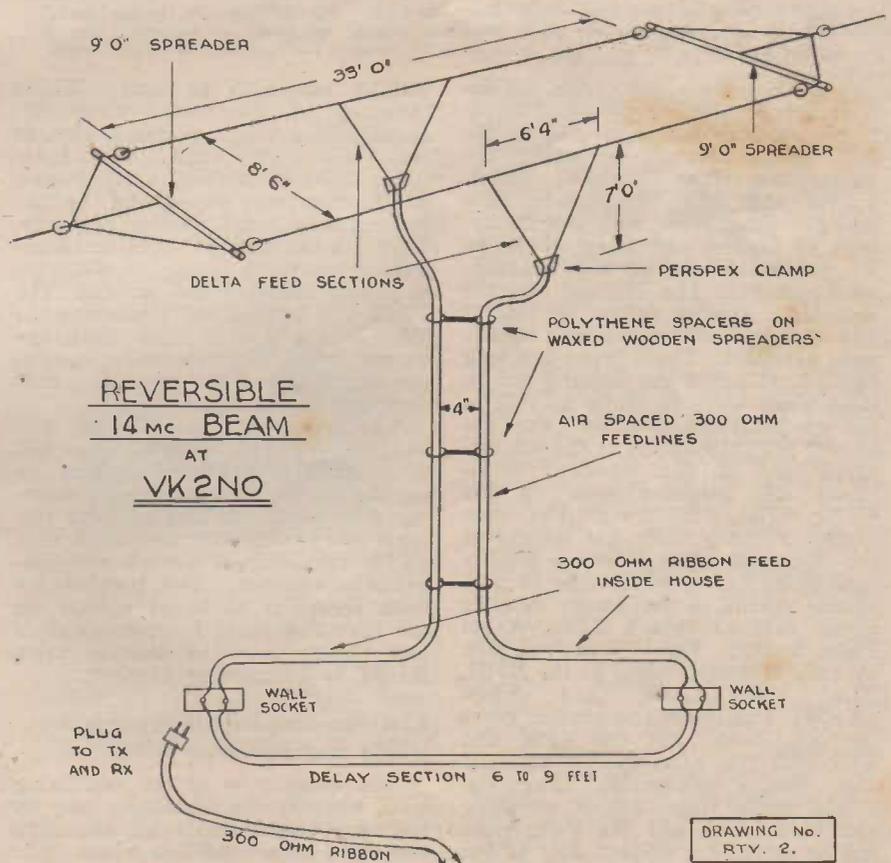
writer's station, passed on the details. Subsequently, G8PO was posted for duty with the R.A.N. in Australia for a period, and is active on 14 Mc phone at the present period signing VK3WU. Needless to say, he practises what he preached, and uses his pet antenna system; in fact, it is the actual antenna brought from London, wire, insulators, feedline and all. If anybody in the amateur world doubts the effectiveness of the system, they have only to listen to British amateurs giving signal reports to the many Australians now making good use of similar arrays. Probably the shining light in that respect is Bert Hay, VK2AGW, of Lindfield, N.S.W., who uses a version similar to the one described in this article. VK2AGW is one of those blessed with a good location, as well as a better-than-average antenna, yet conversely, VK2CM is a station at what may be considered a poor location, but where excellent results are obtained with a modified version of the G8PO scheme. The system at VK2CM is also referred to in detail in this article.

Without going into the mathematical reasons of the why and wherefore of the array devised initially by Cmdr. Ironmonger (and there has been plenty of academic argument about it overseas), it is sufficient to state briefly that it functions as a W8JK type which, instead of being bi-directional, is controllable from the operating position so that it "fires" the signal either in one of two directions, assuming that the structure is fixed and cannot be rotated. This feature is obviously an advantage in itself, but where the system really scores is that a very high back-to-front ratio of signal can be obtained when using the array for reception. In other words, if a signal is being received from the South East at reasonable level, there will be far less interference possible from a nearby station to the North West than would be possible with a bi-directional antenna. Because the latter deals equally with signals from the both directions, the interference position can be acute at times. Some amateurs may not think discrimination against unwanted signals to be a serious handicap; and such may be the case where a station is not surrounded by others, but the city suburban station would not wish to revert to the bi-directional feature of the 8JK after a little experience with a properly-functioning high-discrimination array of the kind described. The forward gain obtainable is not rated as being very high, although this must be higher than at first estimated, judging by the reports

obtained from Europeans by stations such as VK3WU, 3JT, 2AGW and others. It is sufficient to say that there is materially more forward gain than a plain half-wave radiator, but coupled with the high discrimination, the two features add up to a really good combination. Reference to the sketch outlining the original G8PO array will give an idea of the simplicity of the scheme. Two half-wave radiators, which, in the case of operation between 14 and 14.25 Mc, are 33 feet long, are arranged on spreaders about 8 feet 6 inches long. For 14 Mc operation this is approximately a spacing of an eighth wave. The dipoles are fed at the centre, originally by co-axial cable, but preferably with balanced feedline such as the Telcon 75 ohm material. Co-axial cable is O.K., but subsequent adjustment of line length, also the delay section inside the "shack," can be a nuisance. If you have tried joining-up co-ax the reference will be obvious. Experience has shown that the length of each feedline, from the radiator joint to the point inside the "shack" where the delay section

commences, should be an even multiple of a quarter-wave. For average purposes, a full-wave will be suitable, but in considering the lengths, the velocity factor of the feedline material must be allowed for. For example, the popular 300 ohm K25 Telcon material has a VP of .76. Multiplying the length in feet for a half-wave as determined by the usual formula by .76 will fix the requisite half-wave at 24.4 feet. A full-wavelength of feedline using the 300 ohm material will thus be around 48 feet. The feedlines are brought to the operating position, and at the ends of these an extra length of feedline, of the same material, links the two together. This extra length may be equal to the spacing between the two dipoles, say 8 feet 6 inches. Where each feedline terminates its full-wavelength, and connects to the 8 feet 6 inches of link cable between the two, a two-pin electrical appliance socket is fitted. Reference to the sketch outlining the G8PO array will indicate the arrangement clearly.

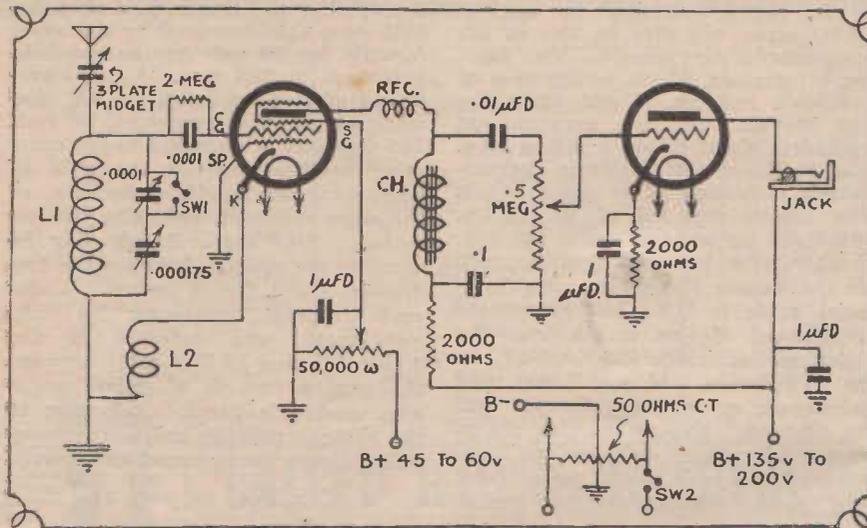
(Continued on page 33)



Showing the physical arrangement of the Reversible Beam array as used at the Editor's station for communication with U.K. on the 14 Mc (amateur 20 metre) band. Where concentrated coverage is of importance for Short-Wave Listeners interested in the best possible reception from the B.B.C. stations, the principle can be applied similarly. Dipole lengths can be worked out to suit the popular International Short-Wave broadcast bands.

# The "Wide-world" S.-W. Two-valve Receiver

An easily constructed receiver for the younger enthusiast.  
 Suitable for general SWL or amateur band reception.  
 Described by the Editor.



Circuit diagram of the "Wide-world" Short-wave Two—the little set with the big "kick." Note that if B batteries are used, provision should be made to disconnect the B negative lead when the set is idle to avoid drain through the regeneration potentiometer

ceived station's carrier wave will be heard and of course, it is desirable to use the receiver in that way for telegraphic reception of the "CW" kind. For telephony however; and that is what no doubt most interests you, the regeneration is "backed off" until oscillation just ceases. There are many ways of controlling a regenerative detector and the one shown in this receiver's circuit diagram is about the best. On the same former as the grid coil (L1) another smaller coil is wound at the "earth" end, taking care to wind the turns in the same direction, and the "top" end of this extra coil (L2) is connected straight to the cathode of the detector valve. Regeneration (and oscillation) is controlled by a 50,000 ohm potentiometer in the screen-grid circuit of the valve. The valve is a "grid-leak" detector and the wavebands are changed by the simple business of using plug-in coils. These days there are some excellent Polystyrene coil formers available in R.C.S. make; much more efficient than the old bakelite-moulded kind used in the original receiver. An important feature of the receiver is a simple arrangement for "band-spreading" and higher audio gain than usual is obtained through the use of a high-impedance audio choke in the anode-coupling of the detector. Such chokes were readily available a few years ago and may be obtained to-day in R.C.S. make, type TA4. The audio valve uses cathode-biasing and for all general purposes the 2000 ohm resistor should be applicable. Note that the diagram shows a One microfarad condenser across this resistor. This may with advantage be a 10 or 25 Mfd 40 volt electrolytic condenser.

## Some Constructional Details

Being a 2-valve receiver with no built-in power supply unit, it is possible to make the structure very compactly. In fact, if you like to use miniature valves such as the 6AG5 and 6C4 or similar types (ex-Disposals and rather rare) you could make this little receiver small enough to rest easily on the palm of the hand. There are very small and highly efficient variable condensers on the market such as the English "Polar" (United Radio Distributors, Sydney) and "Eddystone" (available in all States from the appointed Distributors). Miniaturise by all means in valves and condensers, but it is suggested that you do not cut down on the size of the plug-in coils. Stick to

(Continued on page 38)

It is many years ago since the description of this simple little head-phone receiver first appeared in the old "Radio News;" of which the writer was then technical editor. Valves and other components have changed since then, with the advantage of higher sensitivity where an RF pentode is applied as a regenerative detector. The original receiver was built around valves of the 77 and 37 types respectively, and results were excellent. Those types are long obsolescent or in the discard but in their place there is really no end to the combinations possible. For example, you may apply, in the 6.3 volt types any of the standard octal-based RF pentodes such as the 6U7G, 6J7G, 6K7G, etc. For even higher efficiency there are several of the ex-service types of valves readily applicable; valves which may be purchased readily in well-known dealer's stores such as Price's Radio, Angel Place, Sydney. For 10/- one can pick up such first-rate valves as the EF50, RL7, VR53 (EF39) and VR56 (EF56). The latter two similar types are octal-based, but the EF50 and RL7 need the 9-pin socket, which is also readily obtainable. For the single audio stage almost anything can be applied, and the valve need not be actually a triode. Any of the types already mentioned can be used as high-gain triodes by connecting anode, screen, and suppressor grids commonly. Don't forget however that the simple 6J5 or 6C6 is readily applicable. The triode section of a diode-triode such as the Philips EBC3 or

EBC33 can also be used. Whilst speaking of Disposals valves, remember this about valves known as the VR65 and VR65A. Both these types have a special octal basing which does not correspond to the International octal we use normally. They use the "Mazda" octal arrangement; somewhat larger in diameter and with different pin spacing. The VR65 is a 6.3 volt valve whereas the VR65A is a 4 volt type. Both are valves with characteristics corresponding to the EF50 excepting that they are double-ended.

Whatever you decide to use, you will find that this little receiver will give you comfortable headphone reception of the many overseas short-wave broadcasters; and amateur stations everywhere may be logged with all the reliability of a much more impressive receiver. The proviso for such reception is based mainly on one very important feature, which is that the regenerative detector valve MUST be functioning properly.

## Electron-coupled detector is stable and sensitive

This detector is of the oscillating kind, whereby the sensitivity may be built up tremendously by adjusting the valve to a condition where it is just about to "spill" over into oscillation. At that point the selectivity and the sensitivity are high, and these features can be held, if the valve is working smoothly until just after oscillation has commenced. In that condition the whistle of a re-

(Continued from page 31)

There are two sockets, A and B, respectively, one at the bottom of the feedline going to A dipole, and one at the bottom of the line to B dipole. The linking section between is known as the "delay section." The electrical scheme of things is that actually one dipole is directly connected to the other through a continuous loop of feedline, with provision at either of two points for connecting the transmitter output (or receiver input) by means of a two-pin connector-plug and a length of feedline, as shown. Note that in the original G8PO set-up the two dipoles are connected in shunt, i.e., in an "in-phase" condition. The left-hand side of dipole A is connected to the left-hand side of dipole B, and vice versa. The action of the array in this "in phase" condition is that when the transmitter is connected via the socket at the end of the feedline to dipole B, the array is "firing" in the direction of dipole A. The reverse is the case when the transmitter is plugged into socket A. The system can be used in the "out-of-phase" method; wherein the left-hand side of dipole A is connected to the right-hand side of dipole B, and vice versa, by simply transposing one feedline. Or, it can be done at the delay section. An important point intending user of the array should note is that for "out-of-phase" operation the length of the delay section should be rather less than an eighth wave in length, and that for "in-phase" working the delay section should be in the vicinity of three eighth waves in length. This figuring has been arrived at after a series of protracted tests by both the originator and the author of this article. As in determining the length of the feedlines, the length of the delay section must be adjusted with regard to the velocity factor of the particular kind of feedline used. It will be obvious to the experienced amateur student of antenna systems that the G8PO system can be applied to almost any of the accepted methods of centre-feeding a half-wave dipole, and that a good way of obtaining the desired results is to use two folded dipoles as the radiators and to feed these with lines of impedance between 300 and 500 ohms, depending upon the structure of the dipoles. Such a scheme was in use for a period at the writer's station, in which the two radiators were made up simply of 300 ohm ribbon closed at the ends, and cut on one side for centre-feeding by similar material. This gave exceptionally good results, but suffered from two disadvantages.

## Rainy Weather Considerations

Firstly, the action of wet weather on the ribbon material. There is no question of electrical leakage, but the presence of water along the line will introduce a measure of increase in standing-wave ratio, and thus affect transmitter loading. With the radiators made of the same material, the effect is more pronounced still. However, there is a simple treatment for the ribbon material as at present available which overcomes the problem. The ribbon is so constructed as to provide a channel between the polythene-encased conductors, and it is in this channel that water collects, and by its presence, alters the capacity of the line. If a 7/32 inch leather punch is obtained from a hardware store, this can be used to punch out a succession of holes in the centre of the material; thus providing a considerable air-space. The process is a little tedious, but well worth the trouble. Such treatment is simpler than the suggestion (in "QST," U.S.A.), recently, of cutting elongated slots. The 7/32 inch punch just spans the material between the two conductors without cutting into the material around these. Latest designs for 300 ohm ribbon feedline

are either oval in shape or in the form of a tube with the two conductors moulded into the wall on either side. The second disadvantage, although not a serious one, is that the ribbon material will break the conductors if permitted to whip about in the wind without staying. This is a purely mechanical consideration and easily overcome by providing a splint of Perspex or similar material at the junction between folded dipoles and feedlines.

## The Delta-Matched Version

To the writer, simplicity in things radio has always been a key to success, and so it was decided to try out a modification to the G8PO system, wherein the radiators are unbroken lengths of wire. One of the most "sure-fire" methods of feeding a half-wave antenna is by what is known as the "Y," or delta-match. The various Handbooks contain the details and computation formula, but briefly it consists of tapping the two conductors of a relatively high impedance feedline at appropriate points along the antenna, so as to transfer RF energy effectively.

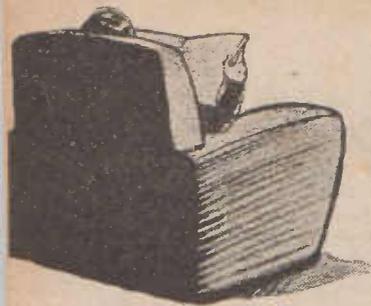
To do this, of course, there must be a correct enough matching of line impedance to the antenna. By arranging the feedlines so that they are pulled in gradually in a triangular shape or "delta" to a point where the spaced line proper commences, a particularly effective balanced feed system is provided. The reader is referred to the diagram (No RTV.2.), wherein the details of the array are given. Dimensions are for use over the lower frequency half of the 14 Mc band, i.e., 14000 to 14250 Kc. The feeders are tapped to the radiator in each case at 3 feet 2 inches each side of the centre, making a distance of 6 feet 4 inches between the tapping points. The length of wire down each side of the delta to the feedline junction is 7 feet. These details have been worked out to match 300 ohm lines and will vary for higher impedance lines such as 600 ohms. 300 ohm ribbon material can be used, or spaced lines to give the same impedance. This is readily done by using the small polythene spacers recently placed on the market. These are oval shaped and provided with two sets of holes for 16 or 12-gauge wires, respectively. The writer uses stranded Nylex set-wiring flex in the wider spaced holes, with a spacer to every two feet of feedline. A touch of G.U.D. "Grip" cement where the Nylex covered wire passes through the holes will result in a secure assembly. Note that the diagram shows the feedlines brought in to a separation of 4 inches by means of waxed wooden spreaders.



The inscription reads "The Howard Love Memorial Beam. The rotary beam antenna above was erected in memory of my friend Howard Kingsley Love (VK3KU), who died July 29, 1948. He continually advocated its installation."

Director of Sydney's Wentworth Hotel. The plaque on the wall at the station of Charles Maclurcan (VK2CM), Managing

(Continued on page 36)



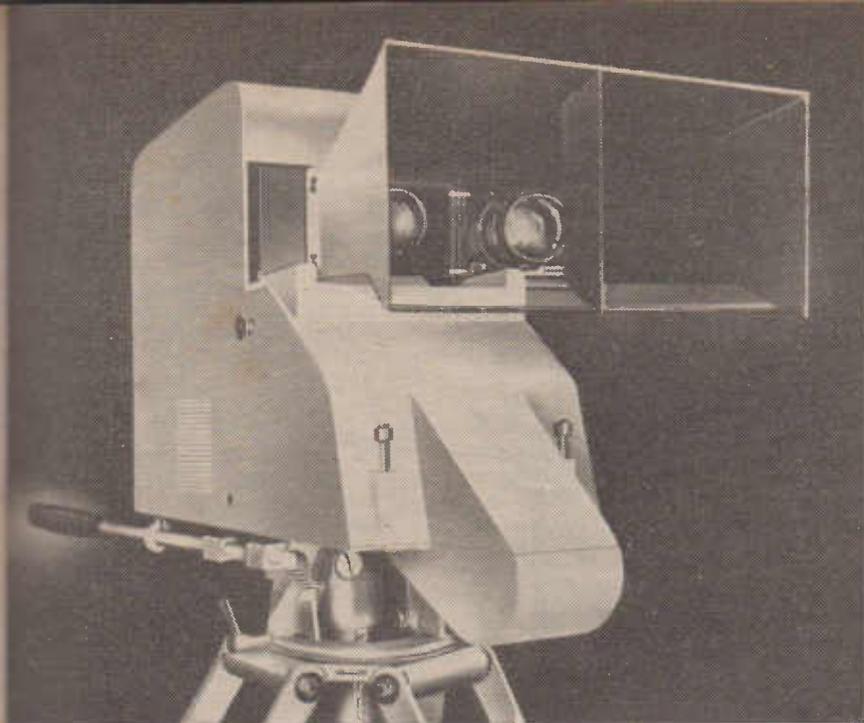
# Radio and Television News Illustrated



## Joy Nichols

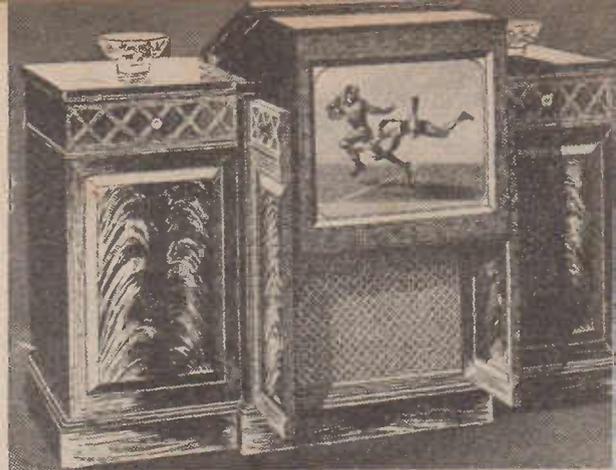
Talented young Australian  
Radio and Television Singer

The tall slim blonde smiling so captivatingly from this page may be heard regularly in British Broadcasting Corporation overseas programmes. Since Joy Nichols first appeared before the microphone and television cameras in London, her popularity has been continuously on the rise. She was born in Sydney, and almost as soon as she could read, was handling script and "on the air." The stage is no strange place to her and movie fans will remember her leading part in the film "Smithy," the Cinesound dedication to the memory of the late Sir Charles Kingsford Smith. She devoted much of her personal time to Sunday Shows to raise funds for Boys' Town, Sydney. During the Christmas season of 1948-49 in London, Joy was before the television cameras at Alexandra Palace in the popular pantomime "Cinderella." Much of her B.B.C. broadcast time has been in association with Australian comedian Dick Bentley and Jimmy Edwards in the mixture of burlesque, sophistication and satire titled "Take it from Here." Any show in which Joy Nichols features may be rated as one with plenty of sparkle.



★ Above:—  
A typical Emitron camera of the type supplied to the B.B.C. and used at the London Television station.

—Photo by courtesy of E.M.I. Ltd., Hayes, Middlesex.



★ An example of modern large screen television receiver design.

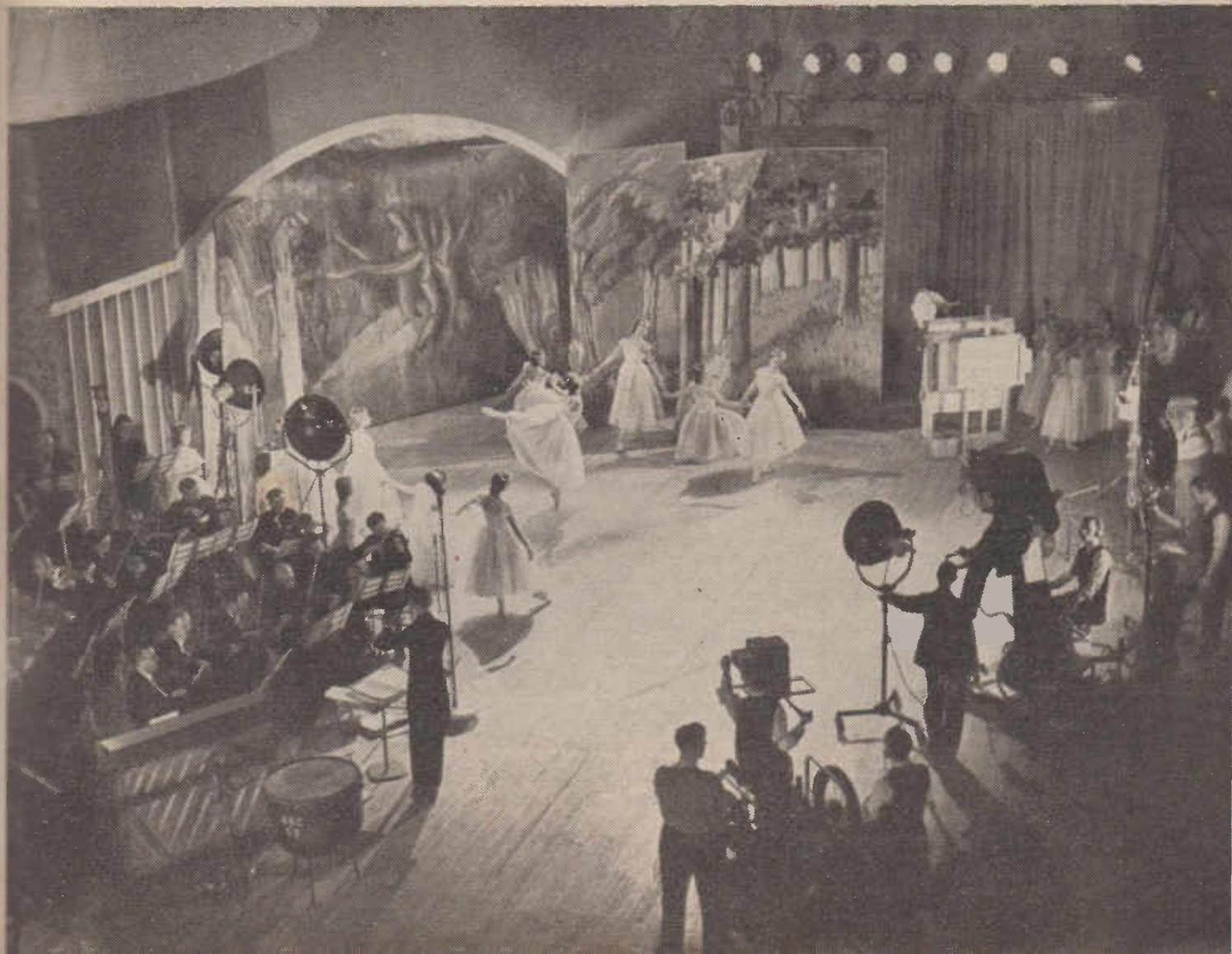
★ Below:—

B.B.C. Television Service. "Stars in Your Eyes." "Les Sylphides" danced by the Sadlers Wells Theatre Ballet during a star entertainment programme, broadcast from the specially built television studio at London's Radiolympia.

—Photo by courtesy of the B.B.C.

May, 1949

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This is NOT important to the functioning of the array, but IS a convenience for staying the lines against high winds. The performance of the array seems to be the same with the lines hanging straight down, separated by the 8 feet 6 inches spacing all the way, or pulled in together, as indicated. The spaced line method of construction calls for more care in assembly, and the 300 ohm Telcon K25 ribbon material is a simpler proposition and conveniently handled.

### Length of Feedlines

Some adjustment will be needed in the overall length of the lines with regard to securing a high back-to-front ratio, and as a start, the writer suggests that a convenient length is 47 feet. This represents a full wave if using K25 material, and the length of 47 feet is inclusive of the delta in each case. There will thus be 40 feet from the bottom of each delta (junction) to the two-pin socket inside the operating room, and placed conveniently on the wall. These two are linked together, as shown by the delay section, which can be 9 feet long to start. There should be no difficulty about loading the transmitter through a 3-turn swinging link coil via a length of 300 ohm line of any convenient length. The writer uses a length of about 5 feet of co-axial cable from the transmitter end as an impedance reducing transformer in series with 5 feet of 300 ohm ribbon. The overall length of this combined line between transmitter and receiver does not appear to be important.

### The Delta-Version On 10 Metres

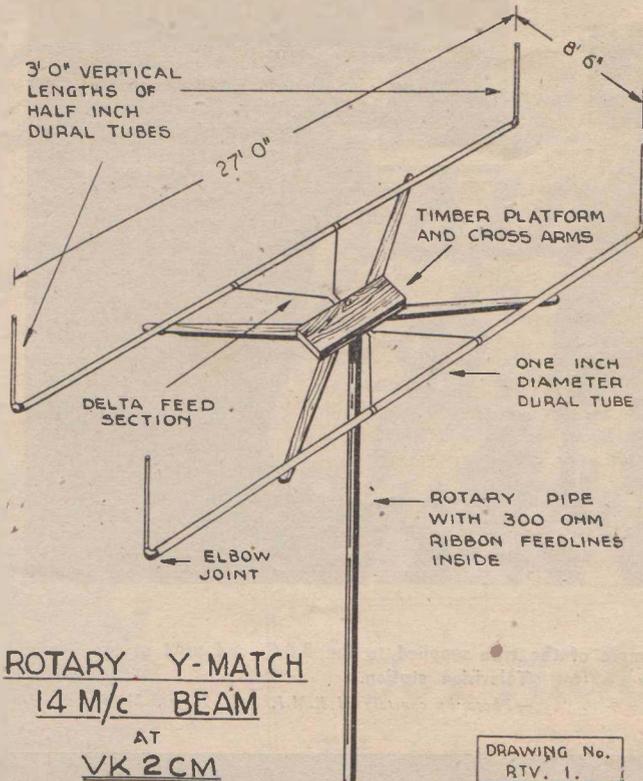
With the centre-fed co-axial feedlines as in the original G8PO array the system is essentially "one-band" operation. That applies also to the twin Folded-Dipole version described last year by the writer in a contemporary publication as "The Ribbon Beam." As they stand they are not applicable to operation at twice the frequency, but the delta-system described here lends itself rather easily to application for 20 and 10 metres. Provided that the user isn't too lazy to raise and lower the antenna on the halyards, the scheme is simple. If we provide, right at the centre of each delta radiator, a strip of insulating material, such as Perspex, with two terminals and a shorting link of sheet metal, this link can be either opened or closed as required. When opened, the radiator becomes a two-half-wave in phase system, and at 10 metres, it is backed by another two-half-waves in phase at quarter-wave spacing and the added advantage of increased gain and controllable directivity into the bargain. The radiators function on 10 metres as single-wire feed or

"Windom" systems. At the writer's station, the Delta-matched G8PO for 20 metres has given good results on G stations on 10 metres, at a height of 40 feet above ground, and the location is a difficult one for 10 metre working with Europe.

### VK2CM's Rotary Version

The illustrations show a particularly well engineered delta-matched array of the type described, which is now in use at the station of Charles D. Maclurcan, pioneer Australian radio amateur, at Neutral Bay, Sydney. This array has all the desirable electrical features of the original, but has the big advantage that it is rotatable additionally. With the controllable directivity feature this means that movement of the beam through little more than 90 degrees is all necessary for world coverage, and to effect this movement a small winch controlling a steel cable and balance weights is applied. The elements are made of inch dural tubing, tapering to 3-8-inch at the tips. Note that the ends are turned UP, for the reason that they would otherwise catch against

a chimney stack. It was decided to take the ends UP rather than down in order to gain the little extra height in the overall effectiveness of the array. The beam is mounted and turned on a steel tube 3 inches in diameter, which is fitted with water-tight glands through the house roof, and the 300 ohm ribbon feeders are taken from the deltas down through the pipe to the operating room. No ill-effect whatsoever is noticed by running the feedlines thus closely together. The obvious advantage is that the ribbons are immune from wet weather effects. The location at VK2CM is not what the experienced DX man would pick for best results . . . it is at sea level and surrounded by rising ground in almost all directions. Yet this station, using only 50 watts maximum power, obtains outstandingly good results in telephonic communication on 20 metres with Europe and America. The many friends of the late Howard Kingsley Love (VK3KU) will be interested to note that at VK2CM there is a wall plaque on which reference is made to the beam overhead as being in the nature of a memorial.



ROTARY Y-MATCH  
14 M/c BEAM  
AT  
VK 2 CM

DRAWING No.  
RTV. 1.

This illustrates the principle of construction used in the rotary version of the beam at the Neutral Bay (N.S.W.) station of Mr. C. D. Maclurcan, VK2CM. Exceptionally high discrimination is obtained by screening the feedlines against vertical pickup; running them conveniently inside the rotary pipe. With this beam a back-to-front ratio of 6 "S" points is obtained, equal to a figure of 36 Db.

## Conclusion

The writer does not claim that the G8PO type array is possessed of miraculous properties, but does consider it to be a useful answer to the man without parasitic element multi-section rotary beam facilities and the desire to make the most of DX working in two opposite directions. Where poles can be erected simply to string a system such as this on bridles and spreaders as diagrammed, there is little more to the construction and erection of the arrangement than there is in making up the assembly of a conventional "Zepp" antenna. The results obtainable are, however, a very different story, for the G8PO system in all its forms, other than the split-delta scheme mentioned, is essentially a one-band system. Of course, if one ties the feeders together and uses the mass of wire against earth with appropriate series and parallel resonating capacities, it can be used as a Marconi affair on lower

frequencies than the half-wave fundamental for which it is designed. Better by far to use a "Zepp" or "Windom" for 3.5 and 7 Mc if you are a constant user of those bands, which prompts a thought: A G8PO type antenna cut for and applied for the 7 Mc band would be a very useful beam indeed for that band where a stretch of 60-odd feet can be strung between poles, and lots of amateurs have the available space. Finally, don't overlook the point that the system can be used with the ends folded in on the spreaders in the manner of the "Twin-Triplex" beam featured in "CQ" (U.S.A.). By folding in (not to be confused with the folded-dipole) a G8PO beam for 14 Mc can be made with a stretch of only 26 feet, and one for the 7 Mc band can be slung in a space of 52 feet between poles. For the latter band, of course, spacing between the elements will be around 16 feet for an eighth wave.

## TELETOPICAL

"Videx." What we may expect of modern Television is described attractively in a letter from the General Sales Manager of one of Britain's leading radio and TV receiver manufacturers. The recent Olympic Games provided a public testing ground for public reaction to Television, for it was easy to stay at home and to see, in clear detail, most of the major events from the Wembley Stadium and the swimming pool. The new Emitron cameras, fitted with recently developed lenses of advanced type, simply bore through any haze or fog and provide a sparklingly clear picture on the screen. Public demand for TV receivers is now considerable in England, and this demand will be considerably increased with the advent of the Birmingham station scheduled for 1949.

Ask your Newsagent to deliver  
"R & TV News" regularly.



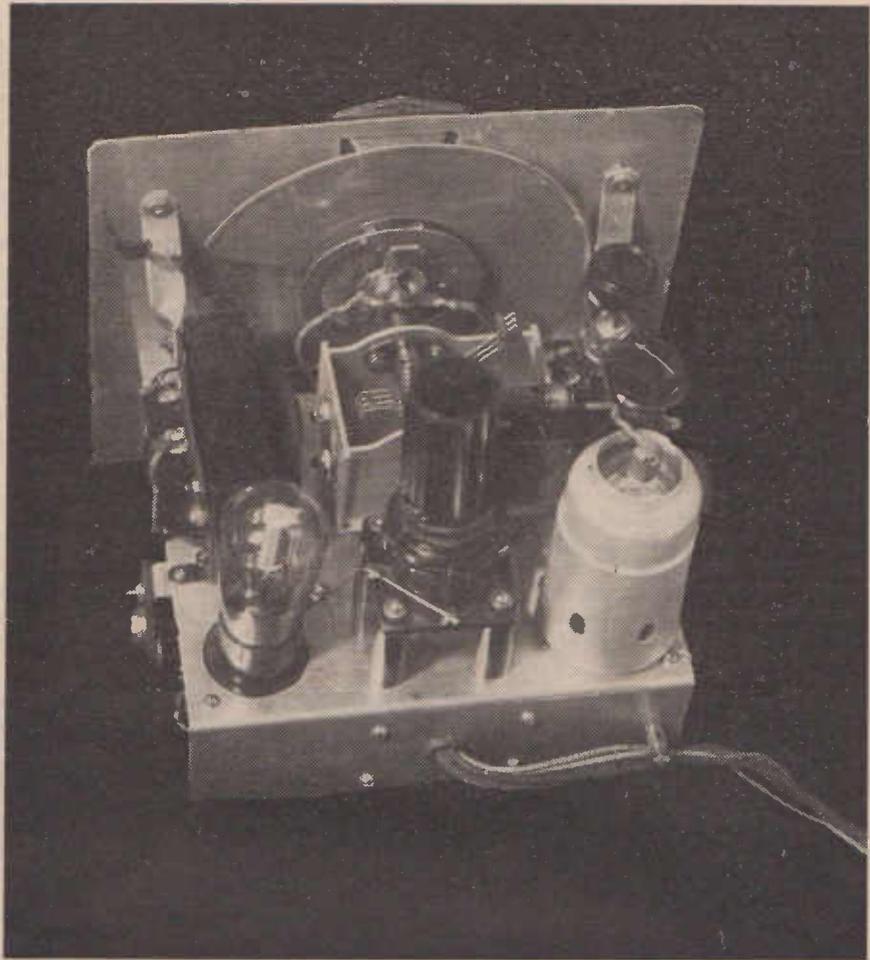
South Australian Police FM system:—This control room is the nerve-centre of this modern radio communication network.  
—Illustration by courtesy of Philips.

(Continued from page 32)

the 1½ inch size. Results have a great deal to do with ratio of inductance to tuning capacity.

An aluminium base and panel was used for the assembly and measured 7 by 6 inches and 2½ inches deep. The panel measured 8½ by 7½ inches. The dial shown in the illustrations, although of what is now considered an old type, was smooth and noiseless. It had a friction-drive on a plastic disc. There are types of such dials to be found in more modern form and although it is large in indicator size, the Philips "Log-Dial" is a good suggestion in these times. Its use will preclude making the receiver very small in over-all size, but it is a good thing to have as large an indicator movement as feasible. The Philips "Log-Dial" has a replaceable printed card scale, and a smooth action in the drive. Another excellent dial is the "Eddystone" and also the recently introduced British "Jackson." For the tuning condenser, shown in the circuit as .000175 Mfd, the "Eddystone" type 586 is suitable. This has a capacity of 140 mmfd maximum. In series with the stator section of the tuning condenser is the bandspread condenser, the rotor plates of which are connected to the stator of the tuner. This band-spreader is a 100 mmfd (.0001) midget variable. Looking down on the top view of the receiver, this assembly may be seen to the left of the tuner. A switch is provided to short out the bandspread condenser when full range tuning is wanted, and the feature will be found of great value when tuning over the amateur "20" and "40" metre bands. The switch (open for band-spread) may be a simple toggle type, and should be mounted on a strip of bakelite adjacent to the bandspread condenser. The lay-out is shown clearly in the top view and it will be seen that the plug-in coil is mounted directly between the two valves. It is essential to keep all leads from the tuned circuit to the valve grid and cathode as short as possible. A .0001 mfd grid condenser is used with a 1 or 2 meg grid leak and for normal operation this combination should be correct. In the circuit diagram, a .0001 mfd mica condenser should be connected direct from the detector anode to earth.

The underneath view of the chassis gives an idea of the placement of parts for the panel controls. Directly under the tuning control is the On-Off switch for use where a 6 volt accumulator and B batteries may be applied, as in many country instances. Where a standard 6 volt AC and 250 volt DC power pack is applied, there is no need for the heater switch (SW2), as the 240 volt AC control to the power unit will take care of everything. To the left of the switch



View from the rear, showing the layout. The coil socket is above the base between the valves, supported on bakelite pillars. The grid condenser and leak mounting are between the coil and tuning condenser. Connections are as short as possible.

is the 50,000 ohm potentiometer for regeneration control, and this may be considered as the key-stone to good reception. In the grid circuit of the audio valve is shown a 500,000 ohm potentiometer for control of audio level. This is no mere refinement but is quite necessary for comfortable headphone usage at times. It can be left out and a .5 meg resistor used as fixed coupling, but it is better to use the pot. The aerial is coupled direct to the grid circuit of the detector valve through a three plate midget variable condenser and this is also no mere suggestion. It is quite important, depending upon the length and general arrangement of the receiving aerial. A variable capacity in this position is useful for removing tuning "holes" caused by aerial resonance at a particular frequency (wavelength). A headphone jack is indicated and this can be replaced by a pair of terminals if desired. The plug and jack arrangement is however a very convenient method, and is fully modern in practice. Note that a 50 ohm centre-

tapped resistor is shown connected directly across the heater supply to the valves. This is a refinement but may be an advantage in minimising any possible AC hum because of electrical unbalance. Such a consideration is of little importance in most valve hook-ups these times, but the scheme is as evergreen as ever where an oscillating grid-leak detector is to be considered.

#### Coil Data

With this electron-coupled detector we use a grid and cathode coil instead of the usual plate or screen-grid feed-back coil. This cathode coil is of the same inductive size for each waveband, namely, four turns, and the wire used for all the coils is 22 D.S.C. 1½ inch or 1½ inch diameter 4-pin plug-in formers were used, and the connections to the pins may be seen on reference to the socket diagram. The small cathode coil is the lower winding, and the grid the upper. Specifications are as follows:—

(Continued on page 44)

# CHIT-CHAT

"Eyeone." Most embarrassed was I when that Italian came back on 14 Mc/s phone with "well my Dear . . . many thanks for the QSO, etc." Of course, I know quite well that he meant to say, as Europeans do . . . "my Dear FRIEND," but omission of that last word brought something of a blush to my phiz.

An interesting visitor in and around Eastern Australia has been Bob Black, ZL2BX, of Wellington, New Zealand. Bob has been meeting in person his many contacts made during the last year or two on Ten Metre phone, and his breezy personality has been most welcome. He is one of those who stick with "Ten" through thick and thin, which isn't to be wondered at, for he works an awful lot of DX on the band with "Plumber's Delight" beam array. He was seen in a Sydney store looking over Disposals gear together with Doug Reid, ZL10F.

"Enno." Lots of Australian amateurs will recall that droll personality, G5UB, otherwise Jim Wetherill, seafaring Yorkshire/Canadian brass-pounder, who was in and out of Eastern ports in the last year or so. After acquiring an XYL, he put in a spell ashore in Vancouver, leaving radio in favour of Power House engineering. The sea must have called pretty hard, for he has left, pro tem, aboard S.S. "Seaboard Pioneer" for U.K. as Radio Officer.

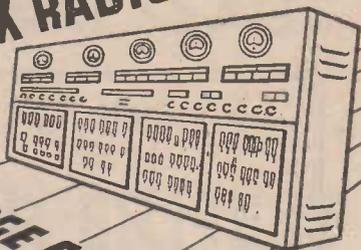
DX men note. VU and AP now count as separate countries. and AP prefixes are as follows:—

- AP1—Not allocated.
- AP2—Sind.
- AP3—Baluchistan.
- AP4—North West Frontier province.
- AP5—West Punjab.
- AP6—Bhawalpur.
- AP7—Eastern Bengal.
- AP8—Dakar.

Ken Jowers, who was pre-war G5ZJ and short-wave editor of "Television and Short-wave World," is now located in Karachi, Pakistan, and is on the air as AP2J.

Tests made on the insulation properties of ceramic and hard rubber (ebonite) showed that when placed in the field of a 1 Kw oscillator both materials reached the same temperature. The material known in Australia as WT/22 (loaded ebonite) is therefore as effective RF insulation as needed for general work, with the obvious advantage of being readily machined and hand-worked.

## FROM A MATCH BOX RADIO



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"Australia, I am confident, will take to television with the same far-sighted enthusiasm and pioneering determination that characterised the Commonwealth's acceptance of, and, indeed, great

contribution to, sound broadcasting and radio communications generally. As one who was privileged to have been closely associated with those exciting early days and with vivid and lasting memories of Australia's spontaneous and encouraging acceptances of sound broadcasting in the home, I confidently believe that the advent of television will evoke even greater enthusiasm.

"For this reason I commend your timely enterprise in launching a new journal which, I believe, it is your intention to devote very largely to the interests of television, and I welcome this opportunity of wishing you all success."

*We are pleased to have the honour of a few words for this, our first issue, from Sir Ernest Fisk, Managing Director of E.M.I. No man has a better insight into the future possibilities of Television than Sir Ernest. It is largely due to the developments from his Company's laboratories that British Television to-day stands second to none in the post-war world.—Editor.*

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HALLICRAFTERS	R100
NATIONAL	NX100
MARCONI	B28
MARCONI	B38
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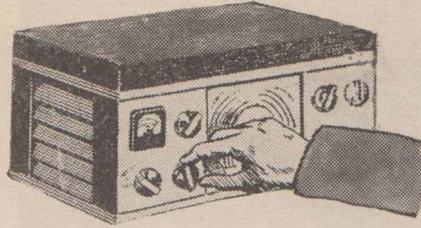


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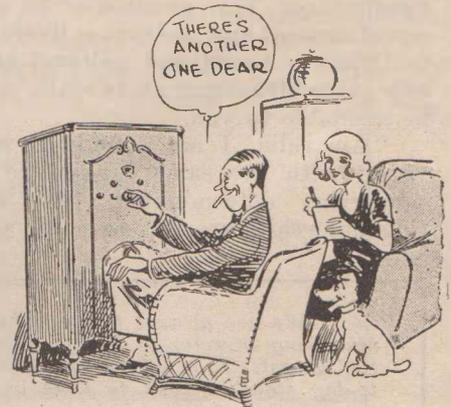
### Our policy regarding the Short-Wave Listener, by The Editor

FOR the majority of the general public, radio broadcasting is to-day an accepted part of our daily lives. It is a means to an end, an essential and familiar service without which a serious handicap would exist in the tempo of the modern world. Broadcasting by radio is not very old in itself; it received its impetus in the early 1920's, at a time when little was known about the medium for the requisite purpose. It was natural that in terms of "wavelength," the transmission of speech and music by radio should graduate from the "long waves," to the "medium," and later, to the "short wavelengths." It was in the development of the latter that the transmitting amateur played a pioneer part, and with his activities there ran parallel the growth of the short-wave listener. The general public knows well to-day that short-wave broadcasting plays a vital part in our scheme of life, for it requires very little effort to turn the switch of the modern all-wave Radiogram to the ranges where the powerful transmitters of the British Broadcasting Corporation, the American National Broadcasters, and stations of all Nations may be heard quite easily.

They will notice however, that not always are they able to hear these overseas short-wave services with the complete reliability of the local "broadcast band" Australasian stations. Conditions of reception vary; particularly at the present time when solar radiation affects profoundly the results obtained. Mr. Public, at these times, will turn from the short-wave side of his receiver and content himself with his locals. Not so our keen short-wave listener who makes much of his hobby of listening and elucidating the overseas transmissions to his satisfaction. His hobby is akin to that of the busy bee of the radio lanes, the amateur transmitter. In fact, the "SWL" is in far greater strength throughout the world than his transmitting confrere. No licence is needed, other than the usual receiving licence for a fee paid over a counter, and in his many thousands he manipulates the controls of many

kinds of receivers . . . receivers that may be fine examples of the manufacturer's skill, or humble but effective results of his personal constructive efforts. The SWL gets a wealth of enjoyment out of his long distance listening, and that is accentuated considerably when the equipment he uses is of his own making.

As one who has lived a lifetime in radio, both as an SWL and a transmitting amateur, totalling 37 years in all, I know fully the thrill that permeates both versions of this radio hobby. The SWL is, in the editorial opinion of "Australian Radio and Television News" no less important than the licensed amateur who talks daily and nightly by radiotelephony with fellow amateurs in all parts of the world. It will therefore be the policy of this publication to cater very extensively for the likes and observations of the SWL in the Southern Hemisphere. His interests will be furthered by providing many simple technical articles of a constructional nature enabling him to make up equipment and accessories to improve his reception results. Such equipment will be described especially for the SWL, and not as any afterthought or generalisation. It will be distinct from the material provided for the amateur transmitter. All those aspects of the hobby so dear to the SWL will be presented in scope, limited only in space allocation solely by the material contributed by SWL readers themselves. In my opinion there is really a firm association between the SWL and the transmitting radio amateur, even though there are a few of the latter who welcome reports only from other amateur stations. That minority fails to recognise, among other things, that the SWL is a prospective transmitter tomorrow. Long experience with the amateur side confirms what I have always believed; that the best amateurs on the air are those who started off as SWL's. A sound apprenticeship to the receiving side is the best introduction to amateur transmission.





# AROUND THE DIALS

## WITH THE

# SHORT-WAVE LISTENER

### "Nation Shall Speak Peace Unto Nation"

FOR the benefit of those who may not be aware of it, the hopeful sounding title for this article is simply the quotation of the B.B.C.'s motto. It was, and maybe still is, emblazoned over the portals of Broadcasting House, London. The idea was (and is), a good one. The B.B.C. short-wave broadcasting service was commenced in earnest more than a decade ago with the idea of a British Empire news service, and also with the objective no doubt, of giving the British conception of living peacefully with one's neighbour via the microphone. That didn't seem to work out as we well know. For one thing the foreign language broadcasts were by no means so frequent as after September, 1939, when it became imperative to put over talks in German, Italian, French, Arabic, Czech, Polish and others in the interests and, in self-defence of — propaganda.

Propaganda can be, especially in the Goebels brand, a polite word for the most blatant falsehoods. Even before September '39, the nations weren't exactly speaking the truth to each other by the medium of microphone. All kinds of verbal sparring was going on over the Spanish war, Munich, and everything that led up to the launching of World War II. But truth was being spoken between Nations even at that time, and for many years before 1939, by private individuals using microphones and morse code keys. These were individuals who by sheer love of an absorbing scientific hobby, did not recognise International barriers. These were the radio amateurs, men (and women) who, with their private radio stations in practically all countries of the world conversed night and day, over oceans and continents, and foreign language was no bar to a genuine friendship. If one didn't know a syllable of the other's language, the ever-useful abbreviation or "Q" code was quite enough to carry on an intelligent conversation by telegraphy.

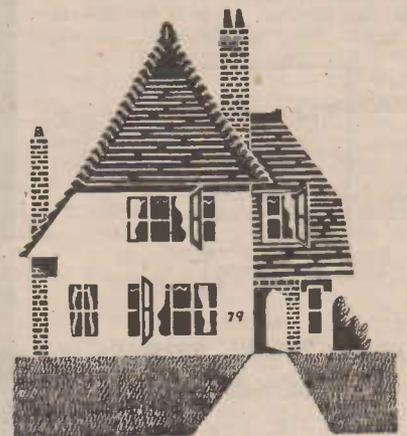
Does it sound fantastic to say that it was no unusual occurrence for a Soviet commissar to yarn with a Nazi storm-trooper and for each to call the other "old man" (OM)? Or for a rural Australian to punch the key and vice-versa with a Japanese student away in Tokio, and for each to exchange correspondence in the form of a "QSL" card (communication verification)? To the radio amateur such overseas communication is known as "DX working" and is again commonplace.

No doubt the primary urge is the lure of working with elusive stations in out of the way places, but in so doing, people of widely separated countries and political creeds get to know each other very well indeed. The trouble was, prior to World War II, that radio amateurs were voices in the wilderness in a world torn with political strife and fostered misunderstanding. The microphones and morse keys with high power and loud voices were in the hands of the wrong people, and instead of using the microphone to "speak truth unto nation," the Dictators used the products of the radio engineer to spread distrust, suspicion, and hatred. But for the advancement of radio science and its associated "public address" systems, it is a safe bet that Hitler and Mussolini wouldn't have had such a meteoric career to infamy. What now is the outlook?

The microphone in particular has again become a powerful weapon and potential destroyer of peace instead of an instrument of good fellowship. The latter of course, is what the radio engineer intended it to be. Total number of radio amateurs active before September, 1939, was about 100,000. When World War II finally terminated, that number was increased very considerably. There are large numbers of servicemen and service women who served as radio operators. For the majority of these, radio is a new calling, but it is safe to say that many of them are



attracted to radio in a private capacity, as licensed radio amateurs. If the United Nations statesmen show good sense they will, in the world of tomorrow, provide every facility for unhampered International communication between radio amateurs. That may well be one of the best insurance policies for future world peace. —"Brasso"



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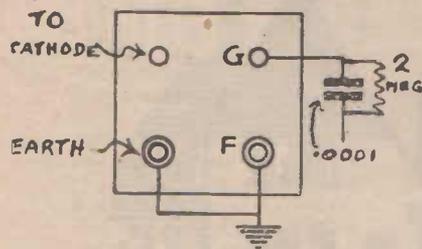
(Continued from page 38)

50 to 90 metres, space between coils 3/8 inch.—L1 12 turns, L2 4 turns.

30 to 55 metres, space between coils 3/8 inch.—L1 12 turns, L2 4 turns.

14 to 32 metres, space between coils 5/16 inch.—L1 5 turns, L2 4 turns.

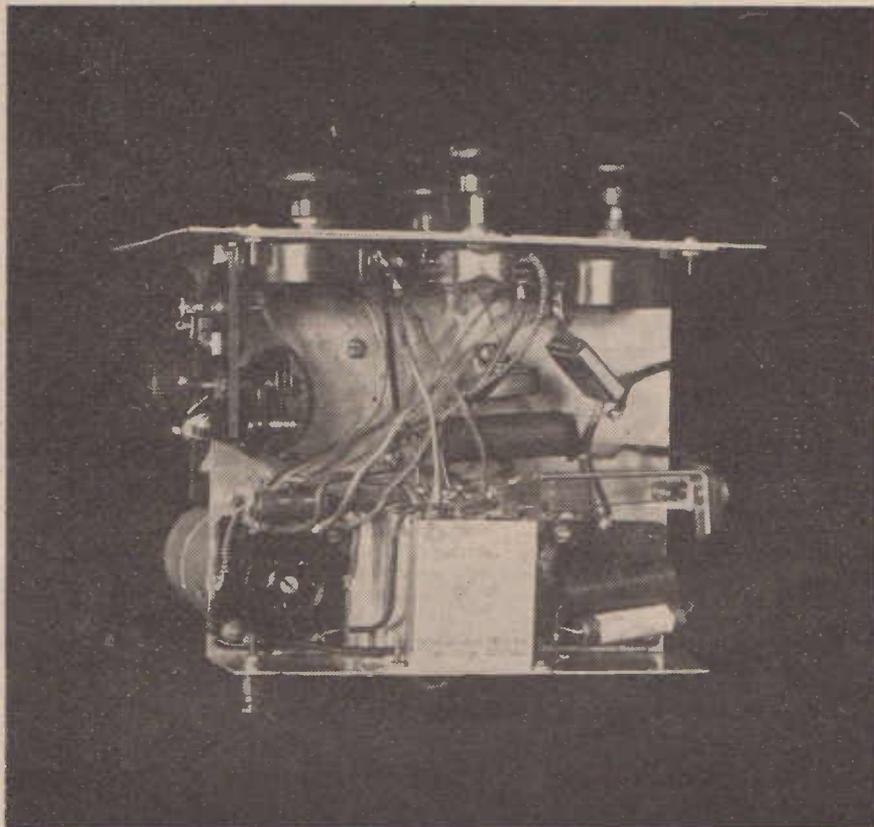
For the amateur transmitter to whom the matter of a 0 to 100 degree bandspread is desirable, we sug-



### CONNECTIONS FOR COIL SOCKET

gest adding six turns to L1 for 80 metres, three turns to L1 for 40 metres, and two turns to L1 for 20 metres. This will result in a better L/C ratio and give more spread and even better efficiency. With the specifications given, however, a spread

(Continued on page 49)



Underneath the chassis. The compactness of the design ensures that wiring is short. The 50 ohm C.T. Heater resistor is soldered directly to the heater connectors of the detector valve socket on the left.

## IT STARTED LIKE THIS

A brief survey, for the Short-Wave Listener, of the way in which Amateur Radio grew to maturity.

By DON B. KNOCK

RECENT correspondence indicates that many of the most enthusiastic listeners of post-war experience have very little knowledge of the Amateur Radio of pre-war years. To them, Amateur Radio is something that might have been in existence always, like a Boer War veteran to this generation in the early fifties. I can claim to have started off in the coherer and spark days of "wireless," and I can recall that the transmitting amateur of the pre-1914 period was in a very small minority. Those that were attracted to the new communication science could be considered really as professionals rather than amateur. It was in the 1920's that the hobby gathered momentum as a DX medium of communication between private individuals, and by that time it was no longer a case of "thinking up" a personal call sign. The Post Office was established as the regulating authority and a licence had to be obtained.

Amateurs weren't known as such in the British Empire, but as "experimenters"—a title that was really correct then. The Americans however, always were and always have been classed as "amateurs." It is only since 1947 that Australians are known officially similarly, by the P.M.G. Department. In Australia, as in Britain, those experimenters of the 1920's were the true pioneers of short-wave radio. "Wireless" meant wavelengths of around 1000 metres, but by the time the triode valve was in use as an oscillator, experimental transmission was taking place on 440 metres—the forerunner of the present day range as used by your local broadcasters.

I remember well, that in Britain, there were some amateurs who continued to use the 1000 metres region and it was commonplace to find in 1923 in the London area that one might be causing trouble to the Croydon airport, which operated on 900 metres. The listener of those days was often entertained by verbal interchange between Croydon and London amateurs. Frequency consciousness had not developed and the "kilocycle" was practically unknown. It was near enough to be within "20 or 30 metres" of one's allotted wavelength, and such practice was considered pretty good. It was on that 440metre band that telephony really came into its own. Here in Australia, such pioneers as Charles D.



An old radio story; or the bloke who WILL pop H.T. batteries across 1.4 volt filaments.

Maclurcan were operating what were actually the first broadcasting services in the Southern Hemisphere.

Gramophone recordings were the order of the day then—a vastly different state of affairs to now, when recordings as "entertainment" from amateur stations are forbidden by regulation. "Broadcasting" as we now know it, was nothing more than a suggested and rather fanciful name for some regular service that might possibly come into being some time in the future. When broadcasting *did* arrive, something had to be done about the experimenters because the 440 metre transmissions were likely to get mixed up with the newly functioning broadcasters on adjacent wavelengths, so a further move was made. It was permitted to use between 150 and 200 metres, and so the experimenters simply had to look into the possibility of utilising these then "short" waves.

### 200 metres and below

It was this 200 metre era that started the amateur movement toward the lower wavelengths, for it was found speedily that the 200 metres region would cover greater distances with less power. All this was quite opposed to predictions, but quite true. The first Transatlantic amateur signals were heard in Britain from America on 200 metres in December, 1921, and January 1922—telegraphy by spark and CW. The latter means of generation of power speedily supplanted the spark method and paved the way for the radio-telephonic operation that was so soon to come. The next thing that happened was when a Frenchman and an American both got the idea of trying the unheard-of wavelength of 100 metres, and the first two-way communication was established and quickly followed by others in America, Canada, Britain, and Europe. A band was allotted officially, after representation, for the 100 metre working had been without authoritative sanction, and this band compared with the 200 metres allocation much in the same way as 10 metres does with 20 to-day. It was less reliable, rather more difficult to operate, but when it was good, it was outstanding. Receivers then were not the tried

and proved designs of communication models they are to-day, but mainly detectors with uncertain reaction controls, and audio stages that spilled over at the least provocation. Nobody had been able to make RF amplifiers work in any manner that justified their use. Then came the famous Reinartz receiver arrangement and quite a few of the failings of the older receivers were cleaned up. Valves of course, were not in any sense comparable to the valves of to-day.

### World girdling contacts

Progress was rapid, for by 1924 the first amateur two-way contacts had taken place between Britain and Canada, New Zealand, Australia, India, and many other places, and the hobbyist with modest equipment was in being with transmitters constructed around receiving valves and using power of 10 watts or less. He made his way steadily toward more and more long distance records. Not until the 1930's did receivers of the short-wave superhetrodyne variety come into general use, and the "straight" receiver was in the majority. Now the reverse is the case, but even so there are still useful applications for receivers of the simpler kind. In those days the SWL was invariably a would-be transmitter, whereas to-day, you can buy a beautifully engineered receiver, plug it into the house power supply, and be a short-wave listener forthwith. You just couldn't do that in the 20's and 30's.

Thus did the great hobby of amateur radio develop—the 100 metres region was discarded and its place taken by 80, 40, 20, 10, and 5 metres. As the number of amateur transmitters increased, the SWL reception of amateur transmissions became a hobby on its own, and the QSL card scheme spread throughout the world. The country-collecting craze started and became one of the foremost interests for both sender and recipient. QSL card collecting is somewhat akin to stamp collecting now, and I wonder if ever the stage will be reached when rare and old time cards will have a monetary value placed on them. I want at this stage to emphasise a point to the keen SWL, regarding amateur transmitters. Not all of them welcome SWL reports. If you do report on a transmission, do it well, with discretion, and in painstaking manner. If the station reported on is a very active and popular one to whom world-wide contacts come easy; it will be advisable to enclose return postage. A station operating under difficulties, with low power from portable equipment, is more than likely to welcome SWL reports. You can ask for a verification from such a station with reasonable certainty of a response.

# SHORT-WAVE STATION LIST

Country	City	Call	Band Meters	Freq'cy Mc	Broadcasting-time, G.M.T.
Holland	Hilversum	P.C.J.			<b>Sunday</b>
Holland	Hilversum	P.C.J.	19	15.22	3.30 p.m. to 5 p.m.
Holland	Hilversum	P.C.J.	25	11.75	BEAM: East and Near East.
Holland	Hilversum	P.C.J.	49	6.02	
Holland	Hilversum	P.C.J.	25	11.75	9.00—10.30 p.m.
Holland	Hilversum	P.C.J.	31	9.59	BEAM: Africa and Mediterranean.
Holland	Hilversum	P.C.J.	49	6.02	
Holland	Hilversum	P.C.J.	25	11.73	3.00—4.30 p.m. (Monday morning).
Holland	Hilversum	P.C.J.	31	9.59	BEAM: America.
Holland	Hilversum	P.C.J.	49	6.02	
					<b>Tuesday</b>
Holland	Hilversum	P.C.J.	25	11.75	8.00—9.30 a.m.
Holland	Hilversum	P.C.J.	31	0.59	BEAM: Pacific and Australia.
Holland	Hilversum	P.C.J.	49	6.02	
					<b>Wednesday</b>
Holland	Hilversum	P.C.J.	19	15.22	3.30—5.00 p.m.
Holland	Hilversum	P.C.J.	25	11.75	BEAM: East and Near East.
Holland	Hilversum	P.C.J.	49	6.02	
Holland	Hilversum	P.C.J.	25	11.75	9.00—10.30 p.m.
Holland	Hilversum	P.C.J.	31	9.59	BEAM: Africa and Mediterranean.
Holland	Hilversum	P.C.J.	49	6.02	
Holland	Hilversum	P.C.J.	25	11.75	3.00—4.30 p.m.
Holland	Hilversum	P.C.J.	31	9.59	(Thursday morning).
Holland	Hilversum	P.C.J.	49	6.02	BEAM: America.

Schedule subject to changes.

NOTE: G.M.T. = E.S.T. + 5 hours.

Country	City	Call	Band Meters	Freq'cy Mc	Broadcasting time, E.S.T. (Daily unless otherwise stated)
Arabia	Aden	ZNR	25	12.115	11.15 a.m. to 1.15 p.m. daily.
Argentina	Buenos Aires	LRSI	49	6.065	5.00 to 11.00 p.m.
Argentina	Buenos Aires	LQA5	31	10.350	7.15 to 7.35 p.m.
Argentina	Rosario	LRR	25	11.880	heard at 8.30 p.m.
Argentina	Buenos Aires	LSN3	25	12.190	7.15 p.m.
Argentina	Buenos Aires	LSL3	19	15.810	hear mornings.
Australia	Brisbane	VLQ2	41	7.210	3.30 to 9.30 a.m.
Australia	Melbourne	VLQ6	31	9.615	North American beam, 11.00 to 11.45 a.m.
Australia	Melbourne	VLR3	25	11.880	9.45 p.m. to 3.45 a.m.
Australia	Melbourne	VLC4	19	15.315	North America beam, 12.30 to 1.40 a.m.
Australia	Perth	VLW6	31	9.680	6.30 to 11.30 a.m.; 6.00 to 9.45 p.m.
Australia	Sydney	VLQ3	19	15.315	12.45 to 1.45 a.m.
Austria	Vienna		31	9.810	heard at 3.00 p.m.
Azores	Ponta del Gada		25	11.090	heard at 2.45 p.m.
Bahamas	Nassau	ZNS4	49	6.090	heard at 6.00 p.m.
Belgian Congo	Leopoldville	OTC	31	9.380	3.00 to 5.30 p.m.
Belgian Congo	Leopoldville	OTC	31	9.785	relays B.B.C. at 9.30 p.m. to 12.45 a.m.
Belgium	Belg'n. Nat. Rad.		25	11.645	evenings about 8.30.
Belgium	Belg'n. Nat. Rad.		25	11.785	6.30 to 7.00 p.m., 9.00 to 9.15 p.m.
Borneo	Balikpapan		31	9.120	6.00 to 7.00 p.m.
Brazil	Rio de Janeiro	ZYC8	31	9.610	
Brazil	Rio de Janeiro	PRL7	31	9.720	4.10 to 9.50 p.m.
Brazil	Rio de Janeiro	PSH	31	10.220	evenings.
Brazil	Rio de Janeiro	PRL8	25	11.700	
Brazil	Rio de Janeiro	PRL8	25	11.720	9.35 to 10.45 p.m.; off Sundays.
British Guiana	Georgetown	ZFY	49	6.000	daily, 6.45 to 7.15 a.m.; 10.45 a.m. to 12.45 p.m.
Brazil	Rio de Janeiro	PST	25	12.080	3.45 to 8.15 p.m.; Sundays, 6.45 to 9.45 a.m.;
Brit. W. Indies		ZQI	60	4.700	2.45 to 8.15 p.m.
Brit. W. Indies	Jamaica	VRR6	19	15.620	7.00 to 8.00 p.m.
Canada	Edmonton	VE9AI	49	6.005	6.00 to 7.30 p.m.
Canada	Edmonton	CJCA	31	9.540	midnight to 2.00 a.m.
Canada	Montreal	CFCX	49	6.005	heard at 10.30 a.m.; afternoons.
Canada	Montreal	CBFX	31	9.360	Sunday, 7.30 a.m. to midnight; Monday to Saturday,
Canada	Montreal	CBFX	31	9.360	6.45 a.m. to midnight.
Canada	Toronto	CFRX	49	6.070	7.30 a.m. to 11.30 p.m.
Canada	Vercheres	CBFY	25	11.705	evenings till 12.05 a.m.
Canada	Winnipeg	CKRX	25	11.720	Sundays, 9.00 a.m. to midnight; Monday to Friday,
Chile	Santiago	CE1185	25	11.850	7.30 a.m. to 12.05 a.m.; Saturdays, 7.30 a.m. to
China	Chungking	XGOY		7.153	12.45 a.m.
					11.00 a.m. to noon.
					heard at 1.30 a.m.
					East Asia and South Seas beam, 7.35 to 9.40 a.m.;
					North American beam, 9.45 to 11.40 a.m.; European
					beam, 11.45 a.m. to 12.30 p.m.; East Asia and
					South Seas beam 12.30 to 1.45 p.m.

(This list of stations and operating times will be continued in order of countries in the next issue)

# "I'VE BEEN READING YOUR MAIL" — Says Ed Wilding

THE OBSERVATIONS OF AN S.W.L.

FOR sheer cameraderie, there is surely nothing in the way of a Club, Association, Lodge, Society or other group of men to equal the rapidly growing body of transmitting radio amateurs the world over? In order to help a fellow hobbyist, they will go to no end of trouble. It is a body that could and SHOULD be a vital factor in preserving International goodwill. If leaders of men had the yen to help instead of to hamper the hobby of amateur radio . . . if International Conferences granted MORE instead of LESS frequency channels for amateurs, there would be better facility for interference-free intercourse between younger generations of all countries. Young fellows who get to know each other well by frequent and friendly radio communication . . . especially by the spoken word . . . would not take kindly to looking along gun sights at the other fellow because political manoeuvrings breed suspicion and hate. It's a utopian idea no doubt, but generations to come may have the courage to decree that mankind may benefit materially by the correct instead of the incorrect use of radio.

There is, as aforementioned, a unique measure of goodwill permeating the atmosphere of the transmitting amateur, but there is also a great deal of thoughtlessness and selfishness in evidence, when on the air. Some of the 'phone enthusiasts I hear would be the better for a term at a corrective Institution in order to learn something about restraint and social conduct. Oft-times the impression is given that some 'phone users don't care much what other people are doing, and that they scramble for the desired contact in a welter of fellow-scramblers. These things result no doubt from a kind of illusion that nobody else hears the two or more sides of a conversation other than the participants. Some people don't seem to realise that their voices are being reproduced at full strength in thousands of living rooms, lounges and drawing rooms, and in the laboratories of scientists. I feel that if some people realised this, they would blush with embarrassment and confusion.

These days every radio manufacturer turns out public receivers for home entertainment, two-thirds of which are inclusive of the amateur "twenty" and "forty" metre bands. The voice of the amateur, like that of the broadcast artiste, gets into thousands of homes. There is the gentleman who talks grandly about this and that in overdone old school tie style; there is the man whose do-

mestic troubles have been brought to a full-stop by divorce, and the patronising voice of the person who could, if you were at hand, prove to you by maths and a slide rule that his argument is infallible . . . but that he cannot put it into simple words. I have known professional radio engineers hurl things at the innocent receiver upon hearing the sententious efforts of the latter type. Lots of amateurs using phone are entertaining, but for every one gifted with a merry line of patter there are dozens with a flair only for flat-voiced platitudes that bring derisive comment from intelligent listeners. Existence of a repressed ego is thereby revealed . . . where there is no means of self-expression in daily life . . . these people pour their triumphs and troubles at night into the ether for one or two only to hear . . . so they think. You, dear reader may at this stage hurl at me a retort in simple fashion—saying "Don't listen to it then." There is the catch . . . for I have to listen to it if I want to make use of the hobby myself. So much for the phone side of things . . . and I don't for a minute suppose that my own mike technique would be acceptable to all and sundry.

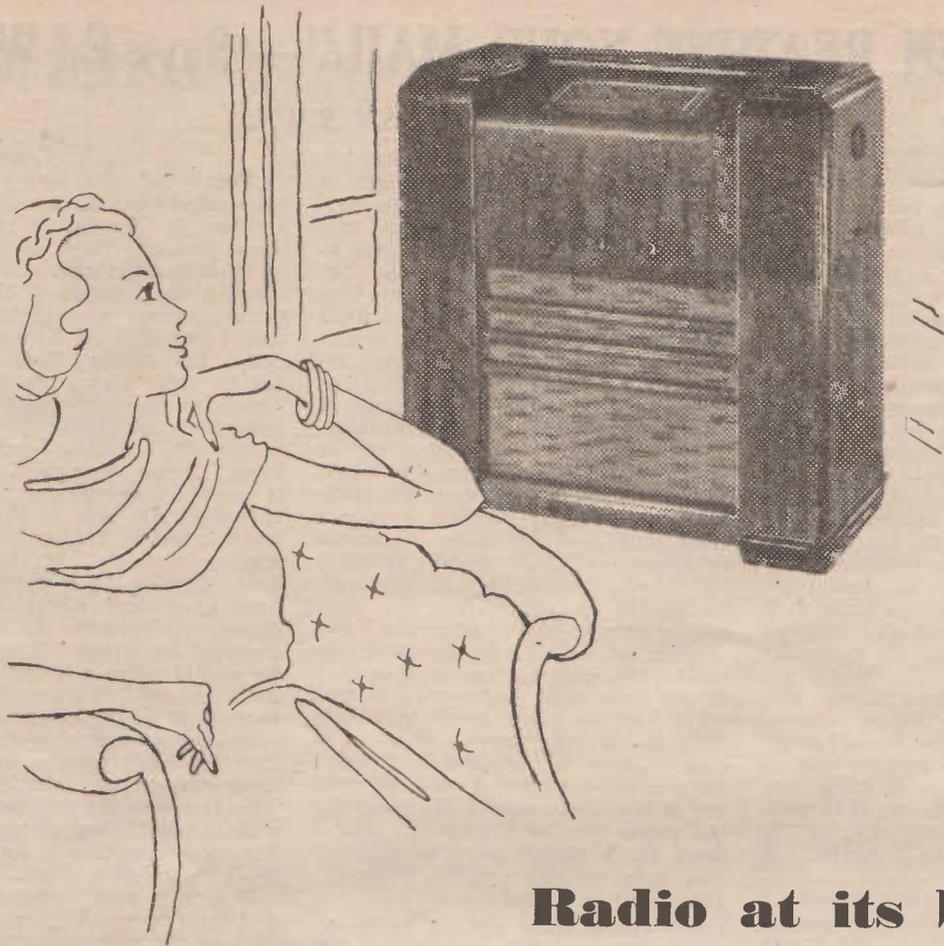
The telegraphy outlook is somewhat different, but among the CW



A corner of the operating room at G6QP.

exponents of the hobby there are habits that need correction also. Chief of these is the one, so pernicious in these post-war days of DX-chasing, of "jumping the gun." Words fail to describe the feelings of the conscientious operator who in the midst of struggling with an S4 signal from a choice DX station, finds him blotted out by some high-powered interloper who butts in on the same frequency, and starts in calling the choice DX before the existing contact is finished. From that point the contact is certainly ended—for the butter-in has effectively seen to that. There is much more to transmitting than in making contacts. It should be the duty of EVERY amateur to listen first upon and AROUND the frequency he proposes to use. If it is occupied by either CW or Telephony he should refrain from transmitting until the others have finished. Of course, if those others commit the crime of persistent occupation then they really do deserve to be jammed until things are straightened out. This is where the ruthless DX chaser who is not limited by time says—"if I hang around for a clear channel I shall never do a thing." So he uses full power, and perhaps a bit plus, and tries to wear other people down. Things get worse instead of better but in general the CW man seems to be more co-operative than the 'phone user. He usually occupies no more than the allotted frequency with a pure and steady note; often indeed an example to commercial stations; and for a minimum of transmission time. The CW man doesn't acquire the habit of leaving a carrier whistling away whilst he thinks out what is the next thing to say, and his transmissions are certainly heard, but not understood, by the public listener.

These points are a bit in favour of the CW side of the hobby of amateur radio transmission, but the fact remains that communication by the spoken word has been responsible for technical developments that never would have taken place if CW had been through the years, the sole method of amateur communication. The design of receivers with more than average selectivity is the outcome of the direct need for such development because of band congestion. Whichever way one looks at it, the hobby has its attractions from all angles, and "reading the mail" is not the prerogative of the licensed transmitter alone—the short-wave listener gets quite a kick from eavesdropping on the doings of the microphone men.



## Radio at its best

The superiority of the A.W.A. Radiola is the result of A.W.A.'s thirty years leadership of the radio industry and unequalled research and manufacturing resources. The range of A.W.A. Radiolas comprises twenty different models covering all city and country requirements including personal portables, mantel models, consoles, radiograms and car radios.

Authorised Radiola Distributors in all parts of the Commonwealth will gladly arrange demonstrations.



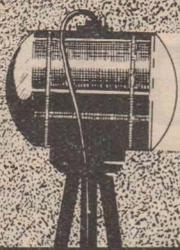
# RADIOLA

THE WORLD'S FINEST BROADCAST RECEIVER

MANUFACTURED AND GUARANTEED BY

**AMALGAMATED WIRELESS (AUSTRALASIA) LTD.**

AUSTRALIA'S NATIONAL WIRELESS ORGANISATION



# READER'S FLOODLIGHT

**A section for the exchange of correspondence between readers.**

*(The views expressed in letters published in these columns are those of readers, and are not necessarily those of "Australian RADIO & TELEVISION News." Commentary from readers interested in any particular subject is invited and welcomed by the editor, and if suitable for publication will be given space as the opportunity permits.)*

A letter from the Editor.

Dear Reader,—

It would have been possible to decorate this page, our first issue, with fictitious correspondence penned under the cloak of anonymity. That

kind of thing has been done oftentimes in the world of journalism, but it is a practice we abhor. There will not, for example, be any repartee with imaginary people under the pretext of answering queries . . .

any letters appearing under the "Floodlight" will be genuine, or they will not appear at all. In keeping with long-established literary practice, the use of noms-de-plume will be acceptable, providing letters are accompanied by identification for office record purposes. Readers who so desire may, of course, use their proper name and address, provided again that they are genuine. On this spinning spheroid inhabited by we puny humans, there had to be a start of some kind, and it was Adam who got things moving toward establishment and expansion. So, with this letter, a commencement is made in a direction where a foundation stone is laid, with others to follow. It will be observed by readers of innumerable magazines on variegated subjects now circulating throughout

*(Continued on page 63)*

*(Continued from page 44)*

of 40 degrees or so is obtained, and this is a good medium. The method of bandspreading is simple. With SW1 opened, the 23-plate midget is in series with the .000175 tuner. The midget can be set at any desired value, and thus the total effective tuning capacity may be made very small owing to the two condensers being in series. Closing the switch enables quick searching over all frequencies from 14 to 100 metres with the three plug-in coils.

Operation of the receiver is a sheer joy. The "Wide-world" Two is a receiver we recommend enthusiastically for all beginners who want the best in short-wave headphone reception, whether they be interested in short-wave programmes or amateur communication.

Finally, it is recalled that many builders of the original receiver made provision for extra plug-in coils for the broadcast band. Excellent results were obtained and the little receiver is quite a handy thing to have around for certain applications at such low frequencies.

—D.B.K.

**SAY YOU SAW IT IN  
Australian RADIO and  
TELEVISION News!**

## The "Wide-World" Short-Wave Two Valve Receiver Comprises The Following

- 1 chassis, 7in. by 6 in. by 2½in. deep.
- 1 panel, 8½in. by 7½in.
- 1 dial.
- 7 knobs.
- 1 variable condenser, Eddystone type 586.
- 1 (.0001 mfd. midget variable condenser, R.C.S. Polar.
- 2 valve sockets.
- 1 socket (coil mount).
- 1 high impedance audio choke, R.C.S. Type TA4, 100 Henry.
- 1 .0001 mfd. grid condenser and 2-meg. leak.
- 1 3-plate midget variable condenser (aerial coupling).
- 6 insulating pillars.
- 1 R.F. choke. Aegis 4 ple.
- 1 50,000 ohm potentiometer.
- 1 500,000 ohm potentiometer.
- 2 Alpha switches (heater and bandspread cut-out).
- 3 strips of bakelite.
- 1 .01 mfd. mica dielectric condenser (grid coupling).
- 2 1 mfd. 250v. working condensers.
- 2 .1 mfd. tubular condensers.
- 2 2000 ohm 25ma. resistors.
- 1 50 ohm centre-tapped heater resistor.
- 1 single circuit telephone jack and 'phone plug.
- 2 terminals.
- 3 short-wave coil formers and small reel of 22 D.S.C. wire or coil kit ready for use (R.C.S.).
- Wiring flex, screws, nuts, solder, etc.
- 1 rubber cable bush.
- 5 lengths flex or fine-wire battery cable for connections.
- Accessories—
- Valves: as suggested.
- Battery operation—
- 1 6-volt 60 A.H. accumulator.
- 3 45-volt heavy-duty B batteries.
- Power operation—
- 6.3v A.C. at 2 amperes.
- 250v D.C. at 40 m.a.

The following letter is typical of the enthusiasm surrounding the advent of "R & TVN."

"Dear Mr. Knock,

I am so confident of the success of the publication, and that it will be the answer to my futile gropings after the "truth," that I have already popped into the shop of the local purveyor of literature and said casually 'revise the audit pal. I want no more of your scandal sheets called radio magazines,' and, tightening up the glands of the old blood pump, I left our book bird grovelling on the doorstep like a tiger who had pepper put into his milk. Apart from the frivolity, please find enclosed my sub. Some time ago you advised me about trouble with an ex-Army No. 4 set, but I am afraid I must have slipped. Results, although not fatal, have been very edifying to the local cat clan, and have caused the neighbours to assume that I understand lots of foreign languages, interpret static as a form of music, listen only to overseas short-wave stations, and that I am quite crazy. Which of course is really scandalous. Anyhow, I wish you the joy of success that I fully expect of your publication, and wait with lip-smacking anticipation the arrival of the first issue.

Fraternally yours,

A. M. Thomson,

190 Shafton Avenue, Kangaroo Point, East Brisbane, Qld."

**P**OPULAR releases for the month of May deserve the description "popular" if overseas opinion may be taken as a guide. Looking through our information lists we see that each item, without exception, is a best-seller either in England or U.S.A.

The first to catch the eye— or should we say ear?—is a double from Kay Kyser (Col. DO.3274) doing "It's Kind of Lonesome Out To-night," and that fox-trot with the unusual name of "On a Slow Boat to China," which is going places fast on the Hit Parades.

The film, "It's Magic," brings us Doris Day, who features in the movie, on Columbia DO.3278 singing the title song, "It's Magic" and the revival, "That Certain Party."

From the same show comes "Put 'Em in a Box, Tie 'Em With a Ribbon" (Decca Y.6144), with the inimitable Danny Kaye and the Andrews Sisters. The girls appear on the reverse side, too, as they support peppery Carmen Miranda in "Cuanto Le Gusta." This combination of star artists certainly won't linger long on the shelves.

That leading English dance band, Joe Loss and his Orchestra, contributes on H.M.V. EA.3815 a colourful double in "Hair of Gold, Eyes of Blue" and "The Silver Wedding Waltz."

Remember "Underneath the Arches"? It's back again on the Hit Parades. Joe Loss waxes it for H.M.V. on EA.3816, and the Andrews Sisters also give it a fine vocal treatment on Decca's Y.6146. They back their platter with that tuneful success, "You Call Everybody Darling."

On Columbia's DO.3276 Harry James' Orchestra introduces "Ev'ry Day I Love You" and "Hankerin'," two sparkling numbers from the new film musical, "Two Texas Knights."



The reputation they made for themselves following their Continental tour will be sure to create a big demand for the special release of a new record from Graeme Bell and his Australian Jazz Band. Dixieland-style fans will queue up for Parlophone A.7724. "Chicken and Almonds" and "Free Man's Blues."

Over in the General Section "His Masters Voice" has a pair of records that should find general favour everywhere. The first couples a musical comedy favourite, Jerome Kern's "They Didn't Believe Me," with a Latin style number called "Malaguena" (EA.3813). George Melachrino's Orchestra shows its versatility well in this bracket.

The second H.M.V. record, EA.3814, introduces two celebrated pianists in a duet. They are Benno Moiseiwitsch and Nicolas Medtner, and their choice is Medtner's melodious composition, "Round Dance."

That fine tenor voice of Sydney MacEwan, who recently visited Australia, is heard on Columbia DO.3264, "The Old House," and an old Irish air, "I Saw From the Beach."

Neapolitan folk songs have found a sympathetic interpreter in operatic baritone Paolo Silveri. With the Covent Garden Royal Opera House Orchestra behind him, he sings with true Southern warmth, "Tu Ca Nun Chaigne" and "Marechiaro." Its number is Columbia DO.3265.

Expectation is rising high in anticipation of the Australian tour of Polish pianist Maluczynski. We find him among the Columbia labels in the Imported Section this month on LX.1028, giving us a foretaste of his noted Chopin interpretation with "Mazurka No. 32 in C Sharp Minor," and "Mazurka No. 17 in B Flat Minor."

From Poland we can travel musically to Czechoslovakia for a new and spirited performance of Dvorak's "Carnival Overture" by the City of Birmingham Orchestra on DX.1235, whilst on DX.1471 the soprano, Isobel

Baillie, delights us with an excerpt from Dvorak's "The Spectre's Bride," "Where Art, Thou Father, Dear?"

New York and far-off Armenia combine on DX.8316/18 to give us the first complete recording of the stimulating ballet suite, "Gayaneh," by the modern composer, Khatchaturian. The Philharmonic Symphony Orchestra of New York is conducted through these exciting rhythms of Efreim Kurtz.

When we heard the celebrated pianist, Alfred Cortot, playing Schumann's "Scenes From Childhood" on H.M.V. DB.6700/1, we readily agreed with those overseas critics who have praised this recording so highly. Cortot, by the way, who is always spoken of as "the French pianist," was actually born in Switzerland.

Perhaps the most rich musical expression of the whole of the Romantic Period—the era of Liszt, Chopin, George Sand, Sir Walter Scott and Byron—is Berlioz' "Symphonie Fantastique." To the San Francisco Symphony Orchestra's thrilling performance on H.M.V. DB.6670/75, we are indebted for a performance that has all the sweep and artistry that we associate with this spectacular masterpiece of the concert hall and the ballet stage.

Two seldom heard Puccini arias make an unusual debut choice for the fine European baritone, Giovanni Inghilleri. Both are from the opera "Il Tabarro." They are "Why Don't You Love Me?" and "No One! All Is Silent." Puccini-lovers will find these on H.M.V. C.3772.

Ravel's popularity is steadily increasing, and the Columbia LX.1088/9 recording of his unusual "Concerto For Left Hand" is an answer to the growing demands for this modern master.

Eugene Ormandy conducts the Philadelphie Orchestra, and Robert Casadesus is at the keyboard.

(Continued on page 64)



A thought for an idle moment:  
"REMOTE CONTROL."

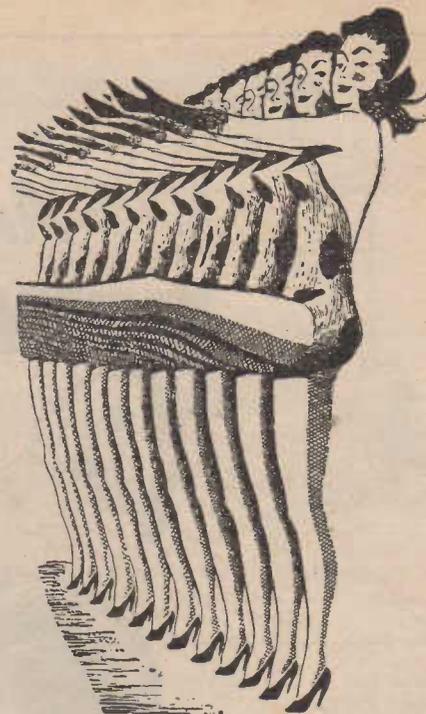
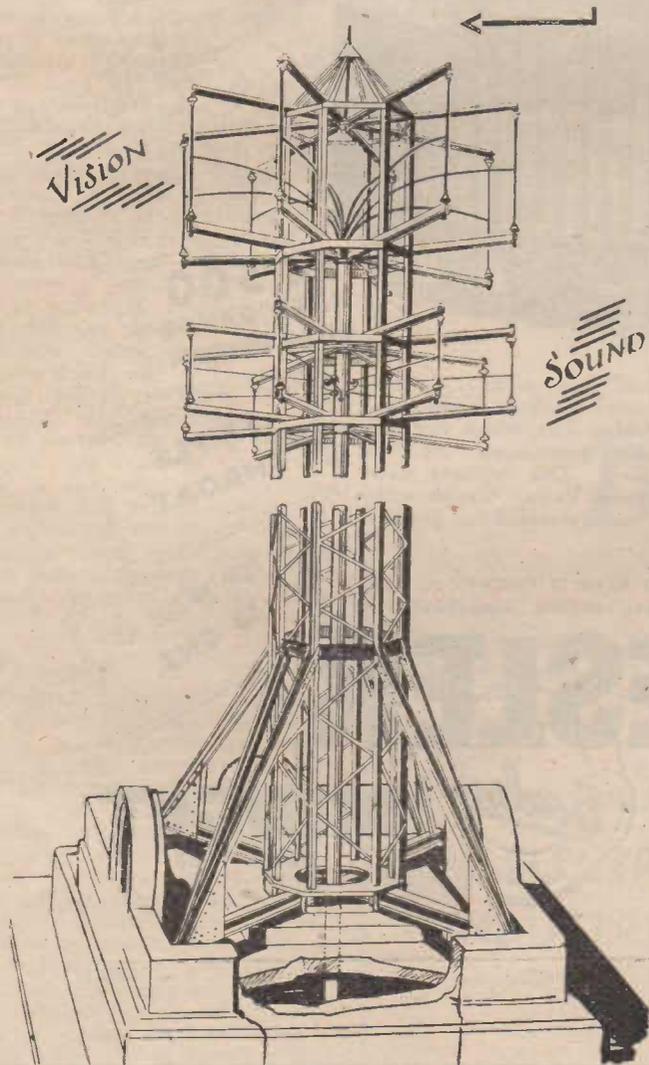
# TELEVISION

## The Modern Art of Seeing by Radio

By VIDEX

THE FULL ENJOYMENT OF THE STAGE PRESENTATION  
CAN BE BROUGHT TO THE HOME

The arrangement of the Television aerial systems on the Tower of Alexandra Palace for the London transmitter. The upper portion radiates the Vision and the lower the Sound.



PRIOR to, and since the War of 1939-45, there had been perfected, mainly in Britain and the U.S.A. what is undoubtedly a most astonishing art; the ability to transmit moving pictures by the medium of radio. Before the war, the people within immediate reach of the British and American Television transmitting stations had not availed themselves of the service to any great extent. In the post-war period, however, the services have been re-established and considerably augmented and improved, with the result that popular demand is now very considerable, especially in the last twelve months of the 1947/48 period. Although there were a few minor technical differences in the pre-war Television standards, there is no question to-day about the technical perfection of the systems. One hears no criticism of the quality of the pictures as transmitted and received. Interference by local conditions with a picture at a receiving position is not a point for criticism of the transmission, any more than is the case with reception of a regular AM broadcasting transmission. If there is any local interference with a sound programme; the remedy does not lie at the transmitting end.

### Standardisation

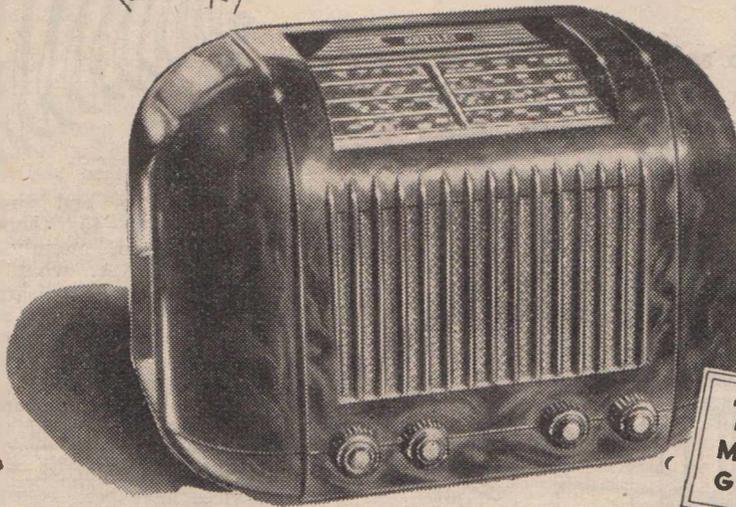
In calling Tenders for the supply of Television transmitting and receiving equipment recently, the Australian P.M.G. Department has not laid down any definite standard for the number of lines making up the scanned picture, together with other

(Continued on page 53)

*An Amazing*  
**NEW Triple Throat RADIO**



Built like a Musical Instrument . . .  
 with unique *Sound Vibration Bridge!*



**12,500  
 MILES' RANGE  
 GUARANTEED!**

**TRIPLE  
 THROAT**

**TOP VALUE AT  
 18 GNS.**

☆ Here is the radio they said was years away . . . the amazing Kriesler Triple-Throat Sealed Midget—incorporating the unique Sound Vibration Bridge that brings you the acoustic perfection of a true musical instrument. At first sound, the difference is astounding! This brilliant new Kriesler Midget features the "Phantom Valve" Circuit with 12,500 miles world range, and is factory-sealed for perfect performance.

SEE AND HEAR IT TO-DAY . . .  
 at leading retailers everywhere!

*The NEW*

**KRIESLER**

*Triple Throat*



**MIDGET**

MODEL 11-20

TM7A.83

(Continued from page 51)

technical considerations. The Department has very wisely left it to the tendering manufacturers to put forward their systems for consideration. The differences in certain particulars that need not interest very much the man in the street, are not likely to be considerable. In other words there is no likelihood that whatever system is adopted for Australian Television; such a system will be supplanted by the advent of any other system radically different to present-day methods.

### What About Programmes?

It is a fact that in pre-war times the British Television Service of the BBC occupied an unsatisfactory position of being a poor relation to the established parent organisation. That is not the position to-day, but the pre-war aspect is something that should be kept in mind in Australia. Political decisions indicate at this early stage that both FM and Television will be the prerogatives of the ABC. That being so, the "poor relation" situation is something that will need due avoidance. Obviously the ABC itself will have the final say in all matters pertaining to its new rival to Sound Broadcasting, and it is not impossible that an element of obstruction could intrude within the organisation. It must be considered that a Television transmission will consist of the Vision accompanied by the Sound, and that the latter in itself conveys a partial illusion. This illusion is enhanced enormously by the fact that one sees just what the simultaneous Sound portrays. No matter how much one could improve the Sound itself in the shape of very High Quality and the complete exclusion of extraneous noise, *nothing can enhance the value of the Sound so much as the addition of Vision.* Just imagine, for example, your favourite broadcast Serial or Vaudeville entertainment . . . how much more will you enjoy such fare if you can actually *see* what goes on at the same time?

### What To Expect

The Australian Broadcasting Commission will not be in the position of having to try unknown quantities with a Television service for programme presentation for the sound reason that, it is understood, such organisation may be in the hands of Harry Pringle, an officer with much Television experience with the BBC. Programmes may be expected to follow a pattern something like the following: — Commencement with a "News Bulletin" and possibly the weather information augmented by weather charts. It may be expected that the "News Bulletin" will include short film selections of sporting and other events secured during the day.

Entertainment may include drama, light plays, and variety. Musical transmissions will be admirably suited to this new conception of radio entertainment with views of conductor and orchestra fading to scenic transcriptions portraying the language of music visually. There is tremendous entertainment value in the relay of outside sporting events and functions of National importance may be expected to have their part in the scheme of things. The fact is, that there will be very little difficulty in giving the Television public plenty of interest to look at; but once the novelty of watching and hearing a Television broadcast has passed, and the service is accepted as part of our everyday lives, the attractiveness of the bill of fare will need to be maintained and continually enhanced.

With the recent war behind us, the advanced technical progress brought about as a direct result of war-time Radar and VHF communication, has raised British Television to a standard where it is rapidly becoming established as an essential to everyday life in the Metropolis. Birmingham will also have TV in the near future. The popularity of the Telecasts from the Olympic Games has left no doubt at all in the minds of organisers and technicians that TV



A future use for television?

—From "Radio Craft", U.S.A.

has arrived to stay. It is the same story in U.S.A. There, the main cities of the North American continent have their TV stations in operation day and night, and the number of stations is steadily increasing. Unlike the British system, which func-

(Continued on page 55)

## POSTAL COURSES in *Television* for

**RADIO ENGINEERS and RETAILERS**  
direct from

**THE BIRTHPLACE OF ELECTRONIC TELEVISION**  
**ELECTRIC AND MUSICAL**  
**INDUSTRIES LIMITED (England)**

See Special Announcement in Column 2 on Page 58

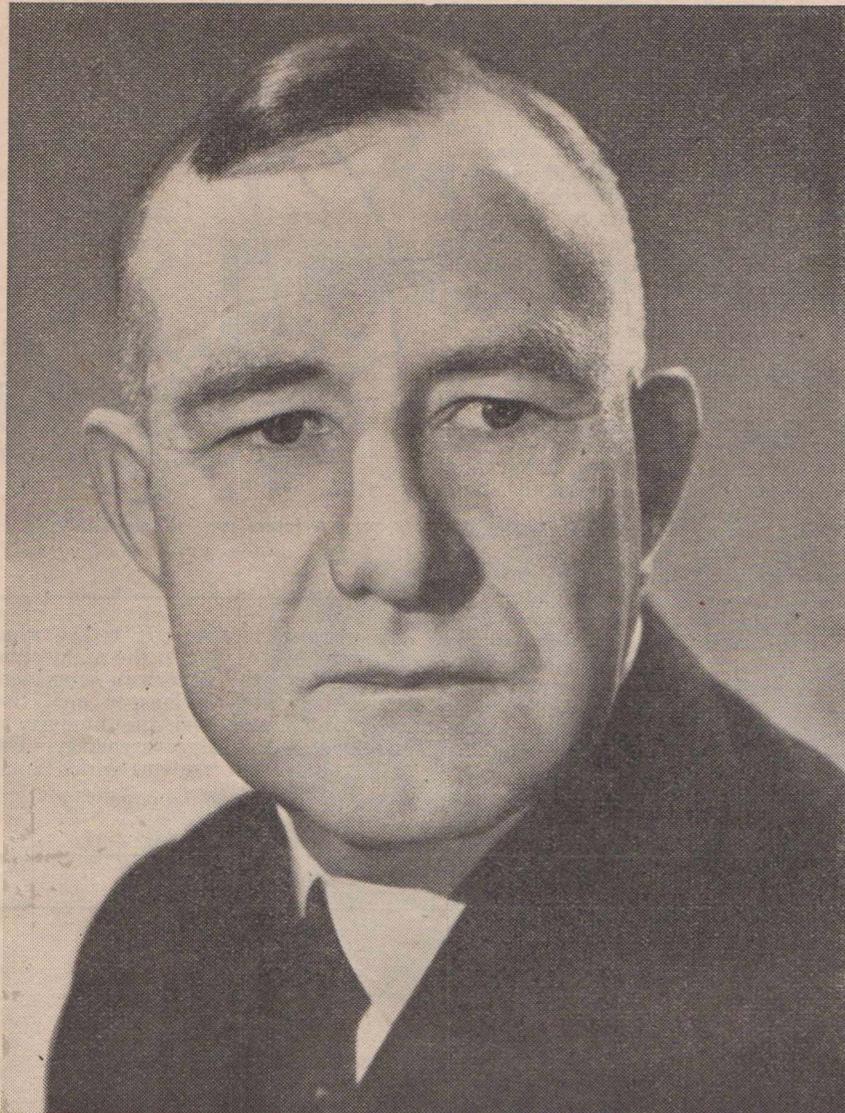
# A STATEMENT

by

Mr. L. A.

HOOKE

Managing Director  
of  
AMALGAMATED  
WIRELESS  
AUSTRALASIA  
LTD.



The first appearance of "Radio & Television" follows closely on the establishment of the Australian Broadcasting Control Board and the investigation by that body of television and its application to Australia, and I wish the journal every success in serving both the Australian public and industry in company with the other excellent radio publications.

Television in the broad sense will create a new industry and it is certain that future developments will lead into many fields other than the telecasting of entertainment and educational programmes. Television provides means for the verification of documents, the identification of individuals at a distance, and, indeed, has already been used for this purpose.

It will give sight to the telephone wire—it will

enable dangerous experiments to be watched from a distance—it will provide a moving picture from piloted or pilotless aircraft to ground bases many miles distant. Its watchful eye is capable of a ceaseless vigil. In combination with high speed photographic transmission, and demonstrations have been given of speeds exceeding one million words a minute, so placing the modern telegram in the cost category of a letter.

We must not overlook the fact that radio in the ordinarily accepted sense is offering new services and new possibilities, and the limit of its expansion is not in sight. Sound broadcasting has still a long road to travel and will not be replaced by television, and another task of the newly appointed

*(Continued on page 59)*

*The outlook for the future of Television in Australia is reviewed here by the Head of Amalgamated Wireless, Australasia Ltd., Mr. L. A. Hooke. The points outlined are of considerable interest and indicate assured confidence in the ability and capability of the radio industry to meet the needs of the public in the field of Television.—Editor.*

(Continued from page 53)

tions from revenue derived from license fees, the American stations are "commercial;" they needs must support themselves by income from advertising sources. The evidence to date is that they are doing this essential very nicely, and the ingenuity of production for sponsored Vision programmes is quite remarkable. Although in time to come, it is likely that Australian TV will be established on the lines of the present broadcasting systems, i.e., ABC and commercials, it is natural that at the primary stages, which may cover a year or two, the Government, through its regulating authority, the P.M.G. Department, may confine TV activity to a skeleton experimental service operated under ABC programme administration.

### Television is communication of intelligence by seeing and hearing

One may say that already we have in everyday use, a tried and proved system of sight and sound communication that fills the bill in the form of the modern "movie." Not many years ago, sound as an adjunct to the film was looked upon as a "stunt." Can you imagine sitting through a really silent film to-day . . . the kind where drama is presented with situations and climax conveyed by sub-titles? Any theatre playing "silents" only in this era would be empty. The difference with Television and the sound-film, is that with TV, there is portrayed on the screen (plus the accompanying sound) the event as it actually takes place. This is the case with "live" Telecasts, but there are instances where a film recording is made of the original event, and this film is later "played" through the Television transmitter. The important feature in this case is the convenience; the viewer enjoys his sight and sound programme, even though it be an hour or so later than time of the event; comfortably in his own home.

A vitally important feature about Television is that it means even more intimate contact and impact between radio and the home. In radio communication of any kind, we modulate the flow of radio frequency current in the antenna in such a manner that it represents just what we want to transmit. In the case of a picture, a drawing, or a visual scene of any kind we arrange to modulate the antenna current in such a way that the representation of the picture is transmitted. Here there is a vast difference in the manner of transmitting sight and sound. In the latter we are dealing with a little at a time . . . one sound followed by others in sequence. A symphony concert or a Jack Davey Show merely consists of one sound at a time. It is true that each sound may be complex, with

many tones contributing to it, but it is only one sound and as such can be represented by one current. Our radio transmitter can follow the complex sounds faithfully. A picture is a very different matter. Even an instantaneous flash is not a single thing of any kind, and cannot be described or represented by any one current. It is made up of many small elements, one for each area of the size that the eye can distinguish. If we examine a scene with ten feet square dimensions from a distance where the eye can pick out objects an inch square, there will be about fifteen thousand of these small squares going to make up the whole ten by ten picture.

If we wanted to transmit such a picture, and if we were given any amount of time to do so, it could be done by a telegraphic process. The scene could be broken up into imaginary squares, a hundred in each way. By transmitting information corresponding to each square, working across in lines from left to right, the receiving operator could fill in the squares corresponding to the transmitted information, and would eventually have a complete picture. Such a procedure would be a slow one, and of no use at all where transmission of a moving picture is concerned. Nevertheless it is satisfactory for transmission and reception of "still" pictures by what is known as "facsimile." The press photographs you see in your daily newspapers marked "radio-photo" have been through a process of this kind. Facsimile time has been speeded up in recent years so that what previously took hours to do now takes a matter of minutes, either by wire or radio.

### Television . . . many pictures per second.

The transmission of moving scenes as in Television means the sending of a large number of pictures each second, so that, as in motion pictures, the eye is virtually deceived by a rapid succession of still pictures, and believes that it sees a continuous scene. In motion pictures, the eye has presented to it twenty-four different scenes every second, and that is what must be done as a minimum in Television. It means that we have to send out information about each little portion of each picture, and to repeat that process many times each second. Television may be considered as the need for transmitting a very large amount of accurate information in a very short space of time. Let us examine simply the way in which it is done.

The first requirement, is, as in photography, light. The light beams are to be caught by a device which will turn them into electric currents which may modulate the radio currents being fed into the transmitting antenna. Several methods are known

of converting light images to electricity, and many of these were applied in the earlier experimental systems of Television. The modern system uses a device that is far superior to any other, and is called an Iconoscope, which is from the Greek, meaning "Observer of an image." This device is known in British Television practice as an Emitron, a name derived from the Company responsible for development and manufacture, namely, Electrical and Musical Industries. This device, which may be considered simply as the Television camera, corresponds to the microphone in transmission of sound.

There are two main parts. One is a plate upon which, by optical means, is focussed the scene to be televised, and this plate may be considered as the film in a camera. It is not, however, coated with photographic emulsion but with light-responsive, or photo-electric cells. The cells are extremely minute in size, but each one is separate from the others and generates a voltage when light falls upon it. The voltage is proportional to the strength of the light. With a picture focussed on the mosaic of very small photo-cells, there is a difference in voltage generated by some because of the difference in the amount of light on those compared to others. The cells, activated by bright light give out the most voltage and those with little or no light falling upon them will deliver very little output voltage. It is necessary to collect these voltages from the mosaic and this is done by brushing them off electrically. The "brush" is a beam of electrons which is generated in another part of the device and moved, by electrical arrangements, over the face of the mosaic plate, line by line in regular fashion. There may be 400 of these lines, or more than 600 as in the latest TV equipment, and it will be understood readily that the more of these lines that can be used, the more accurately will the picture be reproduced in detail. The electron beam sweeping across the mosaic makes contact with only one minute portion at a time, a portion that is considerably smaller than the head of a pin. After the beam has completed its travel all over the area it returns again to the same spot, and in so doing collects the energy which has been storing up there whilst the beam was travelling over the rest of the area collecting energy from the other spots. The electron beam originates in a part of the Iconoscope which is known as the electron-gun or cathode. This is coated with certain chemical compounds which emit electrons when heated, and this is done by electric current as in the filament of a lamp. The cathode is part of the electron beam and if this and the mosaic plate

(Continued overleaf)

(Continued from page 55)

are connected to external apparatus we can collect the electricity that the beam takes from the plate, which has the light image upon it. The resultant current is very small in value, but it is stepped up by amplifying to useful proportions by valves. When this is done we have arrived at a useful stage where the amplified current can be used to control the antenna current of the radio transmitter to be used for the purpose.

### Scanning speed.

The time that is required for the electron beam to sweep the whole picture is made such that the process can be repeated thirty times each second. On the mosaic plate there are about a quarter of a million spots to be visited at this speed, so you can imagine that the electron beam as it flies back and forth at a speed of many miles per second, is a very busy and vital item in our Television transmitter. We have a system which picks up scenes, a spot at a time, but covers the spots so speedily, and goes over the whole scene so many times during each second, that if we arrange a device to reproduce this action in reverse fashion and to deliver light images corresponding to the currents from the mosaic spots, our slow moving human sense of vision will ignore the details of the process and will perceive only the total result, which is the complete picture.

### Very High Radio Frequencies for transmission of Television.

Because in Television we are trying to crowd so much information into each interval of time, far in excess of that needed for sound broadcasting, it is essential to make use of extremely high frequencies, or, to express it more simply for the layman, much shorter wave lengths than those used even for overseas short-wave broadcasting. The use of these VHF's gives rise to problems not normally applicable to the ordinary "radio" side of broadcasting. The user of a broadcast receiver for National and Commercial stations is aware that quality of service depends upon the power of the transmitter, the distance between transmitter and the receiver, and the intensity of static or other noise in the neighbourhood of the receiver. These same factors apply with the very high frequencies used for Television but in different degrees. The frequencies used for transmission of Television are so high that they approach the behaviour of light waves.

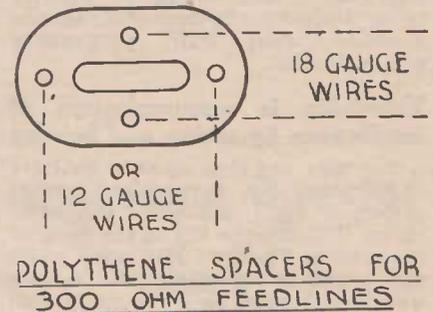
We are accustomed to ordinary radio waves going around the curvature of the earth, over and behind mountains, and through objects of all kinds. The waves used at Television frequencies, behaving similarly

to light waves, act something like a searchlight in that they are limited by obstacles on the surface of the earth. This means that the higher the transmitting antennae are placed, the more effective will be the transmission. Better reception will be had similarly by locating the receiving antenna as high as possible. When the time comes for you to instal a TV receiver in your home, it will be an immediate advantage to instal a special roof antenna than to use a wire around a picture rail.

It is found that with the modern Television transmitting aerial at a high elevation, satisfactory reception can be had to distances up to fifty miles. In some instances that distance is exceeded by special attention to the receiving conditions, such as the use of a high-gain beam antenna. The service area of a Television station is limited in comparison with areas for sound broadcasting stations using the frequencies between 1600 and 550 kilocycles per second, and the limited TV area is due solely to the necessity for using VHF's. Engineering problems are increased. Just as it is difficult to make these very high frequencies travel far through space, so is it difficult to make them go very far over wires. Special types of cable may be used for such purpose, but the high cost of this method is out of all proportion in most instances. Television studios had thus, before the recent war, to be located as close to the transmitters as possible, but modern practice makes use of radar applications for such purposes by microwave technique. Generally speaking, a Television programme may, in the initial stages at least, be confined to the area around the originating studio, and thus the audience can be only within that area. The problem of providing programmes over a widespread area is much greater but technical progress will find means of solving that. The man in the street should realise, that from the outset, programme expense for Television is much heavier than for normal sound broadcasting. In the latter, sound is all important and there is nothing else to consider. In Television, not only is there sound to be considered but the added problem of vision is all that of making a motion picture. Costumes are needed, scenery, and special lighting; also actors must needs be letter perfect. They cannot gang up around the microphone with a bunch of paper in the hand. Retakes are not possible in Television. These remarks apply of course to studio presentations, but for the Outside Broadcast kind of TV, such as football games, cricket, etc., there is all the attraction of the movie newsreel, with the same element of permissible uncertainty of subject.

### Spaced 300 Ohm Transmitting Lines

The Type 3 Polythene spacers now on the market are of interest to many readers, and detailed information is given here. The spacers permit speedy construction of two types of 300 ohm lines. By spacing two 16-gauge copper wires across the short axis, using the two small holes provided, a low-loss lightweight line is obtained. By using two No. 11 gauge copper wires spaced across the long axis a strong low-loss 300 ohm line is provided for long runs between transmitter and antenna.



Losses in either type of line are less than 0.1 Db per hundred feet as high as 500 Mc/s. By using a length of 0.95 of a half wave-length as a folded dipole—fed by line of similar construction, a most efficient antenna with wide frequency response can be constructed. The spacers are available from the trade at 3/8 per dozen.

\* \* \*

"Abolander." Many a home constructor of radio receiving gear could learn a point or two from Frank ("Pop") Stroud, of Brighton Blvd., Bondi, N.S.W. Frank, who is now three score and ten, and therefore no sprightly youth, makes up the most comprehensive receivers from constructor articles and technical advice, and makes them work. So much so that he is equipped for reception on all bands from the broadcast range to 6 metres. There isn't much going on around Forty and twenty metres that Frank misses... he listens to most of the conversations of interest. Recently he overheard me say to another VK that I was short of a length of "two by two" for a beam support... and next day he dropped a length around. Said it was spare material he had lying around. VK's will be interested to know that "Pop" is no recent newcomer to amateur radio... he was concerned in it along with Charles Maclurcan (A2CM) about thirty years back. What intrigues me mostly is... when DO you sleep, Frank?



# AMATEUR RADIO SECTION



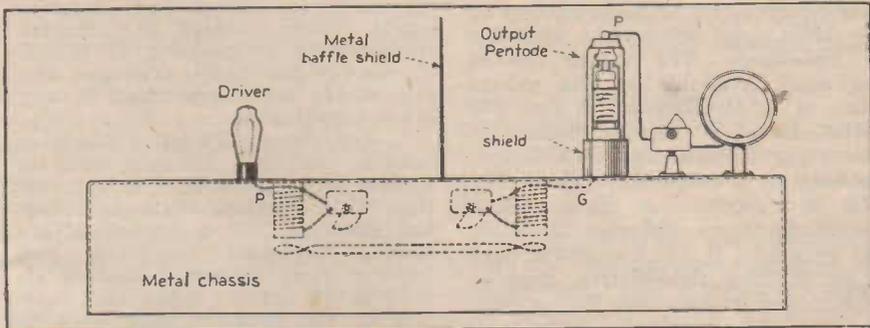
**I**N this, the first issue of "Australian RADIO and TELEVISION News," the opportunity is taken to hail the amateur coterie of VK and ZL enthusiasts and to emphasise from the commencement that here is your own stamping-ground. If you want to discuss this or that, technical or topical, so far as matters strictly amateur are concerned, then this is the spot where you can do it. It isn't as if your "comper" (to pinch a disc-jockeyism) isn't fully au fait with the likes and dislikes of those who follow this most fascinating of hobbies . . . he most surely is . . . for he is one of the gang, purely and simply. So also, by the way, is the co-publisher of "R. and TV." . . . another "ham" with a lifetime of experience of key-pounding and mike "yatcheting" . . . so if you chaps aren't well and truly catered for, there will be something amiss in the State of Denmark somewhere. . . . So, gents (and ladies) of the fraternity, don't be shy in coming forward with your welcome observations from time to time, and that means ALL the time.

\* \* \*

"Aird." The 7 Mc/s band is about the most useful for portable working. One station that puts it to good use thus is Bob Godsall, VK2ARG, of Palm Beach, N.S.W. Bob has a portable call sign for special purposes, VK2ARC, and is liable to be heard from unexpectedly in remote parts of this Continent. He is an airman by profession and gets a lot of fun out of the amateur version of radio communication. If he isn't making use of a tin roof somewhere for an antenna, it is likely to be a cockie's fence somewhere out-back.

\* \* \*

An American amateur in New York area removed the nice metal frame edging from his rack and panel 75 metre phone transmitter and found that his indicated antenna current had increased from 2 to 3 amperes. No coils or leads were within 4 inches of the metal frame. A pretty metal frame may thus form an RF-consuming loop.



## That "S" Meter

Far too many of us have adopted the pernicious habit of quoting a station as being "umpteen Db over S Nine on the Meter." Undoubtedly a glow of satisfaction permeates one's well being when G9BF or somebody says "the band is in poor shape but you are 45 Db over Nine" . . . but what does it mean? It seems in most instances that a set of comparative indications on the scale of a meter registering anode and/or other current variation with signal impulse shows a self-appointed set of values. One mark says "S9" and at that the received signal level is excellent—or should be. If one says, because the meter needle goes a few ink marks over the magical "S9" spot that the station is "20 Db over the Nine," a little sober reflection doesn't do any harm. 20 Db means, among other things, a multiplication of 10 times. 40 Db indicates 100 times amplification, etc. You know quite well—instinctively apart from the mathematical facts, that because the S meter swings a bit past the Nine mark—that signal just is NOT stepped up by 100 times or so. The truth is—that the Nine is, or should be—expressed as "Signal strength at a Maximum"—not necessarily at THE Maximum. Any indication over that should be treated as leeway—or a safety region to avoid meter damage.

## Interstage Shielding In Transmitters

Many amateurs do not pay enough attention to the needs of careful Interstage screening where pentodes or tetrodes are concerned. The sketch shows one desirable method of screening the output circuit from the input. With either link or capacity coupling, the anode circuit of the driver stage must be considered as part of the input circuit of the following stage. Therefore, the anode tank of the driver should be shielded from the field around the anode of a power pentode or tetrode. This applies to valves of such types as 6L6G's, 807's, 803's, 813's, etc. The electrostatic field surrounding the anode is strong enough to light a neon lamp within 3 inches and to produce feed-back effects at much greater distance. The higher the operating frequency, the more pronounced the effect. The metal tube around the lower part of the valve and extending up to the lower internal shield should clear the glass bulb by one-sixteenth of an inch. The baffle shield may not be needed at frequencies below 14 megacycles, but is of definite value at 21 and 28 mc.

\* \* \*

Somewhat akin to the old method of placing a book on the Morse key whilst using phone is another method noted on 14 Mc/s. The operator said, "Sorry, old man, I couldn't make any notes and I forgot what you said. I have the pencil wedged in the bug so that I can work phone."

(Continued on page 59)

# In Tune with the Trade

## CRYSTAL DIODES— S METERS, ETC.

Of-times the questing amateur asks where in Australia can one obtain germanium crystal rectifiers of the 1N34 type so readily available to Americans. The answer lies in the stock available at the unique store of J. H. Magrath & Co., 208 Little Lonsdale Street, Melbourne, where the British-made type CGI is on hand at a reasonable price. The CGI is a germanium diode with a thousand-and-one different uses for the amateur. It fills a need for peak noise limiters, field-meters, modulators and wavemeters. We recently paid a visit to this "radio enthusiast's Supply Store" in Melbourne and came away with the feeling that if ever a business existed redolent of the earlier days of radio as a home constructor hobby, this is indeed it. It is refreshing to look over all the excellent items marketed especially for the amateur, both transmitter and SWL. A particularly neat unit for the receiver-hobbyist is an "S" Meter mounted in attractive black crackle-finish case. This Meter is calibrated in "S" units to 60 Db over nine and is fitted with octal connector for receiver connections. A circuit is supplied to indicate the simple modifications needed for the receiver. Tuning dials are always an important point for receivers, frequency meters, etc., and one of the best possible buys is the English-made band-spread model with two-speed drive selling at only 28/-. The scale is accessible for direct calibration. Receiver building can be a tortuous business for the relatively inexperienced constructor, and it is the RF portion which provides the most pitfalls. An excellent answer is given in the Aegis KC4, which is a four band unit, all ready to wire in ahead of a receiver I.F. and audio channel. It has band-spread on all amateur bands and embodies a 6SK7 RF stage, 6AC7 mixer, and 6SK7 oscillator. Band-changing is by switching and the Muirhead type tuning dials are a joy to operate. The unit is completely wired and tested and can be supplied fitted in a chromium-plated case with panel and handling bars.



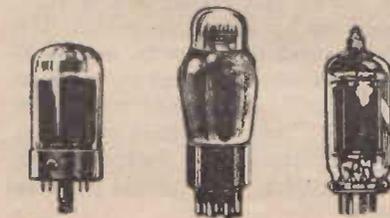
## ROLA'S NEW 12-0

During a visit to the beautifully situated and appointed Rola factory at Richmond, Vic., we were privileged, under the guidance of that seasoned old-timer "ham" and journalist, "King" Box, to hear a demonstration in the lab. of this revolutionary new permag speaker. This is a 12-inch type in the inexpensive class, and one which commands instant attention, both for the commercial set designer and the amplifier-lover. Reference to the response-curves amply confirmed the feeling of "aliveness" of full reproduction with the most straightforward of single-ended small powered amplifiers. Since its introduction, model 12-0 has been improved still further, if that is possible, by the application of a specially processed cone. We gained the impression that with such engineering achievement as demonstrated in this Rola 12-0, the day of the separately-excited field speaker has indeed waned. There seems to be no point in consideration of any other flux agency than the powerful field set up by the latest Anisotropic magnet.

## ATTRACTIONS AT RELIANCE

It is worth a visit to Reliance Radio's beautifully-appointed Sydney Showroom in Barrack St. to see the latest in the way of large and small radiogram combinations of all kinds. Additionally to those of Reliance make, models from the leading Australian manufacturers are on display and demonstration. Interesting features about those of Reliance design are the careful attention given to the short-wave side, and the use of such high-gain RF amplifier valves as the EF50. We were interested in a Reliance model called the "Sky Knight," a 5-valve dual-wave chassis complete with speaker and valves, selling at only £19/19/-. This is fitted with provision for connection of an FM converter where it is desired to listen to the alternative National service by that means in Metropolitan areas. The "Sky Knight" features a large modern calibrated dial, and the company undertakes to pack the receiver and air-freight it free of charge to your nearest airport. That is service indeed.

(Continued on page 60)



To Electric and Musical Industries Limited belongs the credit for the television inventions and developments which enabled the British Broadcasting Corporation to launch the world's first public television service nearly ten years ahead of any other organisation.

To-day, the world's latest television camera, the C.P.S. Emitron, owes its success to yet another E.M.I. invention. This is called "Cathode Potential Stabilisation," a method of obtaining increased sensitivity and freedom from unwanted shading effects in TV camera tubes, both matters of the greatest importance in the attainment of perfect picture definition. The same development is employed in the American Orthicon and Image Orthicon cameras, and will undoubtedly influence future TV camera design all over the world.

The news, therefore, that E.M.I. (Australia) Pty. Limited will shortly be making available postal courses in Radio Engineering and Television will be received with enthusiasm by students of these sciences. These identical courses have been most successful in England under the direction of Professor H. F. Trewman of E.M.I. Institutes Limited. They have been compiled by experts in their field, all of whom have been engaged for many years in the practical application of this knowledge, and, although imparting information of a highly specialised nature, they have been planned on the most lucid basis possible. Coming from the birthplace of electronic television and Britain's largest radio organisation, it goes without saying that the postal courses are absolutely definitive and of inestimable value to the ambitious Australian radio engineer. The General Manager of Works, E.M.I. (Australia) Pty. Limited, 2 Parramatta Road, Homebush, will, upon written application, furnish intending students with further details and a prospectus of the courses.

(Continued from page 54)

Board is to ensure broadcasting improvements. Consideration is being given to a wider dissemination and improvement of programmes and higher frequencies are being explored so that more stations may operate, and these factors must increase the popularity of listening. Education and entertainment is in many cases completely satisfied by hearing and, indeed, some programmes do not lend themselves to any other sense, so that the public will be wise to avail themselves of the improved broadcast receivers now available, knowing that they will not be obsolete for many years to come. Increased migration, together with the home building programme, should continue to make demands on the radio industry.

If the Board decides to establish television in Australia, some time must elapse—sites must be surveyed, studios, masts and buildings erected, and technical and theatrical staffs trained. Australia has certain advantages and disadvantages over other countries in the establishment of television. On the credit side we are far enough away from our neighbours to formulate a self-contained plan without regard to established standards, or the limitation of bandwidths imposed by the possibility of interference. On the debit side, we have vast territories to cover and a less abundant supply of programme matter than some

of the more fully populated countries. The first problem can be met by the use of central stations relaying programmes through coaxials or radio links; alternatively by an extensive use of film. With regard to the second problem, the Australian broadcasting stations have shown great ingenuity in providing aural programmes of a high standard, and I do not doubt they will rise to the occasion in television, but these problems take time and money to overcome so that there should not be undue optimism in expecting a widespread television service for some time. It will also be important in chain telecasting in Australia for receivers to be designed so as to be independent of the electricity supply frequency of the originating transmitting station.

In the establishment of a television service in Australia it is of great importance that the highest available standard be adopted so that the public have an assurance that their television receivers will not become obsolete at an early date.

The Australian broadcast receiver manufacturer has shown versatility and makes equipment of a high technical standard, and there will be no difficulty in these manufacturers meeting Australia's requirements for television receivers.

In conclusion, I am of the opinion that television will succeed in Australia, but will not replace aural broadcasting.

(Continued from page 57)

### 'Phone Philosophy

"Veekaylander." Herewith some handy advice for phone men, especially those with ideas that all meters should dither around as in Class B systems: . . . when speaking into the mike, the meter in a modulated Class C stage should remain steady. The downward wobble that occurs frequently is caused by non-linearity of the Class C stage; on positive peaks the current doesn't rise as much as it falls on negative peaks. Remember that a phone transmitter isn't a telegraphy-adjusted transmitter with a modulator hitched on. If excitation is sufficient, bias obtained from leak and fixed supply, and the modulator of suitable power, then the downward kick is due to impedance of the final tank circuit being too low to permit linearity of the Class C stage. Cures are:—1. More inductance and less capacity in final tank circuit. 2. Higher Q coil—more suitable conductor or coil shape. Reduce antenna coupling until the anode meter can just be made to kick upward on peaks. Finally, alter the matching of the modulation transformer to suit the load offered by the Class C stage under the different conditions. The only kick obtainable should be upwards on peak modulation.



Two Old Timers in Australian amateur radio survey the world from the roof-top at VK2CM. Charles Maclurcan (VK2CM) on the left, and Joe Reed, (VK2JR) aloft with the new rotary beam at Charles' station. This array has been dedicated to the memory of the late Howard Love (VK3KU).

"Querex." Welcome to active amateur participation for Rev. Len Winton, of Wyalong, N.S.W. Len has secured his Amateur Operator's Certificate of Proficiency, and is heard on 7 Mc/s and other bands. He has been a keen SWL for many long years.

\* \* \*

An old-timer returned to activity after a quiet period of years is Eric Bierre, now VK2VE. Eric is Australia's No. 1 movie cameraman and has a celluloid record to his credit with Fox Movietone amounting to two decades. Last time I QSO'd Eric he was somewhere shooting scenery on New Zealand's Franz Joseph glacier, and that was in the early 30's.

\* \* \*

Ross Treharne, elder son of our famous "Pop" (VK2BM), is a figure prominent in scientific circles. In spite of his arduous (and hush hush) duties in that direction, Ross is a keen amateur, and now has become VK5IQ instead of VK2IQ as hitherto. His new address is at Plympton, S.A. When Ross can get a little breathing spell from what keeps him very busy, he should be good for a lecture or two at the VK5 Division of the Wireless Institute.

(Continued on page 61)

# "The YORK"

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(Continued from page 58)

An interesting catalogue to hand is that published by the well-known British Eddystone Co. for the current year. It is replete with fascinating high-grade items to delight the heart of the discerning Australian "Ham" and SWL. An accessory of particular interest for the transmitting man is the No. 678 Modulation Level indicator which reads percentage modulation direct. It may be used also as a field strength meter and a neutralising indicator. The receiver enthusiast is well catered for in the No. 669 Signal Strength meter, which, like the level indicator, is arranged in an attractively finished diecast housing. The S meter is calibrated in S units and dB's above Nine. Leads terminate in an octal plug for connection to the receiver. VHF men will be attracted by the natty beam aerial kits for 145 Mc and 50-100 Mc respectively under Catalogue numbers of 717 and 683. No. 709 is a very well-engineered and useful 145 Mc tuning assembly which can be applied to receivers, transmitters, wavemeters, oscillators etc.

A valuable adjunct to the modern "shack" is a crystal calibrator, and here the Eddystone people come to light with just "what the doctor ordered" in this category. It is Cat.

No. 690, and comprises a small-sized unit containing GE vacuum-mounted crystals at 100 and 1000 Kc/s respectively. Useable harmonics are provided clear down to 60 Mc/s and the importance of such a unit for band-spotting needs no emphasis. The catalogue contains many more items covering most of the famous Eddystone range of components, and may be obtained from any of the Australian distributors. Melbourne readers may obtain the catalogue direct from R. H. Cunningham & Co., 420 William Street, and N.S.W. readers may apply to the factory representatives, Messrs. J. B. Chandler Pty. Ltd. (John Martin), George Brown Pty. Ltd., or Price's Radio, who have recently been appointed distributors. In other States application should be made to the authorised distributors.

### FASHIONS DE-LUXE FOR THE FAIR SEX

The radio enthusiast revels in the enjoyment of the hobby, but he needs must give attention to the clothing requirements of the ladies of the household. Good quality clothing is something of a hobby for the discerning lady, and it becomes particularly attractive when the name

of the make is "Lyndale." When you introduce your wife, sister, or daughter to "Lyndale" coats and suitings the high quality of these long-established English productions is at once in evidence. They come from the English House of Green, Hearn and Co. Ltd., and after very successful exhibition in Canada at the Toronto Fair, they are now offered in Australia at prices to suit the pocket of the smartly-dressed woman. Mr. S. Lenzer, Australian representative, has made arrangements for ample supply for the current season and has stocks on hand for immediate distribution. "Lyndale" garments include exciting English worsteds, boucles, hopsacks, camel hair, etc., and Mr. Lenzer is able to satisfy the immediate needs of prospective clients. Supplies for the Southern State are handled by Mr. David Alton, Commerce House, Melbourne, and for Queensland, stocks are available from Mr. John Grasso, 260 Queen St., Brisbane. Associated Houses include the London Pleaters Pty. Ltd., R. L. Page, makers of the well-known "Patone" brand of blouses, Melbourne, and several other well-known blouse manufacturers. Mr. Lenzer is available at 154 Castle-reagh St., Sydney, second floor.

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(Continued from page 59)

### VHF Doings

Westralian amateurs have been making hay whilst the sun shines on 2 metres (144 Mc), and recently VK6KW toted mobile gear of the SCR522 variety to the summit of Mount William. A distance record of 73 miles was set up for the Western State, the communication being between VK6RU, VK6GB and VK6KW.

\* \* \*

### Six Metre W.A.S. Records

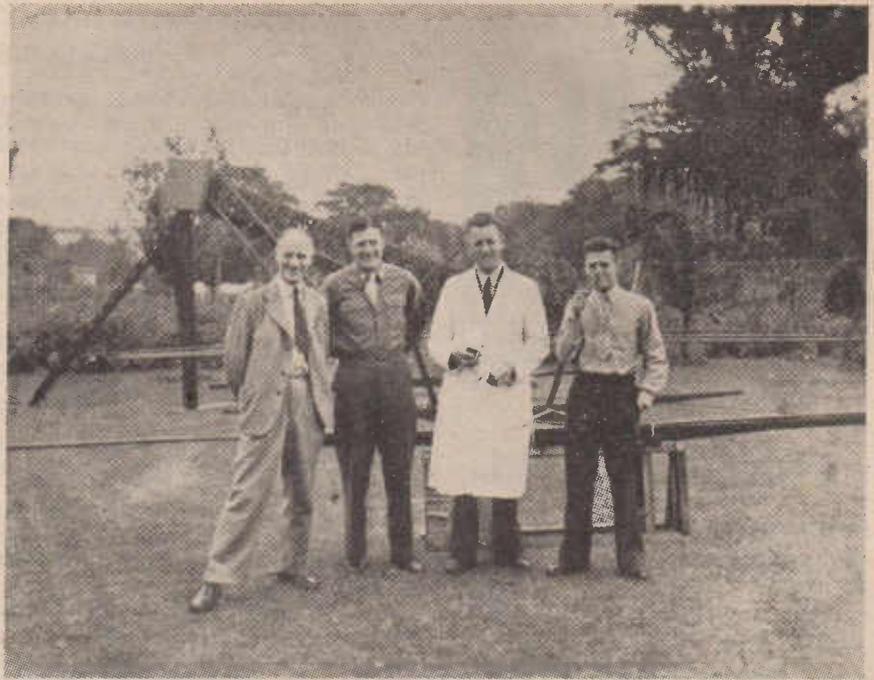
It is reported that VK6HM at Boulder, Westralia, was the first lad to break the 50 Mc "silence curtain" between W.A. and other States by working a fistful of South Aussies. One or two of the VK5's thus qualify for their WAS (worked all States) on 6 metres. Congratulations from "R. and TV." to all concerned. Just quietly, my friends, there was a modicum of amiable rivalry extant among New South Welshmen as to who would some day take the 6 metre VK2-VK6 trick. The honour went to Jack Hill (VK2ADT), followed by John Peell (VK2WJ) and Stan Skinner (VK2LY). The eventful evening was Dec. 18 last year.

\* \* \*

"Bandscanner." It's a poor show when one hears an amateur phone station emphasising that "under no circumstances will I answer SWL reports." Perhaps Mr. High and Mighty doesn't consider the circumstances of the boy, probably in poor family circumstances, with little or no pocket money. He parts with a valuable 2½d. for an International reply coupon and hopefully makes out his penned report, boyishly written and admittedly unattractive in appearance. Mr. H. and M. ignores him . . . pockets the 2½d. . . . and the boy loses a big chunk of faith in mankind, especially the vociferous microphone-nurtured kind. It isn't good for amateur radio in general to spurn the Short-wave Listener. Were YOU ever an SWL yourself, Mr. Amateur? The writer (an amateur of long standing) has in his possession SWL reports of the 1920's (and 30's) from supplicants for a QSL card—who to-day are DX "Big Shots" . . . . and they were all answered.



The BCL calls on the "Ham". Wouldn't be BCI would it? Yes! Wooden it?



A group at a beam-erecting bee at G6XR, near Coventry, England. Harry Cook, owner-operator of this well-known station is wearing the white dust coat. On his left is Ken Hatton, VK2GD, airways radio officer who often visits G6XR to have a word back home with Dad, Harry Hatton, VK2AGU at Abbotsford, N.S.W. On G6XR's right is a visiting American amateur, of unstated identity. On his right is another British amateur.

VK2AGW, Bert Hay, erstwhile GW3BHG, is obtaining 14 Mc/s phone results with G-landers to arouse the envy of many with much more comprehensive beam arrays. The antenna system in use at the new location (Lindfield, N.S.W.) is a modified G8PO array, positioned for twin-directive firing at the Old Country over Long and Short routes. His reports are of the S9 plus variety, with comment to the effect that the signal is outstanding from this part of the earth. Location undoubtedly contributes materially to the results, but the array is something that is well worth erection. It comprises Y-match fed dipoles close-spaced for end-firing with 300 ohm feedlines.

\* \* \*

'Tis reported in the friendly little club magazine run by "Radio Society of Western Australia" that the boys there recently held a very successful annual get-together. President Ron Hugo, VK6KW, officiated, and guests included Sir Norbert Keenan, K.C., who is Patron, and representatives from the business houses of Carlyle and Co. and Atkins (W.A.) Ltd. The events of the evening were enhanced by 16 mm movies and a wire recorder. Prospective radio transmitting amateurs in the Perth area can get in touch with this Society through the Secretary, W. Sproge, 11 Gloster St., Šubiaco.

One of the most active Banana-landers on 20 metre phone appears to be VK4FH; otherwise answering to the name of John Bull . . . . of Mackay. Yes, John is English-born, to boot, so the name is more than appropriate! Do you look anything like that grand old John Bull type, Winston OM? The XYL at VK4FH, also of G origin, takes a keen interest in the hobby and can often be heard assisting hubby to yarn with the boys.

\* \* \*

A "new" Old Time hand heard on the 20 metre phone air around Sydney these evenings is Bruce O'Brien, of Coogee, who is signing VK2AZH. Bruce was pre-war VK2OH, and has now returned to the hobby after years of absence, decreed mainly by service in the RAAF.

\* \* \*

One of the best European phone stations heard on 20 metre phone in Eastern Australia in the afternoons is CN8BA in Rabat, French Morocco, usually to be found at the HF end of the band. He packs a punch, and his receiver is no mere ornament, either, for he seldom misses a call. CN8BA is Pierre Ramond.

**N.S.W. AMATEUR ADVISORY COMMITTEE.**

**MEMBERS**

- BARLOW, E. VK2GQ  
61 Spit Rd., Mosman. Private: XM 4860,  
Business: MW 2829.
- PATTERSON, R. W. VK2AJW  
44 Addison Ave., Ashfield. JA 8076.
- DUFF, D. H. VK2EO  
21 Dural St., Hornsby. FA 8061.
- TAYLOR, L. H. VK2CL  
45 Hardy St., Ashfield. BX 3281.
- DALE, R. VK2ND  
15 Anthony St., Croydon. BY 4318.
- QUILTY, H. E. VK2AHQ  
130 Hastings Pde., North Bondi. FY 1856.

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- RAYNER, L. H. VK2DO  
42 Pettit St., Yass, 2S.
- ARNOLD, E. N. VK2OJ  
673 Forrest Hill Ave., Albury, 3S.
- BAKER, E. J. VK2FP  
13 Skelton St., Newcastle, 2N.

By courtesy P.M.G.'s Dept. Lists from other States will be given if available.

A radio mechanic is a person who passes as an exacting expert on the basis of being able to turn out with prolific fortitude, infinite strings of incomprehensible formulae calculated with micromatic precision from vague assumptions which are based on debatable figures taken from inconclusive experiments carried out with instruments of problematical accuracy by persons of doubtful reliability and questionable mentality for the avowed purpose of confounding a hopelessly chimerical group of esoteric fanatics, referred to altogether too frequently as Radio Mechanics.

**EXTRACT FROM RADIO I.T.C. (ATLANTIC CITY) AMATEUR STATIONS**

1. Radiocommunications between amateur stations of different countries shall be forbidden if the administration of one of the countries concerned has notified that it objects to such radiocommunications.
2. (a) When transmissions between amateur stations of different countries are permitted they must be made in plain language and must be limited to messages of a technical nature relating to tests and to remarks of a personal character for which, by reason of their unimportance, recourse to the public telecommunications service is not justified. It is absolutely forbidden for amateur stations to be used for transmitting international communications on behalf of third parties.  
(b) The preceding provisions may be modified by special arrangements between the countries concerned.
3. (a) Any person operating the apparatus in an amateur station must have proved that he is able to transmit, and to receive by ear, texts in Morse code signals. Administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 1,000 (one thousand) Mc/s.  
(b) Administrations shall take such measures as they judge necessary to verify the qualifications, from a technical point of view, of any person operating the apparatus of an amateur station.
4. The maximum power of amateur stations shall be fixed by the administrations concerned, having regard to the technical qualifications of the operators and to the conditions under which these stations must work.
5. (a) All the general rules of the Convention and of the present Regulations shall apply to amateur stations. In particular, the transmitting frequency must be as constant and as free from harmonics as the state of technical development for stations of this nature permits.  
(b) During the course of their transmissions amateur stations must transmit their call sign at short intervals.

**APPENDIX 4**

**Table of Tolerances for the Intensity of Harmonics and Parasitic Emissions**

Frequency Band	Tolerances
10 to 30,000 kC/s	The power 2) of a harmonic or a parasitic emission must be at least 40 db below the power of the fundamental, and in no case shall it be above 200 milliwatts. 3)

- (1) For mobile stations, endeavour will be made, as far as practicable, to reach the figures specified.
- (2) The power here referred to is the power supplied to the antenna on the frequency of the harmonic or of the parasitic emission.
- (3) The latter limiting figure refers to the mean power.



Left:—

The neat station G2FMU, of Maurice Jackson, at 84 Abbey St., Accrington, Lancs., England. Many VK's will remember Maurice as a Radar CPO in the Royal Navy during war-time.

"Tuenno." The way of the intending "ham" isn't quite the pathway strewn with roses it previously was for the P.M.G. examinee. Not that the exam has been anything other than positive and somewhat exacting, but now it take on an ultra-modern complexion. Subjects for future exams for VK licences include Frequency, Phase, and Pulse Modulation. My advice to the chap seriously-minded enough to tackle it properly is to obtain from the Radio Society of Great Britain that body's handy little booklet on "Microwave Technique." It costs 2/- stg. and the address is New Ruskin House, Little Russell Street, London, WC1.

(Continued from page 49)

Australasia that editors make quite a feature of correspondence between and with readers. They have every reason for so doing, for the volume of letters is a form of Gallup poll on popularity or otherwise of reading material. Lack of correspondence means disinterested or apathetic readers, and you may bet your boots that if there is no feature for correspondence, it is adverse or uninteresting enough to warrant pigeon-holing instead of floodlighting. One objective of "Australian RADIO & TELEVISION News" is to present interesting material within the scope of the subjects covered in an attractive and refreshing manner. We are of the opinion that a lifelong experience of radio journalism and engineering qualifies us reasonably well enough to embark upon such a policy with confidence, that there are lots of people under the Southern Cross who will appreciate and like what we labour to give them. If you don't like our style, then for goodness' sake write in and say so! If your letter merits it, and is not over-offensive then we shall be pleased to pop it under the floodlight for others to digest. If you think perhaps that we are pedantic, bigoted, conceited, or something like that . . . your say-so will be equally welcome along with those who may think otherwise. The point is, that this section is yours, to do within reason what you will, short of libel, obscenity and so on. Your views on programme material, literature, music, talks, etc., can be of great interest to fellow readers, and the "Floodlight" is the place to air your opinions. What, for instance, do YOU think of a future world with the advantage of being able to SEE as well as hear by radio? Television isn't here yet by a long chalk, but there is plenty to talk about in that direction. Don't let anybody kid you that Australia WON'T have TV. either . . . she MUST be progressive in this rapidly changing world. We have lots of things up our sleeve to talk about and we don't mean to keep them from you. Above all, we know that you, as a reader, must often think profoundly about something or other and would like to discuss it. Very well . . . we've started the ball a-rolling . . . now it's up to you. Obey that impulse and get cracking.

Yours sincerely,  
The Editor.

P.S.—We were about to close up this page for the issue when mail came to hand. Firstly, there is a letter from a transmitting radio amateur, and although the subject matter will not be of particular interest to people other than members of the amateur radio fraternity, the letter appears herewith:—

### Correspondence

Old-timer Mart Chaffer, now VK3MH, and an engineer on the staff of broadcaster 3BA, Ballarat, Vic., writes a few words of general interest. Says Mart: "Having a few minutes to spare, I thought you might be interested in the number of QSO's I have had since first going on the air as an active transmitter in 1921/22. (Mart was the old original, A3XF, then.—Ed.) The other day, in the month of October, 1948, I had my 120,000th QSO, with a Tasmanian. How's that? Don't, for goodness sake, ask me how long it took to count them, either! That is definitely the total, anyway. I have been wondering if any of the old gang have kept a similar record of their QSO's, and it would be interesting to have comments. Also, some of the new amateurs who seem always to be on the air might be interested, but I'll bet they have never had a QSO that lasted a week or more. That was the order of things on the old 200 metre band. Remember 2RJ, Reg Fagan, of Mandurama, when he first got a 'pianola'? Somewhere around 1924 we QSO'd each night for eight nights between 8 and 10.30 p.m. until he eventually found the right position for the carbon microphone. I wonder if the phone gang would go to such trouble in these times? The phone/CW war still rages, I notice, but it is most amusing to listen-in when conditions are "off" or static fierce. The phone boys give it away, but the CW gang still battles through. Don't think I am trying to start something, but 'them's my sentiments'."



The man who omitted to file his copies of Australian RADIO and TELEVISION News.

# BUK'S

## head means business

Each of BUK'S 5 self-sharpening blades has 60 cutting edges, so with every complete movement of the vibrator, 300 separate cutters get busy on your beard. BUK'S head gently presses down your skin, which is shielded by a wafer-thin metal guard from the cutters, ensuring a close, clean shave without any pulling or 'burning.'

Electric dry shaving is a wonderful saving of time and trouble, and we believe a trial with BUK will convince you for life.

The BUK is fully guaranteed.



## BUK

### ELECTRIC DRY SHAVER

BREVILLE RADIO PTY. LTD.  
67 Missenden Rd., Camperdown

Name.....

Address.....

R & TV News

## In Tune with the Trade

(Continued from page 60)

### ECLIPSE MAKES FORD CAR RADIO

Eclipse Radio Pty. Ltd. has been given the contract for the supply and installation of car radios in the new Ford cars. Known as the Ford Eclipse, the radio, designed by Eclipse, has 6 valves and a special elliptical speaker that has been built especially for the panel of the Ford car.

The list price is £39/19/6, plus tax and cost of fitting. The set has a remarkably good tone, irrespective of car speed, and offers exceptionally long range. It has won Australia wide approval from Ford distributors, and a letter received in Melbourne by the Eclipse Sales Manager, Mr. Jim Bryce, from Mr. Frank Allom, the Queensland Manager of the Ford Company, is typical of a number that have reached the offices of Eclipse.

Mr. Allom writes: "Recently I travelled from Brisbane to Dalby with the aerial down and was able to get Brisbane stations with full force at Dalby. My trip then extended west to Mitchell, and there, with the aerial up, I could get 4QG and 4GR very clearly. In fact, very powerfully. Then proceeding down to Bollon due south of Mitchell, near the N.S.W. border, and to Dirrambindi, no difficulty was experienced whatsoever in getting 'on full bore' 4QG and 2FC Sydney.

"The various garage men who heard the unit spoke very highly of its efficiency, and strange to relate, in nearly every case, where the car was parked in a steel building, they all stated that I had no hope of getting any reception, and you can imagine their surprise when in it came."

### Round the Turntable

(Continued from page 50)

Until the introduction of the waltz to the ballrooms of Europe early in the 1800's there was no division between so-called "classical" and "popular" music. But the waltz became the rage and music became divided. Perhaps we shall yet see them united, and it could be that the ever melodic Tchaikowsky is the bridgeway. His universal appeal is evident in this month's list. H.M.V. C.3776/7 gives us his "Variations On a Rococo Theme" played by 'cellist Tortelier with orchestra, and the well-known Andre Kostelanetz combines on Columbia DX1373 Tchaikowsky's "Melodie in E Flat Major" and "Waltz of the Flowers" from the well-loved "Nutmacker Suite."

Jussi Bjorling, world-renowned

tenor, brings to H.M.V. disc DA.1836 two rare Giordano operatic arias from "Andre Chenier" and "Fedora." They are "Come Un Bel Di Di Maggio" and "Amor Ti Vieto," and they should be heard by all who are interested in collecting something more than the standard operatic excerpts.

We mustn't overlook a first-class release on Columbia LX.1090 from Ijuba Welitsch, sensational European soprano who, with brilliant support from the Philharmonia Orchestra, sings the recitative "Before My Eyes Beheld Him" and the aria, "Earth Has Lull'd Her Cares To Rest," both from Weber's "Der Freischutz."

The celebrated Toscanini, with the N.B.C. Symphony Orchestra, turns to this same opera on H.M.V. DB.6331 and lends his unsurpassed musicianship to the "Der Freischutz Overture," which is one of the most popular overtures ever written and a worthy addition to any musical library.

Igor Stravinsky's colourful "Song of the Nightingale" (H.M.V. DB.6380/2) is brought to vivid life by the Cincinnati Symphony Orchestra under the baton of Eugene Goossens, and Chabrier's "Marche Joyeuse" is one of those little gems one often finds on the last side of a record list.

For the lover of chamber music Columbia has issued Brahms' "Quartet in A Minor." This interesting and melodious composition is played on LX.8575/8 by the Adolf Busch Quartet.

A brilliant virtuoso performance on Columbia LX.8624/7 rounds off our record ramble this month. This is by the famous Roumanian pianist, Dinu Lipatti, and the work is Schumann's "Concerto in A Minor." Lipatti and the Philharmonia Orchestra use that great art which conceals art under the conductorship of the much discussed Herbert Von Karajan.

### A.B.C. USES MAGNETIC RECORDING

A recent A.B.C. feature session, "Caramba," which introduced music with a South American flavour, attracted the attention not only of listeners who don't know a kilocycle from a decibel, but also that of sound engineers who can't tell a rumba from a tango.

The reason for this widespread interest has been that "Caramba" virtually represented the introduction of tape recording in this country. The normal method of recording a programme is, of course, the familiar electrically recorded wax disc, but magnetic recording utilises steel tape, wire or plastic tape impregnated with iron oxide.

"Caramba" features the Lester Sisters, a famous vocal trio, and Leo White and his Orchestra. It has been recorded on Emitape, a new development of Electric and Musical Industries Limited, England. The sensitised tape is only two-thousandths of an inch thick and one-quarter of an inch wide. A spool of Emitape is placed in an E.M.I. Tape Recorder unit, and when set in motion passes over a magnetic recording head which "prints" the sound track. After recording, the tape may be played back immediately since no processing is required. An interesting point is that, if so desired, a used tape may be inserted in the instrument and an entirely new programme recorded upon it, because, while recording, delicate mechanism automatically erases the previous sounds. Push-button control makes the Recorder easy to operate as a radio set. Each spool of Emitape plays for about twenty-one minutes, and one reel may be synchronised to another without even a split second's interruption.

When next you hear "Caramba"—and subsequent Emitape recordings—you'll have an idea of how it's done, and how broadcast arrangers are constantly taking advantage of all the newest and best in modern techniques.

### NEW STROMBERG-CARLSON MODELS

Congratulations to Stromberg-Carlson on their stand at the Royal Easter Show. The giant working model of the Supercoker above the display was a wonderful attention getter, and the audition room where the public could hear radios and combinations in home conditions filled a much needed want, particularly as the walls of the room drowned most of the clamour from outside.

Premiered were new releases for 1949. Most attractive of these was the De Luxe Radiogram. Styled along the lines of the most expensive models of this type in America, it is designed for those who want absolutely the best money can buy.

The 5A79 Radiogram should prove a firm favourite with the buying public through the coming year. Ultra modern in appearance it has the fine performance and rich tone of a much more expensive model and is confidently expected to be a sales leader in its class.

The 5B48 5-valve battery radio is another blue ribbon winner. Cabinet is a polished walnut veneer and choice of two battery types are available. Pick-up connection provided. 8" speaker.

The Stromberg-Carlson Automatic Record Changer is manufactured under licence from the world's largest manufacturers of automatic record changers and gives excellent simple, silent, trouble-free service, and may be easily attached to any radio, converting it into a radiogram.

# READER'S EXCHANGE AND MART

## Classified Small Trade Advertisements.

5d. per word. Minimum charge 12/6d. No series discounts. Charges payable with order.

This section is available to members of the radio (and other) industry for the insertion of advertisements not normally comprehensive enough for display in the advertising pages of this journal. Only bona fide trade advertisements accepted.

## Classified Small Private Advertisements.

Charge 2½d. per word. Single numerals, groups, and combinations of figures and letters count as one word. Replies to advertisements can be addressed to a Box number c/o. this office. In this case allow four words for Box address and remit 6d. extra to cover cost of handling and postage of replies. Please use block letters only.

### FOR SALE

**BENDIX BC221** Frequency Meters complete with spare set valves and Calibration Book containing operating instructions but less Carrying Case, as new condition and to arrive from England shortly, £25 F.O.R. Melbourne. Brand new and tested in England 832A Valves also to arrive, £3 each for Melbourne. Sockets for 832 at 14/6 each also arriving. Order early to ensure delivery. Terms: Half deposit — Balance on arrival. R. H. Cunningham & Company, 420 William Street, Melbourne.

### CLASSIFIED SMALL PRIVATE ADVERTISEMENTS.

(Continued From Column Three)

**PRACTICAL RADIO COMMUNICATION**—3rd Edition, 35/-, Theory and Application Electron Tubes, 20/- new copies, 37 Grandview Street, Pymble, JX 1630.

**FOR SALE**—Complete Transmitter and Receiver FS6 adjusted for 7 MC Band, with new Vesta storage battery. All in excellent order, Price £20 or would exchange for Bendix frequency meter. Inspect Sunday mornings or ring BU 1078 or XA 1345. VK2CM, C. D. MacLurcan, 7 Shell Cove Road, Kurraba Point.

**WILL sell**, H.R.O. Receiver complete. What offers? N. MacNaughton, VK2ZH, Box M, "R & TV News".

**COMPLETE** set unbound copies "Twenty Years After"; illustrated magazine describing battlefields of 1914-18 war. Makes 3 volumes of 22 copies. Accept 30/-. Box AR5, c/o. "R & TV News".

**HIGH-GRADE** German reflex mirror Camera, F 4.5 lens. Takes 8 exposures on 120 film, speeds 25, 50, 100, bulb and time. Not a "viewfinder" camera, but a genuine reflex. Will sell with portrait attachments, yellow filter, and tripod for £28. Apply Box AR6, c/o. "R & TV News".

**SACRIFICE** Hickok Signal Generator, covering 90 Kc to 40 Mc in 8 switched bands. Includes Weston-Jewell output Meter. 240 volt AC operation. Complete in carrying case ready for use. Sale simply because unit superfluous to needs. A gift at £18. Apply Box K, "R & TV News". Phone FW 2443.

### MORE CHIT-CHAT.

Talking of Dural and other kinds of masts prompts a thought. American magazines carry advts. depicting a most handy type of ex-service sectional lightweight mast, used in the American Forces. These are made in tubular section of bonded and plastic-impregnated plywood, and they are in lengths up to 75 feet and as light as the virtual feather. Nearest thing we can think of in Australian Sigs. of the AMF were "Poles Telegraph," but we haven't seen a sign of one of those in the welter of Disposals gear of the last three years. Anyway, the American amateur is indeed fortunate to have access to those plywood types of masts.

\* \* \*

This business about the epoch-making "Cubical Quad" Beam which a Chicagoan W Nine recently brought to light: We had the gen from Murray Throp, ZL4HS, on one of his periodical visits as R/O on the S.S. "Karetu." We claim to be the first VK to actually use the system, too; the date on which it graced the sky-line at VK2NO being October 16, 1948. It did a yeoman job for a few days, and then the winds came, and the Quad "went." But another, more robust and solid-looking, has been firing up since then, and it is certainly a fine performer. W's are talking of forward gain of 72 dB's for the system, but brothers, that's an awful lot of decibels.

\* \* \*

Welcome back to Australia to Ken McTaggart, VK3NW prior to his sojourn in Britain for 18 months as G3CUA. Ken has been in the Old Dart on official business connected with nuclear physics, and is a keen VHF man. It was shortly after he left for G-land that the 6 metre band in this part of the world opened up for Interstate and VK-ZL DX, so he missed the fun. Ken will be a regular contributor to the Amateur Section of "R. & TV."

\* \* \*

We extend a welcome back to active participation in Amateur Radio to Len Sawford, now appearing in the latest PMG list as VK5FS, at Glen Osmond, S.A. His pre-war call-sign was well-known through the strictly CW DX days as VK5LF.

**REPLACEMENT** Valves for 2 volt battery receivers. Advertiser has the following hard-to-get types in good order:—1 RCA 1A6, 6 Sylvania 15, 2 Kenrad 1C6, 1 Mullard PM2BA, 1 RCA 1M5G, 2 Mullard PM22A, 1 Osram QP21, 1 Mullard PM22, 1 RCA 32, 1 Cossor 220B, 1 Mullard PM2DX, 1 Kenrad 1A4, 2 RCA 199, 1 Osram B21, 1 Mullard PM1DG, 1 RCA 1J6G, 1 Marconi DER, 2 Philips KF3 (P base), 1 Osram 210HF, 1 Osram VP21, 1 AWW 19, 1 Kenrad 1B5, 2 Mullard PM202. Price 5/- each or the lot to clear at £7. Box AR1, c/o. "Australian RADIO and TELEVISION News".

**EXCHANGE** or sell, 12 inch GZ Amphon, 8 inch Magnavox elec-mag, 12 inch AWA Permag, 8 inch Magnavox Permag speakers. Also B and C Eliminator. What offers? Phone JA 1257, Sydney, after 6 p.m.

**FOR SALE**—High gain tuned grid-anode Preselector, covering 14 and 21 Mc bands. Uses EF50. Couples in to any receiver covering those amateur bands. Socket connector for external power supply at 6 volts heater and up to 250 volts anode. Unit with valve £3. Cash with order, postage extra. Write Box AR3, c/o. "R & TV News".

**26 VOLT DC** aerial switching relay from Collins ARP 13 transmitter. Designed with silver ball rocker-bars for spaced feedline or Marconi aerial change-over. Insulation high-grade Mycalex. Easily adapted for 12 volt operation by connecting magnet coils in parallel. Price £2, plus postage. Apply "R & TV News", Box 5177, G.P.O., Sydney.

**HIGH Grade** American Regal carbon microphone in nickel-plated case. Resistance 100 ohms. Ideal for cathode-coupling to grounded-grid pre-amplifier. A give-away at £1. Box AR4, c/o. "R & TV News".

**SELL** or suitable exchange, 1—813 and socket, for power transformer, approx. 400 volt 250-300 Ma. Also want 807's in exchange for 1625's. Write VK2GC, Mosman, Sydney, or ring XM 3910.

**HAVE** the following for sale:—One 813 and 828 valves, RCA, new. One Receiver, wired minus RF end, comprises AMR300 dial, two stages 455 KC I.F., xtal filter, noise limiter, BFO, S Meter, and AF end, working from I.F. end back. Offers to B. H. Anderson, VK2AND, 21 Hunter's Rd., Mosman, N.S.W.

**VALVES** for old type receivers for sale: 3—A409, 1—A415, 1—B406, 2—A609, 3—224A, 1—227, 2—232, 1—238 and 1—245, 5/- each or £2/10/- to clear the lot. Box AR7, c/o. "R & TV News".

(Continued on Column One)

## AMATEUR NOTES FROM VICTORIA

By Our VK3 Correspondent

**VK3TW**, Hamilton. Recently enjoyed a three weeks' holiday at Mildura, getting away for a spell from the BC game (he is early morning announcer for 3HA), as well as Hamilton's wet weather. Still runs a T40 in the final, modulated by 807's.

**VK3RE**, Hamilton. For anyone who wants to see what can be done to a BC375, ask Bill, he completely pulled out the innards and rebuilt a 4 stage job into the unit; the result being a beautifully compact RF assembly.

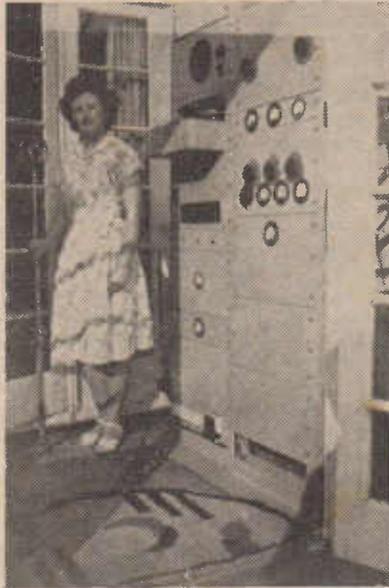
Modulation is separate, and the HT unit uses a Selenium rectifier. Is now settled in his new home-plus-radio-shack-cum-workshop, including Windlite Tower up and ready for arrays. Is working 80, 40 and 20.

**VK3BI**, Ballarat. Apart from broadcasting, stage shows and other activities, plus bush fire schedules is active on 80, 40 and 20. We wonder what Bert uses as a modr.? Guess the Modr. dwarfs the final, not in modulation, but in physical size.

**VK3IV**, Ballarat. At present in throes of moving to new address, so guess maybe some time before we hear Keith. He is heard from, though, on a bush-fire frequency in the network. Has a nice portable

AC unit mounted on front of his car. Is it going to be HOT this summer, Keith?

**VK3MH**, Ballarat. Complete rebuild from TX to RX whilst awaiting his new home. Still heard on 20 and 40 CW. Thinking about a suppressor modulator for the final!



Ellen, the XYL at G6XR.

**VK3II**, Hamilton. In hospital at present, but not deterred from getting on the air with a portable, YES . . . from the hospital. What time is lights OUT, Leigh? Good wishes for a speedy recovery OM.

**VK3KR**, Benalla. Been on well-earned holidays. Definitely no portable. Why, Ken? What about those 3-way QSO's with VKs3DW and 3MH? The junior Op has been very quiet around the mike lately!

**VK3AKR**, Westmere. Only recently acquired a ticket and putting out a nice phone signal on "40." What do you know about 6V6G's, Kevin? Why do the screens run hot, I wonder?

**VK3DW**, Shepparton. Back again after a successful holiday tour. The voice appears to be strong and healthy, evidently the result of driving and no talking. How many switches to pull for a "cross-over" these days?

**VK3ALM**, Ballarat. Lloyd has deserted the 20 metre band . . . conditions? Even the nice-looking and working receivers are of no avail in poor conditions.

**VK3UJ**, Melbourne. Nice going, getting your phone on 40 to that VE. Who says 40 is NG for phone or CW these days with all the VK's full blast on phone?

A report from U.S.A. says:—"During the first nine months of 1948 the wholesale value of Television receivers sold in America amounted to £41,875,000, which amounts to 30 per cent. of the total of £105,468,750 worth of radio receivers sold in the period."

By courtesy of Fred Phillips, VK2ZQ, the following gem from the pen of ZS5HX is to hand.

"To beam or not to beam,  
That is the question.  
Whether it be better to try a new-born Quad,  
With shorted stubs dangling in the sod,  
Or flat-topped jobs, with T-Match all complete,  
With all dimensions changed from wavelengths to feet.  
Aye, there's the rub.  
Whether to discard the good delight of plumbers,  
That's served us well these happy post-war summers,  
For something that we wot not of.  
Whose crucifix of oregon may yet transfix  
Our puny hopes of working rare DX,  
And wake; to find in our more saner spells,  
We've lost an awful lot of useful decibels."

—with apologies to the Immortal Bard and Sir Laurence Olivier!

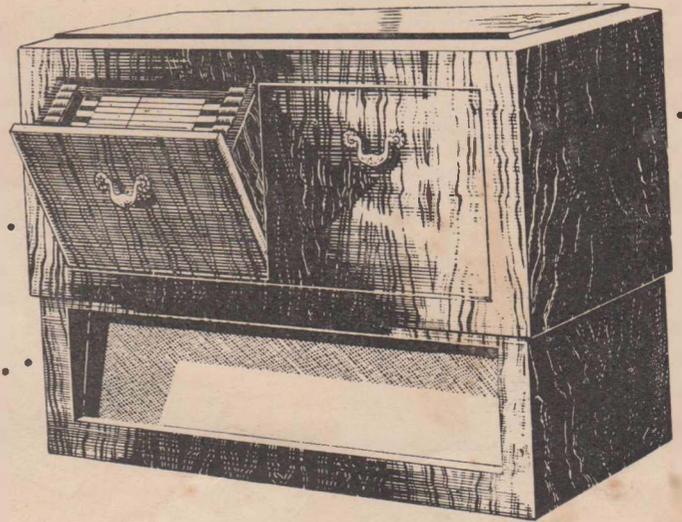


The smiling operator of his station at Mt. Eden, Auckland, is popular Doug Reid, ZL10F. Doug is a keen 28 Mc/s DX phone man who is able to visit much of the DX he works. He is an Airways Radio Officer and is a frequent visitor to Australian amateur stations. As this issue of "R & TV" went to press, Doug had flown to G-Land in a "Connie" for a few months special liaison work.

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Only the Peter Pan Radiogram gives you Isotonic Performance. This magnificent radiogramophone, a five-valve, dual-wave receiver with world-range, brings you tone of a richness and clarity never heard before; thanks to Isotonic Performance. Isotonic Performance means perfect balanced tone at all times . . . under all conditions. It means greater listening pleasure in every way. Housed in a gleaming modern cabinet of rich hand-polished wood, the Peter Pan Radiogram adds grace, beauty and dignity to your home. Have your local Peter Pan dealer demonstrate this wonderful instrument. You'll love it's smooth, flowing lines; be thrilled by its warm, "living" tone. Take your choice of any one of three fine woods . . . Walnut, Mahogany or White Sycamore. Ask for the Peter Pan Radiogram — the *only* radiogramophone with Isotonic Performance.



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**1 AEGIS 2-STAGE D/W COIL ASSEMBLY** featuring Permeability iron-cored B/C and SW coils.

**2 AEGIS BROADCAST COILS** cover the full range of standard types, plus special windings as required.

**3 AEGIS INTERMEDIATES** — range of 26 types including the new 10.7 megs. for Frequency Modulation.

**4 AEGIS TUNING AND INSTRUMENT KNOBS** all sizes and types including Vernier drive.

Capital "A" is appropriate for Aegis components—for their quality is second to none! Here are some typical examples from the comprehensive Aegis range, each one designed and made to exacting standards from first-grade materials.

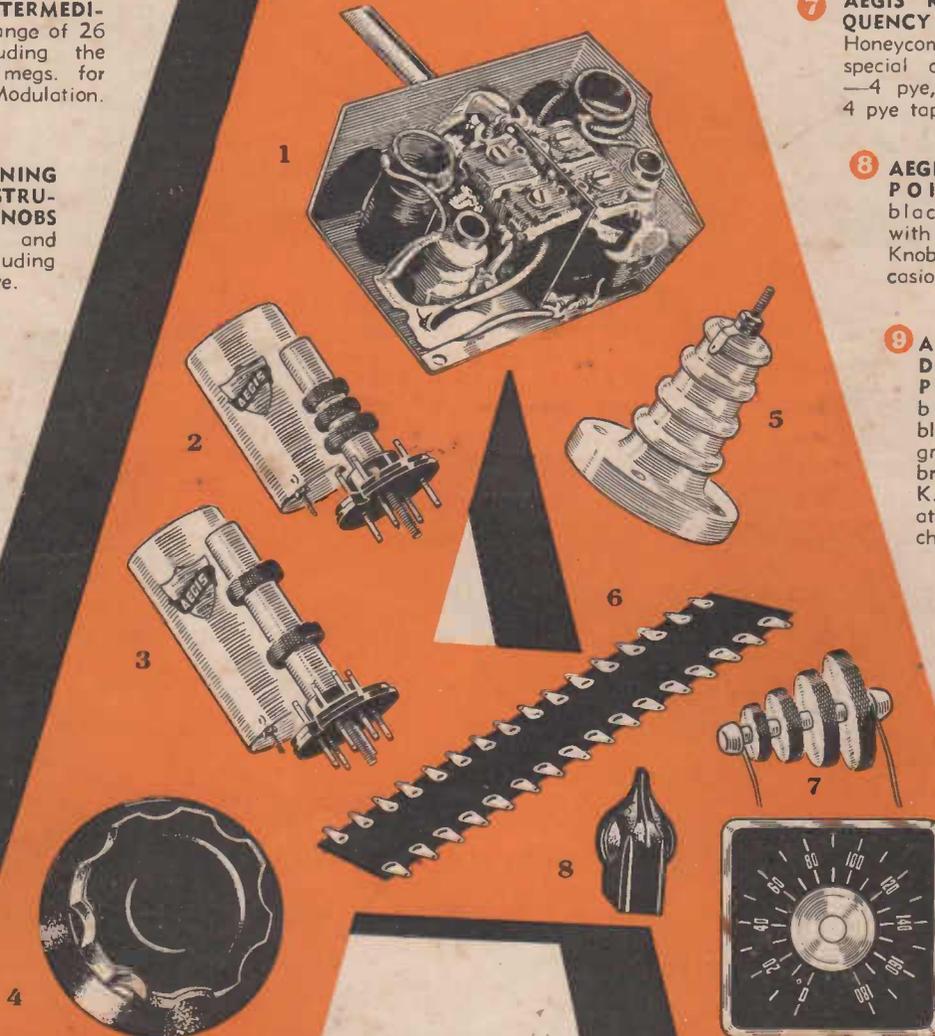
**5 AEGIS CERAMIC INSULATORS.** Full range of stand-off and feed-through types for all needs.

**6 AEGIS RESISTOR STRIPS** 48 lug, 24 lug and 6 lug (with upright mounting lugs).

**7 AEGIS RADIO FREQUENCY CHOKES.** Honeycomb wound on special ceramic rods —4 pye, 1 pye and 4 pye tapered.

**8 AEGIS TUNING POINTER** in black bakelite with metal insert. Knobs for all occasions.

**9 AEGIS INDICATOR PLATE** — bright on black background, calibrated 0-180 K.C. — many other types to choose from.



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