



# Mullard

## PIONEERS IN ELECTRONICS

The science and practice of electronics doubtless commenced with the first application of the thermionic electron tube — familiarly known as the “valve.” The name of Mullard was closely associated with the early developments of the valve, and Mullard was one of the first in the world to manufacture valves commercially. During the first World War Mullard Valves were used extensively by the Services, particularly the Mullard Silica Transmitting Valves supplied to the Admiralty. Then, as now, Mullard Silica Valves were famous for their long life and high efficiency.

Early radio experimenters remember affectionately their first valve—carefully nursed and wrapped in cotton wool — which in a majority of cases was the famous Mullard “ORA.” Those letters represented “Oscillates, Rectifies, Amplifies” — one valve type for all purposes. To-day the Mullard range of valves includes a highly-developed specialised type for every conceivable application in science, industry, defence, and entertainment.

In the television field, too, Mullard was (and remains) right out in front. The late John L. Baird is recognised as the “father” of practical television, and most of the special tubes and valves he required were developed and made by Mullard. From that beginning Mullard has become England’s leading source of electronic tubes for television and special defence applications.

There is hardly a field of application for electronics with which the name of Mullard is not intimately associated. In all modesty, Mullard can truly claim the title “Pioneers in Electronics.”

IN THE FIELD OF ELECTRONICS — “COMMUNICATE WITH MULLARD”

### Some of the Mullard Electronic Products

#### Electronic Tubes:

Radio Receiving Valves.  
Radio Transmitting Valves.  
Industrial Valves for Heating and Control.  
Hearing Aid Valves.  
Special Television Valves.  
Cathode Ray Oscillograph Tubes.  
Television Picture Tubes.  
Photographic and Sroscopic Flash Tubes.  
Photoelectric Cells.  
Accelerometer Tubes.  
Voltage Stabllising Tubes.  
Voltage Reference Tubes.

#### Electronic Apparatus:

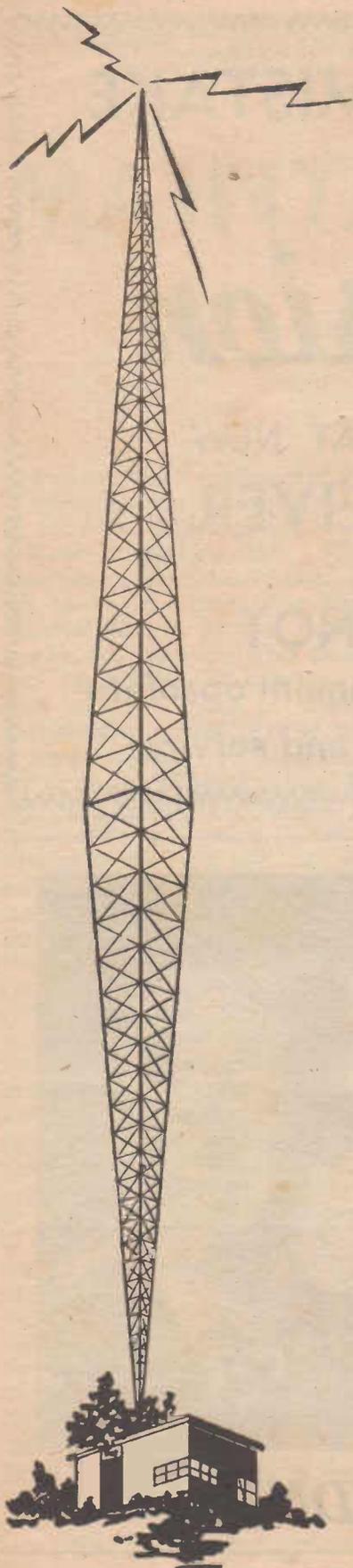
Domestic Radio Receivers.  
Domestic Television Receivers.  
Communication Receivers.  
Fixed and Mobile Radio Transmitters.  
Mobile Transceiver Equipment.  
Intercommunication Equipment.  
Sound Amplifying Systems.  
Industrial Electronic Equipment.  
Cathode Ray Oscilloscopes.  
Moisture Meters.  
Potentiometric Titration Apparatus.  
Measuring and Testing Instruments.  
Scientific Apparatus.

“Where there’s a new electronic device — there’s Mullard”

**MULLARD, AUSTRALIA Pty. Ltd.**

HEAD OFFICE: 33-43 CLARENCE STREET, SYDNEY





# AUSTRALIAN RADIO AND TELEVISION NEWS

THE PROGRESSIVE NATIONAL  
JOURNAL FOR EVERYBODY

EDITED BY DON B. KNOCK

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DON'T MAKE THE MISTAKE

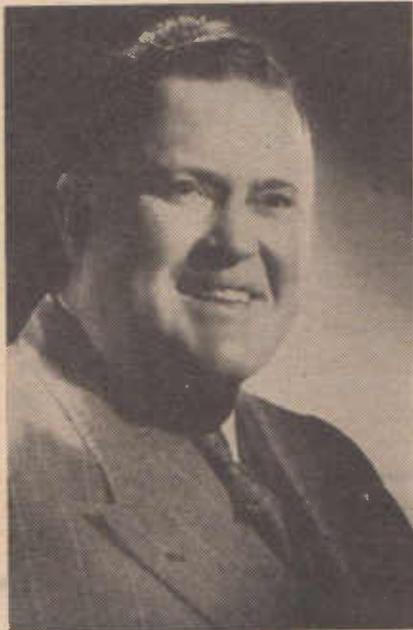
of waiting for



*Television*

BEFORE DECIDING TO BUY THAT NEW  
BROADCAST RECEIVER

TELEVISION WILL NOT  
render your present broadcast entertainment obsolete  
it is essentially a different technique and service.



Left:—

- Popular manager of Sydney's 2SM is B. B. Stapleton. Additional to his station activities, he is also Vice President of the Australian Federation of Broadcasting Stations.

Right:—

- You may think you can tell a good story . . . especially when you arrive home in the early morning. But you should hear Charles Collings of 2SM. Not that Charles specialises in THAT type of yarn . . . but he HAS a way of putting a tale across . . . especially when he has an audience of young folk. When in Brisbane he made a speciality of his Radio Readings, and if your kiddie would like to hear any story in particular, write to Charles Collings at 2SM and—if he can obtain it—he'll be only too happy to oblige. His special little session follows the famous 2SM "Gang."



AT STATION 2SM, SYDNEY

# MAINTAINING A STANDARD

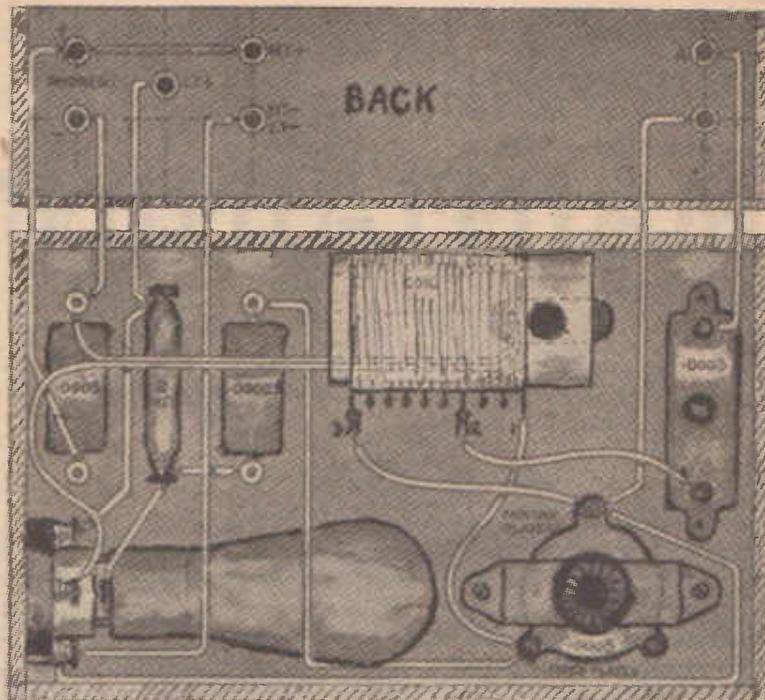
IT is not a good thing for a publication of the periodical variety to show inconsistent features, for when that happens, it is likely to indicate a stage of petering out. When reading matter deteriorates from authoritative to the unconvincing, the result is degeneration into monotony. The editorial pen can be held responsible for that primarily, but there are other factors that can aggravate the problem of keeping reader interest at a high standard. One of those is lack of active participation on the part of readers, and another is the succumbing to the prods of those who would try to dictate editorial policy. So many people can help to maintain the standard of reading material by contributing toward it, but so many more are content to sit back and "let George do it." The correspondence columns of a periodical are important in this business of giving readers the best possible, for it is in letters to the editor that the thinking process of readers is reflected. Correspondence suitable for publication does not necessarily imply that letters must be of technical or specialised nature; rather the contrary. Any subject at all, associated with the topical nature or other aspects of radio and television, is welcome. Readers' ideas and writings can influence considerably the maintenance of the high standard, and thus help discover new wells of interest before old ones reach a drying-up stage. We wish to make it crystal clear that readers' ideas about the future of television for the Commonwealth are equally welcome along with discussion about the more commonplace topics of radio, whether topical or technical. In inviting comment about television, we assure readers that it is a subject that we, as your publishers, have no intention of side-tracking or avoiding. There are people who say we "talk too much about television" . . . people who would like us to sheer off all mention of the subject as being adverse influence on the sales of radio re-

ceivers. Quiet perusal . . . not a mere finger-flipping . . . of our pages will give the lie to any suggestion that this publication is anything but impartial where the Video art is concerned. Entertainment is not by any means the only factor of importance in the television field as indicated by the surgical applications so strikingly shown in Melbourne and Sydney Hospitals. The name "TELEVISION" is included in the title of this magazine, not as a sensational "sprat to catch a mackerel", but because of long-range planning for the future. It is our unswerving policy to cover all phases of television, no less than radio, and minority criticism will not have the slightest influence, nor result in any decision to "soft-pedal" the subject of TV. This publication is, so far, the only one in Australia to devote, at its own expense, full and half-page announcements emphasising to the public the vast differences between broadcast entertainment and television . . . that radio receivers can be purchased now with no fears whatsoever of influence by television in any way. Those pages are there for all to see, from our first issue in May last year . . . in one instance a major manufacturer obtained our permission to reprint the announcement in thousands for use as window stickers in radio dealers' stores. Hardly in accordance with inspired ideas that our reading material is not "good medicine" for traders? We really do believe that there ARE disgruntled individuals who seem to bend their energies to the fomenting of a depression, but in the main, the radio industrialists with whom we co-operate in business matters, are level-headed realists. With their understanding and our refusal to accept attempts to dictate editorial policy, we shall continue on our planned pathway . . . the provision of a readable magazine fully embraced by the meaning of the title.

—DON B. KNOCK.

# JUNIOR CONSTRUCTORS SINGLE VALVE RECEIVER

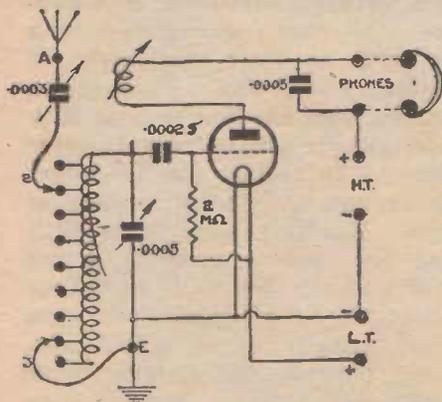
*This little set was specially designed for schoolboys, and because of its sheer simplicity, is sure to create a considerable amount of interest. The idea has been to build a complete one-valver into a small plywood box, which takes the place of the usual cabinet. Good head-phone reception of many distant stations is easily obtained. The construction including the tuning coil, is particularly simple.*



*Constructors will find this wiring plan invaluable in following the wiring of the components.*

**E**VERY boy can build up this simple one-valve set, and obtain good reception at trifling cost. It is easy to make, can be used with an indoor or an outdoor aerial, and will bring in plenty of stations on the headphones.

Quite apart from the low cost, this single-valver is very cheap indeed to run. It works from a 45 or 67½-volt high-tension battery, and takes so



*Theoretical circuit diagram of the boy's One-valver, using a leaky-grid detector with reaction.*

little current from the battery that it will last for at least six months and probably longer.

The basis of our little set is a simple plywood box.

One thing about that box: see that it is at least 2 inches deep, otherwise you will not be able to take in the

components. The box contains, when the set is finished, a tuning coil, tuning condenser, detector valve, and several smaller components such as the grid leak and the condenser for detection, and a small compression type of condenser for improving the aerial selectivity.

Perhaps the first thing to study, if you intend to make this set, is the theoretical circuit diagram. In case you do not understand the symbolic diagram we will explain.

The set's main feature is a detector valve, which can be almost any valve on the market. Best results will be obtained with a medium-impedance valve with a fairly high amplification factor. Such a valve takes very little anode current from the battery, and only about .1 ampere from the 1½ volt dry battery used to heat its filament.

The tuning of the set is placed in the grid circuit of this detector valve. Tuning is done with a home-made but nevertheless efficient solenoid coil, all the dimensions of which are given by one of the drawings on these pages.

Winding this coil is very easy if you follow the instructions given by the diagram, anchoring each end of the winding securely and leaving plenty of spare wire for the connections and for the twisted tapings. Remember to bare the ends of the tapping wires, and take care not to cut the loops or the continuity of the tuning-coil circuit will be broken.

About the tapings: there are two clips making contact with them, and

you will find small window-ticket clips very suitable. Ordinary crocodile clips are rather big, but will do for the job. The small clips can be obtained from any stationers.

What, you may ask, is the object of these coil tapings? They play an important part in the set's performance. Clip No. 2 is for varying the selectivity of the tuning circuit by varying the extent to which the aerial lead is coupled to the coil. The lower down the coil this clip is taken the more selective is the tuning, because the aerial coupling is progressively reduced.

## Aerial Tuning Condenser

Note, by the way, that a further control of the selectivity is the aerial condenser, which is connected between the aerial lead and the No. 2 coil tapping.

Now for the second coil tapping, marked as No. 3 on the drawings. This is a very useful tapping, because it enables the amount of coil in circuit with the tuning condenser to be varied. If you are using a short aerial probably most of the coil will be needed, but with a long aerial, particularly if you want to get down to the very shortest of the broadcast wavelength stations, it may be an advantage to cut down the number of turns of the coil in circuit and this is very easily done with the coil tap No. 3.

Whatever the length of your aerial may be, the No. 3 tap will materially help you to tune down to those stations around the 200 metres (1600

Kilocycles). It is only a small extra trouble for such an advantage. You have the satisfaction with this coil of knowing that all the stations are within the tuning range of your coil.

### Detector Action

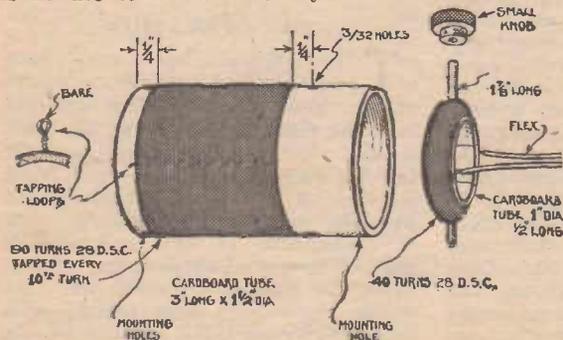
The detector valve follows the tuning coil and is a straightforward leaky-grid detector arrangement. The detector valve converts the radio frequency waves into "one-way" pulsations which can affect the 'phones connected in the anode circuit of the valve.

We will not bother you with this process just now, but remember that in the anode circuit of the valve there is still a high-frequency current flowing, and this we make use of to boost up the signals. We pass back this high-frequency current from the anode circuit to the grid tuning circuit by the process known as reaction. Americans call it a "tickler."

This reaction is a very important part of the set. Without it you would not be able to get any distant stations, so take care to make up the reaction coil carefully. It is this coil that enables the high-frequency current flowing through it to be fed back by induction into the grid or tuning coil.

The reaction coil, which is fully illustrated and quite easy to make, is arranged to swing inside the tuning-coil former at one end, as shown. The degree of feedback or reaction is controlled by the position of this swinging coil. You will soon find the position that gives the maximum effect, for at one point the set will produce a squeal, showing that the detector valve is oscillating.

This oscillating or squealing point is no use to us and the object is to



reduce the reaction effect by slightly swinging back the coil until the squeal stops. The most sensitive position of the reaction coil is just short of the oscillation point.

On no account permit the set to go on producing the squeal, for the valve is then a miniature transmitter and the noise may be reproduced in neighbours' loudspeakers—and that will not add either to your fun or to your popularity.

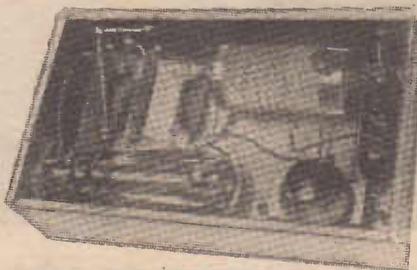
Having made up the coil you should study the diagrams to see how the components are fitted into the box.

When they have been fixed you can then undertake the very simple wiring together of these components and the coil. The tuning condenser is of a compact type of which quite a few ex-war stock are about. It is very simply mounted by fixing on a metal bracket, as shown. The bracket is screwed to the box.

For the wiring we suggest you might use plastic covered flex. It is obtainable from all radio supply stores. This is both cheap and very suitable for this set. Make sure all your connections are sound and well soldered where necessary.

The connections for the high-tension battery and the filament battery are made at the back of the box. Sockets are sunk into the wood for the actual set connections and the leads from the two batteries then plug into the sockets as required.

The positive "A" battery (filament) terminal is marked red, and the negative is black. Do not get these mixed up. Similarly, the high-tension battery has a positive and a negative terminal, and these certainly must not be wrongly connected or the set will not work at all.



● Here you see the completed set with the detector valve in a horizontal position in the box.

● Full details are given here of the coil for the boy's One-valver. Note the tappings for selectivity and tuning range. The reaction coil is on the right.

### Detector Voltage

About 45 volts will give smooth reaction, probably, but go to maximum positive voltage for the loudest signals if you use a 67½ volt "B" (H.T.) battery.

When you are testing out this one-valver remember that the condenser in the aerial lead greatly affects the selectivity. For a start turn the knob on this condenser to maximum and that will couple up the aerial as closely as the particular aerial-coil tapping will permit. If you are not

getting enough volume with the condenser right in you must alter the aerial-coil tapping, so that the clip is higher up the coil.

The set will work very well on an indoor aerial wire of about 40 ft., but, thanks to the provision of selectivity devices, it can also be worked with advantage on a larger aerial, such as an outdoor wire of, say, 70 ft. Such an aerial will bring in more stations naturally.

Suitable valves in the 1.4 volt range, using octal bases are: the triode section of a 1H5GT, similar section of a 1D8GT, a 1N5GT with anode and screen grid connected for triode operation, and the 1P5GT similarly. In the miniatures — the more modern counterparts, you can use a 1T4 with anode and screen grid connected. In the 2 volt series there are many valve types applicable — several such valves are found in ex-R.A.F. war equipment, but in the octal based production of modern type, the 1H4G is recommended. This valve is the octal version of the '30 triode. Don't forget, that if you decide to use a 2 volt valve instead of a 1.4 volt type—you should use two 1½ volt filament batteries in series to give you a total of 3 volts, and a low resistance rheostat to drop the voltage at the valve socket terminals to 2 volts. The amount of resistance to be used depends upon the type of valve and how much current the filament consumes, which is why we suggest a variable rheostat of about 0 to 5 ohms. You connect this in series with the positive filament wire from the LT battery, and, with a suitable D.C. voltmeter placed across the valve socket filament connections, adjust until a reading of 2 volts is shown with the set "ON." Instead of providing a filament "ON-OFF" switch for this little set, all you do to switch it off is to pull out the LT positive (plus) plug from its socket on the back of the box.

### You Will Need These Parts

- FIXED CONDENSERS**
- 1 .00025 microfarad mica.
  - 1 .0005 microfarad mica.
- VARIABLE CONDENSERS**
- 1 .0005 microfarad (midget size).
  - 1 .0003 microfarad (compression or small size).
  - 1 Valve socket to suit valve used.
  - 1 2 megohm grid resistor.
- SUNDRIES**
- 1 Plywood box 8 x 4½ x 2 inches (or larger).
  - 1 Coil former 1½ inches diameter, 3 inches long.
  - 1 Coil former 1 inch diameter ½ inch long.
  - 2 ounces 28 double silk covered copper wire.
  - 1 small knob to suit spindle for reaction coil.
  - 12 yards set wiring flex.
  - Woodscrews.
- ACCESSORIES**
- 1 67½ or 45 volt miniature HT battery.
  - 1 1½ volt Filament battery (for 1.4 volt valve).
  - 1 ½ volt or 2 volt filament triode valve as in text.
  - 1 Pair high resistance (2000 ohms) headphones.
  - 1 0-5 or 0-10 ohm rheostat (if 2 volt valve used with 3 volts LT).

# THROUGH THE EYES OF A LAYMAN

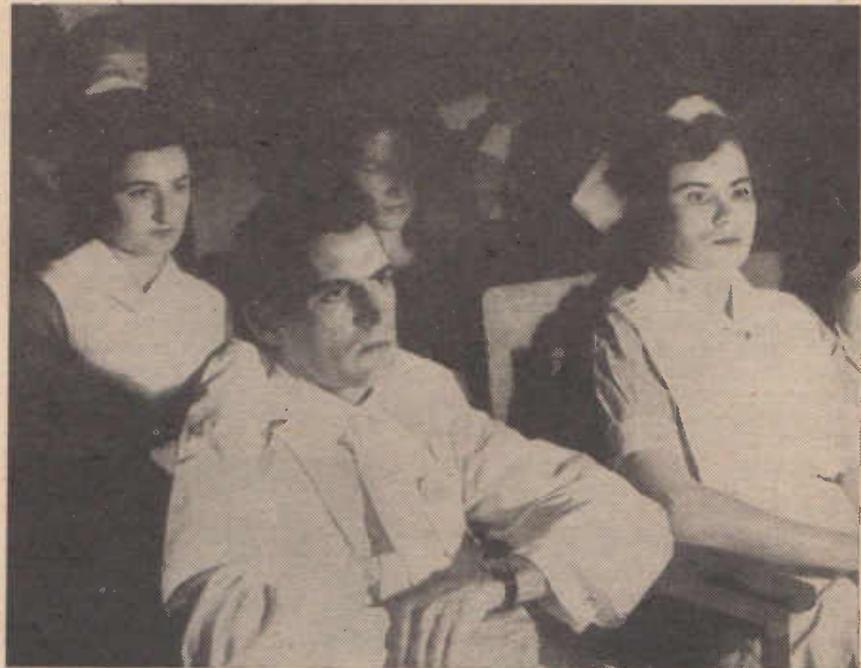
A first-hand impression of a non-medical man's thoughts, on watching, from start to finish, an involved surgical operation by the medium of the television screen.

By THE EDITOR

TWICE in the span to date of a somewhat adventurous life have I graced with my presence the operating theatre of a hospital; but on those two occasions I saw and heard nothing, other than the smoothly soothing voice of the anaesthetist inducing me to "breathe deeply" . . . and then a clamorous jangle of ringing bells as I hurtled seemingly downward into nothingness. Followed then the puzzled return to this earth . . . and the consciousness of the angel in white cap and scarlet cape with sweet sounding voice . . . then . . . the weeks of getting back into working order. In that period wherein the conscious inner self had taken flight into the unknown . . . skilled hands had been busy on the framework encompassing my being . . . very busy indeed; and guided in their certain and sure movements by a brain long trained in full knowledge and familiarity with the skills of surgery. Often in the mind's eye had I pictured the nature of swift-moving events the while anaesthesia held charge, and now . . . although I have not set foot in a hospital operating theatre . . . I have in an unforgettable experience . . . seen in minute detail and heard with startling clarity . . . the whole process of an involved surgical operation. As a layman, and even as a Pressman . . . the likelihood of my being present to witness at the operating table itself . . . the work of surgeons and nurses would be more than remote. But by the miracle of television, I, and fellow Pressmen (and ladies) have been able to watch and follow in the most intimate detail every move and action during a drama of surgical achievement.

## THE OCCASION

FOLLOWING on the tests of television at Melbourne Women's Hospital, as outlined in this magazine for December, 1949, Amalgamated Wireless had installed their 625 line TV equipment at Sydney's King George V Memorial Hospital, and the appointed time of invitation on December 15 last found me in a small room seated before a television receiver with screen size approximating 8 x 7 inches, and feeling somewhat uneasy that my next seat neighbour should be a young lady of the Press. The uneasiness was due to the vague feeling that eyes



● Below:—Tense concentration shows on the faces of these students of surgery as they watch a televised operation.

unused to what would be seen on that screen could react to the extent of a faint or something.

I needn't have worried . . . the fair one came through the ordeal with cigarette and, moreover, seemingly unperturbed. In a larger room some distance away, before a series of similar televisions, sat about a hundred student doctors and surgeons . . . to take in with far more ease and detail what those screens would show them than in comparison to the observation done over the operating theatre. A.W.A. staff men checked up on receiver operation, and in the operating theatre the cameraman trained his turret-lensed vision eyes on trays of surgical instruments, with gauze-masked nurses making preparations. The realisation dawned that there was no second-hand movie "shot" . . . that we were seeing this at the same instant as the camera caught it all. Came then an introductory discussion by the surgeon who would operate . . . in quiet and assured voice he outlined some facts of the case . . . a young married woman . . . a suspected fibrous growth in the womb . . . and the objective . . . the removal without ill after effect. Another gynaecologist then spoke,

and, with the surgeon himself, kept the watchers fully informed of all that happened.

## THE OPERATION

"THE patient has now been anaesthetised," said a quiet voice, "and is now being brought into the theatre." . . . Over the table a mirror had been positioned, so that the TV camera operator could focus on this; it not being practicable to use the camera immediately over the table and in any way impede the movements of surgeon and nurses. With the patient arranged, the area to be worked on was visible with such clarity that the texture of the skin was even noticeable. As the surgeon traced positions with the back of the knife prior to incision, a slight shiver passed along my spine, changing to tensed nerves as the operation commenced. To a radio engineer, the complications of electronic equipment seem involved enough, but to such a person watching a delicate repair of the marvellous mechanism of a human body for this, the first time, came the realisation of how humble is a man-made effort in comparison to God's creation. With infinite patience,

care and understanding, the gloved fingers of surgeon and helpers dealt carefully with living tissue of such complexity that I marvelled that man could know so much of the Creator's handiwork. Because we live in an advanced age of medical and surgical science, there is little that man so skilled does not know, and for myself, this television screen, with its startling reproduction of facts which previously were but figments of imagination, resulted in a feeling of serene confidence. One just knew that those gently working hands would not make any slip . . . that all would be well . . . that the young mother would, in a few short weeks, be out and about, with new life ahead, freed from pain and worry. All honour to these men and women of our hospitals, and may the facilities be provided to make television an indispensable factor in their work. As Doctor Maguire, a Director of Royal Prince Alfred Hospital, said to the Press . . . "In five years no hospital will be up-to-date without television." Television, however, is an expensive item to consider acquiring by reliance on voluntary subscription. Public-spirited men of finance should be shown without delay just what it all means . . . and how vital television is for the training of future surgeons and nurses. Equipment for a hospital costs between £8000 and £10,000 . . . less than the stakes in a "special" lottery, but of such vast importance in comparison. This magazine calls the attention of those who are in a position to act as benefactors for hospital television to the need for action now. We may be awaiting the advent of television in this country as an entertainment medium, but the time for installation in all our main hospitals is IMMEDIATE. Australia's new Federal Government should, with little delay, give heed to subsidising the necessary equipment for the purpose and establish claim in the hearts of future generations of Australians as a government which helped to make such an invaluable and powerful aid to life and health a realisation instead of a dream. No praise, meanwhile, can be high enough for the executives of Amalgamated Wireless (Australia) Ltd., headed by Mr. Lionel Hooke, who have wasted no time in placing the miracle of modern television at the disposal of the hospitals, for far too many people have been thinking of TV in terms of entertainment only. Its application to other fields are innumerable and invaluable, but the needs of the hospitals head the list.

12/- brings "R & TV NEWS" to you each month for a year.

## AUSTRALIAN TELEVISION

VIDEO Telecasting has many problems that are purely geographical and local. These problems can be met only by a close study of local conditions, and for this purpose Amalgamated Wireless engineers have constructed, and are studying TV radiation on an unusual model of the whole of the Sydney area extending West to the Blue Mountains, North to Brisbane Waters and South beyond Bulli Pass.

This model is unusual in that it is deliberately distorted to a planned scale, and the result gives Sydney and its environs the appearance of a prehistoric volcanic world. A member of A.W.A.'s television research staff said this effect was due to a "caricature" exaggeration of heights and the earth's curvature in relation to plane distances, and explained that television radiations—unlike those of ordinary radio—were line of sight; that is, they do not follow around the earth's curvature but more the course a bullet would take, departing at the horizon into infinity, thus limiting the effective range of TV to approximately 40 miles, unless steps were taken to re-radiate them at this point.

Another bullet-like characteristic of the video emanation is that it can be stopped by heavy obstruction in its path. For this reason, the model has been constructed so that such difficult areas can be studied and the means found to overcome them.

Another unit undergoing study at A.W.A. laboratories is the new Image Orthicon Camera Tube. This amazing new tube has been called the "eye of Television". It is so sensitive that it can pick up its picture from the light of a single match up to the full brightness of the noon-day sun. This tube was used recently in London to televise a minute and delicate operation on the human eye, and the Marconi engineers succeeded in magnifying the observers' view 36 times without loss of definition.

Research Engineers of Amalgamated Wireless, are quite confident of the ability of the Australian Radio Industry to meet the problems of television in Australia. Radio research in Australia has never lagged, and it has been Australian Engineers who pressed for Beam Wireless direct to England without relay stations, when overseas experts declared it an impossibility.

A.W.A. technicians have produced pictures of a cigarette being lit by a match in total darkness. The resultant picture, which was photographed and published in the Press, was, in the opinion of experts, of such definition and brilliance that it could be incorporated in any theatre presentation, producing the fullest dramatic effect.

Write for your FREE copy NOW



## DUCON Noise Suppression BULLETIN

The suppression of radio interference is very much to the fore in these days of high fidelity sets. Anyone who has struggled to obtain satisfactory reception through the appalling noise, which can exist in bad localities, will welcome the attempts which are being made to combat such disturbance.

Ducon offers this booklet in the hope that, by so doing, radio users and those interested in the successful merchandising of Radio will find something of interest, and, perhaps, assist in the efforts being made to reduce interference.

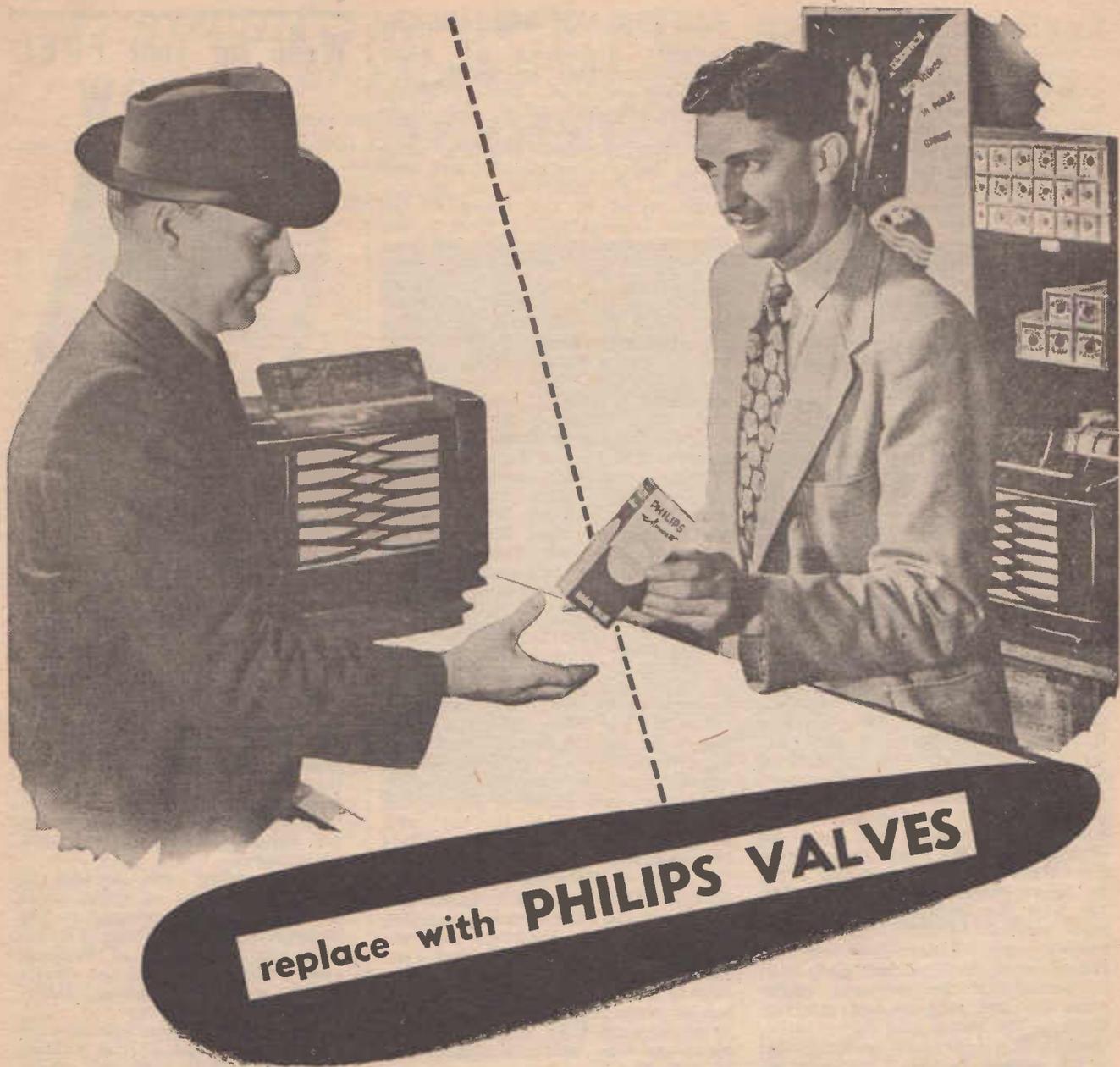
In many cases the interference can be remedied at the source, and it is mainly with this phase of the problem that the Ducon Company can be of service.



DUCON CONDENSERS LTD.  
73-91 Bourke St., Waterloo MX1441

Please forward me without obligation my FREE copy of "Ducon Noise Suppression Bulletin."

NAME.....  
ADDRESS.....



Throughout the world  
this symbol guides  
the choice of millions

Thousands of radio servicemen throughout Australia use and replace with Philips valves. Their reasons for specifying Philips are simple; they've tested them—used them—and found them to be the *best* for all types of radio circuits. Best as initial equipment and best for service work too! Their choice is Philips—so follow their lead, stock and use the world's finest valves—they are steady, year-round profit makers that continue to grow in importance.

# PHILIPS VALVES

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# LAGERRADIOOFIZIER

By NATILUS

The following is authentic. It is a thrilling and amusing biography of the personal experiences of an Australian marine radio officer during his period as a P.O.W. in Nazi Germany. We have known the raconteur for 22 years, and with ample knowledge of his irrepressibility, were not surprised to find that no soon repatriated after the war, he was off to sea again. Now, a few years after his war radio service afloat in both the Kaiser's and Hitler's wars, he is still a marine brasspounder. He writes by choice under his pen-name of "Natilus", and his story will run through two succeeding issues.

—Editor.

AND it came to pass in the year 1939 that Adolf the Hitlerite had a dream, and in it he beheld a Corridor many cubits long and furnished with a beautiful carpet that was as red as the Rheinwein when viewed through the spectacles that are rose hued. Then spake Adolf to the Lord of the land that owned the Corridor, "I prithee mein Herr, give me this parcel of land that connects my backyard with that of the Poles that I may walk to and fro in the evening and my soul shall be happy within me." But the Lord of the Poles was a wise man skilled in the use of mathematics and verily knew how many beans make five, and he communed with himself thusly . . . "has not my Private Dick who has been snooping in the land of the Hitlerites reported that this Adolf is a twerp of the first magnitude . . . and also nourishes a Coloured gentleman in the Baronial Woodpile"? . . . "of a Truth I will have none of him, for possibly it is that he desires my Corridor to dally with a Damosel when little Eva ain't around." And when the news of this decision was relayed to Adolf the Hitlerite, his spirit raged within him and he summoned his Blitzkreig Paladins to his presence . . . the Lord Goering, known to his intimates as Jellibelli, leader of the Luftwaffe . . . the Lord Admiral Raeder (who is still smarting from a kick in the pants delivered to him at Scapaflow), the Admiral Doenitz, a man skilled in the use of the Unterseebooten, and all the mighty Wehrmacht generals, even unto Goebbels, the Propaganda Direktor who had Annanias beaten to a frazzle.

"Holla!" thundered Adolf (or what passed for it in Platt Deutsch) "let my gallant dogs of war be unleashed and sent forth to bite, smite and otherwise fix up this insolent Schweinehund that gives not freely what my soul desires most."

Unleashed, the Hounds leaped forth, the thunder of their secret weapon, the Stiefeln, being heard throughout the Universe, as they bit and smit in their onward course at the Master's bidding.

Fortunately the invaded were not left alone to repulse the war dogs; their call for help was not unheeded,



● "German Hilf-kreuzers—raiders to you, mister."

and assistance was forthcoming. Everywhere the Pundits held council, Financial Nabobs untied the purse strings, and even Jac Klang's famed bull, Ebenezer, looked with a less jaundiced eye on the hammer and sickle.

In the Gargantuan preparations that followed, the whole of friendly populations worked to aid the project of assistance.

"Pro bono publico" sprang to the fore with quivering pen, public benefactors admitted somewhat their presence, and the armchair Strategians quit arguing on the strategy of Jutland to concentrate on more pressing items.

## THE CALL FOR RADIO OPERATORS

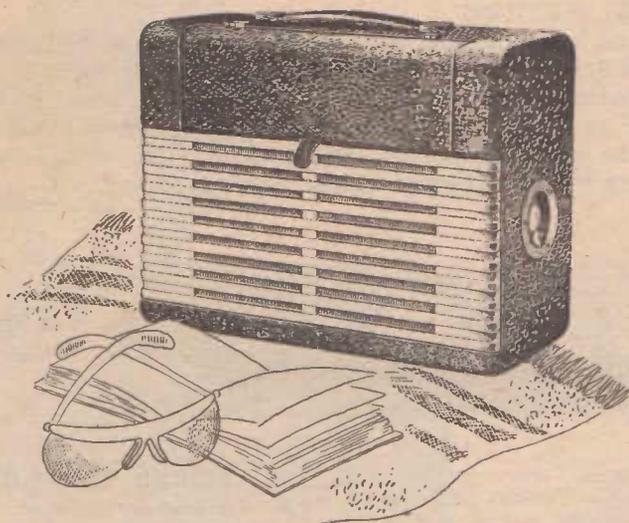
IMPORTED magazines carried full-page advertisements from outside benefactors offering to instruct the hordes of new radio personnel now required. One bespectacled old gentleman, with tears in his eyes, from the printed page, implored the "prospects" to "let me be your Father." . . . What a spirit! Yet another stern-faced gent with outstretched digit said, "I will train you," whilst a third imparted the stupendous words of wisdom that "it will cost you less than some men spend on tobacco" to acquire a veritable fount of radio knowledge.

How these heart-searing offers were received is not recorded for posterity, but apparently local facilities were provided making the offers needless of acceptance, and these local facilities turned out hundreds of good men for service. Alongside their other comrades, these radio men did good work, achieving distinction, paying the sacrifice, or, in some cases, the existence of prisoners of war.

## BEHIND THE WIRE

IN the earlier days of the war, it was the German custom to send the crews of captured or sunken British ships to the Civil Internee Camps, which were situated at Ilag Tost, Thorn, or Wolfsburg. However, with the increased captures at the height of the success of the German "Hilf-kreuzers" (raiders to you, mister) and submarines, it was apparent that something would have to be done to more or less separate the nautical gentry from the common, ordinary or garden civvy internee, as seamen were classed, under the Geneva ruling, as "marine internees". As a start in this programme, a section of Stalag Xb, situated on the peatlands at Sandbostel, was selected as a mustering camp pro tem. This lager was a huge place, holding some 100,000 Allied prisoners, mostly French and Belgians, and, at a later date, after Russia's entry into the Weldkrieg, a large proportion of Russians. Our party, which had been taken prisoner at the "Nauru" turn-out in December, 1940, by the Hilf-kreuzers "Komet" and "Orion", and subsequently transferred to the ex-Hamburg Amerika motorship "Erm-land" up in the Japanese mandated islands of the Carolines, arrived at Bordeaux, France, in April, 1941, and after two weeks' incarceration at Saint Medard en Jalles, we did the five-day train trip overland via Belgium and Holland, arriving at Stalag Xb on Adolf Hitler's birthday. The less said of Saint Medard, the better; some 5-ozs. of light French bread, plus half a litre of greasy water (miscalled soup) daily to us who were mainly clad in cotton singlets and white drill trousers, wasn't a pleasant experience in that cold part of the year. Sandbostel wasn't much better from the grub point of view, but

(Continued overleaf)



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R. 3

Gerry did hand out some clothing. . . . I got a pair of British battle-dress pants and a light blue Dutch cavalryman's coat complete with some shiny buttons, and which only just met across my chest, even though I had lost 2½-stone weight in seven months. To this I added a pair of epaulettes from my white one and only shirt, and which gave me the appearance of a full-blown Swiss Admiral. However, the epaulettes achieved the end to which they were installed, i.e., to dodge being put on the business end of a long-handled shovel digging peat. Gerry had a great respect for a bit of "braid", and officers weren't supposed to work, but it was much the easier to flaunt one's membership of the "favored few" than to try and argue the point with a bone-headed guard in between shovels full of peat . . . particularly as we spoke no Deutsch in those early days. The same bit of braid also got me a nice professional possie. It appears that my rig, in all its illustriousness, was spotted by the Lager Kommandant, Herr Kapitain Leutnant Spiess, who, after inquiring my rank, promptly decided that I was the fit and proper subject for a project that he had in mind. This same gentleman had been Ober Leutnant with Wettigen in U9 when he sank the "Cressy", "Hogue" and "Aboukir" as they stopped to pick up survivors from a sunken vessel. This in the 1914 fracas, of course. It appeared that Kapitain Spiess had a problem; he wanted the prisoners to be able to listen to little Adolf's "bedtime stories" and also make a few recordings of our chaps saying how happy they were and grateful for having our miserable lives spared . . . "just so as our relatives would have an easier mind." Would . . . or . . . could I undertake the project of supervising and installing the necessary gear? . . . There would be no propaganda attached thereto . . . I had his word for that . . . oh, yeah!

### I GET A JOB

OUR British Camp Captain had decided that a bit of music would do us no harm, and at least we could laugh at Adolf's propaganda, so I took the job on and became the first Lagerradiooffizier. All I had to do was submit what gear I needed and Wilhelmshafen Navy Yard would well and truly see that I got the necessary apparatus. The recording stuff was ordered as a unit, but I had to survey the lager and submit a schematic showing what was required for the radio and power amplifier equipment, which was also to function as a public address system, too.

Not unnaturally, I was almost overwhelmed with offers of assistance from the radio officers of other British ships, who all wanted to help,

and, incidentally, receive the munificent allowance of 40 pfennigs per day whilst engaged in honest toil. (40 pfennigs was about equal to 10d.). Came the great day, and the gear arrived . . . we went down to inspect and found . . . one Philips broadcast receiver, probably snatched from Holland, two 15-watt speakers, and a quarter of a mile of lead-covered telephone cable. It was the best laugh we had for many a day, but it wasn't all fun. Notwithstanding my protestation that it wouldn't be a success, we were ordered to proceed with the installation, and so the procession started. In the lead was the Prima Lagerradiooffizier looking a bit self-conscious, followed by the first and second "ditto" humping a dirty big ladder, followed by the third "ditto" tenderly nursing a pair of 6-in. square-nosed pliers; numbers four and five "ditto" carried a coil each of cable; number six "ditto" strode along magnificently with a roll of insulation tape, whilst



● "The epaulettes achieved the end to which they were installed — to dodge the business end of a long-handled shovel."

the tail end comprised numbers seven and eight "ditto" with a bag of nails and some insulators. Half the non-working members of the lager followed in our train to see what they facetiously said couldn't be . . . "Ships' Operators . . . WORKING". We did work, and caused much merriment as we scrambled over hut roofs nailing down insulators and tying wire in position. Our final job was to install the two speakers in a couple of hefty cages that the German carpenters had erected on each side of the parade ground.

All was set for the big try-out . . . the radio was switched on and worked well enough in the Lager Schreibstube (office), and the official party set off headed by Kapitain Spiess, the Baron von Kass (his assistant), Feldwebel Rompa and two buck Gerry privates with rifles brought up the rear of the Wehrmacht party. We slunk along in the rear, hoping for the best but fearing the worst. It happened . . . by dint of slapping the large ladder up against one of the speakers sharply,

climbing up thereon and placing the oral cavity against the speaker boxes, we were able to hear faint music. And so it was . . . "you can't fire us, mister, we quit" . . . and the Muezzin never called the faithful to prayer through those two big speakers. Thus ended our first assay in Kriegsgefangenschaft . . . jobless and cashless, too . . . we never got paid for stringing up that 200 yards of telephone wire, either.

#### OUR OWN MARLAG

GREAT excitement was caused some little time later, when it was announced that the High Command at Wilhelmshafen had decreed that the Merchant Navy was to have a special lager to themselves. To this end a Luftwaffe Lager, at Westertimke had been taken over . . . there were five huts available for an advance party . . . bricklayers, carpenters, plumbers and "wire-jerkers" required . . . all willing to work . . . pay 40 pfennigs a day. We were on . . . if we couldn't cut Adolf's aluminium conduit with a table knife and jerk "two in and two out", etc., we'd stand jumping on; thus it was the advance guard of 200 set out on the 20 kilometre walk with all worldly possessions and a blanket across the peat. Gerry very thoughtfully provided a motor wagon for the "elderly men" . . . how did we travel? . . . Well, we never arrived there with blistered heels through walking in old French military boots . . . and . . . your guess is as good as mine . . . if you know your radio men . . . Hi! And so it was that the Merchant Navy made its entry to Westertimke and created five huts and a lot of waste land into a camp capable of holding 5000 men with 45 huts each capable of holding 200 to 250 men, a theatre and recreation hall in which gambling was openly carried out for German marks that would make a King's Cross baccarat school look like a Sunday School picnic.

#### AN IDEA IS BORN

WITH a total of some 2000 odd men, crews of 250 British ships that had either been sunk or captured, it would be very obvious that a good deal of talent existed, and the radio fraternity were particularly well blessed in that respect. There were over 100 personnel from that particular branch alone among the 950 officers that mustered thrice daily on the parade ground. News was scarce . . . that is, British news. . . . German broadcasts were available from a P.A. system that the late Luftwaffe Kommandant had left in his office. It was felt among the British camp officials that if we could devise some means of listening to the BBC and then spreading the news among the men, it would be

● "Herr Kapitain Lager Kommandant."



a great help to morale. At this particular time I was busily employed as Hut Captain to some 250 British Indians, Malays from a couple of KPM vessels, Chinese from a tanker, and a solitary Arab from Cardiff. My job was to look after their welfare, see that the rations were drawn daily, distribute same equally among the men, see the hut and rooms were kept clean, and last, but not least, write about 200 post-cards to their relatives weekly, and generally act as sort of father confessor and friend. To aid me in the language difficulty I had a purser from one of the B.I. ships to act as an interpreter. He, I and a friend of his occupied a small room at the entrance of the hut which was situated in Sister Street, named after its famous Egyptian counterpart.

This little room gave us a modicum of privacy not shared by most of the other camp inhabitants, and as the hut stank to high heaven on many occasions when the Indians were making chupattis from their Red Cross parcels . . . same which they cooked with ghee . . . a kind of butter, we never had many visitors to our humble domicile.

#### WE SCROUNGE A RECEIVER

THEN it was that a chance to really get Home News came our way. Some Norwegian officers were being sent home to Norway to work for Gerry, and the latter had returned them all the gear that he had confiscated on their entry to the lager. They were all packed up to leave, with their belongings under guard in a large, unoccupied barracks, when it was that a mate from one of the Norwegian ships came to we three with a proposition. He had a 7-tube Yankee Philco a.c. receiver among his gear, and if we could work out a routine whereby we could acquire same . . . well . . . we could have it as a parting gift. A swift conference took place, pro's and con's were put forth. It was an extremely severe type of offence to be caught with broadcast gear, and listening to foreign broadcasts could be punished with being "bumped off". Was it worth the risk to aid the morale of our fellow unfortunates?

(Continued overleaf)

We decided it was, and entered in a huddle to plan a way of hoodwinking the guard and getting the paws on the coveted item. Unfolded . . . our plan was this . . . the Gerry guard was always a sucker for an English cigarette, and this was to be the focal point on which our plan's success stood. One of us was to engage the guard in conversation as he stood outside the hut, give him a cigarette, and ask him what the latest "honest to God" news was. The other two would sneak round the back, and whilst one man kept "nit" the other would force a window, lift the chassis and its speaker out of the cabinet, leaving the empty case to go with the Norwegian officer. The plan worked like a charm, and the cabinet even went out with bits of twig stuck into the receiver knobs to avoid any chance glance revealing an empty cabinet. Milag had its first real source of news production at last. Floor boards were neatly cut under a bunk with a saw procured as only ex-P.O.W. folk know how, the dirt dug away to allow the receiver to sit comfortably in, and each night it was brought out to do its work in delivering the B.B.C. News. Notes were made and faithfully transcribed. These were delivered to Captains Hill and Lewis, our British Camp Captains, who arranged the distribution a few hours later. For three years that receiver did yeoman work, and had a few narrow squeaks of being found by the Gerry Security Police, under the leadership of Leutnant Gussfeldt, a stinking Nazi swine, if ever there was one. One evening we had not had time to stow it away in its customary hidey hole, when our "nit keeper" reported our hut guard, Peter Diehl, to be in the close offing. Hurredly the receiver was pushed under a bunk, and in walked Peter . . . to sit on the bunk and engage us in a spot of conversation. We had to keep him occupied and amused to keep his attention on us and not on the bunk on which he sat. All was going well; with possibilities of a term in the calaboose we were doing our damnedest, when he idly fished hold of about three foot of 22-gauge copper wire hanging from the bunkhead and remarked, "Your radio antenna, gentlemen" and laughed. "Yes," we said and laughed, and at that moment I reckon our collective posteriors oscillated faster than any 7-megacycle X'tal that I have ever owned. Great was our relief when he decided to leave, and we breathed freely once more.

#### NARROW ESCAPES

ANOTHER occasion was one of those surprise "raids" when the Abwehr would swoop down to the lager in Diesel trucks, lock us out of the huts and give our personal belongings a severe going over. The par-

ticular raid to which I am referring occurred after my Indians had transferred to another camp . . . Gerry fondly hoping that they would do a spot of work for him in Bremen if removed from the fell influence of British officers. We had removed from our hut in Sister Street and no longer occupied our secluded small room. Familiarity breeds contempt, and on this particular morning the old faithful receiver was roosting in a suit case on top of a locker, when out of the blue came the raid by Gussfeldt and his minions. We were tossed out, and one man only allowed to remain in each room during the search, to avoid charges being made that the German police were pinching our gear. The modus operandi was that a couple of Abwehr men were allotted to each room, and marked each locker or suitcase with chalk as it was examined and passed as O.K. . . . much in the same way as Customs officials mark baggage in Australian ports after it has been inspected. Every occupant of this



● "If you have never heard a Gerry N.C.O. bawl a soldier out—a sight for sore eyes."

particular room said it was a cinch that the set would be found and weak jokes were cracked on the whole caboodle of us being stuck in a Gerry "Bunker" (gaol) as collective punishment for our sins of commission. Our representative in the room under search was in a dilemma as the case holding the radio came closer to inspection. At the critical moment when a guard was actually putting his hand up to pull the case and its precious burden down, in walked a Gerry sergeant and blew the metaphorical socks off the unfortunate searcher. If you have never heard a Gerry N.C.O. bawl a soldier out . . . well . . . it's a sight for sore eyes, and a case for cotton wool in the ears. Standing to strict attention, head thrown back, the terrific bawling out is atrocious. Our poor searcher was so flustered when it

ended that he uttered a few "Ja wohls" and chalked the offending case as well and truly cleared.

#### WAYS AND MEANS

OF course, other radios had got into the lager after the advent of our receiver . . . mostly of the German people's type of receiver, a 2-tube receiver consisting of a single detector and a combined audio cum rectifier tube. The wave coverage was in bands and went up from about 200 to 2000 metres. Many of these jobs were bought from Gerrys outside the lager, and cost anything from 1000 to 5000 cigarettes, according to the state of the "cigarette market". Coming into the camp, some stayed in their original state to receive medium and long-wave broadcasts, and others passed into the skilled hands of the radio personnel, who made a quick and thorough job of adapting them for short wave reception. These jobs were done with a minimum of tools, and later repairs effected in the same skilled manner.

Crystal sets flourished, and many a German worker had the generator pinched off his bike, later to be stripped down and the wire used for the ubiquitous receiver. It became a craze for the chaps to own one; almost every room in the camp had one, and some naturally were pinched in the raids by Abwehrmen, but, as fast as one went off, another took its place. Many and varied were the hook-ups used . . . some laughable in their design . . . how they worked I never knew, but they did, and in each case the hut conduit was the antenna used. Some were built in tins that had held powdered milk and were covered with a layer of milk powder. Others were hidden in stools; one I saw was concealed in an alarm clock, and so on. Head-sets cost from 500 to 2000 cigarettes, according to the number of cigarettes available for trade purposes, and were sometimes split into two units for two receivers. One particular friend of mine, a steward ex "Rangitane," was a walking radio station; he had a spider web receiver coil with a crystal unit he had made, attached together with a home-made compression type condenser. The whole lot was fitted into a "20 Capstan" packet and carried in his battle-dress breast pocket; 10-ft. of VIR wire was wound round his leg, and a single 'phone unit was in his battle-dress pants pocket. The latter item was a monument to his patience and persistence. Some lunatic tested a new head-set purchase across the a.c. line for a continuity test. . . .

#### TO BE CONCLUDED

★ IN NEXT MONTH'S ★  
ISSUE.

## B.B.C. TALKS

### The Story of Big Ben

**B**IG BEN, the most famous clock in the world and best known of all broadcasters, has just celebrated his ninetieth birthday, a proud fact which Howard Marshall recalled in a B.B.C. talk to mark the event. Marshall himself cannot claim to have broadcast as often as Big Ben has but he has been on the air regularly for more than twenty years. He made his radio name giving sporting commentaries—he is an Oxford Rugger blue—but is equally successful in a straight talk or describing any pageantry or ceremonial.

To him Big Ben is the voice of London. "During the war," he said, "I heard it in so many unexpected places, from a tent in North Africa to a chateau in Normandy, and always it said the same reassuring things, that London faced her evening proudly, that London stood there calm and undismayed. Incidentally, Big Ben is really the great bell—but we all think of the whole clock as Big Ben, so forgive me if I go on talking of him like that."

Big Ben was not the first clock at Westminster. For some unexplained reason a clock of some kind has been there since 1300. Big Ben takes his name from Sir Benjamin Hall, First Commissioner of Works when the clock was placed there. Marshall

climbed the two hundred and ninety two steps to the top of the tower to give a closer inspection to the clock, and emerged on to the platform above the clock face where the bells are waiting to chime. "There you are," he said, "among the Bells, and then you walk out and find yourself on a narrow little battlemented balcony over the face of Big Ben—looking down with very little between you and the pavement of Bridge Street all those hundreds of feet below. And somehow there's always a wind blowing up there. I don't know whether you remember, but about a couple of years ago Big Ben went—not on strike, but off strike—a terrible thing—and when the engineers toiled up to the clock tower to investigate, they found that the sorbo rubber pad which is between the bell and the hammer—the rubber pad had frozen stiff in the north wind which came whistling over the London rooftops, and they had to rig up a screen to keep the wind off—and a perishing cold job that was, they told me." Three times a week clock makers go up the tower and spend the day in the machinery room attending to the winding of the clock, which is done by electric motor. London pigeons roost in the tower among the bells, for apparently pigeons do not mind the noise of the striking, though it resounds with a tremendous clangour and the reverberation, sounding like a swarm of bees, goes on for a long time afterwards.

Right by Big Ben stood the House of Commons. It was flattened by a bomb during the blitz and yet Big Ben remained. He bears some honourable scars—the glass on his dial was shattered, they are still working on the brickwork above his face and some of his stone work is in splints. "It's amazing that he survived so well," said Marshall, "when you think of his position—bang in the heart of everything, right on the river and Westminster Bridge, with Waterloo Station nearby."

Looking over London from Big Ben is, he said, one great pattern of evocative history. "It's a great city, there's no doubt of that, and once it's in your blood, it will hold you always, this sprawling, rambling, ragged, shabby, beautiful, lovable London of ours. And right there in the middle of it like a wise guardian stands old Ben, Big Ben of London, with his shining face and his resonant voice, our mutual friend Big Ben. I like to believe that when we hear him telling us the hours we come, perhaps, wherever we may be, a little closer together in thought and feeling and purpose, linked by this familiar, above all by this most friendly voice of London."

\* \* \*

The latest invention pounced upon by Paranoia victims is television. According to a late report, the sufferers aver that enemies watch them out of mirrors, by way of television.



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## NOW HE RIDES INSIDE

"Once upon a time," in the early nineteen-thirties, a rather diffident young man walked timidly into Broadcasting House, the B.B.C.'s London headquarters, and crossed the entrance hall to the lifts. He was an electrical engineer, and it was his job to see that the impressive lifts with their bronze doors were maintained in perfect working order. This young man had great leanings towards a stage career and as he rode up and down on top of the lifts, seeing that all was as it should be, he dreamed longingly of a time when he should ride inside them, as a *bona fide* broadcaster being whisked to and from the studios.

Now this young man—not so very young any more, and with a domed forehead above which there is very little hair—is indeed a *bona fide* broadcaster. More than that, he is one of the best of them, besides being a Variety artist, straight actor and film actor who is in perpetual demand. His name? Maurice Denham, one of the mainstays of the popular Variety programme "Much-Binding-in-the-Marsh," where he appears as so many different people that it is almost impossible to credit any artist with such versatility. The charming but stupid Dudley Davenport, with the choking laugh and the constant admission of "Oh I say, I am a fool!", the totally unintelligible farmer, Mr. Blake, the spinster Miss Clingbine with her high-pitched giggle, and any other odd characters who may be required all are provided by the brilliant Mr. Denham.

Recently he appeared in the B.B.C.'s Third Programme in a straight play, his first straight part on the air for ten years. Before the war he played in all kinds of radio drama, from broadcasts to schools to Children's Hour. Just after war began he played the glamorous charlady Mrs. Lola Tickle, in the first series of "ITMA," then the Army claimed him. It was after his demobilisation that he was snapped up to appear in "Much Binding," to the intense delight of listeners, who at once took the bungling but endearing Dudley Davenport to their hearts.

When Denham is not facing a microphone he is facing a camera and on many days of his life faces both of them, for in the last three years he has played in thirty-eight different films.

\* \* \*

### TWO KINDS OF DISASTER

"There are two sorts of bad news which worry the English most. A naval disaster, because all of us have the sea in our bones, even if we've never been farther than the Isle of Wight, and a cricket disaster."

—Peter West speaking in the B.B.C. programme, "Question and Answer."



● Two lady announcers of the Swiss Short Wave Service. They handle programmes in Spanish, Italian and French, and are Helvetia Godio (left) and Jacqueline Balmer.

### DUCKS AND RADAR

A very great deal remains to be discovered about bird migration, and the subject is still one that is receiving much study. What makes birds migrate, what influences them on their flights and how do they find their way to the same place year by year? Little really definite and accurate data is available but one thing that has become known in recent years is the reaction of migrating birds to radar, which Tom Benson reported on in the B.B.C. magazine programme called "Meet the Commonwealth." During the war years American radar experts were experimenting and happened to throw a radar beam on a flock of migrating ducks. The birds flared up and changed their direction as though they had been shot at. This reaction to a radar beam was constant and moving pictures of the birds were taken. This year, through the courtesy of the Royal Canadian Air Force, equipment and men went to Delta, in Manitoba, during two weeks of the spring migration. Their experiments confirmed the first observations in every detail, as Benson saw for himself. Every time the radar beam was thrown on a flight of birds they flared up and changed course and when one flight had been caught three times they became so confused that they panicked and scattered independently in all directions. The odd thing is that local birds seem to pay no attention to radar which has this markedly unsettling effect only on birds that are

in flight and migrating. What it means is still a mystery but it gives ornithologists a new field to work on when investigating the mystery of migration, and confirms the theory that ducks, geese and other waterfowl are well ahead of human beings in the science of aerial navigation.

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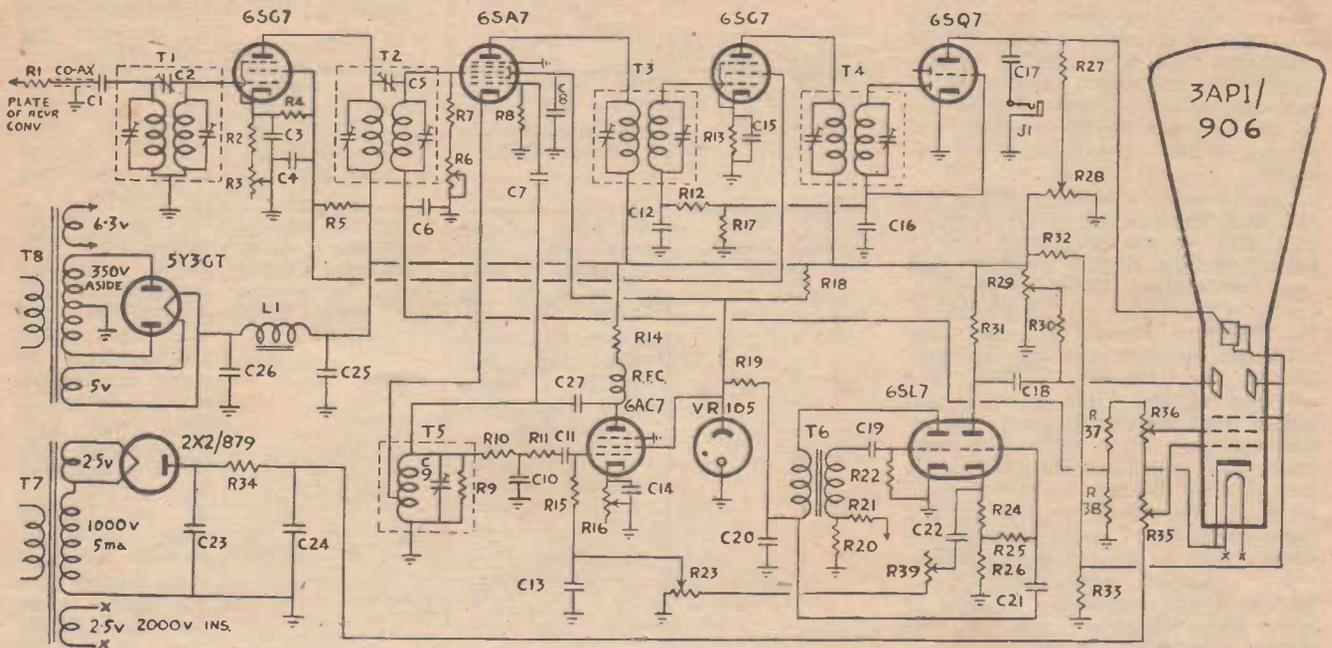
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By WYN MCGEE, ZL3LR \*

\* 24 Tainui St., Somerfield, Ch.Ch.  
(By courtesy of the Editor "Break In," Timaru, New Zealand)

THE panadaptor is a highly versatile piece of equipment, and its usefulness grows continuously as one's experience increases. It is not difficult to visualise the many ways in which panoramic reception may be applied to amateur radio. Unoccupied channels in our congested bands can readily be spotted and our VFO's walked into position for QRM free entertainment. Modulation percentage may be checked, frequency shift is noted with ease, and comparative signal reports given. Any station within a 200 k/c's band limit may be checked and audibly monitored without retuning the receiver. Three way QSO's on three separate frequencies are possible in this way by using the panoramic adaptor as the second receiver and so eliminating the process of retuning between overs.

The author having seen and operated a commercial 2-inch unit, decided there and then to build one and utilise a 3AP1/906 already on hand. The advantages of the larger tube are numerous, but those contemplating the use of that spare 5-inch tube should beware. Additional horizontal and vertical video amplifiers would be necessary to say nothing of the higher voltages necessary for using such a tube.

## Circuit Details

The companion receiver must be a superhet having an IF between 450 and 470 k/cs, and should have at least one RF stage for adequate image rejection.

## R.F. Section

The input is connected through a 50,000 ohm isolating resistor to the plate pin of the converter tube in the receiver. Due to the relatively poor selectivity ahead of the converter many signals may be present in its plate circuit. The R.F. transformers T1 and T2 are peaked on both sides of the receiver IF frequency so that a relatively flat overall response of 200 k/cs is obtained. The peaking of T2 is controlled partially by the equaliser control. As less of this is left in circuit the double peaks of T2 become less pronounced, and therefore the R.F. section of the Panadaptor compensates less for the preselector selectivity.

The RF amplifier is a straight band-pass stage utilising a 6SG7. Manual gain is provided in the cathode circuit.

## Converter, Oscillator and Reactance Modulator

The output of the broad band amplifier which may contain signals up to 100 k/cs above and below the receiver IF is fed to the 6SA7. This tube also receives a signal from the local oscillator. The frequency of oscillation is determined by the tank constants T5 and the reactance modulator 6AC7. This tube acts like a

changing inductance across T5, the magnitude of the inductance being mainly dependant upon the transconductance of the modulator tube.

The centre frequency potentiometer controls the bias and therefore the transconductance of the 6AC7. Hence we have a control which can vary the oscillator frequency within a range of up to 200 k/cs. The oscillator mean frequency will be the sum of the panoramic receiver IF and the mean IF frequency of the companion receiver.

During panoramic operation the oscillator is swept through a band of frequencies by a linear sawtooth voltage taken off the sweepwidth control and applied to the control grid of the 6AC7 reactance modulator. As the oscillator makes its excursion it beats progressively with one incoming signal after another to produce pulses of IF of 262 k/cs which are passed to and amplified by the IF section.

During single signal operation the moving arm of the sweepwidth control is grounded and the modulator receives no sawtooth voltage. The centre frequency control now becomes a tuning control which can vary the frequency of the oscillator accordingly.

## I.F. Amplifier

The IF amplifier uses a 6SG7 and is typical of stages found in most receivers, with the exception that it is made as selective as possible.

(Continued overleaf)

### Detector, A.G.C. and Video Amplifier

The detector is the diode section of the 6SQ7. Its output is coupled directly to the grid of the triode section of the same tube, so that the D.C. appearing across the diode load resistance will be amplified by the triode video amplifier. During panoramic operation the pulses of IF fed to the detector appear rectified and filtered across the diode load resistor.

These negative voltage pulses are fed back through the filter network C12, R12, to the control of the IF tube. Strong signals produce high negative voltage pulses which attenuate the gain of the IF stage. In this way signals differing considerably in strength can be presented simultaneously. The time constant of the filter is such that pulses from strong signals do not reduce the gain for an adjacently weak one. The output of the 6SQ7 video amp is fed directly to the vertical plate on the scope so that a flat video response of down to zero frequency with no distortion is possible.

For headset operation Crystal 'phones are recommended because of their high impedance and less resultant distortion of the pattern.

### Sawtooth Generator and Amplifier

The sawtooth voltage applied to the modulator is obtained from a "Blocking Grid Osc"  $\frac{1}{2}$  6SL7. The output voltage is of a sawtooth pattern, its frequency dependant upon the rate at which the blocking condenser discharges through the grid resistor. The values chosen produce a sawtooth frequency of 25 cycles approx. which locks in with the power frequency. The sawtooth voltage is applied to and amplified by the other  $\frac{1}{2}$  of the 6SN7, the output of this being capacity coupled to the horizontal plate on the scope.

This gives us our time base or horizontal base line. Another sawtooth output is taken off the cathode of the amplifier section of the 6SL7 and applied through the sweep pad and sweep width controls to the modulator tube. The sweep pad proportions the amount of sawtooth across the sweep width control so that a 200 k/cs oscillator excursion is obtained with the sweep width at maximum.

### Power Supply Requirements

The power supplies consist of a positive supply used for all the tubes, and a negative low current high voltage supply for the cathode ray indicator supply. A VR105 regulator is used to stabilise the screen voltage on the 6AC7 reactant modulator.

### Construction

T1 and T2 are standard air-cored 465 k/cs IF transformers, with the

Alignment of	Sig. Gen. Output	Control positions	Procedure
I.F. Amp.	262 k/cs unmodulated to pin 8 of 6SA7.	Sweepwidth zero. Centre frequency counter clockwise.	Entire baseline moves up. Adjust trimmers in T3 and T4 for max. reflection.
F.M. Osc.	265 k/cs (or receiver I.F.) unmodulated to pin 8 of 6SA7.	Sweep max. Sweep pad half-way. Centre frequency at centre or zero position.	A pip will appear on screen. Adjust osc. trimmer and slug to bring pin into centre.
R.F. Band Pass Amp.	465 k/cs (or receiver I.F.) plus or minus 90 k/cs unmod. to a 50,000 ohm resistor in series with the full length of input cable to pan-adaptor.	Gain at max. Equaliser fully clockwise. Centre freq. to centre (or zero position).	Sig. gen. on receiver I.F. +90. Back off top couplers in R.F. Xfmrs. T1 and T2 and align trimmers in same xfmrs. for max. deflection. Shift sig. gen. to receiver I.F. -90 k/cs and tune top couplers on T1 and T2 for max. deflection. Repeat the process. Tuning the sig. gen. across the band should give a valley effect in the centre.

bobbins closed up to about  $\frac{1}{4}$ -inch gap. Top capacity is added with 3-30 mmfd trimmers.

T3 and T4 are 262 k/cs air-cored IF's with the bobbins separated a further  $\frac{1}{2}$ -inch.

T5 is a replacement type osc. coil with the tickler removed. About 25 turns are unwound off the remaining coil and the cathode tap connected here. The turns are now wound on as neat as possible and the coil cemented. Do not remove the tuning slug from the coil, as this greatly reduces its tuning range.



"PUSH-PULL" AND RESISTANCE"

Focus and intensity controls must be suitably insulated to withstand the high negative potential encountered.

A word of warning. Always make certain the H.T. filters are discharged before working on the unit, as 1400 volts peak even at 5-19 mA can be the means of a nasty shock.

### Connecting the Adaptor

The receiver connection is made at the converter or mixer plate where a decoupling resistor tends to eliminate the detuning effect on the first I.F.

### Parts List

R1, R4, R32, R33	50,000 ohm.
R2	200 ohm
R3	10,000 ohm GAIN
R5	25,000-1W
R6	50,000 EQUALISER
R7, R26, R38	5000 ohms
R8, R10, R11	20,000 ohms
R9	10,000 ohms
R12, R17, R31	500,000 ohm
R13	1000 ohms
R14	3000 ohms
R15	200,000 ohms
R16	5000 CENTRE FREQ.
R18	15,000 -10W
R19, R30	3 megohms
R20	2000 ohms
R21	500 ohms
R22	1.5 meg. ohms
R23	100,000 SWEEPWIDTH
R24	15,000 ohms
R25	2 meg. ohms
R27	150,000 ohms
R28	100,000 ohms VERTICAL
R29	250,000 ohms HORIZONTAL
R34	100,000 ohms
R35	1 meg. ohm INTENSITY
R36	1 meg. ohm. FOCUS
R37	1 meg. ohm
R39	1 meg. ohm SWEEP PAD

(Continued on next page)

- (All fixed resistors  $\frac{1}{2}$  watt unless otherwise indicated).
- T1, T2 465 k/cs AIR-CORE I.F.'s  
 T3, T4 262 k/cs AIR-CORE I.F.'s  
 T5 Replacement type Osc. coil (see text)  
 T6 2:1 Audio Transformer  
 67, T8 Power Transformer, using only 1 core  
 J1 Open circuit 'phone Jack  
 L1 10 henry 60 m/a. Choke.  
 R.F.C. 2.5 mh. Receiving type.  
 C1 .001 mfrd Mica  
 C2, C5 3-30 mmfd Trimmers  
 C3, C4, C6, C8, C14, C15, C17, C19 .01 mfd. paper  
 C7, C11, C12 100 mmfd mica  
 C9 50-150 mmfd PADDER  
 C10 10 mmfd mica  
 C13 250 mmfd mica  
 C16, C27 500 mmfd mica  
 C18, C21 .05 mfd paper.  
 C20 .1 mfd paper  
 C22 .25 mfd paper  
 C23, C24 1MFD.-2000v Wkg.  
 C25, C26 16 Mfd 250v.

### "CAPTAIN" AERIAL UNIT

In our issue for November, 1949, we referred to the inexpensive aerial eliminating device known as the "Captain," obtainable from Reg Cooke, Gerringong, N.S.W. To our knowledge these handy little accessories have been selling to the Australian radio listening public for more than twenty years—the test



of time is certainly a prover. Shown here is the latest version, and the dimensions are such that it takes up no more room than a match box. Unobtrusively attached to receiver aerial and earth terminals at the rear of the set, this little unit does what is claimed for it, taking the place effectively of a 50 foot external wire aerial. It is obtainable from Box 9 (v) Gerringong, N.S.W., at the price of 5/9, which includes postage.

Modern tubular condensers are made in inductive and non-inductive forms, and it will be noted that some bear the letters "O.F." near one of the connecting leads, whilst others carry a coloured ring at one end. This indicates the outside foil, and to preserve the non-inductive characteristics it is necessary that the lead marked in this way should be connected to the earth line.

## South African Radio Pioneer

*South Africans have recently been honouring the memory of a young genius who was the builder of one of the first transmitters in the Union to broadcast to the world. His name was Redvers Sylvester Fisher.*

IN 1918 Redvers Fisher's enthusiasm for wireless got him into trouble with the authorities. He was only a 15-year-old lad, living with his people in Johannesburg, but the Commonwealth was at war with Germany and the Post Office got suspicious about the mail young Fisher was receiving from radio enthusiasts in Europe and America.

They became even more suspicious when it was found that an unknown wireless station was interfering with their Morse transmission and might be in communication with the enemy.

The police raided the boy's house and found a transmitter on the roof. An engineer from the Post Office testified that it was strong enough to broadcast to Germany, and so the law got busy. Fisher and his 13-year-old sister were arrested, and they were released only when their father protested that he had five sons on active service!

### Family Affair

When the war was over, Redvers Fishers built a much larger and more powerful set. In those days equipment for radio transmission was hard to get, and very expensive — valves cost as much as £12 apiece. But the whole family wanted to see the boy make headway, and so they clubbed together.

A band was formed, and station 73 S was heard regularly on the air. By 1924, the first company broadcasts were started by the South African Broadcasting Corporation.

In 1927, when he was only 24, Redvers Fisher died, and though the event caused no stir at the time, on the occasion of the 25th anniversary of company broadcasting in South Africa, official tribute was paid to the genius of the lad who was the Union's radio pioneer. On his grave to-day is a stone bearing his name and his station number—73 S.

When using 866A's and other valves drawing heavy filament circuit, it is essential to use sockets with good solid contacts to maintain the filament voltage under load. Some sockets heat badly when handling more than 2 or 3 amperes. Don't therefore, use old-fashioned side-spring wafer sockets for the purpose.

## AMERICAN ARMED FORCES

### Short Wave Schedules

#### PACIFIC

9530 Kc.	KGEI	1045-1430 GCT
9570 Kc.	KWIX	0315-0845 GCT
9700 Kc.	KCFB	0900-1430 GCT
11730 Kc.	KGEX	0530-0845 GCT
11860 Kc.	KWIX	0900-1430 GCT
11900 Kc.	KWID	0530-1130 GCT
15150 Kc.	KCBA	0315-0830 GCT
15210 Kc.	KGEI	0530-1030 GCT
15250 Kc.	KNBX	0530-0845 GCT
15330 Kc.	KCBA	0900-1430 GCT
17850 Kc.	KCBF	0315-0830 GCT

Broadcasts are beamed from San Francisco. Information concerning areas, frequencies, and programme schedules, is broadcast during the daily conference period (0835-0845 GCT), and from 0430-0500 GCT, and 1230-1300 GCT on the first and fifteenth of each month.

#### ATLANTIC

1600-1900 GCT	—Voice of America.
1900-2145 GCT	— Armed Forces Radio Service.
15150 Kc.	WRCA — 15210 Kc.
WBOS	—17880 Kc.
WGEX—21730 Kc.	WNRX — 2230-2300 GCT
U.S. press opinion and news broadcast on:	11770 Kc. WNRA —11790 Kc. WRUS — 15220 Kc. WRUA—15280 Kc. WNRE 15330 Kc. WGEO — 17780 Kc. WNBI—17880 Kc. WGEX 21500 Kc. WOOW.

"Spotcash": An English radio enthusiast recently paid a few bob for a box of drills, files, odds and ends of metal and an old accumulator. The accumulator plates showed no sulphation, and examination proved it to be one of the early Groves storage batteries. The plates of these early cells were made of solid platinum and silver. Platinum was worth £20 and silver 3/- per ounce at the time.

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# Television NEWS

Below—Archery. An outside broadcast in Victoria Park, London. The TV camera gives a close-up shot of the targets as arrows are withdrawn and scored.

—B.B.C. Photograph.

(From our London correspondent,  
**JOHN HUGHES,**  
written in November, 1949).

Our correspondent is an Australian resident in London. His views on the future of Australian TV are more than interesting.

EVERYTHING in the world of television in Britain at the moment is having to take a back seat pending the opening of the B.B.C.'s big new 35 KW transmitter at Sutton Coldfield a few days before Christmas.

As I write the engineers are immersed in radiating extensive test signals from this £300,000 station, the last word in radio technique here or in America—the only two countries in the world as yet to operate television on a really big scale.

The engineers are getting very satisfactory results. Experts who viewed the first day's transmissions at the premises of a Wakefield (Yorkshire) firm of radio engineers told the Yorkshire Post that they were satisfied that the Wakefield area would have "first-class reception".

Australians who might like to ascertain the significance of "first-class reception" in Wakefield, Yorks., of signals transmitted from Sutton Coldfield, Birmingham (Warwickshire) should study a map; the result may well open their eyes about the progress of television in the country which first invented it. By way of postscript let me add that Mr. H. Nothers, the Wakefield firm's chief engineer, told a Yorkshire Post reporter present at the test: "The definition is 100 per cent. better than we dared to expect."

For months Mr. Nothers has been waiting and hoping for the day when television could be received in Wakefield. "It is tremendously exciting—like the early days of radio," he said. "I have been looking for months at an empty screen, and nothing is more frustrating."

"The B.B.C. are really putting the transmitter through its paces this morning," he added. "We have travelled now from extreme low frequencies to extreme high frequencies. Any transmissions before this morning have proved nothing, but now we know that this is the real thing."

Lincoln dealers, 90 miles away, reported excellent reception of the full power television test signal from Sutton Coldfield, and said results were comparable with those obtained 25 miles from the London transmitter.



The tests were well received at Bridlington (Yorks.)—again look at the map.

Although Sutton Coldfield has taken four years to "receive" from Alexander Palace, North London, 115 miles away, the time expended, British radio engineers say unanimously, has been well-expended. The B.B.C. have done a magnificent job and now all is set for the Great Occasion—the opening. The Birmingham Mail to-day (November 15) carries the exclusive story of the All Star Variety Show with which the B.B.C. will christen Sutton Coldfield. It will last for two hours and will be relayed from the stage of the King's Theatre, Hammersmith.

Rehearsals with the B.B.C.'s wonderful £5000 Emitron cameras will be in active progress about a week before the actual show is flashed "live" to millions of viewers in the London and Birmingham service areas. This will be the B.B.C.'s "ace" performance in the presentation of a big London theatrical show and the recent Royal Command Performance at the Palladium will be a mere passing thing compared to it. It is going to make radio history.

REMARKABLE are the canards about Australia appearing from time to time in the London Press. One would think that a newspaper with the record of Lord Rothermere's

Daily Mail would be careful to verify its facts when one of its leading writers (in this particular case John Hall, who writes regularly on television) signs a front-page story charging Canberra with by-passing the British radio industry by not calling tenders for the transmitters and other equipment which may be required for the six capital cities of the Commonwealth, helping "American interests" to "obtain a stranglehold on television in Australia," "adopting the American TV system against the British system," and opening the door to American radio manufacturers for "orders for equipment and receivers worth millions of pounds."

According to the Daily Mail's Melbourne man, the recent move by Pye's, of Cambridge, to injunct Canberra from doing anything further about tenders for the Chifley TV Plan, announced on June 14, unless the tenders are called "in the manner required by law," has given the Australian public "first inkling of a struggle which has been going on between British and U.S. television interests for the lush Australian market."

Not one word, in all this farago, about the part the great Australian radio industry could play in the matter of the supply of equipment and receivers for the six transmitters.

The actual position is something like this: Australia may be expected to choose only the most up-to-date and suitable techniques, and, no doubt, in conformity with its general policy of Imperial Preference (especially because of the gains that accrue to Australia and U.K. from this policy), they may be expected to buy British as far as possible.

Whether or not they choose to follow U.S. on U.K. standards (they have chosen something more advanced than either) the equipment, including receivers, could be made here in England just as easily as it can be made in Australia, to present U.K. standards. However, trade policy aims largely to foster local industry in Australia because of their crying need for millions of people, and, no doubt, because of defence and other requirements. That is why it could be expected that the Australian Government would favour growth of a TV industry in Australia, but, of course, it could have entirely overriding considerations arising from other interests, and so we can only await the outcome of the letting of contracts.

Reference to Pye's, the enterprising Cambridge radio people, whose activities in the export market keep them well in the forefront of the industry in the U.K., once again brings into the news Pye's chairman and managing director, Mr. C. O. Stanley. He is married to an Australian, is convinced that the "Chifley Plan" is going to result in the same kind of snail-like progress, and the same frustration of an army of impatient television enthusiasts in Australia, as the Five Year Plan, implicit in the B.B.C.'s "national network" scheme imposed upon it by the Cabinet Capital Investment Committee, is going to result in here. A grant of £1,750,000 for sound and visual broadcasting development in the U.K. for 1950 gives little scope for that big "move forward" in television which, in the United States, after little more than three years, has already pushed television into the rank of one of the first ten industries of that country.

\* \* \*

BRITAIN has a single television station in London; in America 71 cities are sending out live programmes from nearly 100 stations, and 300 more are "on the map", in the queue, awaiting the F.C.C.'s approval. This is a most remarkable and significant fact.

An article by Bruce Harris in the Sydney Morning Herald stressed the money that has been "lost" by the U.S. television industry since it was invested in it some three years ago. It said nothing about the money made by the manufacturers of receiving sets—2,000,000 sold in 1949

against 200,000 sold in 1947. Above all, it said nothing about the waiting queue of 300. Obviously American Big Business isn't worrying unduly about the future of television in the United States.

Space does not permit further elaboration of the point, but I shall return to it when writing next. TV in U.S.A. already—in the short space of three years—a billion dollar industry! Are Australians so blind that they cannot see what new enormous demands for materials of every kind would be created by the speedy installation of television in the big centres of the Commonwealth? Mr. Chifley said in effect "wait for three years and then Australia will have a television service second to none in the world." This is exactly what Mr. Attlee is saying to televisioners here. Maurice Gorham, who was TV chief at Alexandra Palace, until he resigned in 1947, told the Television Society in London a week or two ago that the reason why television was moving "at a snail's pace" in Britain was "the policy of strict monopolistic control imposed on the B.B.C. by its charter," and that it was this policy which was dictating the progress of television here. "The local station is the backbone of television," he said. "Get your small, local, low-powered transmitters going, with, if necessary, a grant from

the common fund of licence fees—and possibly the calling-in-aid of sponsored programmes."

The speech was not reported, but it must have raised eyebrows at the headquarters of the B.B.C. There is a lesson here for Australia.

## CANADIAN TELEVISION PROGRESS

According to an English contemporary, rapid strides are being made in the TV field in Canada. No transmitter is yet in action but four million dollars have been voted to enable the Columbia Broadcasting Company to build two stations. An important feature is that commercial television has been sanctioned. Will the Canadian moves be reflected in Australia?

### WHAT'S THE USE?

"And if anybody ever asks you what 'use' is a particular piece of information which has been discovered for discovery's sake, remember the reply of Faraday to a lady who asked him what was the use of electro-magnetism: 'Madam,' said Faraday, 'what is the use of a newborn baby?'"

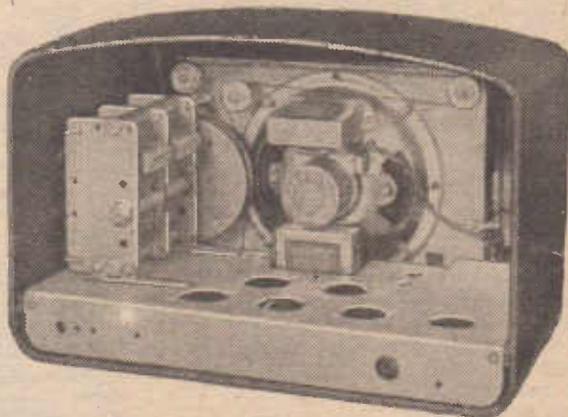
—Dr. A. J. Marshall, Belt Medical Research Fellow at Oxford, speaking in the B.B.C. programme, "Calling Australia."

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# THE FATHER OF THE THERMIONIC VALVE

By M. SCHOFIELD

**J**OHAN AMBROSE FLEMING, whose flash of genius turned the "Edison effect" into the thermionic valve, should be remembered on the centenary of his birth—he was born on November 29, 1849, at Lancaster—for far more than that.

It so often happens that a man's name becomes perpetuated for one particular deed or discovery: that all he did in life—in a long span in the case of Fleming—becomes ignored or even forgotten, simply because one flash of inspiration, or even a lucky turn-up of the cards, provided something that eclipsed a long list of contributions to science.

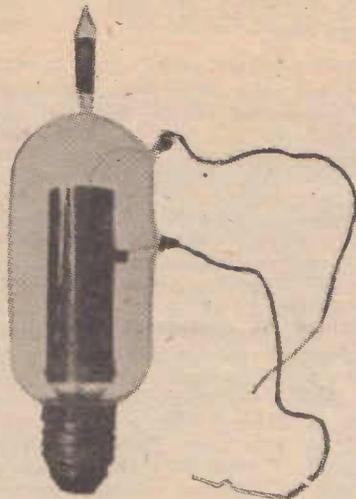
Fleming might well have been lost to science when he turned schoolmaster at Cheltenham for three years. But this Lancaster parson's son, who had graduated from London's University College and Britain's Royal College of Science, and then worked under Guthrie at South Kensington, took the wider view as once more he turned student when drawn to the Cavendish laboratory under the mantle of Clerk Maxwell.

Until well over 70 Ambrose Fleming proved himself in both the academic and more practical spheres. Like Sir Edward Appleton he went to St. John's Cambridge, as scholar, later as Fellow, taking a first-class honours degree in natural science, becoming lecturer in mechanical sciences, and helping to plan the university engineering laboratories. Fleming returned to London as professor of electrical engineering after a year in the Nottingham chair of physics and mathematics. So we should remember that Fleming was ever a professor, ever the brains which the Edison Company could call upon, just as both London and the State could call upon his for expert advice.

We see this eminent man as more than Marconi's fellow-worker, once we note results from this other side of his career. Soon after his London graduation his first published paper on the Contact Theory of the Galvanic Cell was good enough to read as first paper presented before the foundation meeting of the new Physical Society. It proved a pointer to Fleming's lifelong work in the cause of electrical science.

## DEVELOPED THREE BOONS

Yet Fleming, the learned academic man on the one hand, became also the eminently practical man on the other. We now appreciate, since centenaries should be celebrated only by assessing in the light of to-day, how well he played his part in developing those three everyday boons:



● A Marconi-Round Valve of 1914. This early triode was not far removed from Fleming's development.

the electric lamp, the telephone and the radio. The London of 70 years ago saw things begin to move in applied electrical science because Fleming was there.

First, there were the rival Edison and Bell companies setting up telephone exchanges in defiance of any monopoly the Post Office might claim in view of the Telegraph Acts. These companies amalgamated later, had Fleming as scientific adviser in the Edison concern, and called him in along with Rayleigh and Kelvin to try and fight the State monopoly. Then Edison, the Edison who succeeded by sheer driving of himself and his men, had sent from the United States two electric lamps with those carbonised bamboo filaments chosen after he had scoured the world for suitable cellulosic material for filament-making. And Fleming was the man chosen to demonstrate these lamps connected to a battery of 70 dichromate cells (then known, of course, as "bichromate cells").

In the birth of radio Ambrose Fleming goes down in history's pages both as Marconi's associate and as father of the Thermionic Valve. He had visualised that radio would be a boon at sea; he saw his belief a reality within a month, when the East Goodwin lightship summoned help after a steamer had collided with it in a dense fog. In a lecture before the British Association he demonstrated trans-Channel radio messages from Boulogne, France.

In December, 1901, the first radio signals were sent across the Atlantic. The transmitter was sited at Poldhu in Cornwall, and for its design and performance tests Fleming was

largely responsible. It was actually on December 12 that the delighted Marconi on the other side of the Atlantic first heard the signals sent out from Poldhu, signals he received on a kite-aerial 400 feet high. But in all these growing-pains of radio, Fleming was ever there with his theoretical basis. And we must remember, too, his cymometer for measuring wave-lengths; his other work on loss in transformers, on high-tension A.C. (alternating current) transmission from Deptford to London, on the two-phase system in transmitting power from Niagara, together with his standard text-books on telegraphic and telephonic communication; on testing and measurement, on transformers and on wireless.

## BIRTH OF THE VALVE

But then the sudden inspiration which brings perpetuation, the Flemish valve. Joule, Ampere, Volta, Watt and Faraday had all gone down in posterity's pages in units of measurement, in something more useful or fortunate that the perpetuation won by men like Silhouette, Guillo-tine or Quisling for example. Fleming began to think of some sort of "valve", some device for passing current in one direction, thus enabling a telephone to be incorporated in radio. Then, recalling the Edison effect he had pondered over about 20 years previously, with the blackening of bulbs in burnt-out lamps, he put his small metal plate connected to the positive, connected the filament to the negative, and the valve was born. He saw how with the plate connected to the antennae and a telephone circuit, audible effects might be obtained in a receiver. Furthermore, the valve which was introduced for receiving purposes was to lead to valves as oscillators for transmission, this coming some years after Fleming had appreciated that Marconi's spark would have to be superseded by something more efficient in wireless communication.

The Fleming valve, which he improved with a metal cylinder for the plate, and increased sensitivity introduced with greater electronic emission, seemed soon to be overshadowed by Lee de Forest's further improvement with his "grid" of fine wire interposed between plate and filament so that weak transmission could be received. But Fleming's Oscillation Valve of 1904 still stands as a foundation, a base for all subsequent research, one which seemed to have doomed the crystal detector as rectifier even before this had been developed fully. United States courts, it should be noted, laid down

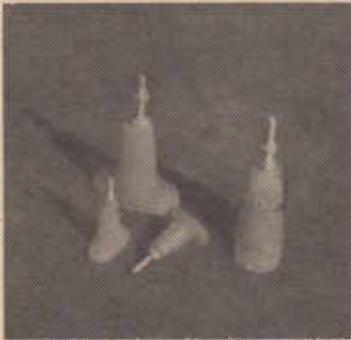
that de Forest's valve was merely a modification of Fleming's master patent. The valve has proved a progenitor of valves for reception and amplification, of valves which found so many other applications outside wireless.

"Discovery"—(London).

## TRADE ITEMS

### POLY STANDOFFS

Reference was made, in our issue for January, 1950, to a new line of stand-off insulators. These are made in various sizes, as shown, and are of moulded polythelene construction. An additional advantage to the



high R.F. insulation properties is that unlike ceramic insulators, these poly types will not fracture when tightening mounting screws. V.H.F. equipment designers should find widespread application for these insulators, obtainable from C. S. C. Sweetman, 1st Floor, 31 Chesser Street, Adelaide, S.A.

### BREIF Club Kempsey Appeal

To date a total of £1,428/0/6 has been subscribed to the BREIF Club Kempsey Appeal for the relief of people in the industry in that area who suffered during the recent flood disasters.

The Kempsey Committee extends their thanks to the following Companies who gave assistance direct in the nature of equipment and materials; they are W. J. McClellan & Co. Ltd., Tecnico Ltd., Ducon Condensers Ltd., Ferguson's Radio Co., Phillips Electrical Industries of Australia Pty. Ltd., Geo. Brown & Co.

Our January, 1950 issue carried a full-page advertisement for the Master "S" Meter and we can recommend this item very highly as an attractive proposition for existing or planned receivers. You will see one used in the Dual-I.F. Amateur band receiver described by the editor in the issue for June, 1949. The Master "S" Meter is a 3 inch type, thus large enough to see easily on a front panel, and is coloured in black and red indication. Manufacturers are Master Instruments Pty. Ltd., 13 Blackfriars Street, Chippendale, Sydney, N.S.W., and amateurs mentioning this magazine will receive special attention.

## Something for Nothing

That ad. by Ducon Condenser Co. in our January, 1950, issue—on page 9. It is worth having—a useful booklet on noise suppression—and it doesn't cost you anything. All you have to do is fill in the coupon and mail it as requested. The Ducon people send you the book free, by return mail. Go to it boys before they all get snapped up.

"D.C.N.": The price of television receivers would not be exorbitant even at £120. In the early days of broadcasting £60 to £120 was paid for crude radio receivers which people maintained at considerable expense for battery and valve replacements. Maintenance of a television receiver would not be so costly, as it is powered straight from the A.C. mains, and most modern valves will last for years. Up to £75 is often paid for movie projectors that show only silent films, and another £20 is necessary for the camera to take the films, which are developed at a cost of about £1/7/- per 100-ft. Even during the 1930 depression a well-known all-wave radio-gramophone was retailed at £175, and despite this price, sold very well. Up to £100 for a television receiver in Australia could therefore hardly be considered a deterrent to buyers.

\* \* \*  
 Congratulations to Allan Fairhall on his election to Federal Parliament as Liberal Member for Paterson, N.S.W. Allan is an old-time amateur, previously holding the callsign VK2KB, and now VK2AKL. He was the founder of Newcastle broadcasting station 2KO, and disposed of his interest there to retire into country life as a dairy farmer. Allan has always been a public-spirited citizen; during the war he functioned on the Board of Area Management in the Ministry of Munitions in an important position, and gave his services salary-free. Australian amateur radio should now have a good friend "at court".



THE MILLIONTH MINIATURE RADIOTRON COMING UP

Works Manager, Mr. R. Lambie (right) stands by with K. Ward and C. Lawrence, as the millionth Miniature Valve comes up for operator Pat Wood at A.W. Valve Co's factory.

## FREEDOM OF TELEVISION

While the Australian commercial stations are advancing very sound arguments why television in this country should not remain a Federal monopoly, it is interesting to note a recent article in the British "Economist" which makes a strong case for the release of British television from B.B.C. monopoly control.

Technically, the "Economist" points out, the provision of a TV service for the whole of Great Britain, or even for any substantial part of it, would be a very costly process. Furthermore, the additional cost of colour television is hovering in the background.

"How can television be made to pay? It costs much more than radio to provide, and yet it is difficult to believe that the demand for it—in terms of viewer-hours—will ever be as large. The whole population cannot be reached; there is difficulty—not, indeed, in providing interesting programmes but in providing enough interesting programmes; and television, unlike radio requires the whole attention of the viewer. With demand in all probability smaller and with the costs of supply certainly much higher, an economic problem is created, whether the finance of broadcasting comes from licence fees or from advertisers. This, incidentally, is a point that is usually overlooked by those who bemoan the slow progress of television in Britain. There must be a limit somewhere to the funds that can be diverted out of the money that sound listeners have paid for the purpose of providing sound broadcasting."

Voices are not lacking to urge, adds the "Economist," that television should be released from its 'dependence' on the B.B.C. on the ground that TV is technically an entirely separate service, using separate channels, and artistically that it is only likely to suffer from the dominance of Broadcasting House.

### THE STREET OF INK

"In spite of disappointments Fleet Street has its eternal fascination for journalists no matter where they come from. There is one whose love of it is sentimentally recorded at the windy corner of Ludgate Circus and Fleet Street where he sold papers as a boy. Under a bronze plaque of the head of Edgar Wallace, famous crime reporter, you can read these words: 'Edgar Wallace, Reporter. Born London 1875, died Hollywood 1932. He knew wealth and poverty, yet had walked with kings and kept his bearing. Of his talents he gave lavishly to authorship, but to Fleet Street he gave his heart.'"

—Betty Nesbit, Australian journalist, talking in a B.B.C. programme about life in Fleet Street, centre of the British newspaper world.

## NEW RECORDS

FOR their first releases in the New Year, the recording companies have "gone Hollywood," nine of their titles being from current and forthcoming films.

The list of releases is small since production was reduced by the holiday period.

Columbia has only two discs. On D03314 Frank Sinatra introduces a new hit, "Comme Ci Comme Ca," which is coupled with "It Happens Every Spring," theme song from the film of the same name.

The other Columbia offering (D03315) is from star vocalist, Doris Day, who sings two romantic numbers, "Someone Like You"—from "My Dream Is Yours"—and "If I Could Be With You," featured in "Flamingo Road."

Sammy Kaye and Tex Beneke with their orchestras bracket two hit numbers for H.M.V. on EA3855. These are "The Four Winds and the Seven Seas," and "The Beautiful Blonde From Bashful Bend."

Perry Como groups a new film song and a sentimental old favourite for H.M.V. on EA3856: "Everytime I Meet You"—also from "The Beautiful Blonde"—and "When Day Is Done."

England's top vocalist Donald Peers, who made his debut in the December lists, appears on the Decca label Y6185 this month. Peers specialises in songs with a sincere appeal, and he has chosen a typical number in "If You Ever Need A Friend." It is backed with the romantic best seller, "In A Shady Nook By A Babbling Brook."

That successful English combination, Primo Scala and His Banjo Accordion Band features on Y6184 colourful arrangements of the overseas hits, "The Echo Told Me A Lie" and "The Mistletoe Kiss."

Those who saw and enjoyed "The Jolson Story"—and that's just about everyone—will be wanting the records from its smash-hit sequel, "Jolson Sings Again." And here they are with the inimitable Al at the microphone. Both are Decca discs, Y6182 and Y6183. With terrific punch and verve, the jazz singer puts over "I Only Have Eyes For You" and "Waiting For the Robert E. Lee" on the first disc, and the other groups "Toot, Toot, Tootsie" with "For Me And My Gal."

From the imported English lists comes a pair of Columbia records (LB79/80) to gladden opera lovers. Mezzo-soprano Jennie Tourel proves her extraordinary versatility and light touch in this attractive collection of songs from the Offenbach operas, "Tales of Hoffman" and "La Perichole." The final side of the set is occupied by the lovely "Barcarolle," in which Miss Tourel takes both the soprano and alto parts. "La Perichole" is represented by four songs. This seldom heard opera appeared in 1868, and has the unusual setting of Lima, Peru. Offenbach's melodic charm was perfectly suited to the public taste of the gay Second Empire, and these operas had considerable influence upon Arthur Sullivan.

The success of "Dream of Olwen" is undisputed, but the composer, Charles Williams, proves that it was not a flash-in-the-pan with "Jealous Lover." This descriptive piece is scored for orchestra and piano. The reverse side is "Estrellita," which has been a favourite ever since publication in the U.S.A. twenty-five years ago. The number is DX1569.

Film fans and ballet lovers will be rushing the first recording of the "Red Shoes Ballet Music," from the most sensational film success in years. Conducted by Muir Mathieson, the Philharmonia Orchestra records this score by Brian Easdale on DX1597/8.

Anyone who is inclined to think that Bach is a musician's musician would do well to hear his "Concerto in E Major" on H.M.V. DB9370/2. This music goes straight to the heart, enriched as it is by the wonderful playing of violinist Gioconda de Vito. The London Chamber Orchestra, and harpsichordist Geraint Jones, are conducted by Anthony Bernard in a most admirable manner, combining ripe Bach scholarship with immaculate teamwork with the soloist.

Prokofiev's "Sonata No. 1 For Violin and Piano," Op. 80" is a striking example of the best type of modern chamber music. It is recorded for the first time by H.M.V. on DB9376/8. In the hands of such artists as Yehudi Menuhin and Marcel Gazelle, the work



sounds fascinating throughout, and a hearing will no doubt stimulate investigation into the composer's other instrumental works.

Unanimous criticism has decreed Alexander Kipnis as the natural successor to Chaliapin in the name part of Moussorgsky's opera, "Boris Godounov." With DB6482/3 H.M.V. offers three highly dramatic scenes—Monologue of Boris; The Clock Scene; and the Duologue between Boris and the Prince, sung by Kipnis and his protegee, tenor Ilya Tamarin. The R.C.A. Victor Symphony Orchestra is conducted by Nicolai Berzewsky, notable interpreter of Russian music in the U.S.A.

An interesting release (C3865) is Cherubini's overture to his opera, "The Water Carrier," played by the Bournemouth Municipal Orchestra and its new director, Rudolf Schwarz. Cherubini lives mainly by this work. He was the friend of Beethoven, and as director of the Paris Conservatoire in Berlioz's student days, earned the dislike of Berliozians by his unfriendly attitude to the unruly, but talented, young romantic.

The records C3829/30 contain piano music with a freshness and vitality that will commend it to all music lovers. This is "Sonata No. 3, Op. 46," by the contemporary Russian composer, Kabalevsky. It has been entrusted to the incomparable skill of Benno Moiseiwitsch, one of the really great keyboard names in music.

No time has been lost in making available this most important contribution to the history of recorded music. Vaughan Williams in his "Symphony No. 6 in E Minor," written at the age of 75, explores quite new ground, and this work has had a great welcome, creating extraordinary interest wherever it has been played. In this, a first waxing, it has been recorded on C7755/8 by the London Symphony Orchestra, conducted by Sir Adrian Boult.

Another major work this month is Decca's AK2075/8—Mozart's "Concerto in C Minor, K491," one of his greatest masterpieces. Overseas critics, notably that of Compton Mackenzie's publication, "The Gramophone," hold up this performance as a model of Mozartian playing. The Concertgebouw Orchestra of Amsterdam lends brilliant support to the artistry of the distinguished pianiste, Kathleen Long.

### ALL THIS, AND MOVIES, TOO!

Friday night—one of the three Audience Participation Nights at 2SM's Radio Playhouse, offers grand entertainment.

There's an hour and a half of actual broadcasting and twenty-five minutes of movie shorts, including travelogues, documentary and comedies . . . all "On the House". It's not surprising that the 2SM Playhouse is packed to the doors.

### George Edwards Plays

### Modern Haroun-al-Raschid

George Edwards has brought the old Baghdad story up-to-date in his latest 2UW serial, "Mr. Meredith Walks Out".

Mr. Meredith is a modern al-Raschid—a multimillionaire, who, tiring of his sheltered luxurious life, borrows a shabby suit of clothes from his butler and wanders out into the streets of his city to discover how the other half lives. His discoveries are humorous, dramatic and tragic, and each makes a complete episode in this new serial, which commenced on 2UW on January 17 last, and will be broadcast every Tuesday evening at 7.45.



### A Fine Hotel FACING A PARK

The one thing you will immediately notice when you stay at the Wentworth is the peaceful atmosphere . . . the absence of noise and bustle . . . The Wentworth faces a park . . . yet it is merely "round the corner" from the centre of the city. The rooms are all you would wish . . . the service and cuisine excellent.

### THE WENTWORTH in Sydney

Phone BW 1361 (10 lines)  
C. D. Maclurcan, Managing Director

# IN LIGHTER VEIN



## DOUBLE LETTERS ARE PITFALLS IN 2CH SPELLING BEE CONTEST

IT seems that the 'double letters' trick most competitors in the 2CH £600 Family Spelling Bee, judging by the pitfalls on some Friday nights.

Joan Read, compere of the programme, says that experience shows that, while words chosen are not difficult, those containing the double letters were the "tongue-trippers".

"One competitor went down for failing to put two d's in 'goddess'," said Joan. "Another didn't know where to put the double-l in 'parallel'. 'Accelerate' is another word that tricked someone who wasn't sure whether to put two l's in it or not."

John Hudson, who is Spelling Master at the quiz, agreed with Joan regarding the double letters, but said that the old tongue-trippers of his school days, including the "i before e" words, were still the cause of many casualties.

"Believe it or not," he said, "but 'believe' is a word that tricks lots of people. The words we select are not usually hard to spell. 'Believe' is easy to spell—if you know how. All you have to remember is that the middle letters spell 'lie'—and there you have it. You can't believe a lie and that's enough to remember that 'i comes before e' in that word, at any rate."

Although a good many families are already lined up, Joan Read is keen to secure as many more as she can get. Families should be of three people or over, and the youngest should be over 12. One member should be a parent.

The Family Spelling Bee is on the air every Friday at 8.15 p.m. from 2CH.

## OUT OF THIS WORLD

"HULLO!"

"Hullo, hullo, hello!"

"Is that Mars? M-A-R-S!"

"M for Mesopotamia, A for Alsatian, R for Randwick, and S for Sesquipedalian? Mars!"

"Oh, that you, Professor? Good-morning. How is the new Canal Control Board functioning?—I can't get you — Oh! William Morris Hughes? I agree. Most dynamic personality. He'd make you see some new stars up there—"

And why not, indeed?

This is the sappy season for the press, and while technicians and scientists scoff, newspapers may be persistent. Headlines such as "Morse to Mars," "Broadcasting to the Stars," and the like may startle suburbanites at breakfast. And these stimulating headlines are likely to be printed over valuable mis-statements concerning scientific, physical and astronomical impossibilities which are enough to make Einstein climb to the top of Nelson's Column and pull it up after him for safety.

But, as Mark Twain remarked, noise proves nothing. Often a hen who has merely laid an egg cackles as if she has laid an asteroid.

Yet once again, why not? Is Mars inhabited? It is a fascinating theory.

And this is a time

*When Science reaches forth her arms  
And feels from world to world, and charms*

*Her secret from the latest moon.*

as Tennyson—or is it Robinson? so aptly expresses it.

A writer in a responsible and reliable overseas journal—who is not a layman, says:—

"If scientists are misled by newspaper myth, and overlook the possibility of inter-planetary radio they are missing, probably, the biggest chance of altering the fate of the world."

Brave words! The writer goes on to say:—

"If our accepted history of the solar system is correct, then Mars has been in existence as a planet longer than the earth, has cooled down more, and so any life on it will probably be in a much more advanced stage of civilisation than in our world to-day. . . . Have they realised the way in which ether vibrations may be harnessed for radio communication? Have they a language or basis of understanding which it is possible to convey by ether vibrations? Have they, perhaps, passed to a higher standard of civilisation so that they cannot appreciate radio communication as we know it?"

Then follows:—

"If we disregard the possibility of continued radio echoes upsetting

inter-planetary broadcasting, we are still faced with the supposition that Mars can comprehend our signals if received as micro-waves.

*So many worlds, so much to do, so little done, such thing to be!*

Meanwhile Mars is a long way off. The planet is 141,000,000 miles from the sun, as against our mean distance of 92,000,000 miles. These figures simply stagger the imagination. You could go mad if you thought steadily about the stars.

There is some inscrutable energy behind the scheme of things, and we are slowly learning more and more about it. Tiny sparks reach us, blown from the roaring furnace of the universe. Radio is a significant gesture of our time. Time itself is a gesture of eternity, and life is a gesture of time. And all our little gestures are part of the great gesticulation which is the universe.

## THE LONG-SUFFERING DIAL

TURN the dial, turn the dial, turn the dial sadly,

List to the singers who're singing so badly.  
Twirl the dial, whirl the dial, hurl the dial madly,

List to the singers they're singing so badly.  
Hear the soprano go flat on high "C"!

And mark well the basso who fumbles his "G"!

Turn to the right and the fiddles need tuning,

Dial to the left and the crooners are crooning.

Turn the dial, turn the dial, turn the dial sadly,

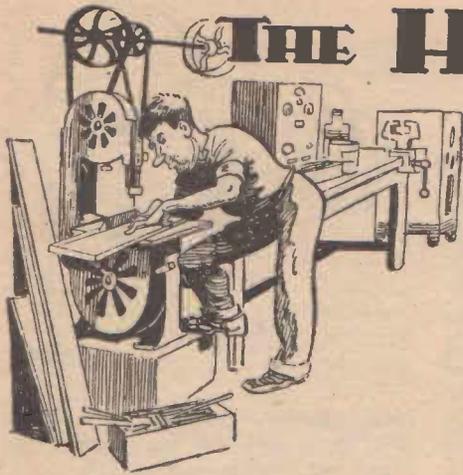
Twirl the dial, whirl the dial, hurl the dial madly!

Just wait a moment—it's not goin' to hurt you.

Patience is really your most needed virtue.  
You'll hear some music that's surely worth while,

If only you'll just keep on turning the dial,  
So turn the dial, turn the dial, turn the dial gladly.

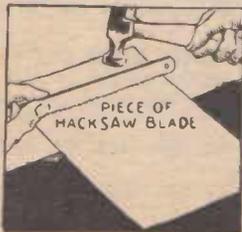
You'll find that some stations are not doing badly.



# THE HOME WORKSHOP AND RADIOTIPS For PRACTICAL PEOPLE

**"Querex":** Several valves at present available are in effect combinations in one envelope of the electrodes of two or more valves. It is often possible to use these individually, ignoring the electrodes relating to one section. There are duo-diode-pentodes with unusual characteristics in the pentode section, and it is possible to use this as a straight pentode.

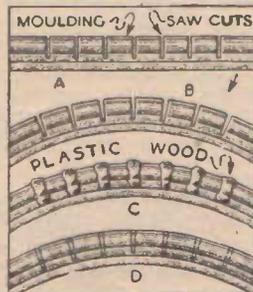
**"Amrad":** Apart from the safety aspect, 240-volt A.C. mains leads to power and lighting points on a radio workbench need shielding and earthing in conduit from another viewpoint. A constructor I know spent considerable time and patience trying to eliminate a prominent hum in a receiver. Eventually the source turned out to be the close proximity to the aerial lead of the flex for a pivot lamp. Removing the flex a few feet from the aerial removed the hum.



Paper Perforation

## METHOD OF PERFORATING PAPER

A hacksaw blade with sixteen to eighteen teeth per inch makes an excellent perforator for small home work, as shown in the sketch. Place the teeth along a line laid out for the perforation and tap the back of the blade sharply several times. This should be done on a very easily penetrated surface, such as linoleum.



Practical tip for Shaping Moulding to Curved Surfaces.

## HOW TO FIX MOULDING TO CURVED SURFACES

The sketch shown herewith shows a method for fitting moulding to curved surfaces. To fit a curved wall, slot the wooden moulding with a number of saw cuts as at (A), and bend it safely into place (B). Fill each cut with plastic wood (or similar compound) and let harden (C). When hard, the filler is smoothed with chisel and sandpaper, as at D. If a plain edging only is to be fitted, then the saw cuts may be made on the inner face and no filling will be necessary.

**"Thunderclap":** In mid-summer, when electrical storms are at their worst, many radio users with external aerial systems towering over the home look fearfully at the skies, and wonder if the elevated wire is an attraction to lightning. A little thought should dispel any such fears. There are miles of overhead power cables and telephone lines strung through every populated centre, but it's rarely these are seriously damaged. Electrical research workers in recent years have been able to duplicate lightning discharges in the laboratory. Tests with models of houses, telegraph poles carrying wires, etc., show that where there is a metal conductor above the object it is

wished to protect, the wiring takes the brunt of the discharge. An external aerial may be looked upon as a safeguard to a home, particularly if it is efficiently earthed. A copper wire has relatively low resistance and will quickly leak away an accumulated charge. Trees are struck because they are full of moisture and have a fairly high resistance. The electrical charge striking the tree turns the moisture, owing to the great heat, into steam, and causes an explosion. Why the imprint of leaves, etc., should often be found "photographed" on the bodies of people who have been near trees during a lightning storm remains a mystery.



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# AMATEUR RADIO SECTION

## AMATEUR RADIO QSL BUREAUX THROUGHOUT THE WORLD

The following list of International QSL Bureaux is up to date as at the end of 1949.

Alaska: J. W. McKinley, Box 1533, Juneau.  
 Algeria: Via France.  
 Argentina: R.C.A., Av. Alvear 2750, Buenos Aires.  
 Australia: W.I.A., Box 2611W, G.P.O., Melbourne.  
 Austria: Via ARRL.  
 Azores: Via Portugal.  
 Barbados: VP6PX, Wood Goddard, Bromley, Welches, Christ Ch., Barbados, British West Indies.  
 Belgian Congo: P.O. Box 271, Leopoldville.  
 Belgium: U.B.A., Postbox 634, Brussels.  
 Bermuda: VP9D, James A. Mann, The Cut, St. Georges.  
 Bolivia: R.C.B., Casilla 15, Cochabamba.  
 Brazil: L.A.B.R.E., Caixa Postal 2353, Rio de Janeiro.  
 British Guiana: Desmond Yong, 22 Sussex St., Charlestown, Georgetown 16.  
 British Honduras: D. Hunter, Box 178, Belize.  
 Burma: B.A.R.S., P.O. Box 611, Rangoon.  
 Canal Zone: Canal Zone Amateur Radio Association, Box 407, Balboa.  
 Canton Island: Francis T. Blatt, KB6AG, c/o C.A.A., Canton Island, South Pacific.  
 Ceylon: P.O. Box 907, Colombo.  
 Chile: Radio Club de Chile, Box 761, Santiago.  
 China: K. L. Koo, P.O. Box 409, Shanghai.  
 Colombia: L.C.R.A., P.O. Box 584, Bogota.  
 Cook Island: Ray Holloway, P.O. Box 65, Rarotonga.  
 Costa Rica: F. Gonzalez, Box 365, San Jose.  
 Cuba: James D. Bourne, Lealtad 660, Habana.  
 Czechoslovakia: C.A.V., P.O. Box 60, Prague I.  
 Denmark: E.D.R., Box 79, Copenhagen, K.  
 Dominica: VP2DC, Roseau.  
 Ecuador: Victoriano Salvador, P.O. Box 2536, Quito.  
 Eire: R. Mooney, "Eyrefield," Killiney Co., Dublin.  
 Ethiopia: ET3AF, P.O. Box 858, Addis Ababa.  
 Fiji: S. H. Mayne, VR2AS, Victoria Parade, Suva.  
 Finland: P.O. Box 306, Helsinki.  
 France: Service QSL, R.E.F., 6 rue du Pont de Lodi, Paris 6.  
 Germany: (DL2 calls only) E. G. Styles, PW/DP Branch, 120 Hq. CCG (BE), Brunswick BAOR (II).

Germany: (DL4 calls only) M/Sgt. A. R. Varney, OPM, EUCOM, APO 757, c/o Postmaster, New York, N.Y.  
 Germany: (DL5 calls only) Via France.  
 Germany: (other than above) D.A.R.C., Post box 99, Munich 27.  
 Great Britain (and British Empire): A. Milne, 29 Kechill Gardens, Hayes, Bromley, Kent.  
 Greece: C. Tavaniotis, 17-A Bucharest St., Athens.  
 Greenland: 1385th AAF Base Unit, APO 858, c/o Postmaster, New York, N.Y.  
 Grenada: VP2GE, St. Georges.  
 Guam: G.R.A.L., APO 234, c/a Postmaster, San Francisco, Calif.  
 Guatemala: Manuel Gomez de Leon, P.O. Box 12, Guatemala City.  
 Haiti: Roger Lanois, c/o RCA, P.O. Box A-153, Port-au-Prince.  
 Hawaii: A. F. Fuchikami, 2543 Namaau Dr., Honolulu



● A good example of the modern up-to-date amateur station is that of John Meagher, VK2AMV, Forbes, N.S.W. Commencing activity during 1949, John is making quite a mark in the DX world.

Hong Kong: Hong Kong Amateur Radio Transmitting Society, P.O. Box 541, Hong Kong.  
 Hungary: H.S.R.L., Postbox 185, Budapest 4  
 Iceland: Islenskir Radio Amatorar, P.O. Box 1080, Reykjavik.

India: J. Nicholson, Nadiar Estate, c/o Munar P.O., Travancore.  
 Israel: See Palestine.  
 Italy: A.R.I., Via San Paolo 10, Milano.  
 Jamaica: Thomas Meyers, 122 Tower St., Kingston.  
 Japan: F.E.A.R.L., APO 500, c/o Postmaster, San Francisco, Calif.  
 Luxembourg: G. Berger, 20 Louigny St.  
 Macao: Via Hong Kong.  
 Malta: Via Great Britain.  
 Mauritius: V. de Robillard, Box 155, Port Louis.  
 Mexico: L.M.R.E., Apartado Postal 907, Mexico, D.F.  
 Montserrat: VP2MY, Plymouth.  
 Morocco: C. Grangier, Box 50, Casablanca.  
 Morocco: Tangier International Zone only: EK1MD, Box 57, British Post office, Tangier.  
 Mozambique: Liga dos Radio-Emissores, P.O. Box 812, Lourenco Marques.  
 Netherlands: V.E.R.O.N., Postbox 400, Rotterdam.  
 Netherlands East Indies: Hr. C. Loze, PK1LZ, Burg. Kuhrweg, 47 Bandoeng, Java.  
 Newfoundland: N.A.R.A., Box 660, St. Johns.  
 New Zealand: N.Z.A.R.T., P.O. Box 489, Wellington C1.  
 Nicaragua: L. B. Satres, Bolivar Ave., 106 Managua.  
 Northern Rhodesia: N.R.A.R.S., P.O. Box 199, Livingstone.  
 Norway: N.R.R.L., P.O. Box 898, Oslo.  
 Pakistan: Via India.  
 Palestine: P.O. Box 4099, Tel-Aviv.  
 Panama, Republic of: L.P.R.A., P.O. Box 1616, Panama.  
 Paraguay: R.C.P., Palma 310, Asuncion.  
 Peru: R.C.P., Box 538, Lima.  
 Philippine Islands: Elpidio G. DeCastro, Philippine Amateur Radio Assn., 931 R. Hidalgo St., Quiapo, Manila.  
 Puerto Rico: E. W. Mayer, P.O. Box 1061, San Juan.  
 Portugal: R.E.P., Travessa Nova de S: Domingos, 34-1 Lisbon.  
 Roumania: Vasilescu, Box 326, Bucharest.  
 Salvador: J. F. Mejia, 7a Calle Poniente No. 76, San Salvador.  
 South Africa: S.A.R.L.A., P.O. Box 3037, Capetown.  
 Southern Rhodesia: S. E. B. Anderson, ZE2JN, 3388 Queens Park, Bulawayo.  
 Spain: U.R.E., P.O. Box 220 Madrid.  
 St. Vincent: VP2SA, Kingstown.  
 Sweden: S.S.A., Stockholm 8.

(Continued overleaf)

Switzerland: U.S.K.A., Postbox 1203, St. Gallen.  
 Syria: P.O. Box 35, Damascus.  
 Trieste: A.R.A.T., P.O. Box 301.  
 Trinidad: Edgar H. Borde, 52 Mucurapo Rd., Port-of-Spain.  
 Uruguay: R.C.U., Casilla 37, Montevideo.  
 U.S.S.R.: Central Radio Club, Postbox N-88, Moscow.  
 Venezuela: R.C.V., Apartado 1247, Caracas.  
 Virgin Islands: Richard Spenceley, KV4AA, Box 403, St. Thomas.  
 Yugoslavia: Post Box 180, Ljubljana.

### A.R.R.L. QSL BUREAU

Here is the complete list of QSL Bureau Officers for the American Radio Relay League. Cards for the appropriate locations in U.S.A., Canada, and Alaska, should be routed through these Bureaux.

- W1, K1—Frederick W. Reynolds, W1JNX, 83 Needham St., Dedham, Mass.  
 W2, K2—Henry W. Yahnel, W2SN, Lake Ave., Helmetta, N.J.  
 W3, K3—Jesse Bieberman, W3KT, Box 34, Philadelphia, Pa.  
 W4, K4—Johnny Dortch, W4DDF, 1611 East Cahal Ave., Nashville, Tenn.  
 W5, K5—L. W. May, jr., W5AJG, 9428 Hobart St., Dallas 18, Texas.  
 W6, K6—Horace R. Greer, W6TI, 414 Fairmount St., Oakland, Calif.  
 W7, K7—Bob Donovan, W7EYS, 1530 Fairview St., Bellingham, Wash.  
 W8, K8—William B. Davis, W8JNF, 4228 W. 217th St., Cleveland 16, Ohio.  
 W9, K9—John F. Schneider, W9CFT, 311 W. Ross Ave., Wausau, Wis.  
 W0, K0—Alva A. Smith, W0DMA, 238 East Main St., Caledonia, Minn.  
 VE1—L. J. Fader, VE1FQ, 125 Henry St., Halifax, N.S.  
 VE2—Austin A. W. Smith, VE2UW, 6164 Jeanne Mance, Montreal 8, Que.  
 VE3—W. Bert Knowles, VE3QB, Lanark, Ont.  
 VE4—Len Cuff, VE4LC, 286 Rutland St., St. James, Man.  
 VE5—Fred Ward, VE5OP, 899 Connaught Ave., Moose Jaw, Sask.  
 VE6—W. R. Savage, VE6EO, 329 15th St., North, Lethbridge, Alta.  
 VE7—H. R. Hough, VE7HR, 1785 Emerson St., Victoria, B.C.  
 VE8—Jack Spall, VE8AS, P.O. Box 268, Whitehorse, Y.T.  
 KP4—E. W. Mayer, KP4KD, P.O. Box 1061, San Juan, P.R.  
 KZ5—C.Z.A.R.A., Box 407, Balboa, Canal Zone.  
 KH6—Andy H. Fuchikami, KH6BA, 2543 Namauu Dr., Honolulu, T.H.  
 KL7—J. W. McKinley, KL7CK, Box 1533, Juneau, Alaska.

"DAMOCLES." Quoth a phone man on a DX band:—"I know I've got ragged edges to my transmission but it doesn't register on overseas or interstate contacts—ONLY ON LOCAL—so that's OK."

Really! Now isn't that just the height of something or other?

### GEELONG (Vic.) AMATEUR RADIO CLUB

Before the close of the year members put in an enjoyable evening at the station of Bob Wookey, VK3IC. He had a lot of gear on display, and particular interest was shown by the visitors in the BC348 receiver. It is unfortunate that he has had to resign the Club Secretaryship owing to transference to Werribee, but it is a case of promotion, and we wish Bob every success. Peter Cartwright has been appointed Secretary in an acting capacity for the time being. Plans have been laid for a Field Day in the near future. Several members took part in the VHF activities early in December, when Mr. Ken McTaggart, VK3NW, took portable gear to the Ceres Look and made contact with VK3RR at Macrae on 580 Mc/s. The distance is 40 miles. Other contacts were made with VK3ZL, Ballarat, and on 6 metres with VK's 3ED, 3MD, 3AKE and 3RR.

### GOOD NEWS

The many Australian readers of "R.S.G.B. Bulletin," the number one British amateur magazine, published by the Radio Society of Great Britain, are in for a welcome change. Since 1942 the "Bull" has suffered by paper restriction and has perforce appeared in tabloid form. R.S.G.B. vice-President Stan Lewer (G6LJ) tells us that "at last they can again set out to produce The Bulletin with a reasonably comfortable "lay-out." As fellow publishers, we have our sympathetic reaction to instances of production difficulties and we wish "R.S.G.B. Bulletin" a happier future. —Editor "R & TV News"

The powerful signals we hear from certain short-wave diathermy sets make us wonder if any of the R.F. ever reaches the patient.



● Family group on the South Coast of N.S.W. L to R:—ZL2WX, VK2WP, VK2WP-XYL (Joyce), and junior locale. Bill Potter's station (VK2WP).

### VHF'S

The old year was ushered out and the new one welcomed by a harvest of sporadic E for 6 metre devotees in all States of Australia and New Zealand. So commonplace have interstate openings become that these are accepted as a regular expectancy for the summer months. Signal level on some occasions far exceeds anything experienced on HF's, excepting 10 metres. Those who had not previously experienced a full opening on Six enjoyed their fill during the late afternoon and early evening on January 2, 1950. The band was a mass of S Nine plus phones from VK3's, 5's and 7's on any Six metre receiver in Sydney. The VHF gang certainly made hay whilst the sporadic E sun shone. Although there is still the tendency to crowd the L.F. end of the band, one VK3 was collecting DX equally well toward the H.F. end. It will become necessary to use the whole of 50-54 mc/s as the band population increases, and it is increasing with country VK's using it for local "short haul" working. Congestion is inevitable during good openings but there would be less "dog-piling" if people would use 53-54 mc's more.

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## THE 'YOUNG FELLOW'

This is a new feature by a contributor young in years, but with ample experience in the ways of the amateur radioman. His regular commentary will raise a smile or two and his gentle satire, by its impartiality, no anger. The "Young Fellow" will not quote personalities or callsigns, but if you feel that he is tilting at YOU brother, don't let it get under your skin.—Editor.

**L**ISTENED spellbound to the character on the "top end" of 20 the other night, reading a commercial radio script for his fone-test. A classical voice and a most dramatic excerpt! Here is one gentleman who eschews the ghastly whistling and "H-a-a-a-a-llo!" technique.

A lot of corny ole comments re "subscriptions to get VK . . . a receiver" are truly justified in the case of a metropolitan type whose fone used to be as rough as hessian before he took to CW. Say, OM, have you ever read Part 6, para. 136? Don't tell us we have to give you the name of the PUBLICATION, too!

Monitored an erudite conversation recently between two folk on fone, holding forth about the accuracy of the BC221 type of freq-meter. Why must we be dominated by figures like this? Some of us seem mesmerised by a number on a dial, and are heartbroken if it is proven slightly inaccurate. The "Bendix" type wavemeter has only a mediocre claimed accuracy, and there is no need whatever to weep into the microphone if certain errors appear, where the tracking is indifferent. It is possible to get the low end of 20 or 40 dead-accurate by the capacitive trim across the crystal standard, locking same with WWV on 15 mc., but watch out for the 440 and 4000 cycle modulation components of that station. Having got this, you ought to have your head read if you can't go within intelligent limits from the various national band-edges.

Hide-outs of N.S.W. commercial ops., Katoomba, Ettalong, Abbotsford, Wiley Park, A.C.T., Kingsford, and Dee Why (to name but a few) should be worth visiting.

These young radiomen apparently knock off work to carry bricks!! Why can't a CW practice class be conducted on 40 metres, with one of them in charge? If they don't know how to send clean CW at various speeds, I'll eat my battered Simplex. Good human sending is better than tape for practice purposes, 'cos it's human sending you have to copy when you go for that Ham or Comm'cl ticket. . .

Maybe this is unkind, but rumour hath it that some of the bigtime (big in all senses of the wd.) operators around town are QRO—and we don't mean 150 watts or such trifling increments! No sir. When a guy starts

● "The exwy-ell? — oh SHE'S taking her HA HA Beauty nap!"



using an 813 for a buffer it's time VK3PMG took a look-see. And don't be telling us it's not true — we've seen one or two, so we're prepared to give credence to the rumour that there are plenty more. Still they must have a really rugged powerbill, come quarterly-account time. Not to mention BCI for leagues around their shock-zone, when the old QRO is not tuned just-so.

One of the most irritating and inane (spelt correctly!) trends lately is the S-meter topic. Their true use lies in relative reports only, and even then, how many of them have divisions representing, more or less accurately, 6 db.? And another thing —if the sig. is S5 without the pre-selector, it's still S5 with it in. The readability might rise, but the signal strength is an affair over which the receiver has no control. The sig. strength is the amount of flux cutting a hunk of wire, gentlemen, and don't you forget it.

There's a VK4 who tested the other PM on 20, long and loud. His transmission wasn't too dusty, tho', for we heard all the "asides" 'twixt him and his offside in the shack. Wake up, OM, it's 1950 now, and there's no real need for this technique. What does whistling into the mike prove? Is it typical of operating conditions? Heaven forbid we all get to whistle our conversations—Madmen's CW?? Seriously, though, lay off it!

Good taste is something that we are born and bred into; some of us just don't seem to have had any home-upbringing. I am against this practice of netting a VFO (all too roughly most times), and roaring out comments which are usually lost in the heterodyne anyway. There is one guy who has a rather Puckish sense of humour, whose brief murmur of "Dit-Dit" seems to achieve 100 per cent indentionation, but even he, in his sober moments, will admit that it is naughty. . . .

Thinly camouflaged soliciting of W call-books is going a bit far. The women are at it now! Yes, we heard it too, honey. It'll take a long time for a boy in the Marianas to get one out to you. Why not just subscribe locally for the whole 4 of 'em annually—the one you do get by begging will be corny, in a few months, anyway.

Speaking of fine old ripe CORN, herewith is donated a giant cob on a silver salver to the character who ends fone "overs" with "DAH-DIDDAH!"

The Editor is allergic to some forms of phonetics, used in callsigns. But we do feel slight glee at hearing "Violent Love" mentioned in connection with one of our gentlest, kindest and quietest OT's. Nothing could be more incongruous — and that's the basis of nearly all clean humour.

"Sat in" a few weeks ago to the reconciliation of two guys who have been burying the hatchet (in each others' skulls) for years now. They both called a W unbeknown to each other, and the third corner of the triangle provided by the Yank made a common meeting-point for the two VK's. It was in the Spirit of Christmas, and seemed a spontaneous, sincere gesture on the part of each man.

Congratulations to the deep-voiced type who murmurs his way through the DX with great serenity and restraint. What a vivid contrast to the shrieking morons who hunt their overseas contacts like bloodhounds in full cry! It's as good as a holiday to hear this guy doing his stuff.

BCI is NG at any time, but consider the nightmare plight of one VK who was called (or shouted) upon, to fix two Rx's with regenerative detectors-plus-audio in succession. He was last heard in a mood of Stygian gloom. Here's hoping he didn't have to rebuild 'em both to superhets—I know how much chance he'd have of getting paid!

(Continued overleaf)

One of our incapacitated "shut-ins" was taken for a long drive to visit other Hams a few months ago. Just got to hear about that—the lad was tickled pink, they say, and has been promised another outing next year.

Speaking of VFO control (which we weren't, but MUST!), don't you feel that we have gone the full circle? By which I mean: There are now stations, in VK and overseas, which definitely will not answer CW or fone calls on their own frequency, regardless of what "band" it is in, or anything else. It is true, of course, that one or two countries which show a national (and rather pointed) disinclination to talk to VK's, which was brought upon us by a gentleman who, it was said, was not a great friend of the Press. Hence, breath and wrist alike can be wasted calling such. But to state dogmatically, as I have heard more than once, that a station will not answer VFO calls on his own frequency savours of mental bankruptcy. It is possible that the calling station is "xtal" on or near that frequency, let us remember. One can't help thinking that these snooty operators must do themselves out of a lot of DX by taking this inflexible attitude—it must give them the very devil to hear a really toothsome one coming back, and being tortured by their own self-made policy!

Heard a nice, well-meaning oldster recently, passing on a ckt. for a noise-limiter to another Ham. That was fine, but when one of 'em claimed the ckt. as his own, the hackles did their habitual job of rising! Break it down, Pop, that N.L. was big news years ago, but right now it's just another ckt., and it certainly wasn't developed by anyone around here.

Heard a helpful one, late last year—re those Folded Dipoles, made of 300-ohm ribbon. Put 'em on the LOW OHMS checker, and, with typical feeders, a 40-metre F.D. should read around 2½ ohms, a 20-metre job about 1½ ohms. Measured through all relay contacts, terminals etc., naturally. Yes, now and again some guy comes out with something really handy, on the air. We hope you know about those wee radar silicon crystal-diodes, too. Their reverse-resistance is only about 5000 ohms on the average, and they are not suitable for any circuit where the complete uni-directional flow of current is essential. Also, they are low-current jobs, and any more than the odd "mill" will bowl 'em over. Identified by a small brass pip on the positive end, and a negative end like the base of a .22 calibre cartridge. A commercial flight-op says they're sixpence each in London, too, so don't go paying silly prices.

Crieff Retlick, VK2XO, of the Belleriver River District of N.S.W. writes an informative letter from which we quote. . . . "Had a nice letter from 'Old Fred,' 75 years old . . . 'The Monitor.' Fred has been a keen SW Listener for 25 years and we used to talk to him from ZL stations years ago. He has just had a car trip in N.Z. . . . 550 miles, visiting all the ham shacks. Here's what he says about ZL2BE. . . . 'Neon lighting . . . lovely rugs and heavy wall to wall carpet . . . like a bridal suite. It contains two of everything, transmitters, receivers, voice recording machines, movie projectors, etc. The main aerial is 3000 (yes, THOUSAND) feet long carried on seven lofty latticed towers, besides beams of all kinds. It is a real amateur's Paradise.' 'Old Fred' is A.F. Leader of 8 Parkfield Terrace, Khyber Pass, Auckland, N.Z. On the 19th December last a big hook-up was arranged between ZL and VK stations on 80 metre phone whereby 'Old Fred' was present at ZL1ME. Australian stations taking part were VK'S 2XO, 2HC, 2NS, 2WH, and 4GG and the old SWL got a big kick out of it."



● QUIZ. Who is this and where was it taken.

Of-times we are asked how one goes about getting the American Amateur Radio Call Book. In these times the only sure way of so doing is by direct subscription. The best way is through the Technical Book and Magazine Co., 295 Swanston St., Melbourne, Victoria. VK's should write, mentioning this magazine, and address mail to Mr. Flloyd for attention.

It is high time that there be revision and/or reconsideration of the senseless official edict that amateurs, other than a favoured few, be barred from transmitting playback wire (or other) recordings. We certainly agree that there needs to be a bar to playing of recordings for entertainment, but where amateurs have recorded something for experimental purposes, surely it can only be of help to let the other fellow hear what his transmission really sounds like?

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# THE VILLAGE DX — SMITH

This effort comes from our irresponsible contributor "Rat-Bag." Where he got it from, if not from his own mental processes, we know not. However, here it is, for what it's worth.

*Under the spreading chestnut tree  
The village Ham-shack stands.  
The OP, a mighty man is HE  
Who contacts many lands.  
The sparks fly from his sideswipe  
key  
Beneath his expert hands.*

*His note is crisp and clear and strong  
He's a rabid radio fan  
He sends the signals short and long  
And sends 'em FAST, he CAN;  
He works the whole world every day  
This FB DX man.*

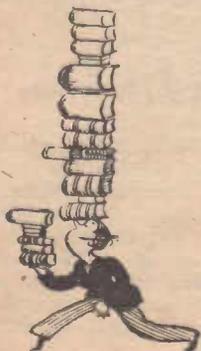
*Week in, week out from morn to night  
The RF currents flow  
You see him swing the knobs around  
With measured motion slow:  
For short-wave signals will abound  
When evening sun is low.*

*The kiddies coming home from play  
Peer through the open door,  
They thrill to see the tubes burn gay  
And hear the speaker roar,  
And catch the burning sparks that  
fly  
From each transformer core.*

*He goes on Sundays off to church  
Each time they ring the bell.  
He hears the parson pray and preach,  
He hears the ex-YL  
A-singing in the village choir,  
A thing she does so well.*

*With volts and watts and decibel,  
Onward through life he goes.  
Each morning sees some QSL,  
Each evening QSO's.  
Working all the DX well,  
He earns his night's repose.*

(After which splurge, we really must apologise to Longfellow.—ye Ed.)



A  
THOUGHT  
FOR  
AN IDLE  
MOMENT

"Volume  
Control."

## RADIO COMMENT

"Ex-B.B.C.": Writer remembers, in the early days of transatlantic wireless telegraphy communication, a reproduced photograph of the aerial system at the old Marconi station at Clifden, Ireland. This station, a pioneer spark affair of several hundred kilowatts, worked on 9000 metres. The photograph was taken at night-time, and showed the aerials as a mass of glowing wires, owing, no doubt, to actual overheating of the conductors under the strain of several amperes. A more interesting but entirely unexpected illustration of an overheated aerial occurred at the old Daventry station of the B.B.C. in 1925. The huge aerial system collapsed overnight owing to the added weight of frost crystals collecting along the wires. Hitch in programmes could not be tolerated in the B.B.C., and Daventry engineers had to turn to hurriedly and erect a jury aerial system. This consisted of stranded galvanised-iron wire, and the zinc coating was relied upon to keep the high frequency resistance within reasonable limits. Good results were obtained with this aerial for a while.. Then the engineer on duty noticed that adjustments needed changing to compensate for a steady variation in aerial conditions, to keep everything just-so. Nobody could explain the reason, and evening came along with all engineers pondering over the trouble. Suddenly the transmitter-room door burst open and a watchman excitedly imparted the information that "the aerial was afire!" Out went everybody, and sure enough the down-lead was red-hot for about 200 feet. What happened was that the zinc coating had burnt off under the strain and left the iron wire, with its high resistance, to carry on the job. The original aerial was repaired and re-erected next morning, but several old-time B.B.C. engineers will long remember the unusual sight of a thin red-hot poker stretching up into England's night sky.

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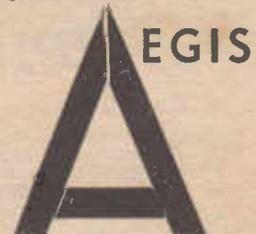
## PRACTICAL

"Goon": It may not be widely known that where an audio transformer is used the parallel-feed method of coupling permits variation of the ratio. Normally the two windings, primary and secondary, are arranged so that coupling takes place between them. The secondary has a greater number of turns than the primary, and this ratio is, or should be, marked on the transformer. If, when parallel-fed, the two windings are joined in series, but with the connections arranged so that they are still inductively coupled, the ratio will be increased by one. If the connections are made so that the windings are still in series, but in opposition, the ratio decreases by one. An ordinary transformer may thus be used for three different ratios.

\* \* \*

*Things have been happening on the 6 metre band with VK2ARG working KH6PP. New Zealanders ZL1HP and 1MQ were also in on the fun. Anything can have happened before these words get into print, for VK2ARG and VK2GU have both heard Americans on the band at reasonable strength.*

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# AMATEUR



# Chatter



## WE HEARD THAT . . .

Somebody thought that a dipole antenna was one which needed two masts to hold it up. If you can't see this one immediately, take your time.

\* \* \*

Much of the drivel being talked on "Forty" has now spread to "Eighty" phone stations, who have been notable for setting good examples in modus operandi.

\* \* \*

The "Twenty" metre phone man in the Western suburbs of Sydney who would never answer a local call and only went after the DX has been jumped upon by the P.M.G. Wireless Branch. He was a red-hot pirate with his self-appointed three letter call. In court it cost him a tenner or so and damages, and it is understood that the beak would have handed out stiffer castigation had not the R.I. intervened on the delinquent's behalf. You can't get away with it all the time.

\* \* \*

An American magazine said this . . . "Her warm loveliness, electric and enigmatic, was like a throbbing radio signal—an exciting CQ, clearing a short-wave channel from her to me." Oh My!

\* \* \*

After listening in on the phone bands of an evening one is just about convinced of the fact that "that's the dope on that."

\* \* \*

If the gadget is used in a receiver it is a volume control, but if the same gadget is used in a transmitter or p.a. system it is a "gain control." Anyone who can give a logical reason why this should be so may go to the head of the class.

\* \* \*

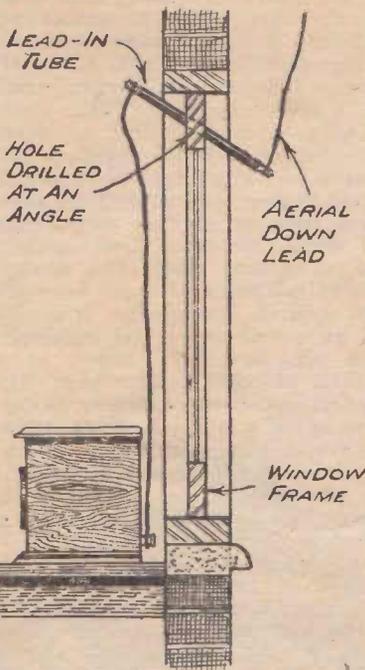
We hear that:—A prominent VK2 7 m/c phone man was doing his Christmas calls around Woy Woy, N.S.W., and fell into a grease-trap; since when his coppers on the air have dubbed him "Willie Pong."

\* \* \*

Another VK2, a portly Army Major, one wartime Christmas in a N.S.W. Training Depot, was, in Stygian darkness, walking between the officers' mess and quarters, and, replete in new uniform, dived into a slit-trench full of glutinous red mud and water. His comments were S Nine plus many deebie's.

\* \* \*

A "new" over-modulation suppressor is being talked about on the DX bands; described as a "high level peak clipper." "New"? About as much as Methuselah! The scheme was introduced and described by "Woody" Smith, W6BCX in "RADIO" (U.S.A.), for October, 1940.



● Troubled by rain "piping" along antenna feeders or lead-ins? Set the lead-in at an angle as shown. Water doesn't usually run up-hill.

Of-times one goes looking for G's on 14 Mc/s phone in Eastern VK's early mornings to find nary a sign of them but lashings of Europeans and Continentals. During October last the Spanish and Portuguese stations have shown up in full force, with an occasional OQ5 in Belgian Congo.

\* \* \*

A small sheet of cellophane folded several times makes a shock-proof envelope for carrying loose quartz crystals.

\* \* \*

Human nerve impulses, believed by countless laymen to be as fast travelling as electricity, in reality move only about 1/2,400,000 as fast.

\* \* \*

Said the buffer to the amplifier, "Don't excite yourself, old timer."

## Radio Comment

"Thor": Every now and again radio publications receive letters gleefully stating that the sender can draw crackling sparks, with a tingling sensation in the finger, from an aerial during thundery weather. This may seem a pretty phenomenon to one who doesn't realise the forces of nature, but it is a mug's game. I have vivid recollections of an early experimenter being seriously affected by a heavily-charged aerial discharging through his body to earth. The aerial was well elevated and insulated, but unearthed. Adjustments were being made to a receiver with the aerial disconnected, during which a black-looking cumulus cloud passed overhead (there was actually no lightning). When the experimenter took hold of the aerial lead a vicious blue spark, about 3-in. in length, snapped at his hand and shook him up very badly. Being of a nervous temperament, it was some weeks before he got back to normal. Fortunately, most modern aeriels are not heavy collectors of static electricity, being single-wire affairs, but this aerial, of 1912 vintage, was a massive, 10-wire-cage affair, about 300-ft. long and 100-ft. high. The wise thing to do, even with the single-wire aerial, is to use the simple little gap-arrestor and to be content to watch the pretty blue lights darting earthwards harmlessly. Indoor aeriels are harmless, being virtually part of the house, and to-day nine out of ten aeriels are of the picture-rail variety. At the same time, it should be remembered that during a heavy thunderstorm a properly-earthed aerial system outside and over the house is definitely a protection to the house in case of a close discharge. The thing to be sure of is that the earthing is done correctly, with the receiver isolated completely; otherwise valves and resistances are likely to go west.

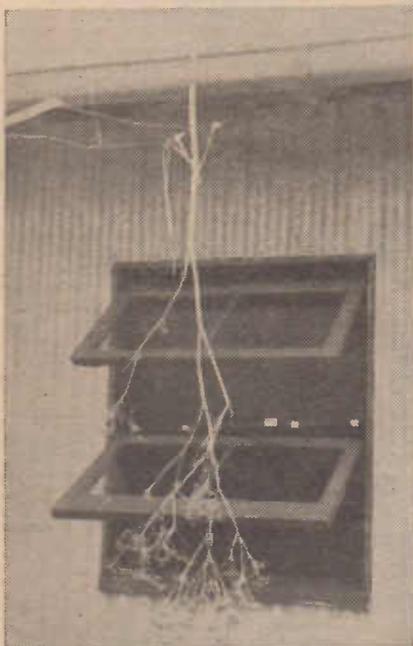
\* \* \*

Remarkable the signal that Bob W4DSY puts into Eastern Australia the long way round the earth, at about 7 or 8 a.m. this end. He stands out on the dial as if he were the only W station in existence at the time and works skeds with VK2JP and others with greater ease than is possible during the W DX peak conditions in our afternoon or evening.

\* \* \*

Johnny of VK3HW must surely "take the cake" for Australian amateur rotary beam antenna construction with his 4 element wide spaced job on 20 metres. The boom holding the elements is all of 40 feet in length. What John doesn't say is how goes the peace of mind when the gales begin to howl? Best of luck with the array OM.

Surprising how one individual station can stand out on the dial for no apparent reason. On the morn of October 28 last there were radio blackout conditions over most of the earth, but on 20 m phone G4OV, Bridport, Dorset, England, appeared at S8, with no other G's heard. He was using no beam array but a plain tuned doublet only. Even the Big Beam Boys weren't audible, but of course they *might* have been along at the "local" instead of being on the air!



● A way we have in the Bush! VK2SA says that he took this snap of Bill's (VK2ACT) feeders on the 40 metre Zepp when Bill wasn't looking. On asking what function the inverted plant hanging on the feeder performed, Wal was given a sound explanation. Windy weather causes the feeders to short against the guttering, and the weight of the weed prevents this happening. To us it is a delightful instance of how the boys out West do things. VK2ACT is at Dubbo, N.S.W., and is an active station on 40 metre phone.

Ever hear of Joe Reed's Cocky? You never know what that bird will get up to, like heading pennies with its beak whilst talking to W4DSY. About as versatile as its owner . . . VK2JR.

● A "shot" by Wal Salmon, VK2SA or Bill Brooks, VK2ACT, Dubbo, starting up his power plant. It is a re-wound car generator, coupled to a petrol engine, delivering 110 volts.



"Amatol": Shocks from radio transmitting equipment are nothing new, but the circumstances can be varied. From Mudros in '18 R.N.A.S. squadrons did considerable bombing of Constantinople. A big strafe was planned, and as duty armorer I had charge of the arming of several 230-pounders and placing them in the racks ready for the night stunt. In company with an assistant, I struggled underneath the fuselage of a DH9 to get a pill into position. Dangling in proximity to the back of my neck was the lead weight of the w.t. aerial, hanging a few inches below the guide tube. A w.t. mechanic, getting his gear shipshape, decided to test the transmitter, a one-inch spark coil affair. As we labored with the loaded bomb, a crackling nerve-twisting flow of blue wattage discharged itself through the path of least resistance to earth, namely my neck, the bomb and my assistant. The blue light that danced before my sight convinced me temporarily that I had reached the pearly portals and that the big "baby" had gone off. When reason returned I was conscious of a burnt neck, 230-lbs. lying across my legs and a fleeing assistant. As a rule, detonators are not so indifferent to a hot fat spark!

\* \* \*

"Yezir": One or two Collins 75A's seem to have found their way by devious paths into VK "shacks". What with Customs and dollars, those acquisitions must be diamond-studded and gold-plated, or something. The Collins type 75A just about represents the acme of communication and amateur band receivers, but be that as may, we shall probably still be delving around Disposals stores to roll our own creations. The W's say there is something even better than the 75A on the way, if that be possible.

"Struth!" I listened to the following on 7 meg. phone: "Calling the station that I think just called CQ; calling the station that I think just called CQ. At least . . . that's what it sounded like . . . please come back on phone."

It can be done. Mars has been worked on 50 Mc/s by W8OSL. He lives in Mars, Pennsylvania.

With S Nine harmonics in the 50-54 Mc/s band, all some of the 20 and 40 metre men need are Six metre receivers.

After listening to two antenna fanatics holding forth on the subject, we spent the night dreaming about lighting a cigarette from an impedance match.

In great demand was Antarctica VK1ADS, with the wolf-pack in full cry. When he appeared on the dial around the HF end of 20, VK's seemed to arrive adjacent to the freq. in full force.

"Oheck." Yet another dumb delivery from a mike maestro . . . "you didn't give your handle, so I can't call you Old Man."

Welcome to Ralph Knight, ex-G3BWO, from Leicester . . . where the shoes come from. He is now settled in Sydney.

"Damocles": Four hundred and fifty-eight pounds in one day was the total of fines imposed by a Magistrate in an Australian country area, following a radio inspector's nosing-out of unlicensed radio receivers in the district, and 85 more cases are to be heard. Reminds me of an experience in north-west N.S.W., where I was part-owner of a small B station many years ago. Letters from the district in answer to an announcement numbered over 1000. I asked the local postmaster how many licenses had been issued through his office. The number was under 200!

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