

VOL. 1 No. 4 OCTOBER, 1949

Registered at G.P.O., Sydney, for transmission by post as a periodical, circulating throughout Australia and New Zealand.

Australian RADIO AND TELEVISION NEWS



There's a **PHILIPS** VALVE
for every socket in your receiver

The advertisement features a collection of various Philips vacuum tubes of different shapes and sizes, arranged on a surface. The text is centered over the image.

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.

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Radio Transmitting Valves.
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Cathode Ray Oscillograph Tubes.
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Voltage Reference Tubes.

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Domestic Television Receivers.
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Measuring and Testing Instruments.
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“Where there’s a new electronic device — there’s Mullard”

MULLARD, AUSTRALIA Pty. Ltd.

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 Laugh Their Way
 Through*

*'Much-Binding-in-
 the-Marsh'*

The terrific moustache and pathetic expression belong to Sam Costa, one of the mainstays of the British Broadcasting Corporation's popular Variety programme, "Much-Binding-In-the-Marsh." Costa's slogan, with which he makes his first appearance in "Much Binding" every week, is "Good morning, sir, was there something?"

This increasingly popular show is heard on Australian National Stations at 8 p.m. E.A.T. on Sundays.

—Photo by Courtesy of the B.B.C.

TELEVISION SHOW

"Alice in Wonderland"

Margaret Barton as Alice and Anthony Sharp as the White Knight in the British Broadcasting Corporation's television production of "Alice." Margaret's first part on the stage was when, at the age of twelve, she played a mouse in a production of "Alice" which was staged at the Shakespeare Memorial Theatre at Stratford-on-Avon in 1938. This presentation was specially adapted by John Glyn-Jones from the play by Herbert M. Prentice.

—Photo by Courtesy of the B.B.C.



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ROLA TRANSFORMERS

are coded so that you will obtain the type which will fully meet your requirements.

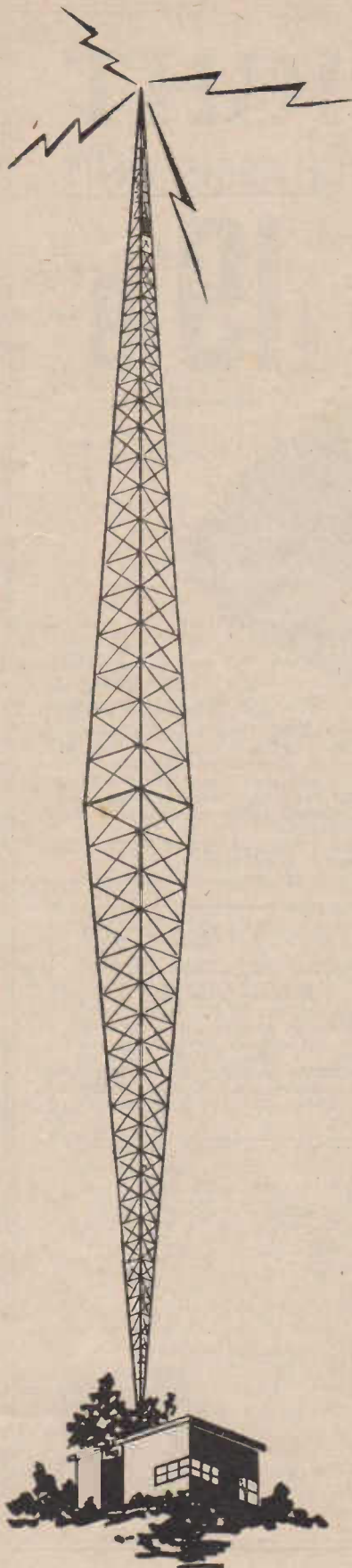
There are too many variables in the design of output transformers for impedance ratios to be used as the only guide to their selection. For example, a 5,000 Ohm transformer intended for use with a triode will have insufficient primary inductance to permit adequate low frequency response to be obtained when it is used with a pentode or tetrode whose characteristics also call for a 5,000 Ohm load.

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ROLA

ROLA CO. (AUST.) PTY. LTD., THE BOULEVARD, RICHMOND,
VICTORIA, and at 116 CLARENCE ST., SYDNEY.



AUSTRALIAN RADIO AND TELEVISION NEWS

THE PROGRESSIVE NATIONAL
JOURNAL FOR EVERYBODY

EDITED BY DON B. KNOCK

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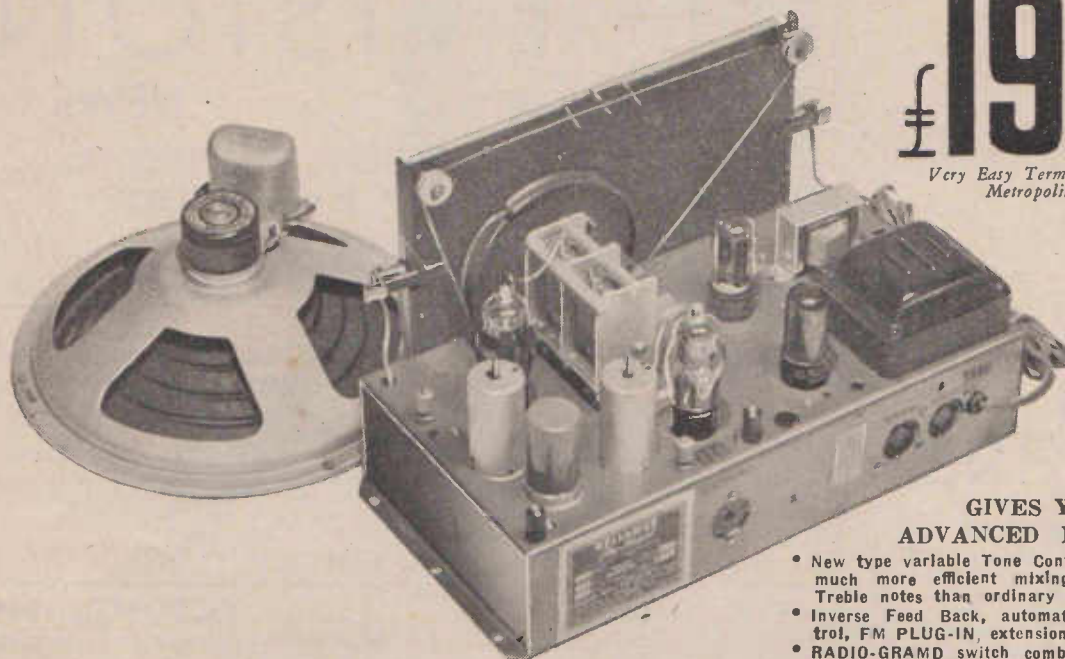
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THIS MONTH'S COVER ILLUSTRATION:—
 On a sunny Australian day, an amateur radioman carries out adjustments to his "Cubical Quad" beam aerial for directional transmission on the "ten metre" band.

RELIANCE SKY KNIGHT

5 Valve WORLD RANGE Radiogram CHASSIS UNIT



Complete

£ 19'19'-

Very Easy Terms in Sydney and Metropolitan Area.

RELIANCE GIVES YOU THESE ADVANCED FEATURES!

- New type variable Tone Control which gives much more efficient mixing of Bass and Treble notes than ordinary types.
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The Reliance Sky Knight is a companion to the famous Reliance Sky Raider and Sky Master, backed by over 20 years of technical experience in producing communication type receivers and luxury type multi-valve sets. The Reliance Sky Knight brilliantly combines many of the distinguished features of these super sets and it comes to you in COMPLETE form to enable you to fit it to your own cabinet easily and at low cost! If you wish, we will supply a cabinet, motor and P/U or record changer at low prices, too!

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Wherever practicable we despatch by AIR FREIGHT. This is FREE IN N.S.W. and to Melbourne and Brisbane. Nominal charge elsewhere. The set is securely packed in a special carton. There is NO CHARGE for packing.

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NOW AVAILABLE!

16-Valve Super Sky Master RADIOGRAM

Limited number of this super luxury set available, complete in magnificent cabinet. It contains many of the new features of the 36-valve SUPER SKYMASTER exhibited at the Royal Show including a DOUBLE PUSH PULL PARALLEL audio with 807 type valves.



"YOU can be sure of THIS door"

READ AND
ENJOY

AUSTRALIAN RADIO AND TELEVISION NEWS

A MAGAZINE
FOR EVERYBODY

Vol. 1, No. 4.

SYDNEY, AUSTRALIA.

October, 1949

Heads Bloody, But Unbowed

IN recent days a great fuss has been made by a section of the daily Press to the detriment in general of the transmitting radio amateur. That the sheets concerned had a "good story" to seize gleefully upon was evident when the news broke about a young Maoriland delinquent who endangered lives by misuse of radio equipment. As has always been the case, the scapegoat at once became the "radio amateur," insinuations being made to the effect that woe would betide any "amateur" responsible when caught. The true-blue transmitting amateur is a man intensely jealous of his record—to him, the application of the word "amateur" to his hobby and status is something sacrosanct. That unthinking news hawks should dub any miscreant dabbler with radio apparatus as an "amateur" is in reality somewhat of an insult to the amateur radio fraternity. Because any young Tom, Dick or Harry has been able to purchase and probably misuse ex-Service radio gear for a mere song—that does not classify him as an intelligent transmitting licensee. It is no fault of amateur radio as a whole that Disposals sales have made available to anybody who cared to fork out the cash, equipment capable of being put on the air by individuals probably of moronic tendency. It so happens that a New Zealand member of the maligned amateur radio fraternity rendered his country a great service by narrowing down the search for the unlicensed masquerader who was endangering life and airways reputation. The culprit, a youth in his 'teens, was apprehended and faced the penalty of the law. Here in Australia the closing stages of the episode were characteristically garnished by Press fulmination to the effect that "should such a thing occur in this country, Civil Aviation, with Direction Finding apparatus, would speedily run to earth any amateur offender. Should any mentally deranged delinquent embark upon action of the kind experienced across the Tasman, the Press here may rest assured that Australian licensed radio amateurs would be swiftly on the job to help lay hands on the person or persons. It could even result in newspapers singing the praises of, instead of damning the men who played no small part in pulling Australia out of the Service communications mud when war came to us in 1939. Meanwhile, Australian amateurs take pride in the knowledge that it was one of their own fraternity in New Zealand who was instrumental in pin-pointing the illicit station, after a week of frantic effort on the part of commercial services had resulted in check-mate, with the offender but a scant mile distant from the airport.

DON B. KNOCK.

Radio and Youth

LIFE does not consist only of success in business or profession or trade or calling. Many a man who has made a success, and especially a temporary success in these things has made an utter failure of life. And very often the reason is that school-years and the years immediately following them have not been furnished with the right training.

As a rule excessive night study does no visible harm except in some cases to health during actual school years. But the position is quite changed when a lad leaves school. He finds himself then at a loose end, and the more diligent he has been the more of a gap there is to fill. The hours which he should have devoted to the cultivation of hobbies were spent with school-books to which he will not return. In many cases the after-school hours were spent quite profitably in sport; but the evening hours were filled with lessons which have come to a sudden close. And then there is liable to be trouble; and trouble may come in a thousand different forms.

A great deal of the discontent of the world—discontent which may have such serious consequences—is due to the fact of young lives being left empty. Give youth something in which it can go on taking an interest; something, if it can be found, of limitless possibilities in the way of development.

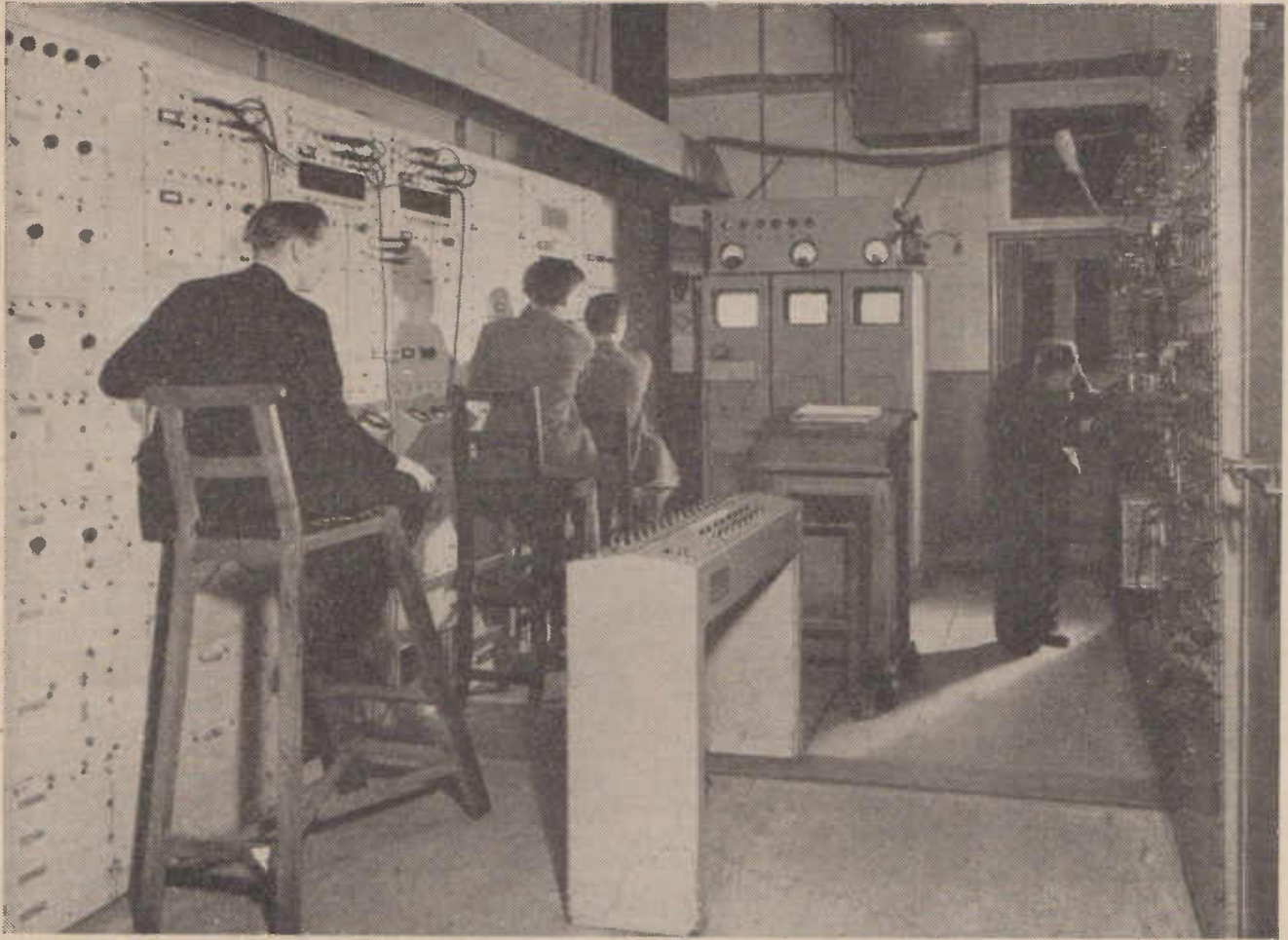
The boy in the city and the boy in the country town can be provided with something equally interesting. There is interest without limit in radio. Consider what progress has been made in it in the past 20 years. Imagine what progress may be made in the next 20 years! It is true that not everyone is mechanically minded. But interest in radio opens up far wider fields than that. It supplies the musically inclined with the possibilities of an education which they could not have purchased 20 years ago for thousands of pounds. Doors to further study are opened for others by specialists whom they could not have hoped to approach a few years ago.

Now, on the heels of radio comes television; and here the interest is quickened by the sheer breath-taking novelty of this new communicative medium. Some time in the future youth will augment long distance radio by vision; amateurs will not only speak with fellows in other countries, but will see each other at the same instant. It is a long way off—but the possibilities are fascinating in the extreme.



MOVIE-TELEVISION

The following is an eye-witness account of a demonstration recently of large screen projected television in England. This aspect of television is likely to assume considerable importance as a medium of news-casting. The report, made by an observer for the British publication "Television," is somewhat of a glimpse into the near future.



● This is the Alexandra Palace (London) Television Control room where the large screen theatre programme referred to in the accompanying description was monitored. Engineers (left) operate picture shading controls and supervise the technical quality of the picture appearing on the monitoring screens (centre). Equipment on the right handles the Sound side of the programme.

—B.B.C. photograph.

LARGE screen cinema television has been the main topic of conversation in those foreign little restaurants around the purlieus of Wardour Street (London). At least twice it was reported that Mr. Rank's Cinema Television Company had fixed a date for a demonstration and his publicity men were kept busy denying a wide assortment of rumours.

At last a highly representative crowd pushed its way into a dilapidated cinema at Bromley, which had been returned to the Rank Pioneers after its wartime use as a food store. There were reporters, a sprinkling of BBC engineers with a slightly sceptical look in their eyes, and a small contingent of officials from Alexandra Palace. On entering the

auditorium, one immediately noticed a neat metal box, about four feet high and two feet wide, which stood level with the front row of the stalls, about forty feet from the screen. This housed the projecting apparatus, and in some theatres this may be fixed to the front of the balcony. Inside the magic box is a high power cathode ray tube giving a very bright image about seven inches square, and this is thrown on to the screen by a special large mirror system. This unit was operated by remote control from a monitor panel at the back of the theatre in a small room which also housed the receiving apparatus.

There was an expectant hush in the animated conversation that buzzed through the auditorium as

the lights were lowered and the familiar television signal appeared on the 16 by 12 feet screen. To the home viewer this enormous magnification seemed uncanny, but the definition was so excellent that one almost forgot that this was television and accepted it as one does a film in the local movie theatre.

One very severe critic complained that the definition round the edges was not so sharp as in the case of a film; but the average movie fan would not have noticed it. Occasionally there was the usual interference, rather like "rain" on the old silent films, but technicians are optimistic

(Continued on page 9)

MOVIE - TELEVISION

(Continued from page 8)

that this will be overcome very quickly when cine-television gets into its stride.

AN excerpt from the Alexandra Palace programme was followed by a special studio presentation from the Sydenham laboratory of the Cinema Television company. This was a slight improvement technically, with reproduction that was almost faultless. In the front rows, however, one could see the "lines" on the screen, but it is understood that research is being pushed forward on a 625-line system, which should effect a considerable improvement.

The micro-wave system used for the demonstration from Sydenham (via the Crystal Palace) uses a beam transmission, which not only reinforces the signal, but also ensures that it is unlikely to be received by more than a handful of amateurs who are directly in line. Furthermore, these receivers would only pick up the pictures, for the sound track would be transmitted by landline. It is not surprising, therefore, to find that the experts are eagerly awaiting the opportunity to equip the half-dozen specially selected Rank cinemas, fully confident that their long years of research will soon be justified.

More than one observer at Bromley was a trifle puzzled that studio performance, rather than a film, was transmitted from Sydenham. It would have been interesting to see if the reproduction of film is any improvement on that of the BBC.

Every single component in this process is of British manufacture. There is, of course, an alternative to this mirror system of projection. It involves an intermediate film process, in which the picture is recorded on celluloid, which is rapidly prepared for the usual type of film projector. This involves a slight delay, but has the advantage of providing a film which can be repeated as often as required.

Experts working on this are now anxious to secure some data on the subject of audience reactions. They freely admit that they have plenty to learn about television presentation, and the types of programmes that will appeal to the public. There may also be a considerable difference in the types of programme suitable for large super-cinemas and small, news-reel theatres.

If this micro-wave transmission to theatres becomes established, what will be the effect on the film industry? To begin with, millions of feet of film will be saved if each theatre does not have to receive a copy of its evening's programme. Then there will be a considerable reduction in labour, for it appears that one opera-

tor will be quite sufficient to handle a show that comes over the air. These are the most obvious developments, but the repercussions will probably be endless.

Other large companies, including several well-known radio and television manufacturers, are experimenting with large screen television, and there is likely to be some fairly hectic competition for the equipping of the various circuits and independent houses. At the moment, the film tycoons incline to the view that they have nothing to fear from the entertainments offered by the BBC, which they consider fall far below the shows offered in their cinemas. They appear to ignore the television aerials that are springing up everywhere, and blind themselves to the fact that people do not pay from £50 to £350 for a television set unless they are confident that they are going to get value for money.

TELEVISION — WHAT IS HAPPENING IN U.S.A.

ELECTRICAL recorders are to be used to test audience reaction to television by the National Broadcasting Company of America.

Known as the Schwerin System of programme-testing, the recorders "will be used not only to measure immediate individual and collective audience reaction to programme content, but also to study such related factors as size of viewing screen, film versus live presentation, viewer fatigue, and many other."

The new device will not only maintain a continuous record of each individual's reaction to what he sees and hears, but will produce a group profile for immediate study by producers and directors.

The questions it is hoped to answer by this method are:

Which camera techniques are most acceptable?

How long can scenes be held before liking diminishes?

How long will an audience stay in front of a set?

Who sees daytime programmes, and what kind of show has greatest appeal then?

Is film liked better than live shows?

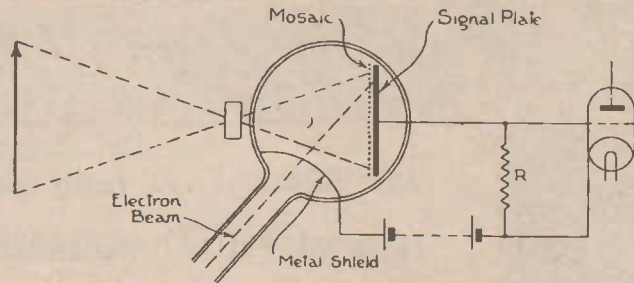


Diagram showing the operating principle of the Iconoscope.

An American editor says television is full of opportunity for young people. In U.S.A. the average age of personnel engaged in television, exclusive of engineers, is about 28. Engineers average 31.

The editor reported: "The people in television are so young that they tell their ages willingly, correctly, and even proudly. Many of them look as though they should be rushing down school corridors in time to make a geometry class. As a matter of fact, quite a few of them were doing that not so very long ago."

Claiming "a clean beat on the coverage of a three-alarm fire that destroyed the First Baptist Church in Philadelphia" NBC says:

"About an hour after the fire broke out in the basement of the church, the television cameras were on the scene. Within a few minutes, the cable had been cleared and the pictures of the fire were seen in cities up and down the NBC East Coast Television Network, including New York. The telecast lasted for an hour and a quarter. One of the oldest congregations in the United States, the First Baptist Church was established in 1695."

Lucky Strike Cigarettes are making short films in Hollywood of famous short stories for television on 24 NBC stations.


The first was Guy de Maupassant's famous tale "The Necklace." A storyteller introduces the films.

Another one was Robert Louis Stevenson's "Sire de Maletroit's Door," broadcast over here recently in The Man in Black series on sound.

Television is no longer referred to as an "infant industry" in Chicago. Carleton D. Smith, director of NBC television there said recently: "The baby has graduated from diapers and is wearing pants."

He pointed out that "for the first time since the war we are entering a period of intense competition for the consumer's dollar, and the backlog of consumer demand is beginning to evaporate. The television industry will do much to create a new demand and undoubtedly will give employment to hundreds of thousands."

Madge Evans, remembered as a star of Hollywood films, is now starring in Philco Television Playhouse programmes on NBC. She recently played lead in "Pride and Prejudice."



AND NOW . . . a really comprehensive
range of PHILIPS REPLACEMENT VALVES

A more complete range of the "wanted" replacement types has seldom before been available. There's a valve from this amazing Philips range for every socket of every radio. Philips Valves are **DEPENDABLE** valves — technical perfection is assured through every stage of manufacture . . . the valves themselves are the result of many years of experience and research in the field of electronics.



PHILIPS
VALVES

Telenews

TELEVISION

Fashion Show Possibilities

Whether it be Myers in Melbourne, or David Jones' in Sydney, there is an air of delight with which women contemplate the seemingly unattainable attractions behind the plate glass. It is one of the feminine mysteries; this allure of shop-window gazing wherein most, if not all, of the articles of apparel may be well beyond the purse of milady, not to mention her husband. But window-shopping is one of the delights of life in a metropolis, and lives there the human, male or female, who doesn't indulge in it from time to time? In British television programmes, one of the most popular features is the



fashion parade, although one may doubt if the lady "viewer" is always happy about such tantalising displays being brought right into the home. No doubt an experienced hubby manages somehow to switch the receiver off just when hats and gowns are to be displayed—with the hope perhaps of dodging financial ruin.

If the show comes on during the afternoon when hubby is busy at the office making the "wherewithal," then he hasn't much chance of averting the inevitable; and parts up with the chequebook. No doubt the feminine producer responsible for running these afternoon shows at the London TV studios had this in mind when she started the series. At any rate, it is a thought for those who someday not so far ahead will plan television programmes for Australian cities . . . the Fashion Show has definite possibilities. It needn't be carried to extremes but can be sensible

and practical; dealing with garments women already possess instead of wildly inducing them to dash out to purchase more. It won't do any harm to give hints on how to make old clothes do and how to use the thread and needle to keep up with fashion changes—or perhaps such a session could be quite divorced from the Fashion Show and produced under what the Navv calls a "Make and Mend." The future of TV literally bristles with possibilities, and not the least of these are the likes and dislikes of the women-folk. "VIDEX"

AMERICAN TELEVISION CHANNELS

Reference is made frequently in overseas technical publications to the various television channels in use in the United States of America, and the channel is invariably quoted, but not the frequency. For the benefit of our readers interested in the establishment of overseas standards and their possible effect on Australian practice the list given here indicates the complete range in U.S.A.:

TV Channel Number	Channel Freq. Megacycles
1	44-50
2	54-60
3	60-66
4	66-72
5	76-82
6	82-88
7	174-180
8	180-186
9	186-192
10	192-198
11	198-204
12	204-210
13	210-216

As mentioned in our Vol. 1 No. 3 issue, the frequency range chosen for Australian National TV transmission includes 178-200 Mc/s, with amplitude modulation for vision and frequency modulation for sound.

NEW IMPROVEMENTS IN DESIGN

Important television research which is going on in Britain is likely to evolve the means of simplifying the cathode ray tubes used in television sets. The main problem is to find a completely effective method of sealing together the metal and the glass. As soon as this problem is solved it will become practicable to make cathode ray tubes mainly of metal and then glass would only be used at the end on which the image is shown. It is estimated that this would result in a reduction of about 20 per cent in the price of television sets.

The type of receiver mainly used in Britain to-day is the table model which gives an image about seven inches wide and six inches deep. This size of picture can be comfortably viewed by up to twelve people. Sets are reasonable in cost compared with prices ruling in other countries.

The new Television station in process of construction at Sutton Coldfield near Birmingham will utilize power rating of 35 kilowatts for the Vision transmitter and 12 kilowatts for the Sound channel. Normally, this station will transmit the same programme as that radiated from the London station at Alexandra Palace.

Apart from the NBC network, the year 1948 totalled in America 65 Television stations on the air in 42 cities and 28 States. Programmes went to an estimated 910,000 receivers and a population of 66,868,000. Television is indeed on the march and is likely, and indeed certain, to assume vast proportions in the next two decades.

HIGHEST FREQUENCY?

Britain's Telecommunication Research Establishment has demonstrated recently a velocity modulation valve covering the frequency of 8-9 MILLIMETRES! This valve operates with 2400 volts between cathode and resonator and with the reflector at 200 volts negative to the cathode. One wonders if there is any limit to the frequencies we can reach?

A POWER AT THE HEARTHSIDE

"Television is not merely a scientific toy. It is a potential social force . . . a permanent addition to the twentieth century way of civilised life. It will overshadow all other broadcasting problems in importance during the next few years. The social obligations are great."—Sir William Haley, Director-General of the British Broadcasting Corporation.

RADIOTICAL RUMINATIONS.

YOU may know little or nothing of radio, technically speaking, but at some time or other you are sure to have heard unfamiliar terms bandied back and forth by radio amateurs; oft-times dubbed "Hams." Such references as 'bottle,' 'toob,' 'Dope' and 'Feeder' may convey an unwarranted impression that most "Hams" derive their income in chemists' shops, but such is not the case. Our irresponsible contributor, known merely as "RAT-BAG," has been doing a spot of investigating of these uncertain terms, with rather remarkable results. The editor accepts no responsibility for the definitions, but after all, what CAN one expect from a Ratbag?

Accumulator:

- (A) a collection of material known as junk.
- (B) a collector of QSL cards.

Artificial Aerial:

Something that exists only in the imagination of the radio inspector.

Acoustic Feedback:

Caustic remarks made by an amateur who has had his ears bashed by microphone whistles. (See also Cross Talk).

B.C.L.:

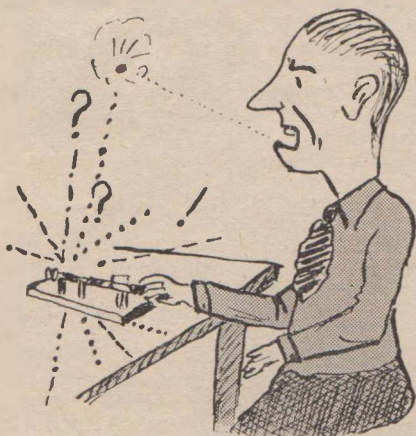
Animal life of low order (according to "hams").

Bottle:

See under Feeder.

Bug:

An instrument for multiplying dots.



MULTIPLYING DOTS!

C.W.:

Continuous wave. So called because it is broken up into dots and dashes.

Crystal:

A small piece of ground glass.

Cross Talk:

See Acoustic Feedback. Usually adopted by an annoyed amateur.

Distortion:

A strange phenomenon usually applicable to fishermen and stories about DX.



"EARS BASHED"

Dope:

Generally inaccurate information imparted by an amateur who can't think of the next thing to say; to an amateur who doesn't want to hear it, anyway. Induces a feeling of sleepiness in both.

Dear OB:

Blime you again!

DX:

One of the most fervent of amateur religions.

Experimenter: Person with large glasses (eye), a copy of a Radio Handbook, and one who thinks he knows all the answers.

Er:

The pause, or break sign, much used in radiotelephony (amateur version).



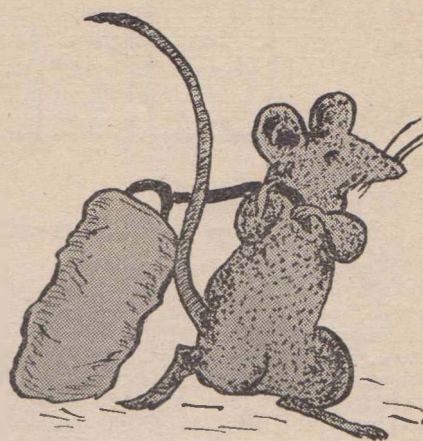
"BREAK SIGN"

FB:

Funny business.

Feeder:

See Bottle.



Fone Station Only:

Means "I can't read Morse, so it's no use calling me on CW."

Gremlin:

Ancient history (apparently).

Ham:

One who says HI in his sleep.

Ham Band:

Occupants of the saloon at the local before a meeting.

Ham Spirit:

The bond of friendship binding together all who use the same crystal (or VFO group) frequency.



WHAT'S YOURS?

Handle:

Usually attached to a LID (dustbin type). See also Lid.

HI:

Indicates something sent on CW, supposedly full of spontaneous humour.

HI (on fone):

Same as above, but that you are being funnier without realizing it.

Lid:

See also Handle.

OW:

The really influential reason for continued activity on the air of the Ham.

Phonetics:

A method of conveying intelligence!! by telephony. Used extensively by those unable to speak normally. Example: CHARLIE QUEEN DOG X RAY.

R:

Means "Received" to the extent that at least two words have been copied correctly.

(Continued on page 14)

Announcing yet another Australian valve development



6AR7
-GT

HIGH-GAIN DUO-DIODE PENTODE

WITH "FORMED" GRID CONSTRUCTION

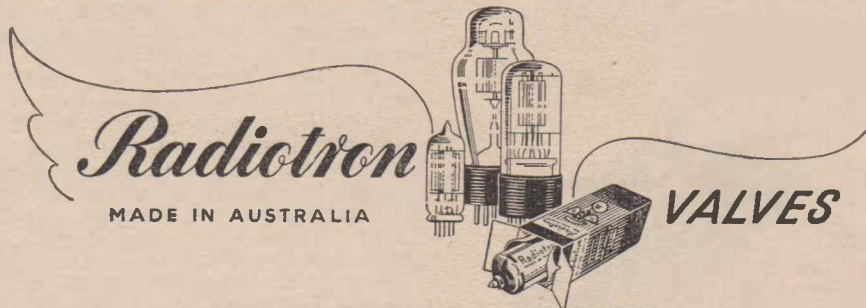
Completely self-shielded internally as well as externally, its super-control characteristic enables the 6AR7-GT to handle the high signal levels without distortion.

Outstanding performance is achieved when the 6AR7-GT is used in the intermediate frequency — detector stages of straight and reflexed broadcast receivers circuits.

Its development by Amalgamated Wireless Valve Company makes possible the manufacture of low-priced, 4 valve radio receivers providing sensitivities of the order of from 20 to 25 micro-volts in straight sets and from 1 to 2 micro-volts in reflexed versions.

**RADIOTRON 6AR7 - GT
TYPICAL OPERATING
CONDITIONS
(Pentode Unit)**

E _f	6.3 Volts
I _f	0.3 Amp.
E _b	250 Volts
E _{c2}	100 Volts
E _{c1}	-2 Volts
G _m	2500 Micromhos
R _p	1.0 Megohm



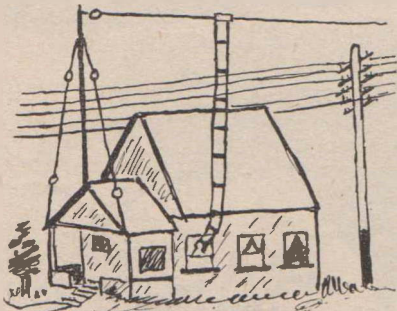
AMALGAMATED WIRELESS VALVE COY. PTY. LTD., 47 YORK ST., SYDNEY.

RADIOTICAL RUMINATIONS

(Continued from page 12)

Repeater Station:

One who tells you all that you have already told him, so as to ensure that you will know he has received all you have told him about all you know, and that . . . oh, skip it!



"Surrounded by wires."

Shack:

A shed or similar building completely surrounded by wire.

Theory:

Nobody's business.

WX:

A topic of conversation introduced after dah dit dit dit dah six times.



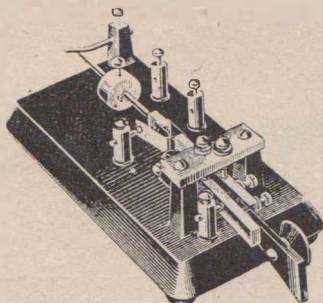
The YL.

YL:

Another excuse for continued activity on the air.

YF:

An OW in the early stages of radio widowhood.



QUEST ETERNAL

SOMETIME it may have happened, that, being out of bed in the small hours of the morning, keeping a vigil, perchance, for some stay-out-late daughter or grandmother, you have, but with little hope of finding any broadcasting station still erupting, turned on the dual waver switch and slowly swept over the short wave range. If you have done so, you probably have heard a sort of monotonous shrill piping like a lost soul with the toothache. Being conversant with talkies that depict explorers sending out despairing last messages on a radio set that makes a noise like a siren, you immediately recognise this for what it is—a telegraphic message—and you idly wish you could read Morse. And that is probably as far as you get. You spare no thought for the sender of that message, sitting up when all the last trams have gone to wherever they go, when wives have gone to bed and the fire (if it happens to be winter) has gone out.

You hear him communing in somewhat halting Morse with some kindred spirit in the next suburb or in Addis Abbaba, and you never say to yourself, "Why does he do that?" You do not reflect that had it not been for stern-minded, devoted men who scorned their beds and lived laborious nights, their minds fixed on impedance, induction, rectification and frequencies, the mechanism of radio would never have reached its present high pitch of audibility. You probably say to yourself that it would have been a darned good job if they hadn't. It is in such an atmosphere of indifference, if not of positive hostility, that the amateurs of radio pursue their dark researches. To alter this undesirable condition of the public mind is the purpose of this screed.

"To know all," said a philosopher whose name I forget, "is to forgive all." At the outset of my mission, which is to cast a searchlight on the lives of home-set-constructors, short-wave experimenters and all that ilk, I am faced, with the difficulty that these nocturnal creatures cannot speak more than a very few words concerning their experiences and adventures without resorting to a jargon that no outsider can follow, thus veiling with mystery their art and craft, as is the manner of doctors and lawyers and professors of phrenology. But I have elicited something regarding the genesis of radio amateurism. I have questioned many experimenters, and in nearly every case I find that once a normal human being has fiddled around with a few "Disposals" bits and pieces he is never the same again. In no time at all he is entirely surrounded

by condensers, transformers, vernier dials, potentiometers and valves of all descriptions, and, though previously he may have got through life with no more aids to handicraft than a hammer and a packet of nails, he accumulates the varied paraphernalia of a young factory so that he may string these contraptions together in countless combinations and permutations.

His path is bestrewn with difficulties, but these make him the more determined. The materials and the myriad gadgets used in radio seem to have been designed with the sole object of discouraging their use. Anybody not a radio-addict who has tried to cut a sheet of plastic or separate the parts of a 26 pin plug will understand, however dimly, what I mean. Instead of being deterred by these obstacles, the individual with the radio virus in his blood greets them with a whoop of joy. From crystal detectors he moves on to thermionic valves and superheterodynes, goes in for short waves, and when mere listening palls, he takes up transmitting. This is the final stage, and once it is attained there is no looking back. Give a transmitting amateur 1000 years of life, and at the end of it you would find him in his bath-chair endeavouring to establish communication with the satellites of Saturn or drawing a diagram of his latest beam antenna.



And what of it? The radio amateurs do nobody any harm; the amount of mischief they keep themselves out of if placed end to end would girdle the earth, and they avoid boredom, the father of all devils. Every now and then one of them is able to add a little bit more to the sum of knowledge, and if there is any worthier aim than that available to the ordinary unsaintly human I haven't heard of it.

—"VERITAX."

WHAT IS A "WAVE-BAND"?

The word "wave-band" has been used for years by amateurs to designate the various "bands" in which they are allowed to operate by the P.M.G. Instead of assigning each amateur a special wave-length on which to transmit, all amateurs are allowed to transmit on certain wave-lengths between definitely specified limits. Thus, there exist certain amateur "bands." The general meaning of the word "wave band" is a range of wave-lengths between certain limits. Wave-bands and frequency bands both mean the same thing, although the present-day trend is toward the words "frequency," or "frequency bands."

If it is stated that a certain tuning condenser with its coil covers the "40-metre" band, it simply means that the condenser covers a certain range in which the wave-length of 40-metres is included. The amateur band in this vicinity is called the "40-metre band"; it is close to 40 metres and called by this name for the sake of simplicity. Similarly, the "20-metre band" would refer to a band of wave-lengths near 20-metres, and usually including this wave-length. Such designations for the various amateur bands, although convenient, are admittedly rather indefinite.

SPOTTY RECEPTION

Listeners who have been experiencing bad reception recently may have ascribed the fault to many things. The most likely cause is sunspots, which have been very active recently. In early February people were able to see a number of these spots with the naked eye. There were three of them; two south of the sun's equator and one north of it. The southern one, according to the Royal Observatory at Greenwich, was about forty times the area of a cross-section of the earth. This, although half the size of the largest sunspot ever recorded, still covers a remarkably large area.

The sunspots are caused by whirlpools which form amongst the turbulent mass of hot, luminous gases which compose the sun and, as listeners know to their cost, they give rise to most serious disturbances in the reception of short-wave transmissions. These disturbances can be divided into two classes; the Dellinger fade-outs, short-lived and violent, which affect transmissions in the day-lit parts of the world; and ionospheric storms which, though less violent than the Dellinger fade-outs, persist sometimes for as long as two or three days. Both kinds of disturbances were caused by these latest sunspots, when reception of transmissions from many directions was upset by Dellinger fade-outs. Ionospheric storms nearly blotted



"BAND - PASS"

A THOUGHT
FOR
AN IDLE
MOMENT

CONTRIBUTED ARTICLES

In case some readers may get the wrong idea about "Australian RADIO and TELEVISION News," we wish to emphasise a point or two forthwith. This is not intended to be primarily a technical magazine, but it includes articles of a suitable technical type to cater for a large section of our readers. We do not intend that because of technicalities the non-academic reader shall suffer; indeed, we have already stated plainly in an editorial in our first issue that mathematical epistles have no place in this magazine. There are other publications catering for such needs. Our first reader consideration is that of the non-technical public—Mr. and Mrs. Everybody and family—who look for a few pages of topical reading to suit simple tastes. To that end the editor welcomes contributions of varied scope. If you think you can write articles of any kind; humorous, serious, partially technical or otherwise . . . then send your effort along. Short paragraphs under pen-names dealing with any subject associated with radio and television—these can provide interesting reading also. Contributions, which if accepted, will be paid for on publication; must be accompanied by the sender's full name and address, not of course, necessarily for publication. legible handwriting is in order, but double-spaced line typing is preferable. The editor is too busy to guess at hieroglyphics. If also you are adept with a pen and sketch pad, you might like to try your hand at one or two appropriate or laugh-raising drawings. Why not? SEND THEM IN.

out reception of programmes from overseas for almost twenty-four hours.

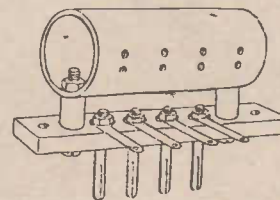
It is difficult to convince many people that invisible sunspots are the cause of bad reception. Those listeners who saw the offending spots find it easier to believe.

THE LOVELY VOICE

"Her voice was soft, gentle and low, an excellent thing in woman," said King Lear, as he mourned his youngest daughter, Cordelia. A modern instance of the appeal that a beautiful voice may exercise was shown recently when the Danish Section of the BBC's European Service received a most unusual "fan" letter. It came from two Danish bachelors, who wrote that in the last few days they had tuned-in on the twenty-five metre band and had heard what they described as "the world's most charming female voice." It must have been an extraordinarily beautiful voice, for though it spoke in Chinese, of which they understood no single word, yet they listened for the whole of the programme, which lasted fifteen minutes. But they were not distressed, they wrote, for, longing to hear the voice again, they hunted the short-wave band for some days and could not find the owner of it. Would the BBC convey their most cordial greetings to her and tell them how to find her again?

The BBC, a most human institution despite its size and importance, did its best. It located the speaker, a member of the Chinese Section of the Overseas Service called Mrs. Lucy Fang. She gives daily talks to her compatriots all over the world on things of interest to women and events in Britain's world of the arts. Before joining the BBC, Mrs. Fang taught English at the Chinese National University and starred in films made in India, proving that her face matched her voice.

The BBC's Danish Service invited Mrs. Fang to appear in their programme as a guest speaker, and in response to the young Danes' request for a greeting in Chinese, she spoke to them and sent her best wishes, which she then translated into English. Their every wish was gratified, for Mrs. Fang also explained that why they had not been able to find her again on their sets was because the wavelength of the Chinese transmissions had recently been changed from twenty-five to thirty-one metres.



"ALFIE." What is considered to be—er, indelicate in broadcasting? In the U.S.A. a big radio network arranged a series of health talks by famous American doctors, all speaking anonymously, of course. Doctor No. 1 arrived, as scheduled, at the studio.

"What is your subject to-night, doctor?" asked an important functionary.

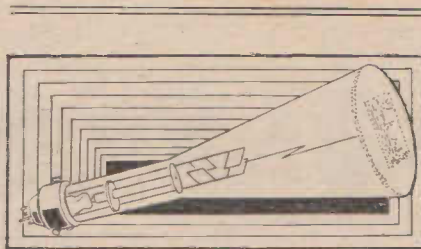
The doctor was blunt. "I am about," he said, "to tell you a few things concerning syphilis."

"But, doctor," cried the functionary, "you can't use that word on our network. It's a horrible word. Think of our advertisers!"

"I'm thinking of 'em, all right," said the doctor. "I'm thinking of 'em as I realise that you won't let me talk about a disease which kills some hundreds of thousands a year while you, all the time, are putting your smutty little vaudeville acts over the air."

Ridiculous, all of it; but there have been similar instances here. One of the songs by comedian Stanley Holloway (recently in Australia) is a pleasant, humorous thing about Anne Boleyn: "With her head tooked oonderneath her arr-m, she waaa-lks the Bloody Tower." A few years ago it was sung—and sung very indifferently—from a Sydney station. The artist (obviously the censor had been busy with him) sang about the Blooming Tower.

They gave Stan a better break this time.



"ME AND MY SHADOW"

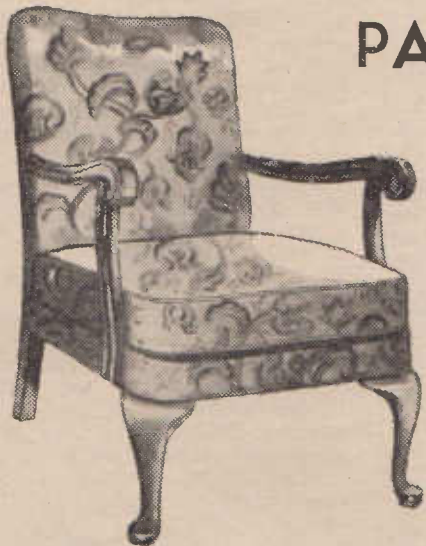
A stage show of a man who can leave his shadow behind has been creating a good deal of interest in America. The performer sits down in front of a curtain, gets up while his shadow remains sitting, then shakes hands with it and then goes off, leaving his shadow behind.

The explanation is that the screen on which the shadow is cast is made of a phosphorescent material. The screen stores up the light which it receives from a powerful spotlight and continues to glow after the light has been turned off. And so, when the performer stands or sits in front of the screen, all of it is "charged" with light except the part obscured and all of the screen glows except the part which received no light. Given a strong enough light, the screen will continue to glow for as long as 10 minutes.

"ANDY." He looked so miserable that I questioned him. "It's me birthday," he said. "I'm ten." I suggested that a birthday should be a happy event. "No bloomin' fear, mister," he replied dolorously. "They all think a man's a kid. And Mum's written to 4XX for a wireless call. Bet I know what the bloke'll say!" He screwed up his face and imitated a rather sanctimonious voice: "And naow 'ere's a call for little Vicky —. Vicky's ten to-day. Marny harpay ree-turns, Vickay, and we know you're a good little boy!" I never heard such concentrated contempt as Vicky put into those three words. "And," he added bitterly, "every kid in the school'll be listen'-in ternight. Won't they chiak me termorrow. Aw, a bloke ought to wag it." I felt rather glad he, and not I, would have to face that barrage of mockery on the morrow.

* * *

"Spehrmidaze": Radio-gramophone combinations, even those that automatically change records, six or more on end, have one failing: the needle has to be changed. A French inventor produced a device by which the needles are fed up from below the motor board in a belt; as the pick-up returns to the starting position a needle is driven into a self-gripping chuck, and the old needle drops out.



PARKER-KNOLL CHAIRS are EASY CHAIRS

WITH ENGLAND'S BEST FABRIC-COVERED SPRINGS

The Parker-Knoll Chair is a revelation in comfort and a masterpiece of construction. There are many designs and one for every room. Parker-Knoll Chairs are available in a selection of beautiful coverings. The secret of Parker-Knoll comfort is in the springing which consists of a series of horizontal coil springs that give to every movement of the body. See the famous Parker-Knoll chairs in

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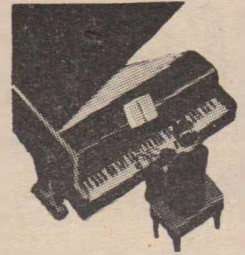
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Australia's PROVINCIAL Broadcasters



● *The story of the smaller broadcasting services throughout Australia is interesting, linked as it is with local development and history of the various country communities. Each rural station has its essentially localised associations, connected directly with the interests and welfare of the surrounding country. The success of the one is dependent upon the prosperity of the other, and by virtue of the commercial broadcasting systems, country listeners enjoy news and entertainment services additionally to the indispensable A.B.C. stations. The city-man knows very little about the service rendered by our provincial stations; they are to him but call signs on a list. We tell him here, something about these stations, and for our overseas readers interested in knowing something about Australian country life, we give a glimpse of the steady and encouraging development in these lightly populated districts. Managers of country stations throughout Australia are invited to forward details to the editor.*

**STATION
2RG.
GRIFFITH
NEW SOUTH
WALES**



● Attractively laid out, with shady trees is the shopping centre, Banna Avenue, of the township of Griffith, New South Wales, on the world-famed Murrumbidgee Irrigation Area.

SITUATED in the Murrumbidgee irrigation area of the State of New South Wales, the township of Griffith is the centre of the 254 miles square Wade Shire, and has a population of about 4500. Thirty years ago this community was little more than a sheep walk, but to-day it is a thriving district with a population of 12,000 within a radius of 12 miles of the township. The answer to any question about the growth of the population is the all-important one of irrigation. As is natural for an Australian country area of this kind, the establishment of a local broadcasting service was in keeping with the ideas of prominent citizens interested in progress, and on September 14th, 1936, there came into being the Griffith Broadcasting station, identified on the P.M.G. list as 2RG. At that time the power rating was 100 watts, but has since been doubled.

History of the Irrigation Area

It is more than a century ago, in June, 1817, that John Oxley, the explorer, camped a few miles from what is now the town of Griffith. In the district his little party made the first attempt at horticulture, for the records in his diary refer to having planted peach and apricot stones, and quince seeds, with the

(Continued on page 18)

USE *Your head*



SAVE *Your face*



BUK



Your Beard

Start shaving the civilised way—the BUK way—no water—no blades—no soap—no mess. BUK Electric Dry Shaver gives the fastest, smoothest shave of all. BUK'S 60 self-sharpening cutting edges mow down the toughest beard.

To
Breville Radio Pty. Ltd.

67 MISSENDEN ROAD, CAMPERDOWN

Please send me without obligation details of the BUK Electric Dry Shaver.

Name.....

Address.....



A stately row of Poplar trees growing along the banks of the irrigation canal at Griffith, N.S.W.

(Continued from page 17)

hope rather than the expectation that they would grow and serve to commemorate the day and situation, should these desolate plains be ever visited again by civilised men, of which however, I think there is little probability. It was not until the latter half of the last century that pastoral settlement took place.

Before the advent of irrigation in 1912, the population comprised a mere handful of station employees . . . to-day 25,000 people are dependent upon the settlement. There were no towns at all on what is now the Murrumbidgee Irrigation Area, and to-day, in addition to the large towns of Griffith and Leeton there are nine village settlements. None of these towns or villages lack the amenities of civilisation.

Attractions of Griffith

The most striking feature which impresses the newcomer to the town of Griffith is the fine plantation of Kurrajongs which extend in a double row along the main street for about a mile. They are prettily interspersed with garden beds, lawns, and parking spaces for motor cars. The height above sea-level is about 400 feet, and there is a hill,

known as Scenic Hill, with an elevation of 640 feet, within two miles. A good view of the area can be had from the "lookout" on this hill. Water stored in the Burrinjuck Dam on the Murrumbidgee is released during the irrigation season, and is diverted at Berembeld into the main canal forming the primary delivery source to the area. Soil around Griffith is comprised of alluvial sand, clays, and gravels. Wade Shire, being an irrigation area, is not subject to soil erosion, but outside this there is a certain amount of erosion from wind action. The climate is in general hot and dry, and average annual rainfall about 15 inches. Driest months are in summer and autumn, with prevailing winds North, North-West, West, and South-West. Industries are: rice, horticulture, grapes, wheat, sheep, vegetables, and rice mill, fruit cannery, fruit packing, fruit drying, pulping factories and wineries. The chief mineral is gypsum.

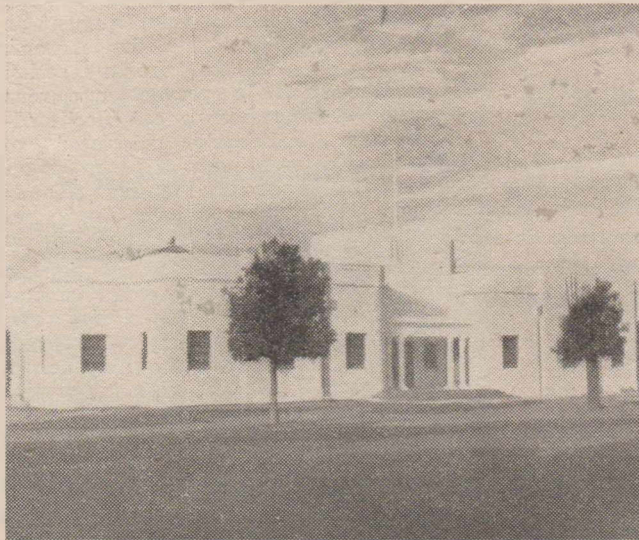
Station Administration

2RG is owned and operated by Area Newspapers Pty. Ltd.; the Managing Director being Dr. L. M. Jones. The total full time staff numbers six. The country covered by

(Continued on page 19)

(Continued from page 18)

the 2RG service embraces Leeton, Narrandera, Temora, Hillston, Hay and surrounding districts. The type of programme includes Request Sessions, music for workers at 8.30 a.m., women's session between 9.30 and 10 a.m., sporting results, special Sunday evening features, Radio Sunday School, and Country Quiz. Considerable station activity has been associated with Hospital work and recently a special broadcast was in connection with the opening of new quarters for nurses. An appeal over the air for contributions to raise £600 for the equipping of the hospital with radio reception equipment was fully successful. Considerable use is made by the 2RG technical staff of a modern wire recorder. A particularly valuable feature for farmers is a bi-weekly session from the C.S.I.R. giving important agricultural information. A remarkable feature of listener reports which seems to ap-



N.S.W. Country Broadcaster 2RG serves the Irrigation areas on the Murrumbidgee.

ply to many of the Australian inland broadcasters is that quite frequently excellent reception is obtained at far distant locations. Such reports have been received by 2RG from places as far as New Zealand, Brisbane, Queensland, and parts of Tasmania. A musical feature regularly heard from 2RG is "Hit Parade of the Week," compiled by local music distributors.

2RG Sunshine Club

The station is rightly proud of the record of its "Sunshine Club," originated by Mrs. G. L. Denham, the President, and an enthusiastic band of helpers. The session is on the air for 15 minutes daily and has grown from a small beginning to the mate-

rial establishment of Club rooms. These have been most attractively furnished and equipped at a cost of over £1,000. All moneys raised have been as a direct result of the efforts of members.

The main room, a dining room and lounge, has been prettily decorated, lounges attractively recovered, curtains and carpets provided, and floor painted.

Parcels For Britain

In the committee room members have packed and sent a large number of parcels of food for Britain.

Material is in hand for the forwarding of a number of additional parcels.

Membership

Membership of the club, which entitles members to use all facilities, costs 2/- per annum.

Associate members (men) may also join for the same fee, but although not entitled to vote, they may use all the club facilities and join in discussions at meetings.

Catering

The club specialises in catering for weddings and parties, and can accommodate 150 guests at any one time.

Male stewards are available to serve liquid refreshments at weddings or parties, while club members, wearing attractive uniform embroidered with 2RG on the pocket, act as waitresses.

The club, on many occasions has been congratulated on its high standard of catering for functions of this nature.

(Continued on page 20)

BOOK NEWS FROM TECHNICAL BOOK & MAGAZINE CO.

Keep abreast of the latest developments in RADIO by subscribing to any of the following Magazines.

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"Q.S.T."	1 13 6
Radio News	1 12 0
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TECHNICAL BOOK & MAGAZINE CO.

295, 297, 299 Swanston Street,

Opp. Old Melbourne Hospital

MELBOURNE, C.1.

Cent. 2041

(Continued from page 19)

This innovation has proved extremely popular, and the club serves on an average 40 to 50 lunches daily, between 12 and 1.15 p.m.

Points About Griffith

The settlement was proclaimed a town about 29 years ago, and takes its name from the Hon. Arthur Griffith who was Minister for Works at that time. Schooling for children is provided in the High, Primary, Infants, and Convent. It is in the Commonwealth Electorate of Riverina and the State Electorate of Murrumbidgee. Churches are: Church of England, Roman Catholic, Presbyterian, Methodist, Baptist, and Salvation Army. During the war the town of Griffith won six honour pennants in connection with war loans and more than 1500 young men and women from the district enlisted in the Defence Forces. Annual value of district production, including rice, wheat, wool, fat lambs, and vegetables is now in the vicinity of £2,000,000 and the progress made is an object lesson on the value of irrigation.



The main irrigation canal near the township of Griffith, New South Wales.

Future Plans

Any substantial new development of the Murrumbidgee region is dependent upon an increased supply of irrigation water. The irrigation areas which now yield so much primary produce cannot be further extended under present conditions. The Snowy River Investigation Committee—a Committee appointed by the N.S.W. Government to study and report upon the proposals for making the best use of the waters of the Snowy River—has reported that it is possible to divert half the flow of the Snowy into the Murrumbidgee.

It is estimated that the River Diversion Scheme would settle at least 50,000 people in the Murrumbidgee Valley with added wealth of £5,000,000 per year.

With the growth of population would come opportunities for the establishment of a University in the Murrumbidgee Region, the establishment of well equipped Technical Colleges and provision for wider opportunities for adolescent and adult education and a widening of the scope of secondary education to provide opportunities for all types in the community.

It follows that in any progressive plans for the future development of the Murrumbidgee area, the broadcasting service will play, as radio does, in our every-day life anywhere to-day, a very important part. Station 2RG in itself, signifies the spirit of progress which so obviously concerns the lives of the citizens of Griffith and district.

A DUSTPAN, A PAIL AND A SCRUBBING BRUSH

"Here's a little sidelight on London life—the story of a Camberwell church which was short of cleaning materials. The Vicar, Canon Veazey,

a great old London character who has just retired, announced this shortage in his Parish Magazine. Two or three days ago, a car drove up to the door of his vicarage. Out stepped a messenger carrying a dustpan, a pail and a scrubbing brush. It was a gift, said the messenger, from a lady who'd read the Vicar's appeal in the Parish Magazine. The car, by the way, was from Buckingham Palace. The lady was the Queen."

—Robert Reid talking in the BBC's programme, "Across the Line."

YOUR NEWSAGENT

finds it difficult to order just the right number of copies each month. Help him by placing a regular order for "RADIO and TELEVISION News."

FRENCH FANCY RADIOS

Latest type of invisible home radio is embodied in a French design. It looks just like an ordinary table lamp, complete with frilly shade, but built into the pedestal is a 4 valve superhet tuner. The loudspeaker is concealed by the shade, and is just below the lamp socket. The wire frame for the shade is the aerial. The receiver is intended only for local reception and a small single knob operates pre-set tuners for a choice of five locals. There is nothing new about the idea of a table lamp radio, but the complete invisibility makes it doubly attractive. Many years ago an American radio manufacturer produced a reading lamp-radio in which the downward glow of light was spread by the "bright emitter" valves themselves. As these were consuming about 20 watts for 5 valves, there should have been a fair amount of reading light.

THRILLER BROADCASTS

"B.A." While we look upon some forms of American entertainment as being specially made for morons, we seem to fail to take any action in Australia to prevent numerous radio stations beefing out blood-and-thunder broadcasts calculated to make children a race of neurotics or, at best, lazy-minded young animals who grow up to believe curses and screams as the basis of all drama.

Whether my children happen to be below f.a.q. standards in humanity, I don't know, but I do know that they take prising away from the gurgles of these drowning heroes and animal-grunting villains.

It's about time something was done to prevent the air barrage of this sort of vocal violence.

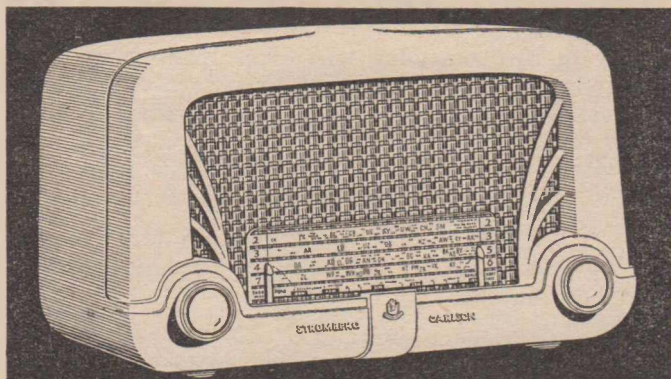
DROPPED BRICK DEPT.

There were a few typographical errors in our post coal-strike issue of July-Aug.-Sept., '49, for which we apologise. The advertiser's index on page 50 was a bit muddled up regarding page indication; and H.M.V. were inadvertently omitted. These things do happen in the best of publishing families, and in these instances, minor as they are, we unhesitatingly point the bone at that recent black diamond upheaval. When we were able to carry on with the job we had to re-cast page make-up rather drastically. We hope it won't happen here again.

STROMBERG-CARLSON



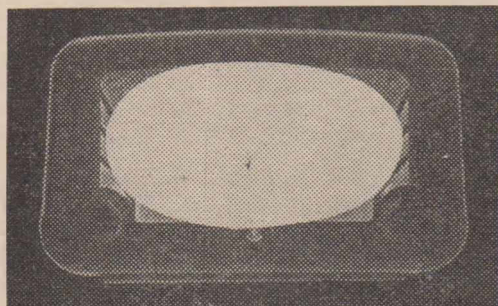
OVALTONE



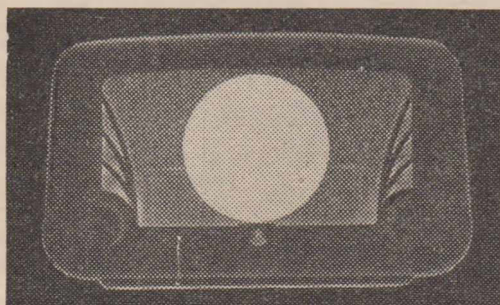
**ACCLAIMED AS MOST AMAZING
POSTWAR DEVELOPMENT
IN RADIO RECEIVERS**

This is the "Ovaltone" radio — the most up-to-date mantel radio in Australia today — the first ever to feature Stromberg-Carlson's exclusive OVALTONE—it's aptly named the "Modernaire". Call at your radio retailer's and hear the difference.

**X-Ray illustrations show basic difference in design
which achieves the beautiful tone of OVALTONE**



1 X-Ray illustration reveals outline of specially designed "OVALTONE" speaker.



2 This illustration shows outline of ordinary speaker. Note extraordinary difference.

Stromberg-Carlson research technicians have proved conclusively that there is no substitute for speaker area. These X-Ray pictures show how they have achieved an amazing speaker area by employing a specially designed oval-shaped speaker (top illus.). The lower illustration shows the area of the speaker normally used in a mantel radio.

Not only has "Ovaltone" so much greater speaker area than ordinary radios of similar size — which in itself represents a major step forward in radio reception — but in addition it is the *special design of the speaker and the whole unit* that makes this new model by Stromberg-Carlson a masterpiece of modern radio design — with the richest tonal quality ever heard in mantel radio.

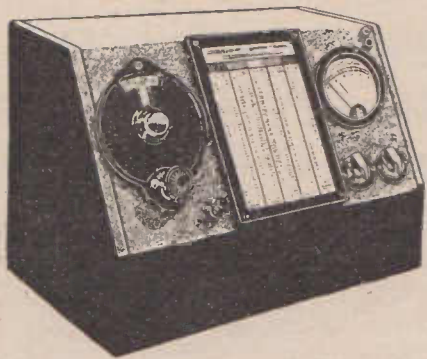
**IT HAS TO BE HEARD TO BE BELIEVED!
HEAR IT! COMPARE IT! YOU'LL BE AMAZED!**

Your Stromberg-Carlson retailer is waiting to give you a demonstration (no obligation, of course), Go along and hear "Ovaltone" today. Insist on a demonstration, then compare it with ordinary mantel receivers—it's terrific! There isn't another mantel radio in existence with the beautiful tone of OVALTONE—exclusive to Stromberg-Carlson, featured in the new "Modernaire" 5-valve mantel, broadcast or dual wave. Four attractive new cabinet shades — New Ivory, Havana Brown, Sorrento Blue, Nile Green.

OVALTONE £24-19-6

AVAILABLE FROM ALL LEADING RADIO STORES

For the Constructor



A useful design for a grid-dip oscillator, with calibration chart in a frame on a sloping front panel.

THE action of an oscillator indicating grid current is to show a reduction in the amount of current when power is absorbed from the grid circuit either inductively or capacitively. One can make up such an oscillator very simply, resorting to the handy plug-in coil method of changing the range; or better still, bandswitching. For the lower frequency ranges switching is appropriate, but where the higher and very higher frequencies are concerned, the plug-in coil scheme is better.

The circuit diagram shows what is involved in the arrangement; the oscillator being a Hartley (or cathode-tap) type, using almost any indirectly heated valve. Suitable valves for the purpose are types 6C5, 6J5, 76, 37, and in the 2.5 volt series, the 56 or 27. Don't forget also that there are many non-triode valves of all kinds that can be applied by connecting RF pentodes and SG valves as triodes. Fundamentally a number of coils are switched as shown, and the grid current read in the meter, which may be anything between 1 and 10 milliamperes. There is a midget coupling condenser, 20 mmfd, which is identified with a terminal marked "red" in the circuit.

"Black" is the other terminal which is common to earth (meaning the metal chassis or structure of the unit). A standard 350 mmfd broadcast type variable condenser gang is used for the oscillator tuning capacity, and a single contact switch is used to connect either one or both sections of the gang.

A Wide Range Grid-Dip Oscillator

The radio constructor of any category who likes making up gear wherein home-made inductances and capacities are involved, should not be without the easily-made piece of apparatus described here. There is nothing new or sensational about the G.D.O.; it was in use around the radio-service work bench 25 years ago. It is even more useful to-day than it was then, owing to the wider variety of applications.

Metal Box

It is suggested that this be made up from sheet aluminium, or better still, that you delve around the radio dealer who offers ex-I.F.F. unit covers at 6d. a pop. These covers make a nice sized box and moreover, they are made of Duralumin. Some are of very light gauge sheet steel and will serve equally well.

The Coils

The following coil details will provide for coverage of all frequencies from around 150 Kc/s to about 12 Mc/s, and there should be overlapping of the ranges.

Coil Table

Lowest frequency I.F. coil—bank wound, 12 banks, 36 turns per bank, making 432 turns No. 26 D.S.C. wire.

1½ inch diameter winding form.

Other I.F. coil—same as above, but with 6 banks.

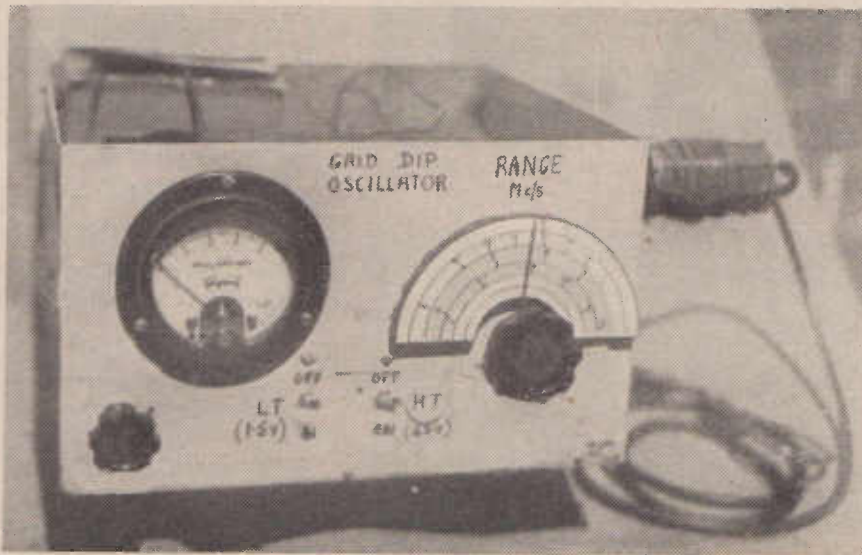
Broadcast coil—70 turns No. 30 enamelled, close-wound on 1-inch diameter form.

First short-wave coil — 30 turns No. 26 D.S.C. wound on 1 inch form spaced diameter of wire.

Second short-wave coil—15 turns No. 18 bare wire, wound on air-spaced diameter of wire and braced with celluloid ribs. Form 1 inch in diameter.

All coils centre-tapped for the cathode connection.

The coils should be placed at right-angles to each other, and in order to keep their fields as small as possible, they are wound on small diameter formers.



★ This is a battery operated grid-dip oscillator designed to cover the useful short-wave ranges. It uses RCS plug-in coils. The valve is a 1.4 volt triode and power is from Eveready 742 (A battery) and 482 (45 volt) "MINI-MAX" dry batteries.

(Continued on page 23)

(Continued from page 22)

The Meter

The meter may be any one handy, reading from one to ten milliamperes, full scale. The value of the cathode resistor depends upon the meter and the anode voltage used. It is best to select a low voltage and use a cathode resistor that gives about three-quarter scale reading on the three lowest frequency bands. On the two high frequency bands, one section of the band switch *shorts* out a portion of the cathode resistor in order to maintain reading on these bands, also.

Calibration Chart: The frame that holds the calibration chart and protecting glass or celluloid can be made up easily.

The earth pin-jack is black and is connected to the chassis when measuring coils in a receiver. The other pin-jack called the *exploring lead* is coloured red.

Determining Cathode Resistors

When the oscillator is built, the value of the *cathode resistors* must first be determined. This value will depend upon what meter you are using, and to some extent upon the condition of the valve and power supply apparatus. Therefore, connect

a variable resistor in series with the cathode temporarily. Vary this resistance until the meter deflects approximately three-quarters on the three lowest frequency bands. Note this value! It will be the value of the *total resistance* in the cathode circuit. Then find the values needed for three-quarter deflection on the two high-frequency bands. Connect the *shorting switch* so that there is appropriate resistance in the cathode circuit when turned to the high frequency bands.

Avoiding False Dips

Next, you eliminate the *false dips* caused by unused coils resonating with the coil in circuit. You will not find any of these dips on the two lowest frequency bands, so begin with the *broadcast* coil and rotate the tuning condenser until you get a dip. Then temporarily earth with a piece of wire, the grid or cathode of the lower frequency coils until the dip vanishes. Connect this permanently to the switch so that it is grounded out when the switch is turned to the broadcast coil. Treat the other high frequency bands in the same manner. On the highest frequency band it will probably be necessary to earth both the grid and cathode of the lowest frequency coil.

Connect the grid-dip oscillator to any 240. volt A.C. 50-60 cycle socket and plug two test leads into the jacks on the front of the panel. These test leads should be coloured for easy identification, as the *black lead* is always connected to the earthed side of the inductance under test. Always use the minimum amount of coupling condenser. However, you might pass over the dip if minimum is always used, especially in cases where the R.F. resistance of the coil to be measured is high and the dial is turned rapidly. Therefore, to find the dip, use say a quarter of the coupling condenser and with the dip once found, reduce the coupling to minimum.

Setting coupling condenser: Setting of the coupling condenser affects calibration, so when doing any comparative work, do *not* move the coupling condenser.

Uses for the Oscillators Testing Transmitters

The problem of "how many turns" is solved in a hurry by the use of the grid-dip oscillator. Always wind on a few more turns than you estimate will be needed, as it is easy to remove turns but difficult to do an artistic job of adding turns. All inductances

(Continued on page 24)



This powerful Eveready Mini-Max battery gives your portable radio.

**GREATER POWER,
LONGER LIFE —**
than any other battery of
comparable size.

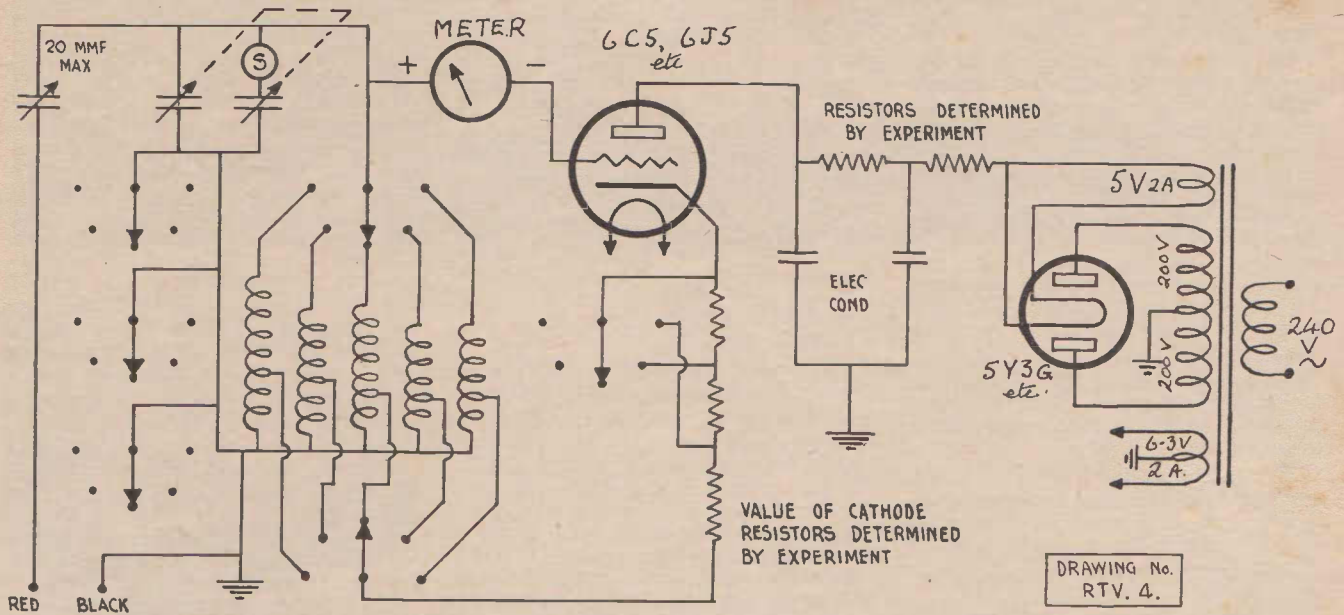
Reduced in price from 17/1 to 15/-

So make sure you get

**EVEREADY
MINI-MAX**
TRADE MARKS

Portable Radio Batteries.

(Continued from page 23)



★ Circuit diagram of the Grid-Dip Oscillator. The points of the three earthed switches are joined to coils giving false dips.

and R.F. chokes used in transmitters should have tests before and after mounting and wiring. Grid-Dip Oscillator tests will explain many a strange, stubborn case of refusal to oscillate. Take the case of a *partially shorted inductance*. The R.F. resistance will be high and so you will only obtain a small dip and the *short* will make the amount of the inductance as read by the meter much smaller than one would expect. From the shorted place to earth there will be no dip at all.

Testing Receivers

You may have a short-wave super-heterodyne that lacks sensitivity. Connect the black lead of the Grid-Dip Oscillator to the chassis and rapidly, one by one, touch the *control grids* with the other lead. If the dial of the Grid-Dip Oscillator must be adjusted quite a few degrees each time—you are safe in assuming the set needs re-lining. (The oscillator in the super will dip at a higher frequency than the R.F. and the I.F. and second detector grid will dip at I.F. frequency). *R.F. trouble, such as shorted trimmers, "open" or "shorted" R.F. chokes:* A shorted trimmer or coil will cause the receiver to be completely dead. Few experimenters have ohm-meters that will detect the difference between the resistance of the coil with or without shorted trimmers.

Shorting condenser plates: The Grid-Dip Oscillator is useful for finding out and repairing shorting condensers in a gang. You need not unsolder any wires and you can quickly tell which gang is responsible and

just where. The Grid-Dip Oscillator will tell you when you have repaired the trouble.

Measuring small capacities, both fixed and variable: Small fixed condensers are often not of the value marked on the case. In cases where it is desired to measure condensers up to 500 mmf., their capacity may be accurately obtained by use of the Grid-Dip Oscillator. Connect the condenser to be measured in parallel with a coil. Connect the Grid-Dip Oscillator to this combination and turn the dial until you get a dip. Leave everything set; remove the unknown condenser and in its place substitute a *calibrated* variable condenser. Rotate the dial of the calibrated condenser until you get a dip and *read the capacity of the unknown directly from the dial of the calibrated condenser.*

Super-oscillator at "sum" or "difference" frequency: A super-heterodyne oscillator that is designed to work at *sum* frequency may sometimes be incorrectly adjusted to *difference* frequency. As such, it will work but imperfectly. There is a complicated method of finding out if the oscillator is adjusted to *sum* or *difference* frequency, but the Grid-Dip Oscillator method is simplest and easiest. *Just touch the control grid and find out!*

Measuring R.F. resistance and comparing coils for efficiency: To compare coils for their R.F. resistance, measure them both without touching the Grid-Dip Oscillator controls. Everything else being the same, the coil which causes the *greatest* dip has the *lowest* R.F. resistance and is the *most* efficient. The more

variable or fixed capacity connected across a coil, the higher the R.F. resistance. The Grid-Dip Oscillator will demonstrate this strikingly.

(Continued on page 25)

R-C-S

455 K.C. NEW I.F. TRANSFORMERS

New I.F. 171-172 series. I.F. transformers are of revolutionary design using silver mica condenser moulded in the trolitul base, making them absolutely moisture proof.



Buy R.C.S. —and get the best! 13/- Ea.

If your local dealer cannot supply, write direct to

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174 CANTERBURY RD.
CANTERBURY, N.S.W.

(Continued from page 24)

Test inductances, R.F. chokes and I.F. transformers before installing: As with transmitter construction, it is a good idea to test every coil before mounting it in a set, and after it is wired up and before you turn the power on. Often I.F. transformers are not marked. Much time can be saved by knowing their I.F. frequency.

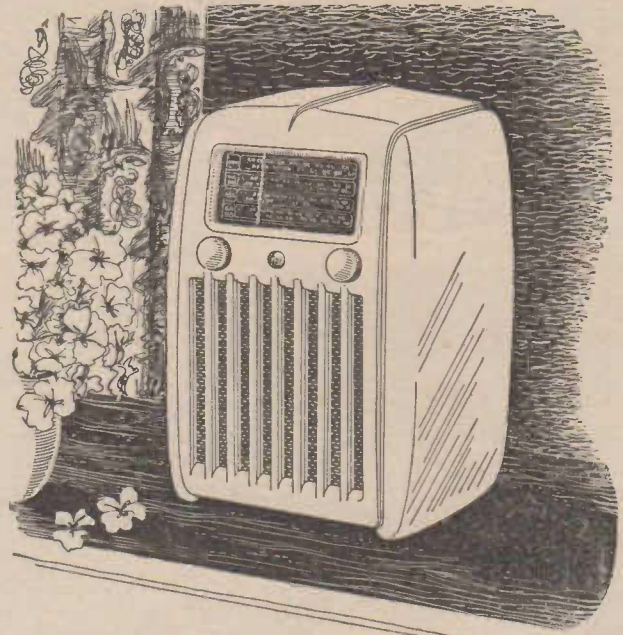
Use in building and testing aerials: Aerials with transmission lines may be home-constructed and experimented with. The coils of the coupling units may be matched with the Grid-Dip Oscillator. An ordinary aerial and ground can be connected to the output jacks of the Grid-Dip Oscillator in order to test efficiency. You should get a dip over the entire range of the Grid-Dip Oscillator. There will be less dip at the natural frequency of the aerial system. (The receiver should be disconnected when making this test). Poor aerial contacts will show up in an unsteady needle of the meter. Earthed aerials will be shown by this method.

PARTS LIST

- 1 Metal case.
- 1 Vernier Dial.
- 1 switch (six-gang, 5-points).
- 1 Milliammeter, from one to ten M/a full-scale.
- 2 small knobs.
- 1 S.P.S.T. Jack switch.
- 1 2-gang variable condenser, 350 mmf. per section.
- 1 20 mmf. maximum midget variable condenser (for coupling).
- 1 .25 mf. fixed condenser.
- 2 insulated tip-jacks—one black, one red.
- Valve sockets.
- 5 inductances (built following instructions given in the table).
- A.C. cord and plug.
- 3 cathode resistors (Value determined experimentally; see text).
- 2 power-pack resistors, 10 watts each, if 10 milliamper meter is used.
- 2 8 mf. electrolytic condensers.
- 1 midget power transformer.
- 1 6C5 valve.
- 1 5Y3G rectifier valve.

* * *

"Himate": A purist friend fell for the high-fidelity instruments being vended in his neighborhood, and I was invited to the bench to assist in the initial valve-warming. On gramophone records chosen at random the set performed admirably, but could show no points to the double push-pull triodes that lit up, in friendly fashion, upon a dusty old chassis away over in the corner. They, hoary at that, proved themselves veterans at tossing out tone and "whang." I've just finished calculations so that he can have the old X-core speaker rewound as a standard electro-magnet-filter-choke. In future when I pull the gramo. switch on my old faithful, 45's in push-pull, I'll be more reverent about it.



The newest and best mantel radio

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- Better tone — new loudspeakers.
- Greater convenience — on/off power switch on set and built in aerial.
- **MODEL 520m** In ivory **£18-7-0**
In walnut **£17-17-0**

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AUSTRALIA'S NATIONAL WIRELESS ORGANISATION

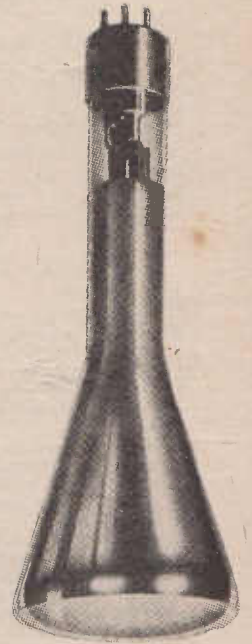
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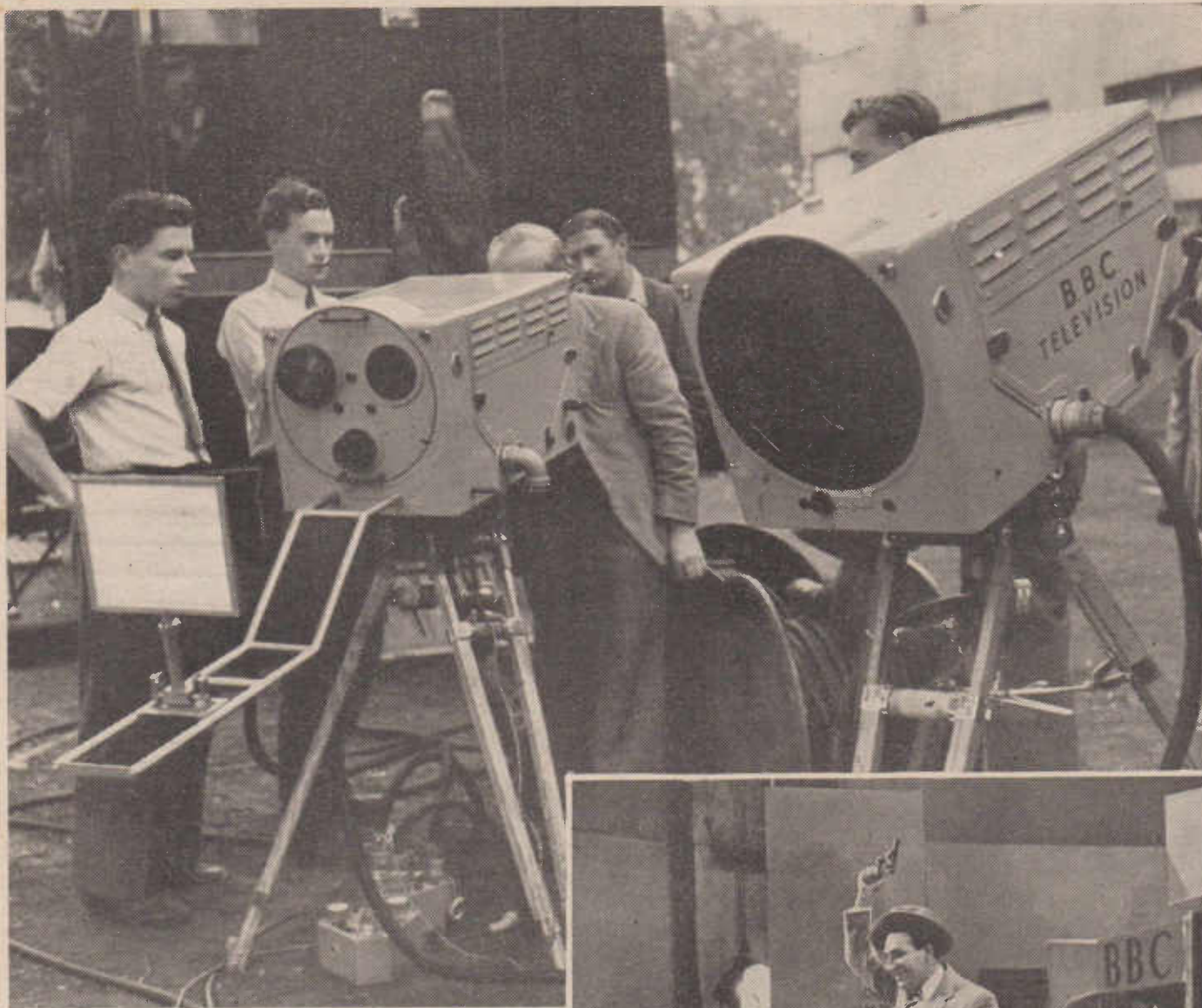


Radio and Television



● LEFT—Outdoor occasions are excellent material for television features and should be particularly popular in Australia when the time comes. The scene here is part of the River Thames near London, where, by courtesy of the Thamesis Club, viewers were able to see some of the races at a recent regatta. A camera of the BBC Television Outside Broadcast unit is seen closing in on a 14 foot International Class Dinghy.

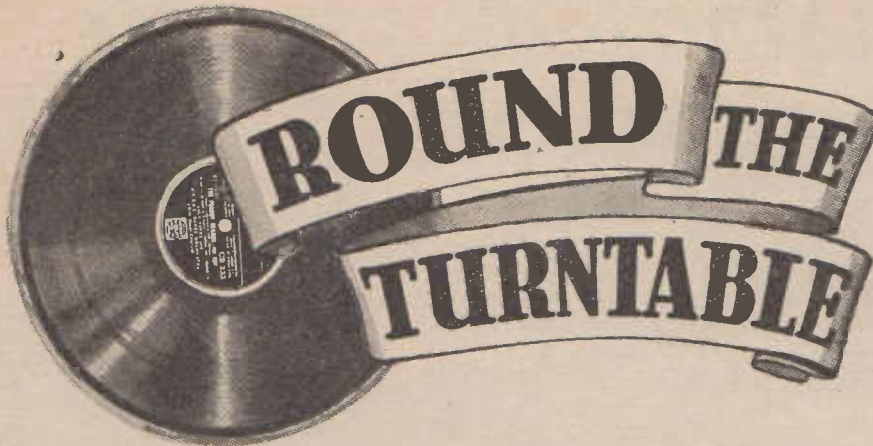
News Illustrated



- ABOVE—A scene during the 1948 Olympic Games in London, showing two of the new C.P.S. Emitron cameras being prepared for televising events from the Empire Swimming Pool.

- ★ RIGHT—Cheerful Charlie Chester, a bright star of BBC sound broadcasting, begins his television performance with a bang. Chester, now one of the top names in radio, had a struggle to make the grade, arriving at his present position of eminence via yodelling competitions in his youth, touring with accordion or guitar, playing in a dance band, cabaret and variety.





ROUND THE TURNTABLE

Around the turntable recently we find a predominance of serious music, but judging by the ever-increasing number of hit musicals now running on Broadway—and scheduled for Australian seasons, we can expect an influx of lighter music fairly soon.

One top-ranking American musical, however, is represented in our lists, and that's "Up in Central Park." Both on the stage and in movies, this musical has added further stardom to the name of composer Romberg, and on H.M.V.'s EA.3819 Jeanette McDonald and her new partner, Robert Merrill, make a charming pair as they sing CLOSE AS PAGES IN A BOOK and CAROUSEL IN THE PARK.

Sharply contrasted is that musical outlaw, Maestro Spike Jones, who bobs up to say I KISS YOUR HAND, MADAME in his own special debunking manner. On the reverse side of EA.3817 he promptly douses MY OLD FLAME, a torch number made popular several years ago by Mae West and Duke Ellington.

Columbia's DO.3282 brackets an equally awaited overseas hit, MY COUSIN LOUELLA, with a current romantic release, EVERYBODY LOVES SOMEBODY. Seeing that the vocalist is Frank Sinatra we can foresee that this disc won't linger long on the counter of the music stores.

Dinah Shore uses the velvet touch on ever-green best-seller, BLUEBIRD OF HAPPINESS, and on turning over to the other side of Col. DO.3280, we hear her do SAY IT EVERY DAY, the first release of a pleasant, romantic number.

Another Big Time voice is heard on H.M.V. EA.3818—Perry Como with two numbers that are best sellers both in England and U.S.A. They are BECAUSE, the love song everybody knows, and HAUNTED HEART, which is featured in the musical production, "Inside U.S.A." Como makes this as much his own song as he did with "Prisoner of Love."

Visions of Mississippi riverboats and New Orleans barrel-houses are conjured up by an outstanding hot jazz coupling by Graeme Bell and his Australian Jazz Band for Parlophone's A.7725. You'll hear Dixie idiom in the groove as they rock into SHABBY GAL RAG and OLD MAN'S BEARD.

CORABELLE and GONNA GET A GIRL are two humorous numbers put over by composer-vocalist Hoagy Carmichael on Decca Y.6148 in his own inimitable style. Time was when Hoagy was known mainly as the composer of "Stardust"—fame enough for most people—but discs such as his recent release are winning him an entirely new following.

First among Imported English Records this month is an interesting offering of two Debussy pieces played on Columbia LB.64 by French pianist, Robert Casadesu. Both are from the second book of Debussy preludes, GENERAL LAVINE and LA TERRASSE DES AUDIENCES DU CLAIRE DE LUNE.

From the same studio, on LB.73, comes a melodious bracket from the visiting Viennese soprano, Elisabeth Schwarzkopf. WHEN DAISES PIED is grouped with WHERE THE BEE SUCKS, and they are backed with Mozart's WARNUNG.

Celebrated Mozart works serve to introduce an outstanding new baritone in Erich Kunz on

Col. LX.1123. These are EIN MADCHEN ODER WEIBACHEN from "The Magic Flute," and NON PIU ANDRAI from the sparkling "Marriage of Figaro."

The rich music of Old Russia is faithfully reproduced by H.M.V. on C.7722/5. Here we have the long awaited new recording of Tchaikovsky's SERENADE IN C, Op. 48, and the final side of this set is Liadov's BERCEUSE, one of a group of Russian folk songs. The Philadelphia String Orchestra is conducted by Issay Dobrowen.

Louis Kentner, English pianist who leapt to fame playing "Warsaw Concerto" in the recording of the original sound-track from the film "Sulicide Squadron," gives an impressive interpretation of the well-known Chopin POLONAISE IN A FLAT. He makes this Col. DX.1502 well worth the attention of every collector of fine piano music.

So familiar has Grieg's PIANO CONCERTO IN A MINOR become that it is often referred to nowadays simply as "The Grieg." Arthur Rubinstein, brilliantly supported by Eugene Ormandy and the Philadelphia Orchestra, performs it magnificently for H.M.V. on DB.904/6, and takes his place with Backhaus, Friedman, Moiseiwitsch, and other exponents of this most melodious concerto.



The noted conductor, Sir Malcolm Sargent, with the Liverpool Philharmonic Orchestra, lends his fine musicianship to yet another favourite work. This is Haydn's SYMPHONY NO. 94 IN G MAJOR—THE SURPRISE, a standard best-seller, and this version comes on three discs, DX8813/5 from Columbia.

Boyd Neel, who had such a pronounced success in Australia, is well represented on the Decca label. His String Orchestra waxes in impeccable style a further issue of the famous "Brandenburg" series by Bach, the BRANDENBURG CONCERTO NO. 3 IN G MAJOR on K.1619. With the National Symphony Orchestra he conducts three Mozart scores: IL SERAGLIO—OVERTURE, one of the most popular overtures in opera, is numbered K.1323, whilst on K.1410 two further overtures will

have great appeal for Mozart lovers. These are THE IMPRESARIO and IDOMENEO.

All the freshness of the English countryside is evoked by Sir Thomas Beecham; foremost interpreter of Delius, as he conducts the Royal Philharmonic Orchestra in that master's BRIGG FAIR. This delightful rhapsody is recorded by H.M.V. on DB.6452/3 under the auspices of the Delius Trust.

A gifted young Polish violinist, Ida Haendel, records her first major work for the Listening Dog Label on C.7733/5. She gives a memorable performance of Max Bruch's CONCERTO NO. 1 IN G MINOR, OP. 26, with Rafael Kubelik conducting the Philharmonia Orchestra. Unconfirmed reports have it that this dynamic son of Jan Kubelik may become permanent conductor of the Melbourne Orchestra, an appointment which would be of enormous value to music in Australia.

Ballet has become one of the keenest delights of our theatre-goers, and in H.M.V. C.3707/8 we have the first release of a suite which is a graceful addition to the ballet library. This is Lecocq's MAM'ZELLE ANGOT, and the Royal Opera House Orchestra of Covent Garden imparts to it all the glamour of the footlights.

Opera fans who enjoyed the production of Giordano's "Andrea Chenier" by the Italian company this year will be able to recapture the flavour of this romantic work as Joan Hammond sings the dramatic aria, LA MAMMA MORTA, on H.M.V. C.3720. She appears again with the Philharmonia Orchestra on the reverse side singing SOLA PERDUTA ABBANDONATA from Puccini's "Manon Lescaut."

They say that the stately walk of the peacock inspired the steps of the pavane, an ancient Court dance. It waited for Ravel to translate the grave formality of this old musical form into a work of solemn beauty, and one can't find adequate praise for this new recording of his PAVANE FOR A DEAD PRINCESS (H.M.V. DB.6699) which the celebrated Boston Symphony Orchestra performs under the baton of Serge Koussevitzky.

In direct contrast come two lighter discs which must conclude our diary for the month of June. Anni Frind—star of that perennial best-seller, "Nuns' Chorus"—together with Walther Ludwig and Wilhelm Strieng, sings PAGANINI POTPOURRI, a selection of Lehar melodies which will find instant popularity. You'll hear this gay piece of theatreland on H.M.V. 1046. The other record is a Columbia label (DX.1527), a 12-inch double-sided feast of Andre Kostelanetz and his Orchestra in Latin-style numbers. Traditional tunes go to make up MEXICANA, while MALAGUENA from "Suite Andalusia" backs this disc, prying—if proof were needed—why Kostelanetz is one of the biggest names on record today.

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TRIALS OF A RADIO-TECH. JOURNALIST

WHEN one has for many years answered radio questions, singly, collectively and in bulk, one should know something about people, if not a little about radio!

What is the use of printing requests to "write on one side of the paper," "write legibly," "sign your name and address," or "enclose stamped and addressed envelope for direct reply"? Some do, but a lot don't, and it's no use protesting. Questions! Pathetic, weird, entreating, compelling and even sarcastic; they all come, and they have to be taken in the spirit in which they were sent.



Because it is in man to try to fashion things with his own hands, the home-constructor, when radio came along, saw the descriptive article, and began to conquer the technicalities of the new science. He started doing it en masse around 1920, and he is still doing it in this year of grace. That he will go on doing it despite the fact that he can buy fairly inexpensive "ready-mades" is certain, and prognostications that the radio constructor will disappear from the map are ridiculous. Whilst politicians and militarists rattle the sabre radio amateur plods along in the enjoyment of his hobby. Youth has more desire to make something than to destroy, and radio (amateur version) is a great uniter of nations.

One can glean from correspondence the sacrifices that have been made to acquire the parts to make this or that radio creation; the laborious sketching of the diagram which it is hoped will suit some old components on hand, sometimes workable, but often likely to ruin cherished valves. One of the biggest handicaps in dispensing advice intended to put the supplicant on the right tracks is the influence of the

"five-minute expert." The seeker of advice has probably been in the hands of such a know-all, and has either been side-tracked or otherwise disappointed. Go-getting crooks have nothing on some of these "experts" in the matter of causing loss and trouble, and sooner or later one is asked to clean up the mess they have left.

Then there is the aggressive type of correspondent—the man who has "made your such-and-such receiver and can't get any sense out of it," etc. After weeks, and perhaps months, of letters both ways, one is constrained to take the bull by the horns and make a personal inspection of the receiver. Usually it is then discovered that anything and everything was used rather than the components specified and recommended, and the attempt has produced something entirely different from the original. This type of correspondent often assumes the injured attitude of "You designed it, so you are responsible." Another type of constructor is the man with a beautiful sense of mechanical engineering. He makes a splendid structural job of his apparatus, but his electrical knowledge is nil. A combination of mechanical and electrical aptitude is rare. Often a receiver is presented for inspection and elucidation of faults, and turns out to be the last word as a piece of metal-work but prevented from functioning

by earthed grids or shorted tuning condensers.

Short-wave receivers provide pitfalls for the unwary that don't yawn before the constructor of the average broadcast receiver. It is comparatively easy to put together a broadcast receiver with the aid of technical directions and a circuit diagram, and in nine cases out of ten it works from the time it is switched on. Short-wave receiver construction is another matter. The greatest source of trouble here is long, straggling wiring in tuned circuits. Crankiness and hopeless performance are the punishments for sloppiness in short-wave receiver building. If a broadcast model must be reasonably well put together to give good results, a thousand times more care must be taken with the short-wave job, however humble its category. A lot of reasons exist just why this or that should or should not be done, and as the average radio constructor is remarkably patient and something of a stickler, he finds them all out at last. His multifarious problems have a wistful appeal to the experienced man who elects to try to solve them. Fascinating game, this radio! What next? Television? Getting nearer, much nearer, day by day, and with it a whole set of new problems, snags and delights for the radio hobbyist.

—"QUEREX."

Train now for Television!

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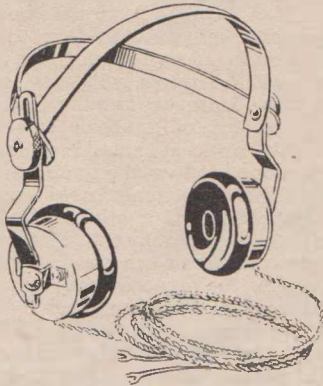
2 Parramatta Road, HOMEBUSH, N.S.W.

R64/49

PRACTICAL MAN'S CORNER

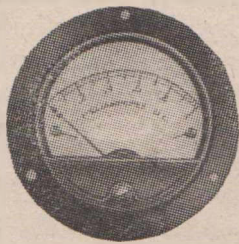
HEADPHONE REPAIR

When headphones become defective, almost always one of the coils is found to be open. This coil can be shorted out, allowing the current to pass through the other coil. The phones are less sensitive, but still usable till replacements can be obtained.



METER READINGS

A problem was recently put forward by a reader who was testing a receiver with a multi-purpose meter and who could not decide upon the reading obtained. It appeared that the meter had a series of voltage ranges, obtained with a selector switch, and when on a high voltage range he obtained a reading of just over 100 volts. To make quite certain what the reading was, he used the next lower range which read slightly more than 100 volts, and



he then found that the reading was only slightly above 60 volts. He thought the meter was out of order, but this was not so. On the high voltage range the total current flowing through the meter would be less than on the lower range, owing to the higher resistance of the meter, and thus this would be the more accurate reading. The voltage being tested was probably the screen voltage, where the additional drain of the low resistance meter would considerably modify the voltage actually applied to the circuit.

STRIPPING LITZ WIRE

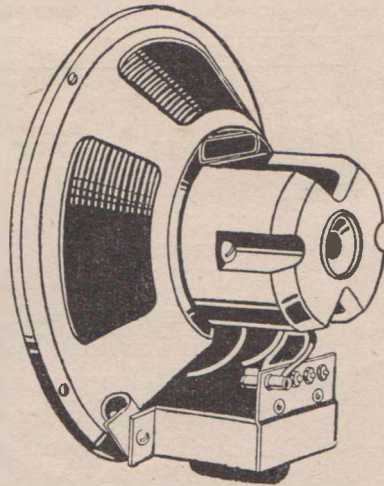
Do you have trouble stripping insulation from Litz wire and the fine wires commonly used on pick-ups and headphones? If so, try passing a lighted match slowly under the end of the wire. This will char the insulation sufficiently to permit it to be pulled off. Use care so that the fine wires will neither char nor melt.

* * *

VALVE PULLER

A sewing-machine screw driver is the basis of this novel valve remover. To make it, hold about $\frac{3}{4}$ -in. of the screw driver blade in a vice and bend it sharply 45 degrees.

Slip the bent end of the screw driver blade between the base of the valve and its holder. A little leverage on the handle will force the valve out easily.



BASS COMPENSATION

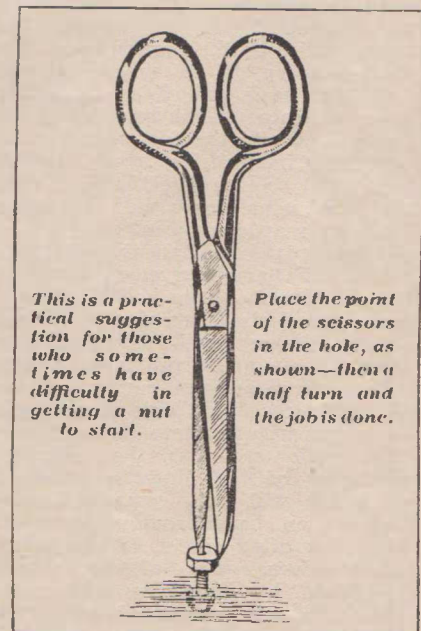
A small iron-cored coil in the voice-coil leads of a speaker provides a very effective form of bass compensation. The inductive reactance of the coil increases with the frequency, thus decreasing voice-coil current at high frequencies while passing lower notes. The inductance may consist of a small filter choke iron-cored r.f. choke, or other inductance having values between 100 mh and 5 henries. Experiment with different values for best results.



CONDENSER TESTS

Some people think that all condensers should have the highest possible insulation resistance and that a leaky condenser is of no use whatever. This is not necessarily true, because there are positions in the set where you can make excellent use of a leaky condenser, provided the leakage is not too great. Of course, if a condenser is leaking badly it is scarcely acting as a condenser at all, and you may get all kinds of noises and crackles set up by it.

A condenser in the grid circuit should have a high insulation resistance, but a condenser which is used in a filter circuit may be none the worse for a slight leak. On the other hand, if you are using a condenser in a resistance amplifier for coupling purposes you should take care that it is quite satisfactory, otherwise you may get noises, and the working of the amplifier be interfered with.



This is a practical suggestion for those who sometimes have difficulty in getting a nut to start.

Place the point of the scissors in the hole, as shown—then a half turn and the job is done.

USEFUL NAME PLATES

Neat name plates for home-made and experimental equipment may be made by typing or lettering the titles on small strips of white paper or thin white cardboard and securing them to the panel by means of transparent tape. The titles are type-written on paper strips 3-8-in. wide, and bound to the panel with $\frac{1}{2}$ -in. cellophane tape. The tape is cut to a length sufficient to give about 1-16-in. overlap also at the top and bottom of the title plate. In mounting, the strip is first fastened to the panel with a thin spreading of rubber cement, then covered with transparent tape and rubbed briskly to complete the fastening operation and to remove any wrinkles. The tape gives a glossy protective covering which prevents soiling.

Other pleasing effects may be obtained by hand-lettering the titles in black India ink, by printing them with a small letter press, or by lettering them with a lettering guide, such as used by draughtsmen.

* * *

SYMMETRY IN LAYOUT

Many constructors who try to design their own receivers fall into the trap of arranging all parts symmetrically, or at least in some kind of order. This can introduce difficulty, although wiring may be simplified. For instance, chokes and transformers when placed in line may cause the windings on the components to be inductively coupled. If a case of hum is found and smoothing does not produce any effect, one of the transformers or chokes should be provided with fairly long flexible leads and the holding-down bolts removed from the component. It should then be turned at various angles and, if necessary, tilted up on one or other of its corners. It may be found that only when this latter procedure is adopted is induction removed, and with it, the introduction of hum.

* * *

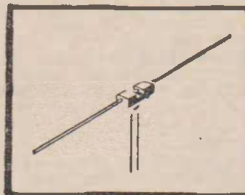
INSTABILITY AND DECOUPLING

Decoupling components are often added to a receiver without removing instability. In such cases it should be remembered that the efficiency of the decoupling circuit may be modified in two ways. It is possible to increase the values of both condenser and resistance, or merely to increase the value of either component. In many cases an increase in the capacity of the condenser up to 8 mfd. will be found all that is necessary, the increase in value of the resistance lowering efficiency due to the reduction of H.T. on the valve.

CONCERNING DOUBLET ANTENNAE

Many an experimenter and serviceman has installed the most expensive type of commercial doublet in an effort to reduce the noise level, and to increase the signal input. Sometimes they have even made up elaborately spaced double-doublets only to find that after they were hooked up to the set, that they did not work as well as a single wire.

The fault lies not with the doublet, but with the match between the antenna and the set.



The first thing is to determine what the input-to-the-receiver impedance is. Next a doublet must be used that will match that input. We know of at least one receiver that has an impedance of only 200 ohms. It is wholly useless to match a 600 ohm doublet to it, since there will not be the maximum transfer of energy.

Always match the doublet to the set, and make the doublet so that it will match. Formulae are available in most handbooks.

MICROFARADS

A farad is the unit of capacity, but as it is too large for ordinary use, the millionth part, or microfarad (mfd.), is used as the practical unit, and this again is divided into a millionth part, or micro-microfarad (mmfd.), useful for stating small capacities. For ease in translating the latter into the former, a few leading capacities are given:—

Mfd.	Mmfd.	Mfd.	Mmfd.
.001	= 1000	.00008	= 80
.0005	= 500	.00005	= 50
.0003	= 300	.000025	= 25
.00015	= 150	.00001	= 10
.0001	= 100		

DIRECT MAIL CORRESPONDENCE

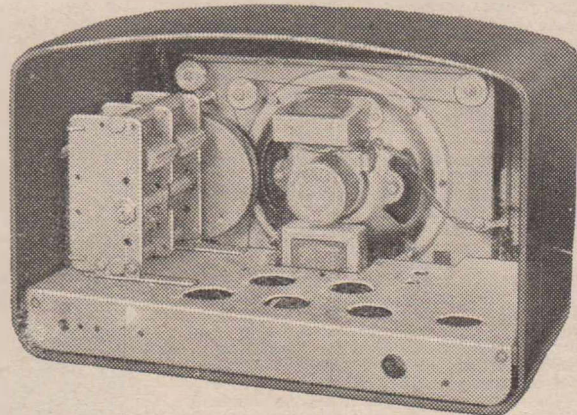
Many readers have written to the editor asking for personal attention to problems, technical and otherwise, by direct mail. It is necessary to stress that a stamped and addressed envelope **MUST** be enclosed with such requests and that in any case some delay may be occasioned owing to demands on editorial time. Correspondence from readers is welcomed but readers are asked not to make requests for whole technical articles, complete with circuits and data all to themselves. Please keep technical questions brief and to the point to facilitate a quick reply.

The "YORK" FOUNDATION KIT

A Boon to
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Manufacturer

Comprising—

Cabinet (as illustrated).
Chassis, Dial Assembly
and Scale, Special AER-
Osc. Coil, Rola 5C
Speaker, Rola 6/60
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step Instructions, "How
to Build It."



Price on application

Write, phone or call
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"THE YORK" Foundation Kit as it reaches you, packed in stout carton, with Circuit and full instructions.



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THE WELDON ELECTRIC SUPPLY CO.

46-48 YORK STREET, SYDNEY

TELEGRAMS: "LESAB" SYDNEY

BX4221 (10 LINES)

In Tune with the Trade



● Mr. Frank Leddy, Governing Director of Philips Electrical Industries of Australia Pty. Ltd.

AUSTRALIAN TELEVISION SHOULD BE WORLD'S BEST

"The standards adopted by the Australian Government for television transmission in this country will give a television service at least equal if not better than anything in the world when it is introduced in about two years time," said Mr. F. N. Leddy, Governing Director of Philips Electrical Industries recently.

Mr. Leddy said that the Philips organisation already had in existence equipment for the transmission and reception of television in conformity with Australian standards. His Company had developed a television demonstration unit complete with studio facilities, which would operate through a range of standards including those adopted by Australia. This equipment is already being used in official television experiments in the Argentine, in Denmark and in many other European countries. In 1948 the Philips organisation recommended a set of television standards for adoption in countries not then using television, which provided for either 567, 605 or 625 line definition with negative modulation and an F.M. sound channel. In 1949 European and English television manufacturers including Philips jointly recommended a European standard of 625 lines.

The Australian standards followed these recommendations fairly closely. The Australian bandwidth of 7 megacycles however provides for greater resolution and contrast and hence a better picture than the 6 megacycles bandwidth of the recommended European standard, the 4 megacycles bandwidth used in America and the 3 megacycles bandwidth in England.

The use of F.M. for the sound channel is an important factor. Viewed in relation to the provision of a first-class television service, its use is unquestionable. It means however, that Australian television receivers will not be suitable for reception of normal broadcast programmes without making separate and necessarily more expensive provision for the additional A.M. radio receiver. In practice therefore it will be found preferable and at least as economic to have entirely separate television and radio receivers so that any member of a family not interested in any particular television programme may at the same time listen to the radio.

PHILIPS F.M. RADIO-TELEPHONE EQUIPMENT FOR S.A. HARBOUR TRUST

A radio telephone communication system employing V.H.F. frequency modulation is being constructed by Philips Electrical Industries for the S.A. Harbour Trust to provide more efficient working of the harbour facilities controlled by the Trust. A fleet of 14 tugs and launches is being fitted with radio and these vessels operate in three areas, Port Adelaide, Outer Harbour, and Port Pirie. Those at Port Adelaide and Outer Harbour will work with the Port Adelaide base station and a second base station is provided for Port Pirie, with inter-communication facilities between the two.

The mobile stations will use the Philips type 1622/1623 transmitter-receiver units which are the same as those used in land vehicles, powered from the ships' batteries, which, in this case, are 12 volts.

The 1622/1623 is a remarkably compact installation, which, including selective calling equipment, measures only 16½" x 11¾" x 6¼" and weighs 45 lbs. When selective calling is not used the dimensions are still smaller, 16½" x 9½" x 6¼" and weighing 39 lbs. The transmitter and receiver are mounted side by side in a single steel case, with the vibrator power unit at the rear end of the transmitter chassis.

A single cable connects the set to the control panel and a coaxial feeder is taken from the set to the aerial. The control panel and microphone take up very little space and may be mounted wherever convenient. The loudspeaker, likewise can be stowed in the most convenient position or may be mounted, without its protective housing, behind the loudspeaker grille where this is provided in the vehicle.

The aerial is usually mounted on the roof or cabin top and may be either spring based or of the "knock-down" type. Cars mostly use the single quarterwave whip aerial, but in the case of the Harbour Trust vessels the "folded unipole" is being fitted, as this type of radiator has superior characteristics and is to be preferred wherever physical conditions

permit. Like the well-known folded dipole it greatly simplifies and improves the impedance matching to the feeder line.

The mobile stations, transmitters type 1622, operate on 82.26 mc/s and have an aerial power of 20 watts, delivered by a type 815 valve, the low power stages using the Miniwatt miniature all-glass valves. Working on a deviation of plus 15 Kc/s the audio frequency input is less than minus 25 V.U. and the audio frequency range transmitted is from 300-3000 cycles, as is usual in voice communication systems. Automatic modulation control is effected by a diode-pentode valve and provides against excessive deviation.

The power consumption of the transmitter, on 12 volt supply, is 2 A. on stand-by and 9 A. on transmit. For 6 V. operation these currents are doubled.

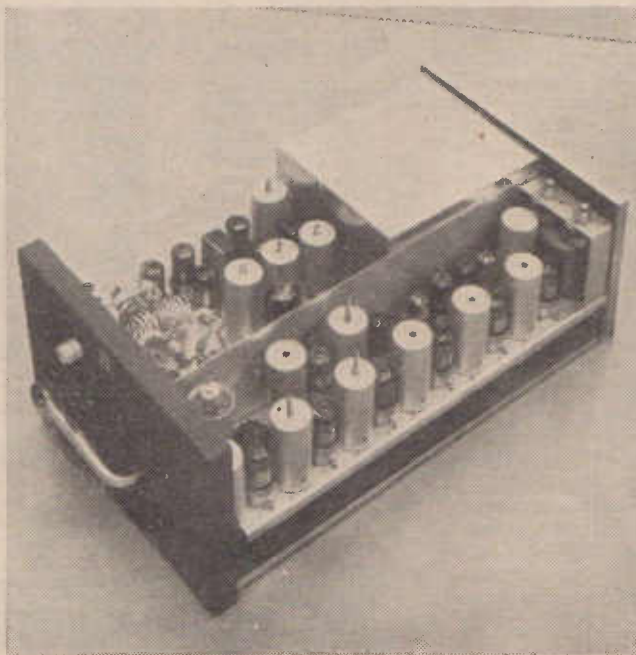
The receiver type 1623 is a double conversion superheterodyne using the same crystal oscillator for the first and second mixers so that oscillator drift difficulties are removed. The Miniwatt all-glass miniature valves provide excellent performance without excessive battery consumption. The sensitivity is 1 microvolt for a noise reduction of 20 db., which, with 15 Kc/s deviation, gives a signal to noise ratio of 20 db. The action of the limiters is assisted by automatic gain control applied to the high frequency, and first intermediate amplifiers.

An electronic squelch system provides for complete silencing of the receiver in the absence of a signal and is adjustable for functioning between 1 and 5 microvolts.

The power output of the receiver, unless specially required to be higher, is 0.8 watt, which with modern loudspeakers provides more than adequate volume without excessive battery drain. In cases where loudspeaker operation is not desired an output of 10 mm. can be provided for the energising of a handset receiver, with a consequent reduction in current consumption.

The receiver current consumption on 12 volts is 3.3 A.

The transmitter and receiver are operated from the control panel which provides all the necessary controls and indicators.



● Designed and manufactured in the Hendon, S.A., factories of the Philips Co., this VHF FM equipment represents the latest for ultra-modern point-to-point radio communication.

The base stations of 200 W. aerial power operating on 77.18 mc/s make use of the type 1606 250 W. base transmitter, which, including in its cabinet the base receiver, occupies a floor space of 24" x 20" and stands 5'10" high. The exciter stage of the transmitter consists of a type 1622 transmitter with A.C. mains power supply and drives the power amplifier using two QB3/300 tetrode valves in push-pull.

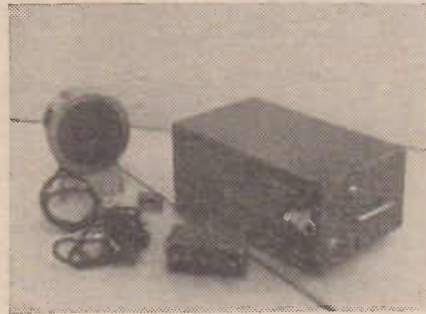
The high tension for the power stage is derived from 866A rectifier valves and the power drawn from the 240 V. mains is 175 W. on standby and 800 W. on transmit.

The base station receiver is a type 1623 unit with A.C. power supply and its power consumption is 50 W.

The 1606 equipment is designed for local or remote operation. In the latter case the line may be of any length providing that the loop resistance does not exceed 1000 ohms.

Several types of aerial are provided for base stations such as the ground plane or stacked dipole arrays, but in the case of Port Pirie the normal omni-direction arrangement had to be departed from and a special array will be erected with directive properties in certain directions. The system is, of course, vertically polarised.

All the base station functions are carried out from a control console to which extension telephone sets may be connected so that officers in several locations can communicate over the system. The selective calling mechanism is operated from the console along with the other central control functions and all the necessary apparatus is built into the cabinet.



The Philips selective calling system provides for individual calling (complete privacy) or group calling, which latter includes calling all stations simultaneously. In this way, while normally only the station desired receives the call, when emergencies arise and a number of stations are to be concentrated at a given spot in the least time, the group or general call greatly expedites the traffic.

The system which is worked by tones and the use of only six audio frequency tones accommodates a fleet of 186 mobile stations.

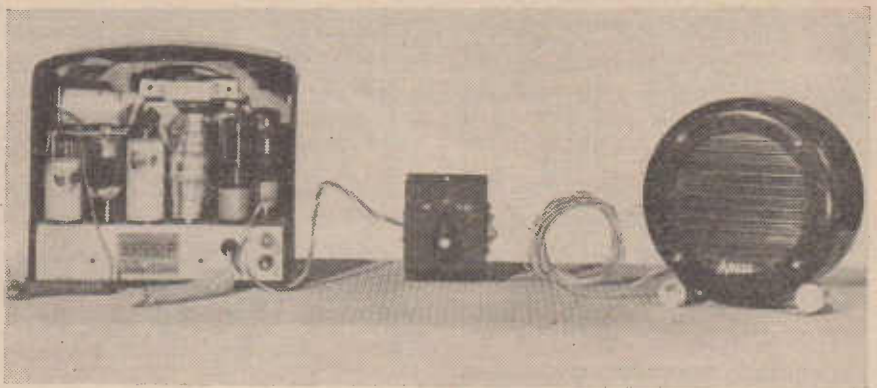
As accessories to the selective calling equipment in the mobile stations a "busy lamp" and "memory lamp" are fitted. The busy lamp informs the mobile operator when the system is busy with another call and the memory lamp shows when a call has been made to him in his absence, should he have been called away for any purpose when the call from the central station was made.

Apart from the small increase in dimensions of the mobile equipment the selective calling apparatus involves an additional battery consumption of only 4 watts and a weight of six pounds.

* * *

Aegis Manufacturing Co., 208 Little Lonsdale Street, Melbourne, C.I., is now in a position to deliver immediately a Communication Cabinet, Front Panel and Chassis to suit their AEGIS KC4 Tuning Assembly. Readers will recall that this unit was suggested for the Dual I.F. Receiver in our June, 1949 issue.

The price structure is as follows:
Trade86/6 Plus 10% S.T.
Retail130/- Inc. Sales Tax



● The Aegis Company solves a loudspeaker extension problem for the home with this useful control unit.

AEGIS EXTENSION SPEAKER CONTROL SYSTEM

After months of research, Aegis Manufacturing Company has perfected an Extension Speaker Cabinet and Control System that revolutionises the fitment of Extension Speakers.

Coinciding with the release of the Extension Speaker Cabinet, is the Control Box, which embraces a Speaker Transformer connected to a switch, Output Terminals, and an Input Lead fitted with a Plug and Socket, the idea being to remove the output tube, insert the plug, refit the valve, and so be in a position to have in operation the Receiver as was, the Extension Speaker operating separately or the Extension Speaker and the Receiver Speaker operating together.

The photograph shows the Cabinet and the small remote control mechanism. Strikes and other factors taken into account, this equipment will be ready for release in time for the Christmas trade.

Prices are—

PLASTIC CABINET WITH 6" ROLA SPEAKER (Less Output Transformer):

	Black or Walnut	
Distributor		
Trade	39/10	Plus 10% S.T.
Retail	65/9	Inc. Sales Tax
	Cream Urea	
Distributor		
Trade	41/3	Plus 10% S.T.
Retail	68/-	Inc. Sales Tax

PLASTIC CABINET ALONE:

	Black or Walnut	
Distributor		
Trade	18/-	Plus 10% S.T.
Retail	29/9	Inc. Sales Tax
	Cream Urea	
Distributor		
Trade	19/4	Plus 10% S.T.
Retail	32/-	Inc. Sales Tax

SWITCH BOX (Including Output Transformer):

Distributor		
Trade	30/3	Plus 10% S.T.
Retail	52/6	Inc. Sales Tax

OVERSEAS CONTRACT TO AUSTRALIA

Tenders to supply and install radio equipment for the seven new ships of the Union Steamship Company of New Zealand and the radio refit of two others has been awarded to Amalgamated Wireless (Australasia) Limited.

This tender was competed for against leading overseas radio organisations.

The ships concerned consist of five vessels under construction in Scotland and two to be built at the New South Wales State Dockyards, Newcastle. The vessels to be refitted with A.W.A. equipment are the "Kopua" and the "Waitaki."

AEGIS KC 5 TUNING UNIT

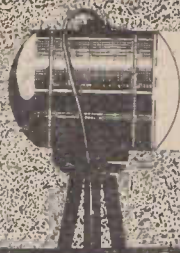
This is an all-wave tuning unit, developed for the Custom Built Console of the modern lounge. The unit is actually the entire "Front End" of a radio receiver, completely assembled and wired, accurately calibrated in megacycles and aligned. For those keen on listening to Overseas Broadcasts direct from their origin, plus hundreds of amateur radio operators talking to one another all over the world, small ships at sea, aircraft, police, and standard broadcast interstate, we recommend the KC.5 Tuning on the Shortwave Bands is as easy as tuning the Broadcast, due to three outstanding features: (1) 29:1 Ratio Dial Drive, (2) Flywheel-spin Tuning Shaft, (3) Electrical Band-spreading. Once a Station is logged on this beautifully clear dial, it appears at the same position next time.

Below are some of the SPECIAL FEATURES of the AEGIS KC.5:—

1. Complete coverage of all popular bands obtained with FIVE SWITCH POSITIONS. (550-1630 Kc), (3.4-4.05 Mc), (5.8-7.5 Mc), (9.4-12.3 Mc), 13.9-18.2 Mc).
2. Bands indicated on dial include 16, 19, 20, 25, 31, 40, 49, 80 Metres, and Standard Broadcast.
3. Multi-coloured, full vision, illuminated dial.
4. Band change switch operates Automatic Band Indicator on dial face.
5. Provision for "Magic Eye" tuning indicator.
6. Positively no back lash on dial drive.
7. Special Perspex dial pointer prevents incorrect logging.
8. All coils possess high quality, adjustable, iron-dust cores.
9. Trimmers have high "Q" factor.
10. Best quality Moulded Mica, Ceramic, and Paper Condensers incorporated in circuit.
11. I.R.C. Resistors used throughout.
12. Stabilised Voltage Control on Screens of Both R.F. and Converter valves.
13. R.F. Stage on all wave bands.
14. Something New and Exclusive in Dial Escutcheons.
15. A.W.A. three-gang Tuning Condenser floated on Rubber.
16. Whole unit may be mounted on four rubber grommets when attached to chassis.
17. All associated resistors and by-pass condensers included, complete.
18. Any number of valves and control circuits can be built around this unit to give the desired results. (We recommend two I.F. stages using Aegis J20 and J21 I.F. Transformers).
19. Only Five Connections to make, to feed into any 455 Kc. I.F. channel.
20. Gold Letter Station Transfers for all Australian stations supplied.

Address enquiries to Aegis Manufacturing Company, 208 Little Lonsdale Street, Melbourne, C.I.

(Continued on page 41)



READER'S FLOODLIGHT

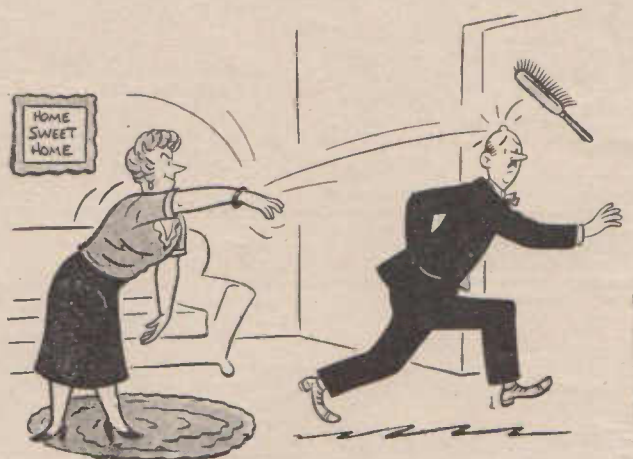
OUR FIRST SUBSCRIBER (since augmented by a formidable list), Mr. Cliff Lloyd, 79 Victoria Street, Lewisham, N.S.W., doesn't regret being first in the field. He says . . . "thanks for a very excellent 'bob's' worth. It is indeed something very different to the usual run of things. The attractive illustrations give a relief from looking at photos of valves and condensers all the time. Such topical illustrations are news in themselves. As I write this my wife is reading carefully through the magazine, and that really is something when she has not evinced any interest in radio previously. Another point is the fine standard of advertising, which does justice to those business people who utilise the space. . . . I am looking forward keenly to the forthcoming issues. . . ."

(We blush with modesty at your bounteous plaudits Mr. Lloyd, and take this opportunity to tell you and thousands of our readers that we deeply regret the recent break in our publication dates. To use an overworked but very true cliché . . . "circumstances arose, over which we had no control." It was no joke to establish "R & TV News" and then find that the perverseness of human nature and the intolerance of a section of the community hit us below the belt. Being young and healthy, we did not fall for the count, but got going again with more enthusiasm than ever. Your remarks about "R & TV News" being "different" emphasise the very point we have stressed from the start . . . we have no intention of being imitators . . . and our claim to be a progressive National magazine is no idle suggestion. We have noted with interest that our ideas have been covertly copied in one direction and of course that is accepted as sincere flattery.—Editor).

CECIL HORNE (VK2AIK), recently of West Wyalong, N.S.W., writes:—

"Just a line or two of congratulation on the very high standard of 'R & TV News.' You have managed to set out in dignified terms all the various sections and I am sure that all discerning readers will appreciate just that fact. There has always been a tendency for 'ham' and other hobby magazines to descend to a level that becomes a jargon, but you have managed to attain the level of high literary merit. Good luck . . ."

(Whilst we are in the publishing business and dealing with amateur radio and other kindred subjects, jargon (as distinct from humorous repartee) is something that will not be permitted to see print. We know that many may not agree with us . . . but we do NOT like the continued reference to radio amateurs as "hams." It is a term which jars immediately on the non-understanding layman, and means something quite different in the professional theatrical world. It is even considered unfortunate that we are virtually doomed to reference to owners and operators of private or citizen radio stations as "amateurs." The "Amateur Hour" in radio, does, for example, mean something very different indeed to the activities of radio amateurs. The one wouldn't know t'other. Thank-you for the good wishes, Cecil.—Editor).



Brush Discharge

A THOUGHT FOR AN IDLE MOMENT

COVER DESIGN

As we expected, several readers and some advertisers have asked why we have depicted the glamorous young lady on our re-designed Cover. We asked Sydney artist Lincoln Hamilton to knock us up something indicative of "The Spirit of Television" and intimated that it should have a feminine theme. Not at all bad, is it? We DID hear a practical radio technician say however, that the lady should have been saying "MISTER—here's your CATHODRAYTUBE."

A Milestone in Valve Production

Amalgamated Wireless Valve Company has just produced the one-millionth miniature type valve in the factory at Ashfield, N.S.W. This indicates the high degree of progress and manufacturing technique now attained in Australian radio valve production.



More than
A FINE HOTEL

A hotel, certainly one of Sydney's leading hotels, but different to every other in many things. The Wentworth, for instance, has ever been noted for its quiet, restful atmosphere. Another thing, too, while away from the noise and bustle, you are nevertheless conveniently situated to everywhere. Service and cuisine are unexcelled.

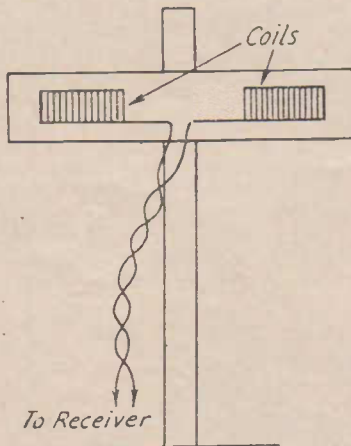
THE WENTWORTH
in Sydney

Phone BW 1561 (10 lines)
C. D. Maclurcan, Managing Director

SHORT WAVES

COMPACT RECEIVING DOUBLETS

Particularly for short waves, the doublet form of aerial with twisted or transposed feeder line is recognised as being highly efficient at the resonant frequency of the aerial itself. It also has the great advantage of possessing good noise-reducing qualities if the aerial portion itself is located well away from the radio-inductive interference field. This can often be arranged, and the length of a twisted-pair feeder line makes little or no difference. For the short-wave broadcasting channels taking in 19, 25 and 31 metres, the physical dimensions of a doublet are modest, as also for use in the amateur experimental bands; but, when it is desired to conduct experiments with a doublet aerial intended for broadcast reception on the 200 to 550-metre range, the space required is inconvenient for anybody but country people with plenty of available room. An idea



is pictured for use in city and suburban areas wherein the advantages of the doublet are obtained, but in a very small amount of space. A wooden cross-piece is fitted to the top of a pole, the higher the better, carrying two coils of 16-gauge copper wire on 3-in. diameter forms. The wire should be cotton-covered and the coils, when wound, soaked in paraffin wax. For the broadcast range each coil should

have 170 turns, for 80 metres 60 turns, for 40 metres 30 turns, and for 20 metres 15 turns. It will be found that in the short-wave ranges a doublet so constructed for 80 metres will work well on the harmonics. A good feeder line can be made from 18-gauge V.I.R. cable twisted together, and if a tuned coupling is used to the receiver, so much the better.

* * *

SHORT-WAVE LISTENERS' CLUB

In a letter to the Editor, Mr. Gordon J. S. Hepburn, of 10 McGregor St., Croydon, N.S.W., raises the subject of a club for SWL's. He suggests that the many readers who are undoubtedly interested in the formation of such a club should get into touch with them. Whilst it will not be possible for the staff of "Australian RADIO & TELEVISION News" to take, at this stage, any executive part, because of business pressure in producing this magazine, appropriate space will certainly be made available. If a group of readers get together and form such a club, the Editor will provide space for the publication of news and notes. What about it, you keen short-wave listeners?

* * *

"Hopalong." In the April 1949 issue of the journal of the Radio Society of Great Britain, A. O. Milne (G2MI) condemns interloping broadcasters in the amateur 7 Mc/s band but gives the SWL short shrift at the same time. Says he . . . "who listens to their blatherings (the transmitting stations)? Broadcast interests will no doubt produce formidable listener figures if asked to do so, after all they must to justify their jobs, but personally we have never yet found anyone who listens consistently to short-wave broadcasting. We still stick to our original conservative estimate—one listener per kilowatt! Short-wave broadcasting is probably the greatest waste of time and energy in the world to-day, and most likely to cause International ill-will." The blathering and spreading of ill-will by certain sources of

short-wave broadcasting is obvious to anybody with a grain of understanding; but I disagree with Mr. Milne in his off-hand treatment of SW broadcasting in general. Surely we are not asked in this part of the Empire to regard the excellent British short-wave broadcasting service as being in the category he emphasises? That goes also for the "Voice of America" programmes from Uncle Sam's domain.

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STORIES OF THE GREAT COMPOSERS

THE LIFE OF MOZART

By RON BRADER

WOLFGANG AMADEUS MOZART was born on January 27, 1756. On that day commenced the life of a man, now famous, who was destined to become one of the greatest of composers. Yet this life, which began so brightly was "bound in shallows and in miseries" and was extinguished after only thirty-five years existence. All music lovers are familiar with the extraordinary genius which was revealed in his childhood; this need not be elaborated upon here. His young ear was so sensitive that he fainted when hearing a trumpet, yet this instrument often featured in novel combinations of instruments, in the music he wrote later in life.

MISUNDERSTOOD TALENT

His father, Leopold, made the great error of attributing his musical talent to youthful precocity, and soon had him touring the courts of Vienna, Paris, and London in a romantic atmosphere of praise, Princes, and patronage, which produced presents of swords, snuff-boxes and golden canes in abundance, but nothing much in the way of money. Only his visit to England was really lucrative; when he received 24 guineas from George the Third and 50 guineas from the Queen in return for six sonatas. His skill in improvisation and his talent made him immensely popular. So great was his initial success, that upon his return to his home town of Salzburg "Wolferl" was shut up in a room by the Archbishop, who did not believe all that was said about him, and refused to release him un-



til he composed an Oratorio. He was very soon released.

FIRST SUCCESSES

At the age of 12 years, Mozart produced his first Opera, "The Pretended Simpleton," with a score 614 pages in length, but its performance was obstructed by the jealousy of the Viennese musicians. It was not long before Leopold, still fearing a waning of his genius, took him to Italy, the home of music, where he made a great impression. It was here that his memory retained the whole of Allegri's "Miserere" and he wrote it out note perfect after having heard it but once. On the return journey Mozart was admitted into the Philharmonic Societies of Bologna and Verona at the age of 14, and his Opera "Mithridates, King of Pontus," was given twenty performances. The letters of Mozart at this time reveal his acute dramatic sense and power of understanding character, which contributed so much to the greatness of his Operas. Up to this stage his music had not been truly his own, and had followed existing convention and style, but the advent of manhood revealed Mozart's music in its maturity. The year 1776 is abundant with Masses, Divertimenti, and music for the organ and piano.

MATRIMONY AND CAREER

Mozart soon became tired of Salzburg and left on another journey. At Mannheim he fell in love with Aloysia Weber, who, unfortunately, did not reciprocate his ardent devotion. His kind but domineering father disapproved of this and caused his son kindly but firmly to break the apron strings which allowed him no independence. Another visit to Paris was quite unremunerative and he returned sadly to Salzburg. Aloysia rejected him and he married her sister Constanze. In 1781 "Idomeneo" was composed for the Munich Carnival and like most of his productions was successful but brought little reward. In the following year he dedicated six fine string quartets to Haydn, whom he admired so much. Haydn's style was the basis for Mozart's creations, but it was not long before the pupil became the Master. In the years 1786 and 1787 Vienna witnessed the performance of "The Marriage of Figaro" and



WOLFGANG AMADEUS MOZART

"Don Giovanni" in which the composer was assisted by the famous librettist Da Ponte, but even these secured no permanent employment for him.

The history of Mozart's last years is one of illness, extreme poverty and disheartening setbacks, but more so of tragedy as a result of the circumstances which hastened his premature death. He was on his death-bed when news came of the huge success of "The Magic Flute," and of financial assistance. He died on December 5, 1791. Unfortunately, Mozart had often displayed some of the less admirable characteristics of Salzburg, but this is more than obscured by his fine character which remained steady in the face of the adulation which was poured on him in boyhood. Such was the man whose music can transport people to Heaven, both by the magnificence of a Mass or an Opera, or by the simplicity and beauty of "Eine Kleine Nachtmusic." Perhaps the greatest tragedy of his life was that his genius was still fertile when he died, since he produced three famous symphonies in six weeks, all full of the precision and alacrity of his style. Who knows to what heights the symphony would have climbed had Mozart lived to die a normal death. It remained for Beethoven to take up where he left off.

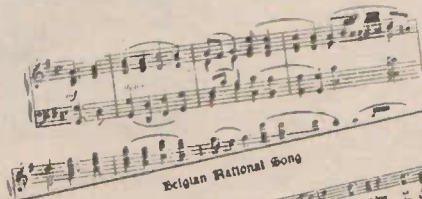
LA MARSEILLAISE

The WORLD'S PROGRAMMES

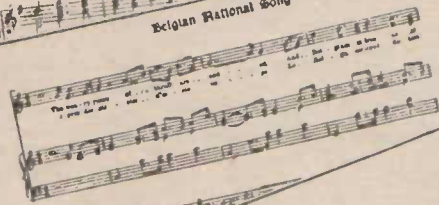
HOW WHEN AND WHERE TO HEAR THOSE

Short-wavers

GOD SAVE THE KING



Belgian National Song

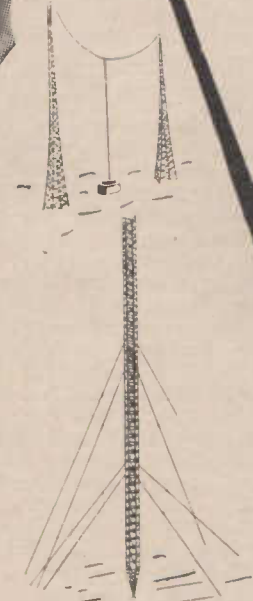
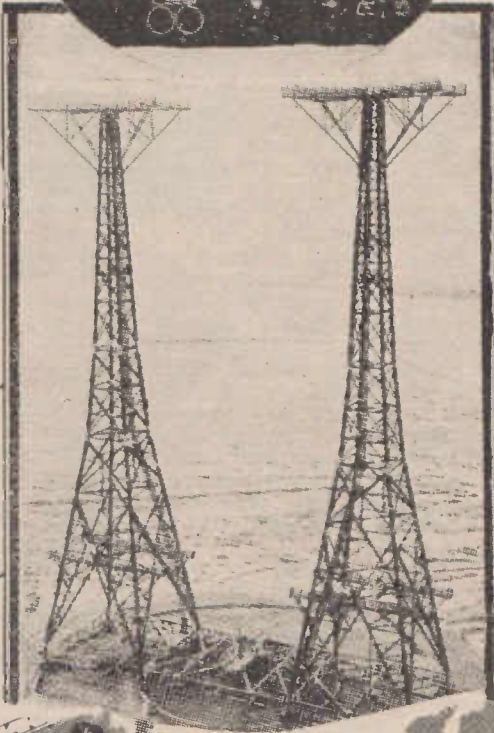
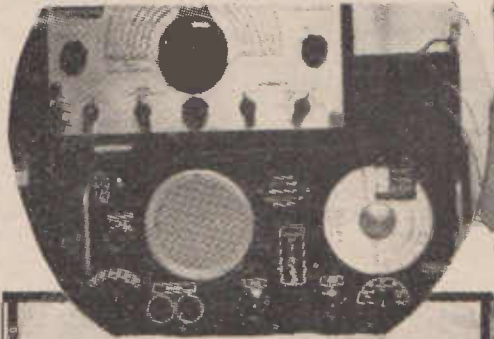


THE STAR-SPANGLED BANNER

National Song of the United States



Den Wroko Natonaalng



SHORT-WAVE STATION LIST

(Continued)

Country	City	Call	Band Meters	Freq'cy Mc	Broadcasting time, E.S.T. (U.S.A.) (Daily unless otherwise stated)
England	London	GRG	25	11.580	Near East beam 1.00 to 4.00 a.m.; Middle East, noon to 2.45 p.m.
England	London	GVW	25	11.700	African beam, 11.30 a.m. to 5.00 p.m.
England	London	GSD	25	11.750	South American beam, 5.15 to 10.15 p.m.; Africa, 1.00 to 4.00 a.m.; 5.00 to 11.15 a.m. 11.30 a.m. to 4.30 p.m.
England	London	GSN	25	11.820	Pacific beam, 1.45 to 6.00 a.m.
England	London	GSE	25	11.860	African beam, 11.15 to 2.45 p.m.; South America, 4.00 to 10.15 p.m.; Mediterranean, 5.00 a.m. to 3.45 p.m.
England	London	BVX	25	11.930	North America, 6.15 to 8.00 a.m., 2.30 to 5.15 p.m.; Pacific, midnight to 4.00 a.m.; India, 10.30 a.m. to 12.30 p.m.
England	London	GRV	25	12.040	Australian beam; 1.45 to 6.00 a.m.
England	London	GRF	25	12.095	Near East, noon to 1.15 p.m.; Italy, 6.00 a.m. to 1.15 p.m.
England	London	GSF	19	15.140	Australia, 7.45 to 10.00 a.m.; Near East, 1.45 a.m. to 1.15 p.m.; India, 7.45 to 11.15 a.m.
England	London	GSO	19	15.180	Pacific beam, 6.00 to 8.00 a.m.; South America, 12.15 to 3.45 p.m.; India, 2.00 to 4.00 a.m.
England	London	GSI	19	15.260	African beam, 11.30 a.m. to 5.00 p.m.
England	London	GWR	19	15.300	South American beam, 6.00 to 7.15 p.m.
England	London	GSP	19	15.310	North American beam, 7.15 a.m. to 5.00 p.m.; Africa, 2.00 to 4.00 a.m.
England	London	GWD	19	15.420	Pacific beam, 4.45 to 6.00 a.m.
England	London	GWE	19	15.435	Middle East beam, 1.00 to 4.00 a.m.; 5.00 to 11.15 a.m.
England	London	GRD	19	15.450	African beam, 11.30 a.m. to 2.15 p.m.
England	London	GVQ	16	17.730	Near East beam, 7.30 to 11.15 a.m.
England	London	GSV	13	17.810	Australia, 6.00 to 10.00 a.m.; Africa, 5.00 to 11.15 a.m.; India, 3.00 to 10.00 a.m.
England	London	GRP	16	17.870	African beam, 11.30 a.m. to 1.00 p.m.
England	London	GVO	16	18.080	South American beam, 7.00 to 8.00 a.m.; 10.00 to 11.15 a.m.; 12.45 to 1.45 p.m.
England	London	GSA	13	21.470	Africa, 7.45 to 11.00 a.m.
England	London	GYR	13	21.675	India beam, 5.00 to 7.30 p.m.
Fiji Islands	Suva	VPD2	49	6.100	1.00 to 3.00 a.m.
Fiji Islands	Suva	VPD2	49	6.130	Sundays, 1.55 to 5.30 a.m.; Tuesday, 4.00 to 5.00 a.m.; Sunday to Thursday, 4.10 to 5.00 p.m.; 8.00 to 9.30 a.m.
France	Paris		31	9.520	6.00 to 7.00 p.m.; 10.30 to 11.15 p.m.
France	Paris		20	14.950	Calls NBC and CBS with press reports.
France	Paris	MCD	19	15.905	Station Paris calls CBS and NBC for press reports and relay broadcasts from Europe.
French W. Africa	Brazzaville	FZI	21	8.440	off at 7.45 p.m.
French W. Africa	Brazzaville	FZI	25	11.785	late afternoons.
French W. Africa	Brazzaville	FZI	25	11.970	noon to 8.50 p.m.; 1.00 to 2.30 a.m.
Gold Coast	Accra	ZOY	49	6.00	heard occasionally at midnight.
Greece	Athens	SVM	31	9.930	heard 2.00 to 7.00 p.m.
Gauadeloupe	Pointe-a-Pitre	FG8AH	41	7.440	7.00 to 8.30 p.m.
Guatemala	Guatemala City	TG2	49	6.220	7.00 p.m. to midnight.
Guatemala	Guatemala City	TGWB	49	6.465	9.00 to 10.00 a.m.; 7.30 p.m. to 2.00 a.m.; Sundays, noon to 6.30 p.m.; 8.00 p.m. to 1.00 a.m.
Guatemala	Guatemala City	TGWA	31	9.685	Sundays, evenings.
Guatemala	Guatemala City	TGWA	19	15.170	daytime transmissions.
Haiti	Port-au-Prince	HH2S	50	5.955	7.00 to 10.30 p.m.
Haiti	Port-au-Prince	HH3W	31	10.130	1.00 to 5.00 p.m.; 7.00 to 11.30 p.m.
Hawaii	Honolulu	KRHO	31	9.650	Philippine beam, noon to 3.00 p.m.
Hawaii	Honolulu	KRHO	19	15.250	Chinese beam, 6.45 to 7.15 p.m.
Hawaii	Kahulu	KEQ	41	7.370	heard at 3.00 p.m.
Honduras	La Ceiba	HRD2	49	6.235	8.30 to 11.00 p.m.
Honduras	San Pedro Sula	HRP1	49	6.357	7.00 to 8.30 a.m.; 7.30 to 11.30 p.m.
Honduras	Tagucigalpa	HRN	50	5.875	9.00 to 11.00 a.m.; 7.00 p.m. to midnight.
Hongkong	Hongkong	JZHA	31	9.465	7.00 to 9.30 a.m.
Hungary	Budapest	HAT4	31	9.125	
Iceland	Roykjavik	TFJ	25	12.235	Saturdays, 10.00 to 10.30 p.m.
India	Calcutta	VUD27	41	7.290	
India	Delhi	VUD7	49	6.190	12.15 to 2.45 p.m.; 8.30 to 10.00 p.m.; 11.55 p.m. to 12.30 a.m.; 9.00 to 10.00 a.m.; 11.00 a.m. to noon.
India	Delhi	VUD8	41	7.275	7.00 to 10 a.m.; 12.15 to 4.00 p.m.; 9 to 9.30 p.m.; 9.35 to 10.00 p.m.
India	Delhi	VUD5	41	7.305	9.00 to 10.00 a.m.; 12.15 to 4.30 p.m.
India	Delhi	VUD4	31	9.590	9.00 to 11.50 p.m.; 2.00 to 5.00 a.m.; 6.30 to 8.00 a.m.; 8.45 a.m. to 4.45 p.m.
Ireland	Athone		31	9.595	5.10 to 5.30 p.m.
Italy	Allied Hdqtrs.	APH	39	8.960	
Italy	Allied Armies	APH	16	17.820	heard mornings with press reports for New York.
Japan	Tokio	JZH4	49	6.130	8.00 to 9.30 a.m.
Japan	Tokio	JLT	49	6.190	9.00 to 10.40 a.m.; 11.00 a.m. to 2.40 p.m.
Japan	Tokio	JVW	41	7.257	heard at 2.00 p.m.
Japan	Tokio	JZ1	31	9.535	heard at 2.00 and 11.30 p.m. and 3.00 a.m.
Japan	Tokio	JVW3	25	11.725	heard at 2.00 p.m.
Japan	Tokio	JZJ	25	11.800	heard at 1.45 p.m.
Japan	Tokio	JVU3	25	11.897	6.15 to 8.15 p.m.
Japan	Tokio		19	15.105	heard at 8.30 p.m.

(This list of stations will be continued until complete)

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AUSTRALIAN
WOMAN'S MIRROR

IS THE
FRIENDLY
MAGAZINE

Written wholly by its readers, it has an intimate, get-together manner as though one woman in her home talked things over with another in hers, with no professional adviser telling either what to do.

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CONTENTS (every issue): Serial Novel, Short Story, Between Ourselves, Feature Articles (not fewer than eight), Knitting Design, Crochet Design, Needlecraft Design, Mothercraft Section, Service and Information, Kitchencraft and Readers' Tested Recipes, Patterns, Pictorial Adventure Page, Health and/or Beauty Talk, Garden Section, Children's Section with Pictorial Strips, Household Hints, Smiles Column.

REGULAR FEATURES: Vocations of Women, World Affairs, Women in History, Real-life Love Stories, Women in Australasian History, Soft Toys, Kiddie Quips, Printed Linens, Mainly About Men, Real-life Sketch.

PUBLISHED BY THE BULLETIN NEWSPAPER CO. PTY., LTD.

(Continued from page 33)

AUSTRALIAN TELEVISION

A Marconi Coy. 625 line television system operating to an Australian built receiver was demonstrated recently to pressmen at the Amalgamated Wireless Laboratories. These units displayed television images of extremely high quality. It was explained that the construction of the picture was based on a 625 line definition as compared with British standard of 405 lines, and the American standard of 525 lines. Mr. L. A. Hooke, Managing Director of Amalgamated Wireless, pointed out that war intensified radar research had provided many refinements and economies for television, many of which could not be adopted in existing pre-war systems without completely scrapping equipment and all receivers.

Australia therefore was in an extremely fortunate position to select the finest system at present available, one embodying every post-war refinement.

Mr. Hooke went on to say that practical television based on the latest of research data available could not be accomplished for at least two years and then could not be regarded as a substitute for radio, for until methods were found to balance the large programme costs, television might be restricted to the hours when the entire family could view it. In England after 13 years of television the service was restricted to one hour in the afternoon and approximately two hours in the evening.



• The extreme sensitivity of the image Orthicon television camera tube is demonstrated in this actual photograph. It was taken as the subject struck a match, which provided the only illuminant. The equipment responsible is A.W.A.'s R.C.A.-Marconi and this "shot" was taken direct from a TV receiver screen in the Ashfield (N.S.W.) laboratory. Definition is 625 lines.

THOSE HARMONICS

The progressive amateur keeps himself well posted with suitable literature concerning the hobby, and to that end we recommend that for the expenditure of but 5/- the six copies per year of A.W. Valve Co's ever-popular "Radiotronics" is cash well invested. The current issue, No. 137 to hand, carries an article by John Reinartz, on "Reducing the Harmonic Power Output of Amateur Transmitters." This is particularly interesting to all for the problem of harmonic suppression is with most of us, and looms mistily larger in the years of Television to come. Reinartz analyses the cause and cure very effectively. Being an RCA engineer and a pioneer of short-wave radio communication, he is still as much of an amateur at heart as he was in the old 1XAM-IQP days of 1924 onwards. For the benefit of those who don't know, Reinartz was the first American amateur to work on 20 metres; firstly trans-Continental, and then trans-Ocean.

NEW EQUIPMENT FOR 2GB

Station 2GB has recently taken delivery of two imported recording units from E.M.I. (Australia) Pty. Limited.

The E.M.I. Magnetic Tape Recorder has been specially designed and made in England for use in broadcasting stations and film studios.

The broadcasting station is now able to record an artist, a play, or an entire programme, onto a spool of sensitized plastic tape, and, since no processing is required, it may be broadcast immediately. Each spool plays for about twenty-one minutes, and one reel may be synchronised to another to give perfect continuity. The mechanism records and plays back, and, should a recorded tape be no longer wanted, it may be placed in the unit and re-recorded because an erasing device is incorporated to "wipe" the tape. A spool may thus be used over and over again; up to 1,000 times, the manufacturers claim, without appreciable loss. The fact that a spool is only 11½ inches in diameter, may be stored without fear of breakage, and will not deteriorate with age, makes this style of recording of particular advantage to a broadcasting station.

"PERSONAL PARAGRAPHS"

Mr. L. Bence, Chief Chemist of General Dry Batteries Pty. Ltd., in which the shares are held jointly by Electronic Industries Limited, and General Dry Batteries Inc., of America, has returned from the United States where he spent some time in the various plants of the American Company investigating new developments in battery production.

During his stay arrangements were concluded for further equipment to be supplied to General Dry Batteries Pty. Ltd., and this is expected to reach Melbourne shortly. Its installation should boost production sufficiently to enable the company to market its product in States other than Victoria. Its present output is absorbed almost wholly by Commonwealth and State Government Departments and by Victorian trade requirements.

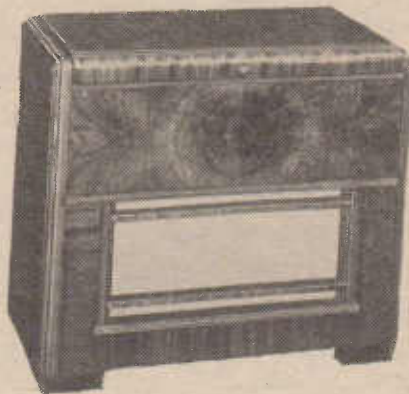
Mr. Bence was accompanied from America by Mr. J. Vidmar, Chief Engineer of the Dubuq (Iowa) plant of General Dry Batteries Inc. Mr. Vidmar will remain in Australia for some months. He is one of America's outstanding battery production experts.

Mr. O. Oppenheim, Technical Manager of the Engineering Division of Electronic Industries Limited, has returned by air from America where he investigated latest developments in the production of electronic and telecommunication equipment. The Company maintains as far as possible continuous personal touch with associated overseas companies in this rapidly expanding field.

H.M.V. AUTORADIOGRAM

An attractive new model from the H.M.V. factory is the E.43A (The "Ernest Flsk").

The features are: extra tonal fidelity—wide diffusion of sound—superlative reproduction of radio and records and simplicity of tuning. These will make a tremendous appeal to the most critical listener.



Embodied in this design are the following:—
Pick-up: Lightweight type providing wide frequency response with minimum record and needle wear.

Automechanism: Latest type handling up to ten 12 in. or 10 in. records (unmixed).

Duo-diffusion sound-reproducing system: This incorporates an ellipsoidal speaker, a keenly sensitive, energised, high flux density moving coil speaker with elliptical cone giving wide angle sound distribution of all frequencies between 50/7000 cycles, aided by an additional 6 in. speaker unit to extend the frequency range.

Metal Grille: A sound transparent grill which minimises the absorption of sound waves radiated from the loudspeaker, so that all the natural crispness and tone of speech and music is retained.

Dials: Large, edge-lit calibrated dial scale. Cabinet: Available in polished walnut, alternative finishes in mahogany or silver ash to special order only.

Range: 16-5/51 metres. 540/1600 Kc/s.
Mains Supply: 200 to 250 volts. 50 c.p.s.
Dimensions: 31 in. high, 36 in. wide, 18 in. deep.

The Price is 115 guineas, and this model is available for immediate delivery.

Good luck to popular Dick Huey of "H.M.V." who is away on a visit to the Old Country. He will, for a year, be studying modern techniques at Electrical and Musical Industries Engineering Development Ltd., one of the many companies in the E.M.I. group. Dick Huey had an important Army job during the war years as Director of Radar equipment. Mrs. Huey has accompanied him to England.



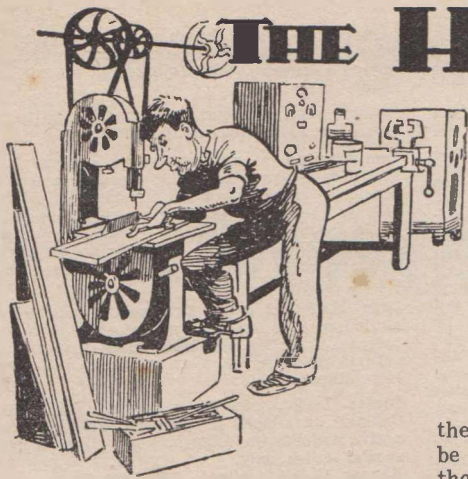
QUALITY TRANSFORMERS

and
METAL-WORK

Manufactured
by

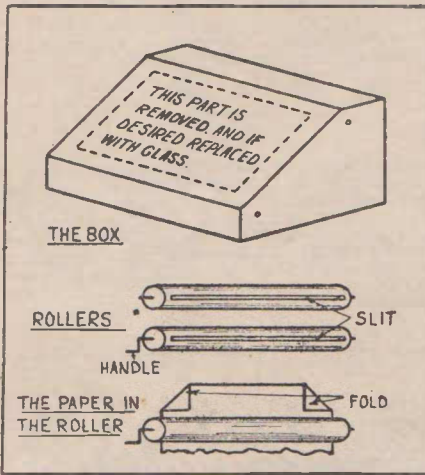
TRIMAX Transformers

DIVISION OF CLIFF & BUNTING PTY. LTD.
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THE HOME WORKSHOP

A Section For The Handicrafter



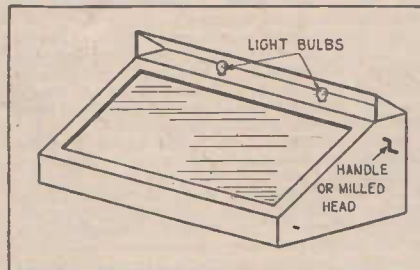
Details of Construction.

A LECTURER'S READING DEVICE

THIS simple accessory can be of material assistance to readers of Papers, Lecturers, Preachers and others. It consists mainly of a triangular box of timber, somewhat resembling portion of a writing desk but of smaller dimensions. It contains two wooden rollers which revolve on pivots, one being placed near the top of the desk and the other towards the base. The rollers are slit similarly to those in a roll-film camera so that the end of a sheet of paper may be passed through and folded down. The top roller carries a small handle which projects to the outside of the desk. The desk board is cut away to expose the space between the rollers, or it may be replaced by glass. The lecture or address is typed on a sheet of paper about 3 feet long and 6 inches or so wide. One side only is used and a fair margin left at both top and bottom. The ends are inserted in the roller slots, pulled through and folded back. The bottom roller is then rotated until the paper is taut, when

the commencement of the "copy" will be visible. As the lecture is delivered the top roller handle is rotated and thus the "copy" keeps pace with the reader. The advantage of this device should be immediately apparent —no loose sheets, no turning over, and the top of the page will be always the matter to be dealt with. Lighting may be arranged simply as shown in the sketch of the finished desk, with two lamps screened from the view of the audience by means of a black metal shade. Radio Clubs and Institutions should find a ready use for such an easily made accessory.

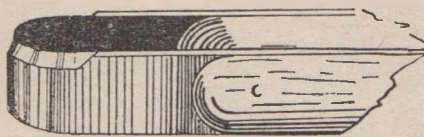
—E. M'c.



The Finished Desk.

Gouge From Hacksaw Blade

A tool which is worth a place in any woodworker's kit can be made from an old hacksaw blade. It is especially useful for getting in awkward places such as the inside of a model motor boat hull. The blade is softened, after which the teeth are



A Useful Woodworking Tool.

ground off and a cutting edge ground in the centre. It is then bent round a suitable bolt and a strip of hardwood inserted between the ends. Two holes are then drilled through for

the rivets which fasten the thin strips of wood to form the handle. This should be about five inches long. Before riveting together, harden the cutting part of the blade and temper to a brown colour. Sharpen on an oilstone, using a slip for the inside.

* * *

A SIMPLE SIGN FLASHER

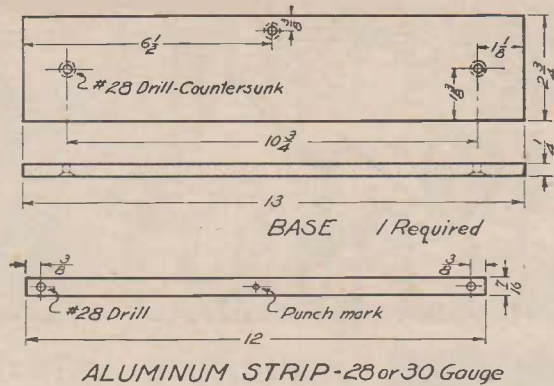
HOME craftsmen frequently find occasion to use a simple, yet effective, sign flasher. The one shown here is easy to make, yet very positive in action. Its cost is nil.

Anyone who possesses an elementary knowledge of electricity knows that the simplest flasher utilises the principle of the expansion of metals under the application of heat in the making and breaking of an electrical circuit. As the current flows through the resistance wires, it heats the aluminium strip, causing it to expand. Note that the ends of this strip are fixed with screws. Therefore, the strip in expanding by heat supplied through the resistance wire arches until it touches the adjusted contact point. The light then flashes to full intensity, for then the current flows through the metal to the lamps. The metal then cools, contracts, and breaks the circuit. The current then flows through the resistance wire with resultant dimming of the lamps.

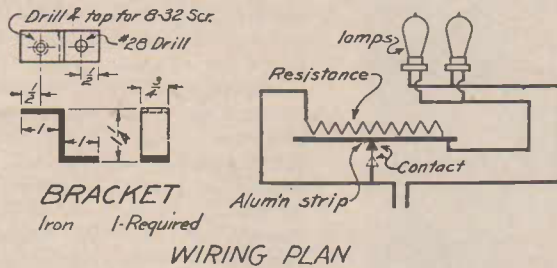
The flasher may be so adjusted at the contact point that any reasonable interval between flashes may be obtained. This flasher is designed to operate two sixty-watt lamps.

The few supplies for this flasher may be obtained from any electrical dealer. The base strip is a non-conductor of electrical current and any non-conductor materials may be used. First saw out the base and finish it smooth. Then cut the aluminium strip with a pair of tin snips and finish the edges of this smooth with file and emery cloth. Next cut

(Continued on next page)

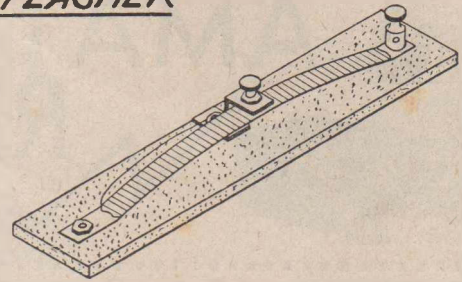


ALUMINUM STRIP - 28 or 30 Gauge

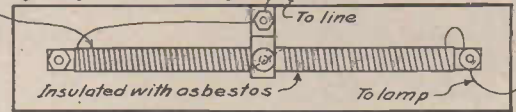


WIRING PLAN

SIGN FLASHER



Wound with #30 resistance wire
Single layer - 13 feet long



ASSEMBLED FLASHER

the piece of strap iron for the bracket and form it to shape in a vice, after drilling the holes.

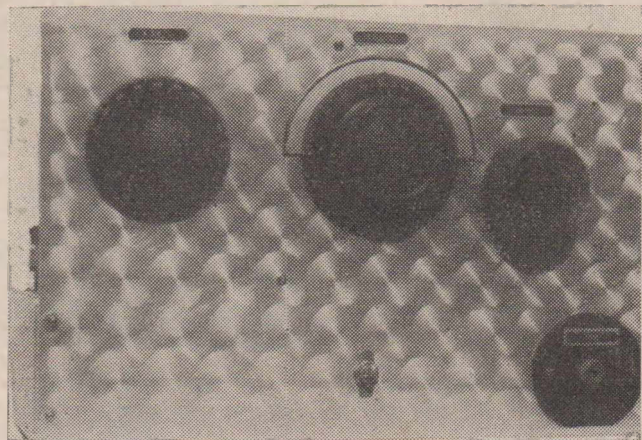
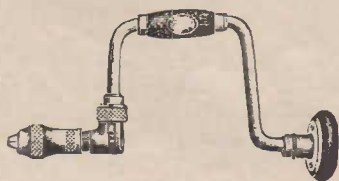
Locate, centre punch and drill all holes, as shown in the drawing, in the strip, strap iron and base. Then tap and countersink all holes as shown.

Wrap a piece of asbestos around the aluminium strip, and then wind on the resistance wire evenly and firmly. Each turn is roughly about 1-8 inch from the preceding one. A No. 30 resistance wire is recommended.

The parts are now ready for assembly. Do this job carefully. Cut a small hole in the asbestos at the punch mark at the centre of the aluminium strip. This is the contact point.

Connect the flasher with a 240-volt line and test it out. The wiring diagram on the sketch shows the connections. This follows the usual plan known to even elementary electrical students.

Adjust the contact screw until the flashes of the lamps occur at the intervals desired.



"ENGINE TURNED" FINISH

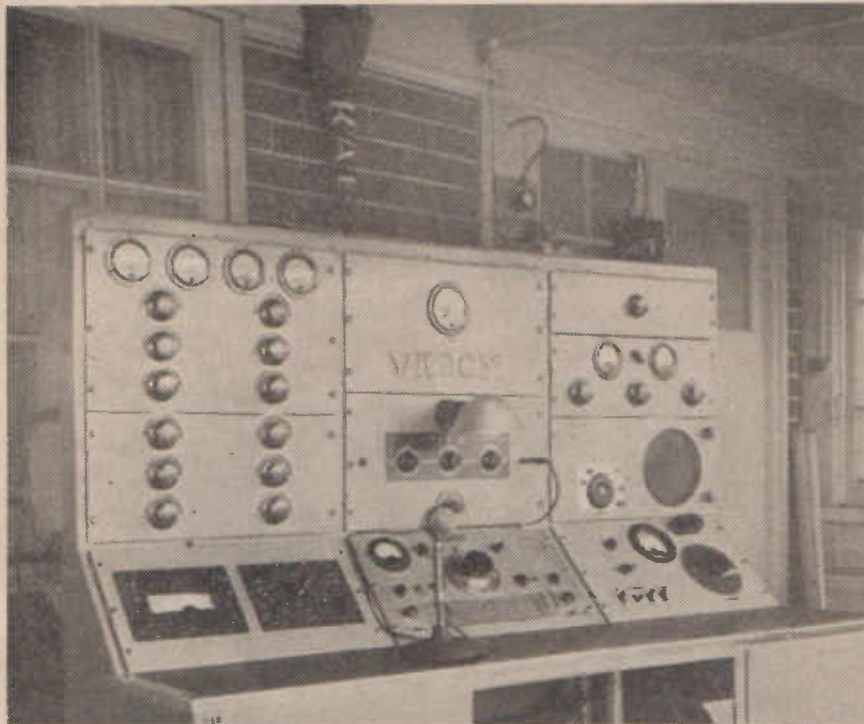
One of the most pleasing appearances for the finishing of a metal surface is that known (especially in the North of England) as "engine turning." It is merely the overlapping effect of concentric circles or discs obtained by a rotary abrasive motion. The illustration shows how an aluminium panel for a small radio receiver can be thus treated, and this is a much better idea than leaving a polished surface of the metal to collect unsightly finger marks and scratches. Frequently I have seen advice, evidently from people who cannot have much practical experience, that this process is "easily" done with a cork coated with oil and emery powder, held in the chuck of a hand-drill. Without a rigid support for the rotating chuck, the cork will wander all over the

place, and the result will not be at all pleasing. The logical methods are to use either a bench drill press, preferably motor driven, or a lathe. The press is the handiest. The writer uses a brass 1/4-inch bolt, with the head first turned flat. To this flat surface is cemented, by the use of "Bostik," a disc of leather. This is charged frequently with a mixture of oil and emery powder. A better method still is to smear the surface of the metal to be treated with a film of oil and to sprinkle the emery thereon. Keep the overlapping circles as uniform and straight as possible. Wash off with petrol or Kero, dry, and coat lightly with clear thin lacquer. The same treatment applies to steel or brass.

—The Editor.



AMATEUR RADIO SECTION



RE-BIRTH OF A STATION

Illustrated here is the very modern amateur radio station of a man long versed in the lore of amateur radio, Charles D. Maclurcan, VK2CM, of Neutral Bay, Sydney. The station has a considerable sentimental value for the reason that this equipment was designed and installed, just prior to his untimely death, by the late H. K. Love, VK3KU, Melbourne. Mr. Maclurcan purchased this equipment in memory of his late friend, and after having completed many design details and modifications, put it into action recently. The console arrangement includes a special AR7 receiver in the centre, with modulator above. To the right are the power input circuits, all controlled through a Variac voltage regulator. The RF controls for the transmitters, covering 80, 20, 10 and 6 metres, are at the left above a KS9'er and 6 metre Converter. The finish is chromium, with plastic covered operating table. All portions are readily accessible for removal and examination. It is a far cry from the original A2CM gear of the early 1920's to this de-luxe outfit.

"Ironicus." Bad enough that in the Metropolitan area of Sydney VK2's have for months been plunged oft-times into darkness by power black-out, but much more drastic has been the aftermath of the coal strike. Powers-that-be didn't impose any drafted restriction on amateur station operation throughout the strike, but intimated that peak periods should be respected. That was done, and came the end of the strike. With it came a sudden excess of zeal on the part of the electricity Diploma Boys, who talked the Commissioner into ban on utilisation of power by VK's between 7 a.m. and 8 p.m. It didn't help composure of thought either to have a "Great Daily" splash ill-informed blah to the effect that VK2's in and around Sydney use up "25,000 (twenty-five thousand) Kilowatts." Published reference to "amateur short-wave broadcasters in the Electricity press notices didn't make sense either. These occurrences stress only too plainly that it is all a question of privileges, not rights.

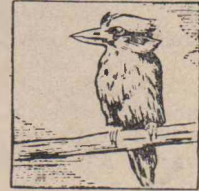
MERITORIOUS SERVICE

The North Eastern coastal region of N.S.W. has recently been beset by grievous trogedy, wrought by the forces of Nature. Vast floods devastated the Maitland and Kempsey areas in rapid succession, with tragic loss of human life, stock, and property. Communications are vital in such emergency and great credit is due to the many amateur radio stations whose operators kept the flow of verbal and telegraphic traffic unceasingly on the move.

Voluntarily and unselfishly they filled a dire need, and stuck the job of mercy out to the end, although in several instances fatigued to the extreme. No more meritorious service was performed in time of war, and this publication offers sincere praise to fellow radio amateurs for a difficult job well and truly done.

"Jonno." That ad. in the classified section of "R. & TV. News" first issue for BC221's at £25 really is something in the way of money well spent. Function of the BC221 is that of a high standard frequency meter which is infallible in what it says. The amateur having one of these in the shack need have no fears about uncertain frequency checks where VFO control and receiver calibration is concerned. Anyway, even if you don't use it in the function for which it was designed, the BC221 makes a first-rate VFO. That, however, seems to be rather a waste of good gear!

*An old amateur sat pounding a key,
"What a very slow business said he,
If I had a good mike,
I could say what I like,
To my friends where-ere they may
be."*



THE BRASSPOUNDER AND THE GUZINKA

By S.H.

I FREELY confess that I am no radio technician. I frankly admit that I don't know a super-generator from a frying-pan. And I make this avowal without shame. If it comes to that, none of us know very much about anything. "Behold, we know not anything!" as the poet sings.

Take the average motorist, for example, the dignified and lordly owner-driver. He pours water into one end of his machine, and petrol into the other. In another inlet he pours lubricating oil. Then he gives the tyres a vicious kick to ascertain whether they are pumped up sufficiently. climbs into the driver's seat, and drives off with a cigarette between his teeth, quite pleased with himself and the world. But what, I ask you, does he know of what goes on under the bonnet, where all those mysterious gadgets operate? Not a thing!

Again, you open your mouth and push food into it. This you swallow because appetite compels you. But what do you or I know about the interior processes of our own intimate, personal domestic economy? The delicate internal mechanism may be fraught with beauty — but what do we know about it? Alas! few of us have any inside information.

Some time back an eminent anatomist showed me actual sections of a larynx taken from a human body. I shuddered.

"How horrible!" I said.

"Horrible?" he echoed indignantly. "On the contrary, they are surprisingly beautiful."

It all depends on the point of view, of course. But I have erred and strayed a bit from radio and its wonders.

One day I was sitting in a room presided over by the Editor of RADIO and TELEVISION News. He was out for the moment, but I was asked, would I wait.

I waited.

I sat down and brooded over the weight of knowledge that must weigh down the editor's brain, when there was a sharp knock at the door and he blew in. Not the editor, oh no! It was a Ham, which, I understand, means an enthusiastic radio-friend with an amateur status, but possessing a *plus* mentality.

He looked at me, and I at him. Impressed, doubtless, by my august yet pleasing presence, he mistook me for the Editor, and after bowing low three times he sat down on the chair to which I courteously waved him.

"Yes?" I said, in my best bedside manner.

A THOUGHT FOR AN IDLE MOMENT



Baffled Speaker!

"Look here," he said earnestly, "there's something wrong with my dielectric flux density on the grid-filament capacitance—of course, it may be the elastance of the inductive reactance."

I may be a little out in these terms, because I set them down from memory. I am proud to state that I rose to the emergency.

"How about your double impedance condenser?" I asked with a frown.

"I don't quite see—" he began, but I bore him down with a barrage of scientific and other terms.

"Of course you don't" I said, "and that's just the trouble. I can tell you what's wrong in two little words: You see, it's what we call a febrifuge. The pineal glands having become morbidly excited by the peritoneum ducts, a contractility has ensued between the cellular tissues of the cavernose membrane. This not unnaturally has produced spasmodic oscillation of the conductive coupling of the Westinghouse brake, combined with ossification of the hippocampus and the pericardium." Then I glared at him interrogatively. "Oh—er—yes—quite," he burred, half rising.

"Sit down," I commanded. He promptly did, and I went on: "So you see, it is obvious that the freieslebenite of the *multum in parvo*, and the lurcation of the *pro bono publico*, must desulphurise the *ne plus ultra*. Again, supposing that my diagnosis is correct, the detorsion of the flagellata and the diatose Guzinka must be lialaceous. You understand me?"

"Perfectly," he said, with a tear in his eye.

Just then the Editor came in and introduced me.

My visitor was a distinguished radio expert. An authority on lots of things. He is electrical engineer-in-charge for a sister State.

Anyhow, I think I interested him tremendously.

* * *

N.S.W. Division of W.I.A. has benefited by the appointment of a particularly keen young enthusiast as Hon. Secretary in the person of George Cameron (VK2GC). George takes over a tough job, as do all men who give their services gratis in their own time. It is no bed of roses to handle the monthly correspondence alone for upwards of 700 members, and "R. & TV." extends wishes for good luck to VK2GC.

"EMMATOC." The old "five metre band" is now, for British amateurs, relegated to the pages of history. On March 31 last, the band was finally withdrawn by the Post Office authorities. "Five" had a long and interesting career in G-land. . . . I can remember G2WV of West Hampstead in 1924 with a formidable looking quarter KW oscillator using a T250 on "Five." The "gridleak" consisted of a pair of wires in water which bubbled somewhat and turned greenish in colour. It is a fact that this then UHF portion of the frequency spectrum was, 25 years ago, given to amateurs to "waste their time on" . . . they "couldn't do much harm down there." But as time moved along they did a lot of good. They weren't satisfied with squegger receivers, mod. osc. TX's and simple vertical dipoles, but progressed to crystal-control, multi-element beams and superhet receivers. With these things came regular long-distance working . . . it was sensational just before the outbreak of war in 1939 when a Liverpool amateur worked two-way with an Italian (the latter "under cover" in Musso's Italy). Now the old band has been handed to commercial interests for Television purposes, and the G-boys are immersed in 144 and 420 Mc/s. They are doing good work in those regions and there seems to be increasing attraction to 420 Mc/s because of the compact nature of antenna arrays.



● Some time ago, we had occasion to come under the flashing pencil of that top-ranker cartoonist, Frith. This is how John sees the editor, VK2NO. Oh well—it MUST be so.



● We told you about G3BUU in our June, 1949 issue. Here is Dennis with his XYL, Madeleine. Who SAYS DX and wives don't mix?

* * *

From our Victorian correspondent—a few VK3 "gen." notes.

VK3AWH (Bendigo): Tried hard to separate I.F. windings; they stick hard and fast, Watty. OM: Congrats. on your FB 'phone signal.

VK3ARS (Trentham): Work 'em while you rebuild, is Pix's motto. New RX and VFO under way, yet plenty of time for ragchew on CW or 'phone. Keep up that "whistle," Pix. Stop Press: VFO sounds nice and dandy. Very useful, eh?

VK3DW (Woodend): —! Nothing heard since the sweet soprano voice. How come, Doug?

VK3BI (Ballarat): Nifty-looking little Xmtr for all frequencies in process of having modulation applied. Bert's super-modulation plays havoc with "S" meters. Notice anyone?

VK3UG (Rye): Puts out a terrific 'phone signal on 40. The real amateur spirit. Leaves a nice warm fire to attend Radio Club at Balcombe in the coldest weather.

VK3HG (Coleraine): Working plenty of DX on 40. Nice fist Neil and a pleasure to copy.

VK3JH (Caulfield): After being on DC mains for years now on AC, but not a pip out of you, John. How come? Gear get mislaid in transit?

HONEST REPORTING

Truth in reporting on characteristics of communication exchanges between amateur stations is sometimes as absent as Truth in Advertising. Not so prevalent among the CW users; it is oft-times strikingly in evidence between phone stations. Consider the station that calls CQ to the accompaniment of "shrapnel" for 20 Kc/s or more either side of the carrier. A colleague answers the call and blissfully ignores the mess so painfully obvious to others. He goes into raptures about the "beautiful signal" that is "oodles of deebes over Ess Nine." Why is it that so many amateur operators are loth, or possibly afraid, of telling another that he is splattering and chopping the band to pieces for other fellows? Surely no reasonably-minded person would object. A campaign for implicit truth in Signal reporting is needed, for most of the splatter on our busy 14 and 7 Mc/s bands is unintentional. Honest reporting isn't at all a bad habit to acquire and can work only for the benefit of all.—Ed.



● Two smiling VK2's are, right, Gordon Kempton, VK2CI, and Geoff Partridge, VK2VU, of Newcastle and Singleton, N.S.W., respectively. That looks like a graflex camera, Gordon?

* * *

● That Quiz Picture—on page 31 of our Vol. 1, No. 3. Taken the day Sydney Bridge opened in March, 1932. Personnel were the editor of "R & TV" and F. E. Buckell, then of B.G.E. This "Walking Broadcaster" described events in Manly over 2UW and other B/C stations.

Amateur Television in Holland

The following information regarding commercial and amateur television in Holland is of interest by reason of the contrasting attitude of the Postmaster-General's Department to the would-be Australian television experimenter. Recently an Australian applicant for an experimental TV licence met with a flat refusal. It is not so long ago that Winston Churchill said, "We must beware of trying to build a society in which nobody counts for anything EXCEPT A POLITICIAN OR AN OFFICIAL." Holland does not appear to be a bureaucrat-ridden country where television is concerned.

Philips, of Eindhoven, are transmitting sound (callsign PAG3) on 67.75 and vision on 63.25 Mc/s, with powers of 3 and 9 kW respectively. On Mondays and Saturdays low power tests are carried out between 0900 and 1100, with normal radiation on Monday from 1300 to 1600 and programmes from 1915 to 2100 on Tuesdays, Thursdays and Saturdays. The service was resumed on February 10, and the system employs 567 lines and 25 frames per second.

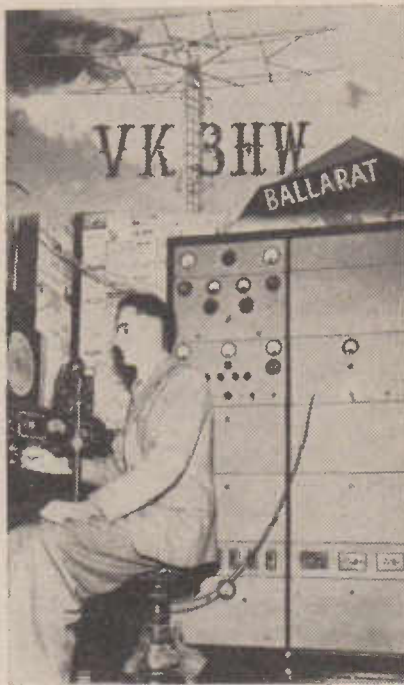
The Groningen amateur group, PAOBE, GN, USA, WL and ZX, transmit vision on 145 and sound on 144 Mc/s, with a power of 250 watts in each case; 202 lines, 25 frames are used on the vision transmission. Tests are made for irregular periods from Monday to Friday, and a programme is radiated on Saturdays from 1900 to 2130, and on Sundays from 0900 to 1100. All times are G.M.T., and the call is PAOZX. The vision transmitter at PAOZX consists of an oscillator on 145 Mc/s, using a cavity tuned circuit, a buffer stage, a 50 watt push-pull driver, and two tuned Philips QB 2.5/200's capable of handling 500 watts in the P.A. On a previous 50 watt transmitter range of 30 miles was obtained with a converted British Gee indicator unit modified for use as a receiver, but the new transmitter is expected to do much better. Groningen is nearly 400 miles from London.

* * *

"Hadi." 'Tis easy for an unsuspecting amateur to fall into a 'blue' with the bureaucratic mind of officialdom should he unthinkingly agree to a request from another amateur to "please telephone so-and-so for me." Can't be done lads—you might think that the powers that be might appreciate even 3d revenue acquired from that phone call—but no Sir. It come under the dreadful 'crime' of 3rd party traffic — and it wouldn't matter should life and death be involved—you will be quoted paras and clauses and threatened with all kinds of things. Wonderful thing this DeMOCKracy.

ZL's CAN USE TELEVISION

The NZART magazine "Break-In" says that ZL's now have 430 to 442 and 1250 to 1280 MC for experimental television.



A composite picture of the station of VK3HW Ballarat, Victoria, well known on 20 metre 'phone.

Observations From Our Victorian Correspondent

- VK5PB puts in a very fine phone signal from Narracoorte. How are the 813 finals . . . all finished yet?
- VK5JW. John, with 5 watts CW, certainly puts out a hefty signal. Keep it up, OM.
- VK3BH. Nice to hear you on CW for a change, Chas. Do you want to give your tower away?
- VK3AAW. Ex-VK5, now at Ballarat. Has all mod. cons. at his convenience. Ask him about his shack, masts, etc. On CW and phone.
- VK5LO. Fixed portable VK3. Believe you are now back in VK5 and hard at work. Miss your solid signals, Don.
- VK3MH. Why all the indoor antennae, Mart? Heard you are using a 33 ft. SWF Windom in the bedroom. Correct?
- VK3DW. So you do get on the air again, Doug, from the new location. You are putting out a good phone signal from that B/C antenna.

VK2ML. Recently in Melbourne. Did you see "Chloe", Mac?

VK3BI. Playing around with modulation when not busy with bush-fire network.

VK3ALM. Is the new car the reason for the silence, Lloyd?

VK3BC, Melbourne. Bert uses a little phone to get a QSO on 40. Keep the CW in reserve though OM! Nice quality phone . . . what do you use, Bert?

VK2PI, A.C.T. Les has at last deserted the ships and gone all BC; also settled down to the 5th Age . . . congrats OM. Any snow brought your antenna down yet?

VK3DG, Numurkah. How are conditions, Dick? You are certainly pushing out a nice signal for that QRP . . . let's hear from you more often.

"Vic Eddy." Among our very comprehensive list of amateur subscribers to *R & TV News* there comes to light a very old hand with a new call in the shape of Maurice Anderson VK3AMA, ex-A5MA. At present the construction of a new shack keeps him off the air. Old hands will recall in the 1926 period that Maurice did some yeoman work under arduous conditions on the old barque "E. R. Sterling." He used home-made gear of essentially prehistoric calibre and kept his sigs on the air through a very devil of a prolonged wind-jammer storm. The barque kept afloat, although the elements around the Horn nearly decreed otherwise. Later, Maurice was active for some years in the Flying Doctor service.

* * *

"Querex." Now settled in Sydney, ostensibly for keeps, is ex-R.A.A.F. Radar FO Les Page, erstwhile VK4LP, VK2YQ, and of late VK3BS. Les is a keen VHF man and will be an acquisition to those regions around the Harbour City. Those who worked on "Ten" immediately after the late war will recall VK4LP at the Loran station up on Graham Moore island off Northern Australia. Les was recently appointed Radio Service Manager to H.M.V., Sydney.

* * *

"Spasebo," VK2ARS was heard telling VK2CL that he had worked a Russian station, and was "advised to be careful or he might be appointed a comrade." The same evening, Les, VK2CL worked 8 U.S.S.R. amateurs in a row. Alright Les — what does that make you, a commissar?

AN ANTENNA MATCHING UNIT

By P.B.A.

THE so-called "Collins" method of antenna coupling has, in the past, met with a great deal of popular favour among the amateur fraternity, and rightly so, offering as it does, a most efficient method of impedance matching between the amplifier tank and the antenna system. Accordingly, for those who wish to combine this type of antenna coupling in any HF transmitter, the unit is described.

The essential components of the Collins system are two variable condensers and an inductance, provided with a shunting loop to permit variation of the amount of inductance in the circuit. The few parts required enables us to dispense with a chassis altogether for this unit, mounting the condensers and inductance directly to the panel. The 350 MMFD condensers are rigidly supported to the panel by supporting screws to the end plate. Inasmuch as the rotors of both condensers are grounded, no insulation need be provided between condensers and panel.

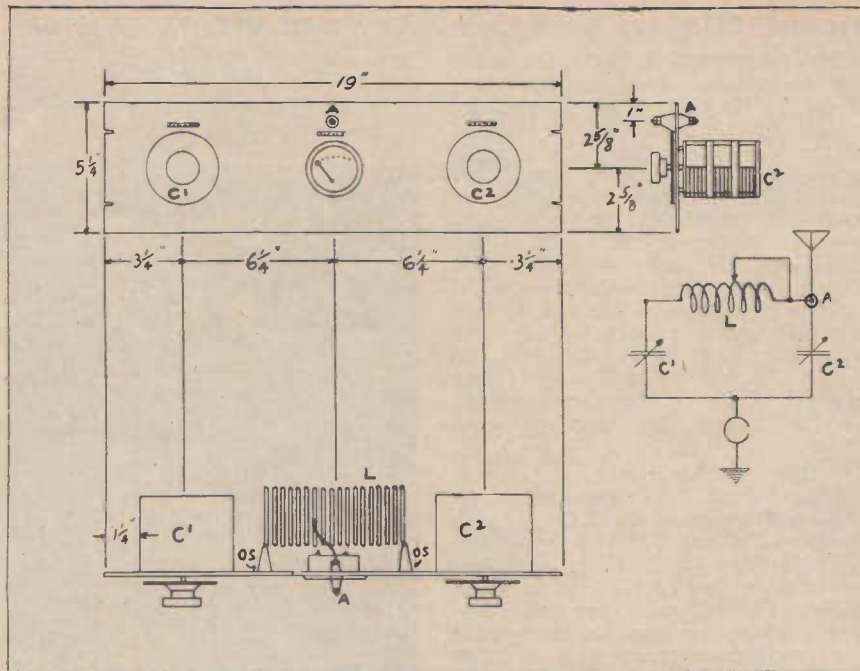
The inductance itself is a simple copper tubing coil of the same type as the tank coils in common use, and supported from the panel on a stand-off insulator. The flexible piece of copper braid constituting the shunting loop terminates in an alligator clip at one end, and on a stand-off insulator at the other. The entire antenna unit may be mounted directly on a 19in. x 5½in. x 1/8 in. relay rack panel of aluminium. Do not use steel, as we desire to avoid magnetic effects in this unit.

The RF ammeter of the thermo-couple type, while not an absolute essential to the builder who is restricted in his available funds, is a most desirable adjunct to the tuning and adjusting of the antenna circuit, and should be provided by all means wherever possible. Select a scale range of about 25 per cent more current than the maximum capabilities of the transmitter with which it is to be used.

A feed-through insulator, with the long portion of the shank on the panel face, makes a very convenient method of connecting the antenna lead to the unit.

Various modifications of the Collins coupling device to permit of taking full advantage of its superiority in connection with two wire feeders, push-pull tank circuits etc., will be found in the Handbooks and this design can readily be modified to suit the particular arrangement it is desired to use.

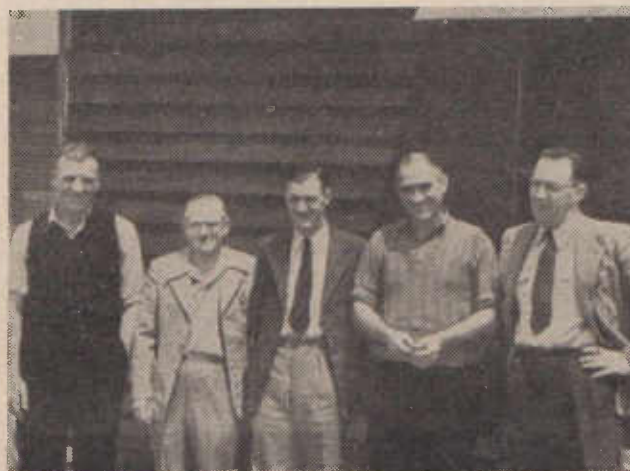
Information on tuning and adjusting this system will also be found in the same source.



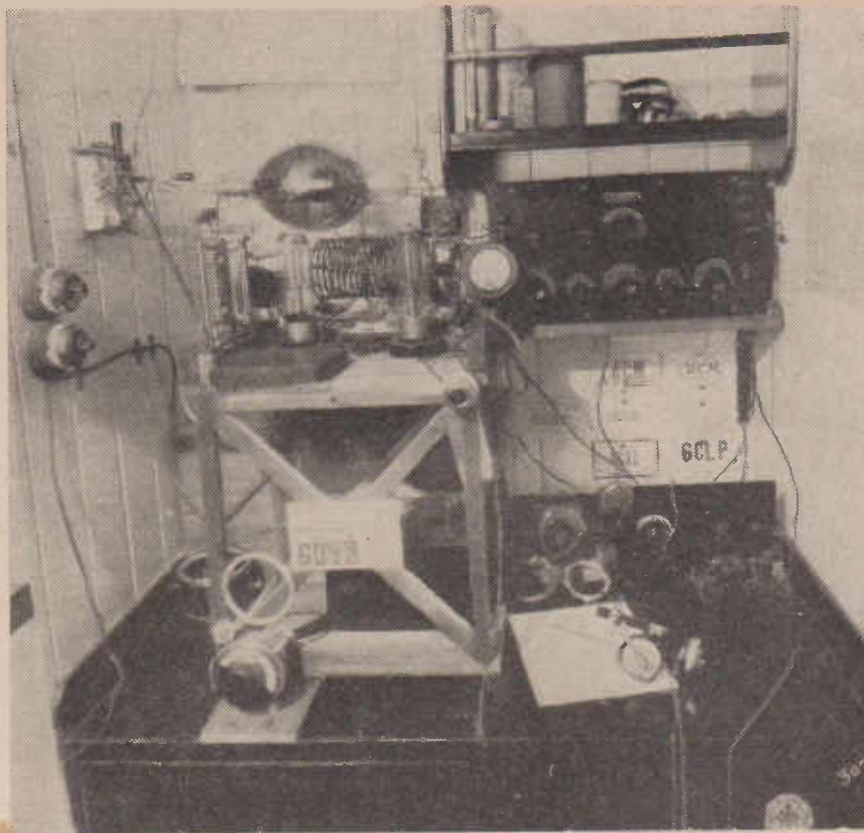
"Dingus." Heard a VK3 on 20 phone referring to an "end-fed dipole or Zepp as some people call it." The term "dipole" should surely be self-explanatory — meaning TWO poles, or two HALVES—which indicates a SPLIT antenna fed in the centre. The "Zepp" (and there is no such animal as a centre-fed Zepp) is an end-fed folded system. And by that I don't mean a FOLDED DIPOLE—Oh! what's the use?

"PHEW." Wonder how many Australians listened spellbound, as I did, to a verbal exchange on 20-metre phone between a W zero and a W6 around 1930 hrs., May 2, 1949? The discussion was about ARRL policy, the FCC and a phone-CW wrangle. The W zero happened to be a Director of ARRL, and the bloke in California was doing a spot of sniping at something.

"WINDGEN." VK1ADS refers, among other things, to 80 m.p.h. gales on Macquarie Island, and sea-elephants 25 feet long. Some years ago I saw a rather fanciful article in an American Science magazine, together with conceptions of artistry, depicting an underground city at Antarctica, lit and powered electrically by huge wind motors and generators on massive towers. It shouldn't be beyond the bounds of possibility, unless the ice-laden temperature at gale force would make generator and wind-motor maintenance a difficult problem. An underground habitat on a large scale might be feasible; there was plenty of experience gleaned during the recent war in building huge underground workshops and quarters in the Old Country and in Axis Europe.



A group of smiling New South Welshmen in the Coalfields area, taken on the occasion of a visit by W.I.A. N.S.W. Div. councillors. They are, L to R:— VK's 2KZ, 2YC, 2VL, 2YO and 2ZH.



A peep into radio history. This equipment comprised what was probably the first mobile/maritime station working ship to shore with British amateurs. The call sign was GDVB, and the same vessel, the "Aorangi," still has the call. GDVB was operated by Bert Hay (VK2AGW) in 1925/27 and was often heard working Australian amateurs in that period. The gear was of course, quite independent of the regular ship's installation and batted along on the old "32 metre band" nicely with a quarter KW.

"Brasso." Welcome visitor to the VK2 metropolis has been Ivan Miller, VK3EG. Ivan was once VK2EG, and when he changed over to VK3 was active in DX Contests pre-war from Tallangatta, Victoria, where his antenna systems stretched with seeming miles of wire up hill and down dale. Now, in Caulfield, Melbourne, he still gets a goodly slice of CW DX but exhibits a wistful nostalgia for those wide open spaces. If you hook up with VK3EG you will have to be on the speedy side on copying, for Ivan doesn't dawdle on that bug of his.

12'- for the Year..

That's all it costs to have
"R & TV" sent you—post free
—for 12 months.



AN IDEA FOR THE LATE BIRD

A portable, and a co-operative amateur station are the accessories

"BACKLASH." Listened to Will Holt on British Industry, through the B.B.C., during which talk he said that 'if he had the money he would send a ship around the world with representative children's toys, also children with them in their various National costumes. By such means the younger people of the world would get to know each other better!' A laudable idea, but I know of another one, realised by some, but hamstrung by International greed and red-tape. It is that the transmitting radio amateurs of the world should be given every freedom for encouragement of exchange of private communication between countries. After all, the hobby attracts mainly younger people, and it is to youth that the world must turn for the future. Instead of amateur radio having appropriate frequency channels for even reasonably uncongested. International working, every conference of Communication Moguls that happens along lops a bit more of the already emasculated amateur bands. Perhaps some day in the distant future . . . a future we shall not enjoy . . . men with more brains than their forerunners exhibit, will provide youth with unhampered communication facilities . . . in the interests of the world as a whole. As things are now . . . well; both the house painter and the Pontine Marsh bullfrog were only a little more drastic . . . they suppressed amateur radio completely, except for a few brave under-cover souls.

"Quintex." Poor Show lads. When the W.I.A's N.S.W. Division proposed a get-together in the Bold Bad Wicked City of Country VK's in the form of a Convention, a check-up on the proposed attendees from points inland showed the shattering total of Seven. Did the Outback Boys think that the City Slickers would be too much in evidence or what? One factor contributing to the apparent lack of enthusiasm is reputed to be that City members didn't rush forward with offers of accommodation. With flats and homes overcrowded in the Metropolis, no doubt that IS a bit of a problem. The really obvious point about it all is the difference in the modus vivandi of the "ham" of to-day. Two decades ago the suggestion of a Convention of any kind would have brought droves of VK's from far and wide but the tendency now seems to be more toward individualism. There is need for amateurs to get to know each other better in the flesh as well as merely by voice or morse-fist.

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

Classified Small Private Advertisements.

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

RADIO—An intelligent youth, interested in radio and educated to at least intermediate standard, is required for our Service Department. Selected youth will be given thorough practical training and must be prepared to undergo private study of the theory of electronics. Apply by letter only, giving full details of education, etc., to Service Manager, "His Master's Voice" Radio, 2 Parramatta Road, Homebush, N.S.W.

PRIVATE:—

BOOST UP those 14 Mc/s signals with this TPTG TF50 preselector, designed for 14 and 21 Mc/s bands. Socket connector for external power at 6 v AC or DC and 250 v DC. Coaxial connection to receiver. A properly tuned job . . . not an uncertain 'broadbander.' £3 CWO. AR3, c/o "R & TV News," Box 5177, G.P.O., Sydney.

CAMERA—small type mirror reflex. Takes 120 film, speeds Time, Bulb, 100, 50, and 25th secs. F 4.5 lens. German high grade make, tripod, attachments. £28. No. AR6, c/o "R & TV."

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NOTE. Where a direct reply is requested to a Box Number advertisement, it is advisable for the enquirer to include a stamped and addressed envelope. This will be passed on to the advertiser concerned and will ensure prompt reply.

FOR SALE—English H.T. Transformer 2000-1500-0-1500-2000 volts at 500 milliamperes (never been used). Can be inspected by appointment. Perfect. £10/10/- (less than cost). Box 407, "R & TV News," P.O. Box 5177, Sydney.

EX R.A.F. phone and CW Transmitter Type T1154 for sale. New and unused, in steel case and with wooden transit case. Requires 6 volt LT supply and 1250 volts at 200 Ma. Two PT15 valves in final stage. Complete with detailed official blue-print. Accept £15. No offers. R.P., c/o "R & TV News," Box 5177, Sydney G.P.O.

TENTH EDITION "Radio" Handbook 1946, surplus copy, 12/6 CWO. R. Brader, c/o Box 5177, G.P.O., Sydney.

FOR SALE—COMMUNICATIONS RECEIVER, 11 Tube, 10, 20, 40, and B/C Bands. Bandswitching. £20. Box C.R., c/o "R & TV News."

EXCHANGE OR SELL 12 inch Amplion Dynamic speaker, 2500 ohm field and pentode output transformer; unused in original carton. Also Phillips B eliminator with rectifier. Have also one Phillips trickle charger but no rectifier valve. What offers. No. AR12.

FOR SALE — Modulation Transformer for Collins ART13 transmitter. This is new, and matches Class B 811's to a single S13. Price £5, plus postage. R.F.W. No. AR10, c/o Box 5177, G.P.O., Sydney.

MODULATION TRANSFORMER designed for suppressor application, suitable for use with 6P6 or 802 valves. High grade make. £2/10/- M. Brown, Box AR15, "R & TV."

COUNTRY BATTERY SET users. That replacement valve you need may be here. All 2 volt types, 2 Mullard PM202, 1 Kenrad 1B5, 1AWV 19, 1 Osram VP21, 2 Philips KF3 (P base), 1 RCA 1J6G, 1 Mullard PM1DG, 1 Osram B21, 1 RCA 199, 1 Mullard PM2DX, 1 Cossor 220B, 1 RCA 32, 1 Mullard PM22, 1 Osram QP 21 (double pentode), 2 Mullard PM22A, 1 RCA 1M5G, 1 Mullard PM2BA, 2 Kenrad 1C6, 6 Sylvania 15 (2 v ind. heated SG valve). Price 5/- each CWO. H. P. Anstey, AR1, c/o "R & TV."

Australian RADIO and TELEVISION News SUBSCRIBER'S ORDER FORM

To the Publishers,
"Australian RADIO and TELEVISION News,"
Box 5177, G.P.O., Sydney, N.S.W., Australia.

Please send me "Australian RADIO and TELEVISION News" every month for twelve months, for which I enclose remittance to the value of

NAME

ADDRESS

(Please write in block letters)

If remitting by cheque, please add exchange.

12/- Sterling to N.Z. and the British Empire in general, excluding Canada.

(A) 12/- Post free to any address within Australia.

Canada and U.S.A. 2 dollars, 50 cents.

SUBSCRIPTION ORDERS MAY BE PLACED WITH YOUR LOCAL NEWSAGENT.

OCTOBER, 1949



EXCITINGLY NEW . . .

STREAMLINED BEAUTY . . .

OUTSTANDING PERFORMANCE . . .

WASHABLE CABINET . . .

INTRODUCING THE

Coronet

A Small Console of Exquisite Charm

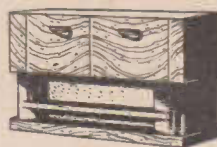
Specially designed to meet today's requirements, the Monarch CORONET is a powerful 4-valve Broadcast Receiver of outstanding performance . . . and RIGHT in size, RIGHT in price . . . Features "Safety Sealed" plastic and washable Fabrex covered cabinet, Magnified Down-view dial, On-Off power switch, Automatic Tonal Balance. Also available as a 5-valve dual-wave battery model, this set is a fitting addition to the famous Monarch range of radio receivers.



Designed and Manufactured by

ECLIPSE RADIO PTY, LTD.

A DIVISION OF ELECTRONIC INDUSTRIES LTD.



Model EMP/G 5-valve dual-wave AC Radiogram. Available in Walnut or Mahogany.



Model EMP 5-valve dual-wave Console. Available in Walnut or Mahogany. Also in vibrator model.



Model DKJ 5-valve dual-wave AC Mantel. Also available in AC/DC, vibrator and battery models.



Model DKL 4-valve AC Mantel, featuring "4-Plus tone". Also available in battery model.



Model CLP Monarch 'Prince' 3-valve Mantel.



Model CKP "Minstrel" Light weight Portable, with 8" speaker and 5 miniature valves.



Model BKQ Personal Portable, light and powerful, "On" with lid open, "Off" with lid closed.

DISTRIBUTORS

NEW SOUTH WALES: Affiliated Distributors Pty. Ltd., 80-84 Paramatta Rd., Stanmore, Sydney.

QUEENSLAND: Irvine's Ltd. Perry House, Albert Street, Brisbane.

VICTORIA: Hartley's Ltd., 270 Flinders St., Melbourne.

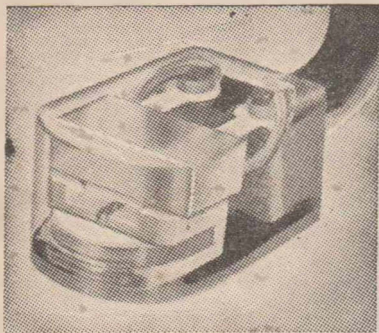
WEST AUSTRALIA: M. J. Bateman Ltd., 12 Milligan Street, Perth.

TASMANIA: W. Hart & Sons, Charles St., Launceston.

Burrows & Meek Pty. Ltd., 93 Elizabeth Street, Hobart.

SOUTH AUSTRALIA: Motor Parts & Service Ltd., 161-163 Pirie Street, Adelaide.

EC/2-M



The miniature head, shown in X-ray form, is a fascinating piece of precision engineering. At double pianissimo or double forte there is no distress, and at full amplification on a three-stage amplifier there is no distortion of bass or treble notes. Every pick-up is tested for a correct response curve. Test one for yourself.

Here's the pick-up you've wanted, and it was worth waiting for! The Connoisseur appeals as much for its technical excellence as its superbly faithful reproduction—which tests will prove to be unsurpassed. Needle chatter is reduced to the point of inaudibility, while there is no distortion of treble or bass notes, giving flawless fidelity in reproduction. The pick-up head, which is only about half the size of its competitors, is an indication of the fine degree of accuracy built into it. Every part is subjected to the severest tests before being assembled into the neatest pick-up on the market.

TECHNICAL DATA

The pick-up coil is of high impedance, being 1,300 Ohms at 1,000 CPS. The output direct from pick-up is .1 volt from a standard recording of 12 db up on the zero reference level 1 cm/sec. RMS velocity.

With our special coupling transformer the voltage across the secondary will be approximately .5 volts.

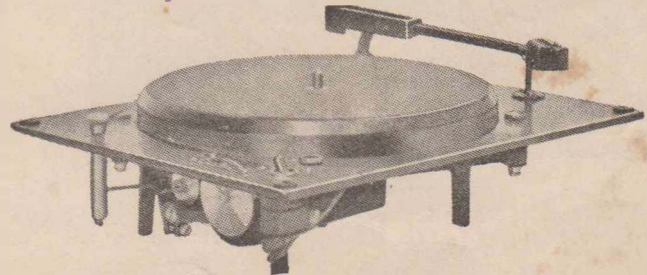
FREQUENCY RESPONSE

Taking 1,000 CPS for our reference level the output falls steadily and at 8,500 CPS the loss is 5 db at 12,000 CPS, the cut is 9 db down.

The response from 1,000 CPS down to 50 CPS remains level, Bass resonance, which gives a steady lift from the 50 CPS mark and is approximately 4 db's, occurs at 25 CPS.

... and the "Connoisseur" Gramophone Motor ...

At long last! A gramophone motor to match the performance of the famous Connoisseur Pick-up. Here are the specifications: 200-250 volts AC, 50 cycles. Rim drive with speed variation. No governors and no gearings. Heavy non-ferrous turntable . . . dead true fly wheel action. Motor runs in needle point self adjusting bearing. Plastic 4-in. Motor Board. Pressure on drive wheel released when not in use.



J. H. MAGRATH & CO.—AGENCY DIVISION

MELBOURNE

VICTORIA