AUSTRALIAN

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RADIO AND TELEVISION

NEWS

HOME INTERESTS AND HANDICRAFTS

1/-

MODIFYING AN AR8.

•

TELEVISION NEWS AND NOTES.

•

"ERRORS OF THE ERUDITE."

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LARGE AMATEUR RADIO SECTION.

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for every socket in every circuit

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DOUBLE DIODE
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6BD7

DOUBLE DIODE
HIGH-MU TRIODE

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HIGH SENSITIVITY
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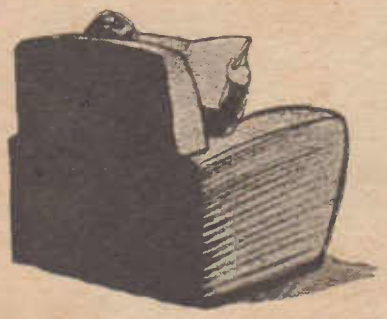
Editorial



WITH the publication of this issue, "Australian Radio and Television News" completes its first year of existence. This month's edition also marks the end of the first series of this magazine in the present form.

The imminence of an official announcement concerning the establishment of an Australian Television service has led ns to believe that "Australian Radio and Television News" will have an even wider appeal if the form of presentation of the magazine is more in keeping with contemporary journalism — if, in short, the magazine is remodelled. We will, therefore, as soon as possible commence a new series, enlarged, in a new "dress" and with different presentation. We are, in brief, "streamlining" the magazine (whatever that much over-worked word may be taken to mean).

This completely different presentation however, involves so many changes in production arrangements that some delay is inevitable. Accordingly, there will be a temporary interruption in publication, but the first issue of our new series will be made just as soon as may be practicable. Meantime it is our wish to cordially thank not only our subscribers and those very numerous readers who have encouraged us with their congratulations and good wishes, but also those advertisers who, by their fidelity and uninterrupted support have enabled "Australian Radio and Television News" to become a recognised medium in the Australian Radio industry as well as being a journal which is eagerly looked forward to by all our regular readers.

DON. B. KNOCK

AUSTRALIAN RADIO AND TELEVISION NEWS

THE PROGRESSIVE NATIONAL JOURNAL FOR EVERYBODY

EDITED BY DON B. KNOCK

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LOOK FOR THIS MONTH'S FEATURES ON **Page**

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LATEST SEA AID IS THE RADAR CHART

How unending team work by Naval Officers and Scientists in Britain increases protection for world's shipping.

By LIEUTENANT-COMMANDER TREVOR BLORE
of Britain's Royal Naval Volunteer Reserve.

"Admiralty Chart No. 2649: Price six shillings" is the prosaic description of one of the most important achievements of 1949 in the development of radar for the protection of merchant ships of the world.

This is the first commercially available radar chart in the world, which has been produced by scientists and navigators of Britain's Royal Navy under the direction of Vice-Admiral Sir Guy Wyatt, the Hydrographer of the Navy. It covers the often foggy and stormy central and western portions of the English Channel, the southern approaches to Britain, and is designed to show the navigators of radar-equipped ships the land formations they should see registered on their radar screens if they are approaching the southern coast of England "blind", in darkness or fog.

Using the Mechanical "Eye"

Yet it is only one specific example of progress made during the year in British radar research. While hydrographic officers and cartographers have been working quietly and steadily on the problem of giving the world's mariners a chart which will help them to use the mechanical "eye" of radar with understanding and accuracy, other scientists and technicians of the Royal Naval Scientific Service, an autonomous organisation under the Admiralty, have been busy seeking improvements in the radar sets designed for ships.

The Navy's work on developing the radar chart is a natural outcome of the prominent part played by British naval officers and scientists in the perfection of this new instrument which has a task in peace as important as it had in war, not only in assuring the safety of the ships of the world but also in saving much time and money by overcoming the costly delays to merchantmen carrying the all important trade flow of the world.

Production of the radar chart is the result of painstaking, unending team work by naval officers and scientists in various ways. Ashore, experienced naval navigators and radar experts have pooled their knowledge to decide which outstanding features along a stretch of coast, and for some miles inland, are most likely to give a good radar "reflection" to ships miles out at sea. At sea, naval hydrographic ships, which spend their lives charting and recharting the waterways of the world, carry out repeated radar tests along the coast, recording and photographing the results.

All knowledge and experience thus gained is carefully sifted and analysed before the result is marked on a new experimental chart.

Close contact is also maintained with the hydrographic departments of other nations, particularly in the United States, where American naval officers and scientists are also working hard on the same problems.

The men for whom radar charts are being evolved are playing their part in the work. At the request of the Admiralty they have been using "Chart No. 2649" as their ships have approached southern England.

Already the charts they have marked, accompanied by reports on results, are flowing back to the Admiralty Hydrographic offices to be studied closely, so that improvements can be made in the radar chart and many more practical lessons learned.

Officers taking part in this work emphasise that the new radar chart is only one step in a long task, though an important one. They still have much to discover and learn. Improvement must go on constantly, as it does in all hydrographic work. They have the duty to provide the world's navigators with constantly better charts to enable them to make the most efficient use of their radar equipment.

One of the great problems of the present is that a radar "picture" of the land appears very different on the screen as the ship's angle of approach to the coast changes. This naturally makes is difficult to produce a chart with markings which will indicate the precise shape of a section of the topography on a radar screen. There are also some surprises over what salient natural features give a good radar "reflection."

Key to Successful Navigation

The existing radar chart, at first glance, looks little different from the charts that Britain's Admiralty has been supplying to the world for many years. Closer scrutiny shows the radar features. Cliffs, hillsides and other topographical features known or estimated to be radar-reflecting are outlined with a darker inking than for the rest of the features shown on the chart. This is designed to give the navigator a fair idea of what he should see on his screen when his radar is trained on the section of the coast he estimates lies ahead of him.

This translation of the radar "picture" to the chart is the key to successful radar navigation.

Some ships of Britain's Navy already have a device to project the luminous radar screen "picture" down on the chart, with means of raising, lowering or adjusting the chart so that the white markings and dark gaps of the radar screen which indicate the shape of the coast can be made to coincide with that section of the chart.

Development of this side of radar lies in the hands of the experts of the Admiralty Signal Radar Establishment and the Naval School of Navigation.

Simultaneously naval officers and scientists press forward in partnership with the constant improvement of radar equipment. On behalf of Britain's Ministry of Transport, which is responsible for safety at sea, Admiralty scientists are pursuing promising lines of research, including experiments with beacons for use with radar. Should these prove satisfactory they will simplify the problem of identifying important navigational marks.

The peacetime progress report on the growth of radar at sea includes the fact that about 400 British ships are already equipped with modern sets, and others are being fitted at the rate of about 15 a month, while more than 200 British radar sets are also installed in foreign ships.

SSH! OYSTERS!

Most people have heard the old song which states that "a noisy noise annoys an oyster," but Captain Owen Cunningham, who spoke in the BBC's "In Town Tonight" programme, says that it is true. And Captain Cunningham is a breeder who has sold over four million oysters, so he should know. He told listeners that if there

is any disturbance over an oyster bed the oysters shut up at once, which means that they stop feeding, and also growing, so that if anyone tries to cultivate oysters in a noisy area, they are wasting their time. Oysters have quite a history, and the ancient Britons used to send them to Rome according to Captain Cunningham. "Whenever a Roman camp is excavated in this country," he said, "you can always be sure of finding piles of oyster shells, no matter how far inland the camp may be. And Colchester is still the traditional centre of the oyster trade, as it was in Roman times."

THE HOME OF BRITISH BROADCASTING

★ Broadcasting House, the British Broadcasting Corporation's London headquarters, surmounted by aerial masts and flying the B.B.C. flag. This fine building, for which G. Val Myer was the architect, was officially opened in 1932. It is built of white Portland stone, which during the war was of necessity camouflaged by paint of an unpleasant dun colour. Now it has returned to its pristine freshness.

Broadcasting House is adorned with sculpture by the late Eric Gill. His statue of Prospero and Ariel is seen over the entrance doors, and there are three other examples of his work on the building, "Ariel Hearing Celestial Music" and "Ariel Between Wisdom and Gaiety" on the West front, and "Ariel piping to Children" on the East front. A further statue by him, "The Sower," stands in the spacious entrance hall.

Broadcasting House was formerly more closely surrounded by other buildings but a landmine fell on them and destroyed them completely, leaving the B.B.C. headquarters still standing. Had the mine landed a few feet farther West the B.B.C. building would have been irreparably damaged It was twice hit by enemy bombs during the war and some members of the staff were killed, but all such damage has been repaired and Broadcasting House now appears as good as new.

"LET'S MODIFY AN AR8"

This article will have plenty of interest for readers who have picked up one of these receivers for less than the price of the valves, and do not know whether to pull it apart or to try to make it work. They work well, and have pleasing audio response. With a good converter for Ten and Six metres, the AR8 represents a cheap way out of the receiver problem.

Written for "Australian Radio & Television News" by

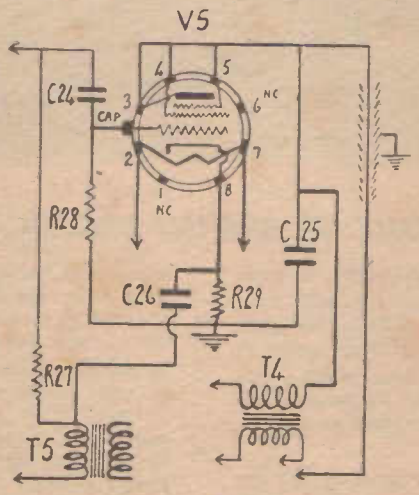
ROY HEIMANN (VK2TH)

● The author of this article, Mr. Roy Heimann, well known in amateur radio circles by his call-sign VK2TH.

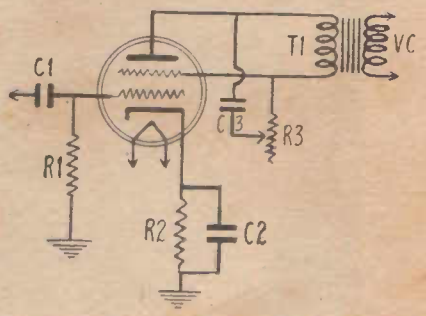
RECEIVER type AR8 is capable of very good performance on broadcast and the three lower frequency amateur bands (80, 40 and 20). When used as originally designed, excellent results are possible without making extensive excursions into the mystic realm of complex circuitry: This has been proved by those who have receivers in use that have been simply modified to operate from a conventional A.C. power supply. It is our purpose, then, to achieve this result as efficiently and economically as possible and by following the procedure outlined this can be done in a few hours of enjoyable occupation.

Like the whole of Gaul, as Caesar said, the AR8 is divided into three parts, the M/F, H/F and I/F A/F section: We shall make an invasion on the I/F A/F section first. Having removed the top, sides and bottom covers this section is located in a line along the rear of the chassis with a nameplate attached to the rear panel inside confirming this. Commencing with V5 which is a 6J7g and originally the output valve operating low impedance head phones (we are to replace this with a 6V6GT) remove C25, 1000 Pf condenser from 6J7g plate to ground. Remove C26, I Mfd 400V block condenser, 6J7g cathode by pass. Remove transformer T4, 6J7g output. Remove wire connecting plate, screen and suppressor pins on 6J7g socket but leave the lead in shielding braid connected to screen pin (this lead goes back to tone control). This will carry 6V6GT screen voltage. Release end of C24. .05 tubular condenser and R28, .5 meg resistor from end contact on strip. Remove R29. 1500 Ohm resistor (6J7g cathode). Next disconnect lead on heater pin of 6J7g socket adjacent to cathode (pin No. 7) and the lead connecting adjacent heater of next valve V4 (6G8g).

Now connect a wire with the other heater pin of V4 and join to heater pin of 6J7g left vacant by previous operation. Next a lead is connected to heater pin 2 of 6J7g and joined to vacant heater pin of 6G8g so that these two valve heaters will be in parallel. Returning to 6J7g we next remove the shielded grid lead disconnecting it from the contact on the strip where it is joined with R28, and connect a lead from this point to pin 5 (supressor) which now becomes grid of 6V6GT. A 250 Ohm 3 watt wire wound resistor is now connected across contacts previously used for R29 and from the cathode end connect a lead that will reach a point



The 6J7G output stage, original wiring.



MODIFIED OUTPUT STAGE USING 6V6GT

C1: .05 tubular,
C2: 25 mfd. 40V electro,
C3: .05 600 V tubular,
R1: .5 meg ½ watt carbon,
R2: 250 ohm 3 watt wire wound,
R3: 50K Pot (Tone control),
T1: Speaker transformer 5 to 7 K ohms.

in the vacant space conveniently left by the removal of C26 and T4. Here we use a 25 mfd 40 V. electrolytic as a cathode by-pass, and a ¾ inch conduit saddle with one side cut off makes a good hold down clip. Earth the negative end of the condenser and reconnect the coupling condenser C24 to grid end of R28.

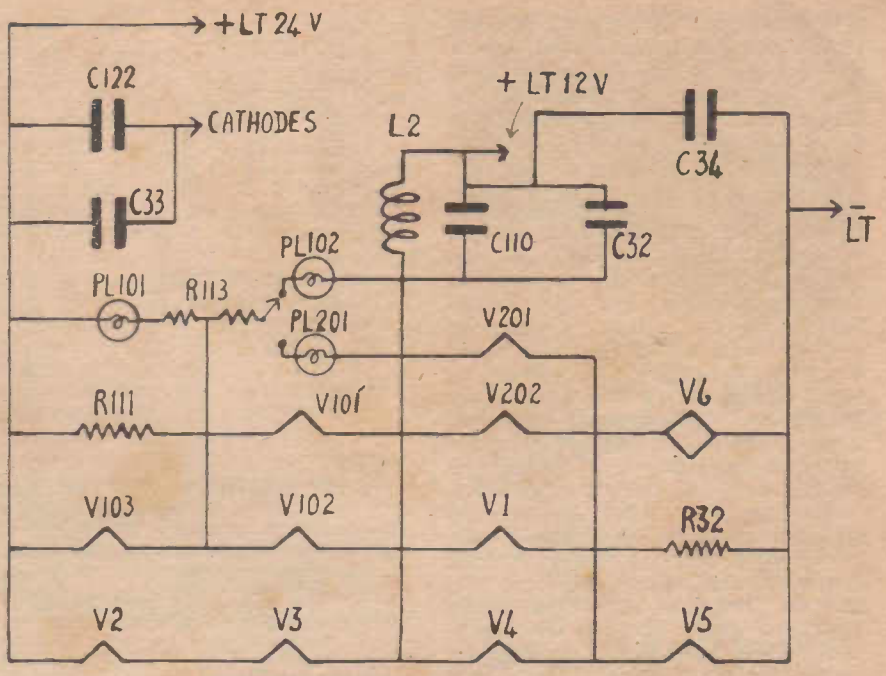
In the original circuit the 6G8G (V4) is also used as a pre-amplifier for the aircraft intercom system and in this function T5 is the microphone input transformer which will be no longer required. When removed from the circuit this necessitates a modification to the 6G8g plate circuit as follows:—Disconnect the four leads of T5 and remove from the panel. You will have noted that the primary winding of T5 was connected across the back of the CW/RT switch and that across this switch is also a 22,000 ohm ½ watt resistor; this conjointly with R27 and the primary of T5 constituted the 6G8g plate load. R27, a 50,000 ohm resistor, may be left in circuit but the 22,000 ohm resistor just referred to is removed and a 200,000 ohm 1 watt resistor substituted for it. A wire connected from the top of this to the open end of R27 closes the circuit which was opened with the removal of the primary of T5 and results in a ½ meg plate load to the 6G8G. Removal of R26, the ½ meg screen resistor, and substitution by a 1 meg resistor

though not essential is recommended in the interest of better gain. Further attention to heater wiring requiring no description is the parallel connecting of V3, 6U7G I.F. and V2, 6A8G B.F.O. linking them with V4. Immediately above V2 socket at the top right hand corner is a contact strip on which are mounted a number of condensers, C30 to C34 inclusive, also choke L2. This strip and components may be removed, as being L.T. filter and by pass condensers they are surplus. The .05 tubular condenser from a top contact on the strip to the tone control may be left connected to the tone control and used again if a higher voltage rating is not available; 350 volt working sails a bit close to the wind, however. Removal of the strip just mentioned will release a number of leads originating in the shielded cable that runs to the power and junction box sockets; draw four of the leads through the grummet for re-use, fit a small 4 contact strip to the panel using one of the holes made available by removal of the filter components, strip and connect to this four more of the available power cable leads. Any remaining leads may now be cut short as they emerge through the grummet. The space left available after removal of T4 and C26 earlier and portion of which may have been used for location of the 25 mfd cathode by pass suggests itself as a good spot for a 5,000 ohm speaker input transformer. Some of the earlier types were small enough to fit in the two inches of space between the back panel and rear cover plate.

PROVISION FOR SPEAKER

IF YOU have one that fits, extend the secondary leads to connect to two of the contacts on the small 4-lug strip. When connecting the primary leads to plate and screen pins of the 6V6GT remember that we left a shielded lead connected to the screen of the socket. Make sure that this lead is on the screen and not the plate as otherwise it will have sufficient capacity effect to cause audio instability. The other end of this shielded lead is taken to the 4-lug strip for introduction to the H.T. pos. Alternatively, if no transformer that will fit is available, or if the speaker used has its transformer attached, an additional lead from the plate pin to the 4-lug strip is used and can be routed along the same locale as the screen lead.

Next to claim attention is the tone control. In the original function this component, a 50,000 ohm switchpot was used to enable zero beat tuning to be employed by manually closing the receiver relay contacts in the A.C.U. unit. This feature will not be required, so R16, the 50,000 ohm switchpot is removed, and the .05 tubular condenser C29 kept handy if required for re-use. The top contact of R17, 1500 ohm wire-wound pot ganged to volume control is now earthed direct to chassis. The switch section on R16 can be taken off and the pot refitted to serve as a tone control. Centre contact is taken to the H.T. end of 6V6GT screen lead, which being attached to a lug on the small strip recently fitted, is quite handy. One side contact is selected to give the best taper and taken through a .05 condenser to the plate lead from the 6V6GT. C29 could be used but is only 350 volt working, a 600 volt type would be preferable. Now check to ensure that H.T. will be applied to R11, .1 meg resistor, by connecting a lead to the end of this resistor at the switch section and to the 6V6GT screen lead contact. This completes the work on the AF/IF section.



ORIGINAL HEATER AND DIAL LIGHT WIRING

● All resistors and condensers shown are removed from circuit, also choke L2. Dial lamps and valve heaters are then wired in parallel, dividing into two sections. V2, 3, 4, 5, V201, V202 as one group and V1, V101, 102, 103 and dial lamps as the other group.

H.F. & M.F. SECTIONS

TURN the unit right side up and note that 6X5 diode limiter tube. This can be left in circuit if the feature of a diode limiter is thought to be desirable, but on the other hand there is much to commend it's removal. A 6X5 could be useful for other functions as also the 25,000 ohm 10 watt resistor, R31, octal socket, .05 condenser and 200 ohm 3 watt wire wound resistor. The deciding factor should be the .6 amp heater current. After removing the components and the shielded lead running along the inside front edge to the rear, the aerial lead is connected to the aerial socket. When removing R31 be sure to rejoin the two wires taken from the H.T. end, tape the join to avoid contact with ground.

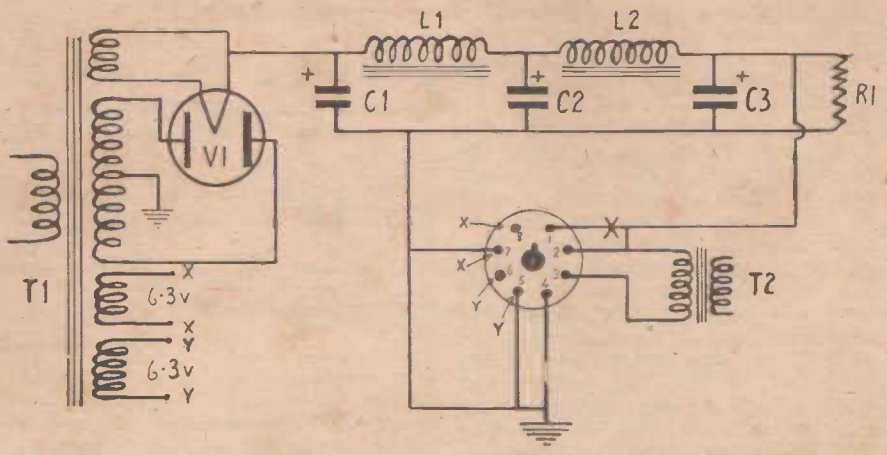
The original wiring connected all valve heaters, dial lamps and the indicator lamp in a series parallel arrangement, with parallel resistors where required. On completion our modification will result in parallel connection of all valves and lamps. Excluding the 6X5GT which has been removed, heater current requirement will be a total of 3.9 amps of which .75 amp is absorbed by dial and indicator lamps. Assuming the use of a conventional 60 or 80 MA 385/385 volt power transformer it is unlikely that a 6.3 volt winding will be available to take care of the full load, but many transformers have two 6.3 volt windings so that the logical step is to divide the load. By arranging the circuits to accomplish this it will be possible to utilise the two windings on a standard stock transformer with the necessary margin for losses in the cable from the power supply unit taken care of.

Eight contacts will be required for admitting H.T. L.T. speaker leads and Neg. If an original female plug

(Continued overleaf)

is available the wiring may be made to the original power socket, otherwise removal of both power and junction box sockets is indicated. A toggle switch S.P.S.T. is fitted to a metal plate and mounted in the space left vacant by removal of the junction box socket. An octal socket is fitted behind the panel in lieu of the power socket. The toggle switch will be used to break the H.T. pos. and will serve to put the receiver in stand-by condition; but more important is the desirability of removing voltage from switch contacts when changing bands. With voltage on wave change switch contacts the resultant arc when contacts make and break is the prime cause of defective switch sections and it is no joke replacing a switch section in an AR8.

Starting with V103, remove the parallel resistor R111, 20 ohm 3 watt wire wound. also the 1000 pf by-pass condenser, the lead to dial lamp 101, and the lead that goes back to the numbered strip. Repeat the operation on the next socket, working towards the front panel. There is a by-pass but no resistor on this socket, the connection from pin 2 of this socket to pin 7 of V101 is left attached. From pin 7 of V103 connect a lead to pin 2 of V102. Examination will reveal that the three sockets are now parallel-connected but that from the heater pins of V101 two leads pass through a grummet very close to the front panel. Turning the unit right side up it is found that the lead from pin 2 connects to the centre of R113, 23 ohm c.t. resistor, and the lead from pin 7 is connected to one side of the H.F. dial lamp. Before proceeding further, resistor R113 should be removed. Unscrew the hex nut on the top and unsolder the connections; the resistor will come out easily. The lead from the bottom of R113 is returned to the MF/HF switch S102, as is also the remaining dial lamp connection. In the original wiring the H.F. dial is illuminated when S102 is moved to H.F. position, when moved to M.F. the light is extinguished and voltage is applied to the M.F. lamp. We wish to retain this feature so to this end we join together the leads that were connected to bottom and centre of R113. Leaving the dial lights pro tem, sockets of V1, V201 and V202 now claim attention. Remove R32 21 ohm wire wound; pin 7 of V1 is connected to pin 7 of V202 and V201 via No. 1 on the numbered strip left hand side rear panel. Pin 2 of V101 and V102 is connected to No. 2 on the same strip and this wiring is left as original. Pin 2 of V1 however, is connected to No. 1 on the right hand numbered strip. This connection is removed and pin 2 of V1 and V202 are joined. At the same time, the link between No. 2 on right hand strip and No. 2 on left hand strip must be opened by cutting close up at the rear of the left hand strip. Back to dial lights again. the M.F. lamp has a lead to pin 2 of V201, this is released, drawn through the grummet, and soldered to the common side of the H.F. lamp.



CONVENTIONAL POWER SUPPLY WITH CONNECTIONS TO OCTAL SOCKET ON RECEIVER

T1: Power Transformer, 350/350V 80MA, 5V 2A, 6.3V 3A, 6.3V 2A.
T2: Speaker Transformer. C1, 2, 3: 8 MFD 525V Electros.
L1: 30HY, 60MA choke. L2: Speaker Field 1500 ohms.
R1: 25K ohms voltage divider-bleeder. V1: 5Y3G or 80.
X: Insert SPST Toggle switch here.

INDICATOR LAMPS

THE second lead from the M.F. lamp is returned to S102 via No. 6 contact on the left hand strip and is left as originally. The indicator lamp is wired to burn continuously by taking one side to the common contact on the H.F. lamp and the other through the grummet to the most convenient point on the nearest socket. The original lamps will have to be replaced with 6.3 volt types as the 3.2 volt types were used in series. Now the contacts 1 and 2 of the numbered strips are used to complete the heater circuits by returning twisted pairs to appropriate pins on the power socket. Don't overlook the need of V2, 3, 4 and 5; a twisted pair is brought through the rear panel and connected to the numbered strip contacts.

If an octal socket has been fitted four of its pins will have been used for heater wiring, pos. and neg. H.T., and speaker input will be taken care of with the four remaining. The H.T. neg. pin will be joined to frame as will also one side of each L.T. pair. H.T. pos. is taken through the S.P.S.T. switch before reaching the socket.

POWER SUPPLY

THE external power supply comprising transformer, filter choke and condensers etc., can be built on a small chassis and fitted inside a standard 8 inch speaker box together with an 8 inch speaker if one is to be used. A multi-wire cable issuing from the rear and terminated with an octal plug or female plug as originally used completes the installation. It may be found desirable to use a little extra filter for the last trace of A.C. ripple. A convenient mount for an 8 or 16 mfd electrolytic is across the block condenser adjacent to the power socket; the block condenser is a 400 volt working type and can be allowed to remain across the H.T. line with reasonable safety.

LINING UP

The I.F. frequency is 755 K.C. The beat on broadcast stations near this channel will be minimised if alignment is correct but cannot be eliminated entirely. Fortunately the H.F. tuning is unaffected. After completing the modifications and putting valves in their correct sockets, the tuned circuits can be peaked by ear in the following manner. Switch to H.F. tuning, band switch on band F. Locate WWV on 15 mc/s transmission; if not in calibration on the dial scale, correct by adjustment of oscillator trimmer which is located the last in the line of trimmers on the right hand side. Move to r.f. trimmer and peak for strongest signal, repeating with aerial trimmer, tune to WWV 10 meg. transmission and check dial calibration. If adjustment is necessary move iron slug of oscillator coil to effect alignment and return to the 15 mc/s transmission to correct any alteration. Check again on 10 mc/s and repeat this process until both frequencies are calibrated with dial marking. Peak the r.f. and aerial trimmers on the high frequency end of the dial and use the

slug adjustments for the low end. The process is repeated on bands E and D using transmissions of known frequency. The same technique will align the broadcast band, and no trouble will be experienced in securing perfect tracking, providing the I.F. frequency is correct. If an audio oscillator is available that will permit use of 755 K.C. the I.F. channel can be aligned through the M/F section in the conventional manner from the 6A8G mixer.

Reading CW with the B.F.O. switched on will necessitate advancing the volume control quite a distance which in itself could be tolerated if it were not for the increased noise level. To overcome this fit another S.P.S.T. toggle switch on the front panel, removing one of the unused D.F. or sense controls to make room. Take the pair of leads from the switch through the back panel to the CW/RT switch. Select a pair of contacts on the switch section that will, when shorted out, put H.T. on the B.F.O. valve. These will be found on the upper right hand side of the section. Connect the switch leads across the contacts, and you will be able to make the B.F.O. operative without the necessity of increasing gain and noise level.

VALVES

VALVE	TYPE	FUNCTION
V6	6X5GT	Diode Limiter.
V201, V101	6U7G	R.F. Amp. MF and HF.
V202	6A8G	Converter on M/F.
V102	6A8G	Mixer on H/F.
V103	6J5GT	H/F Oscillator.
V1, V3	6U7G	I/F Amp.
V4	6G8G	2nd Det. AVC. Audio driver
V2	6A8G	B.F.O.
V5	6J7G	Output & Inter Comm Amp.

Full description and very complete schematic and wiring diagrams of AT5/AR8 equipment is published in R.A.A.F. publication 318 under title of "Standard Notes For Wireless Maintenance Mechanics and Wireless Assistants." This publication is readily available.

CAT CALLS

Many domestic British cats ran wild recently when the BBC broadcast a programme of cat calls, recorded by Dr. Ludwig Koch. Dr. Koch has been recording bird and animal calls since he was eight, and has made two collections of recordings. The first was destroyed by the Germans, the second, an equally fine assortment of unique recordings, is now the property of the BBC. Dr. Koch's programmes are something for the connoisseur of natural history who, through the medium of radio, has had re-created for him the sounds of the countryside.

One of Dr. Koch's greatest interests is in recording sounds new to most people that he himself has only heard after intensive periods of patient watching. It was he, for instance, who discovered that the giraffe, formerly considered dumb by scientists, has a vicious high-pitched bark. He has studied animal language even more closely than bird language and finds it much more difficult. Animals do not speak to each other as much as birds do, for they are more conspicuous and have not the same need for communication. For ths reason they must be watched more closely and for longer periods and this is best done at night.

His latest programme was devoted to the language of the cat family. It began with domestic puss in undomesticated mood, howling and spitting on the tiles at night, a recording for which the patient observer spent many hours in London gardens with his apparatus, waiting for the right number and combination of cats to come within recording range. Cats, like humans, have variations in voice and this was demonstrated by one loud, regular purr like a motor-cycle engine and another, more lulling purr from a less mechanical puss. There was the strange voice of the cheetah, the speedy racing cat, and the serval, whose piercing call sounded like a fiercely protesting "No, No, No, No!" The recording of Dr. Koch's Siamese talking to her owner was one that upset many domestic cats, who before this had remained oblivious to the odd noises coming from their owners' sets. The lion has one of the largest vocabularies in the animal world and listeners who had formerly heard only his roar now heard his hunting call — used to frighten game into running — and then the lion and lioness talking to their cubs. It was most interesting to hear that the cubs make different noises when talking to each parent. The lion is the only member of the cat tribe that does not purr, but this lack was remedied by the purr of the satisfied tiger. After fifteen minutes of assorted cat calls of varying volume domestic cats and their owners were left in peace again.

* * *

SHORTS FROM THE TALKS
PEACEFUL REVOLUTION

"Since 1945 we in Britain have certainly carried out a peaceful social revolution. Hours of work have been reduced in many industries without loss of wages; holidays with pay have become almost universal and comprehensive schemes of social insurance with a wide range of benefits have been introduced. There has also been a wide re-distribution of the national income by taxation and controls. In that way, we believe we are laying the foundations of social stability, industrial peace, and prosperity for the future."

—Douglas Houghton speaking on Industrial Democracy in Action in the B.B.C's Far Eastern Service.

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Engineers

(CIVIL • ELECTRICAL • MECHANICAL)

Unprecedented opportunities for qualified and experienced professional Engineers are being opened up by the huge, long-range expansion programme which the Post Office has embarked on to cope with the demands of Australia's rapidly-increasing population. This vast telecommunications development scheme, the largest in the nation's history, involves the design, construction, installation and operation of millions of pounds worth of modern telephone, telegraph, radio-telephone and broadcasting equipment, together with expansion of related workshop, transport and research facilities.

Attractive appointments in a number of grades are available. Prospects of promotion, which is by merit, are excellent. With the progressive development of the plan, they will become even better.

Appointments will be permanent, with full pension rights and privileges. A full description of the opportunities is not possible here, but experienced Engineers with mechanical, civil or electrical qualifications are invited to obtain full information without obligation.

Salaries range between £505 and £865 per annum.

FULL INFORMATION AVAILABLE ON APPLICATION

Full information may also be obtained from the Employment Officer, Personnel Branch, General Post Office, Martin Place, Sydney (Telephone BY 4611).

The Director-General, Posts and Telegraphs, Treasury Gardens, MELBOURNE, C.2.

Please send me full details of opportunities for professional Engineers in the Engineering Branch, Postmaster-General's Dept.

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Television and Radio News

King Canute and the Sad Sea Waves

THE impending advent of a public Television service in Australia appears to have created very mixed feelings within the Radio manufacturing industry of the Commonwealth. There are a number of wide-awake and progressive manufacturers in this country who are planning and looking forward to Television for what it really will be . . . a revivifying force which will infuse new life and vigour into a jaded industry. But for every such realistically - minded organisation here, there is at least another which refuses to recognise an obvious truth. These are the people who say it will be ten years before Australia has a Television service.

There have been several attempts to "soft-pedal" Television in Australia, but these awkward, even naive, attempts by certain short-sighted units within the Australian Radio Industry will not avail to hold back a new service which will assuredly come, and is just as certain as tomorrow's sunrise. Is it laziness? Is it a reluctance or even obstinate objection to altering time-worn production methods? Or is it just an ostrich-like refusal to recognise the oncoming flood of Television?

Television will be a tide which will completely revitalise a somewhat moribund Australian radio manufacturing industry . . . a tide which the Australian Canutes can no more hold back than could the celebrated King stay the literal waves of the sea.

Let the tide come, then. And when it HAS, it is the ambition of this magazine to be Australia's "Voice of Television." To slightly paraphrase the Immortal Bard . . . "There is a tide in the affairs of men which, taken at the flood leads on to fortune."

—"IMPRIMATUR"

Inie Te Wiata, Maori singer, before the B.B.C. TV camera. He is studying in England under a scholarship granted him by the N.Z. government.

NEW TV COLOUR DEVELOPMENT IN U.S.A.

The Radio Corporation of America have announced the development of a colour television receiver utilising a single cathode tube (the screen of the receiver).

Full details of this revolutionary colour development in America are not yet to hand, but it is known that the receiver operates on the same bandwidth as existing black and white broadcasts, maintains the existing high definition of black and white television and is capable of receiving all telecasts made whether in black and white or colour.

Mr. L. A. Hooke, Managing Director of A.W.A. said "the new American compatible colour system would enable Australia to proceed with black and white television with the knowledge that colour could be later introduced without rendering receivers useless for monochromatic reception."

A.W.A. television engineers consider that the development of such a receiver is the most important step yet made towards the achievement of everyday colour television. But while a single tube colour receiver was an advance of the first magnitude and had been the goal of colour research for many years it was not the ultimate. The camera as yet required three image orthicon valves (the sight of television) for colour telecasts and this made it rather bulky and necessitated the use of special transmitting equipment. The important remaining task was the production of a single tube camera that would operate through existing transmitting equipment. There is no apparent electronic or physical problems remaining other than its development into practical application but this may well take 3 to 5 years.

TELEVISION BOOMING

Television has become a booming business in the United States with 2,594,000 receiving sets sold last year, according to latest industry figures.

This is more than double the number of sets sold in 1948 and many times greater than the 210,000 sets marketed in 1947.

Telecasting stations throughout the nation numbered 92 at the last count and are constantly increasing. Most of the programmes now are produced in major cities and transmitted to stations in the more remote areas.

Manufacturers' figures also show that sales of radio sets were high last year with 7,956,000 sold for home use and 3,964,000 for use in automobiles.

At the end of the year a total of 88,964,000 radio and television sets of all types were in use, or an average of about one and seven-tenths sets per home. This included 70,436,000 radio sets in homes or places of public assembly, 14,764,000 in automobiles and 3,764,000 television sets.

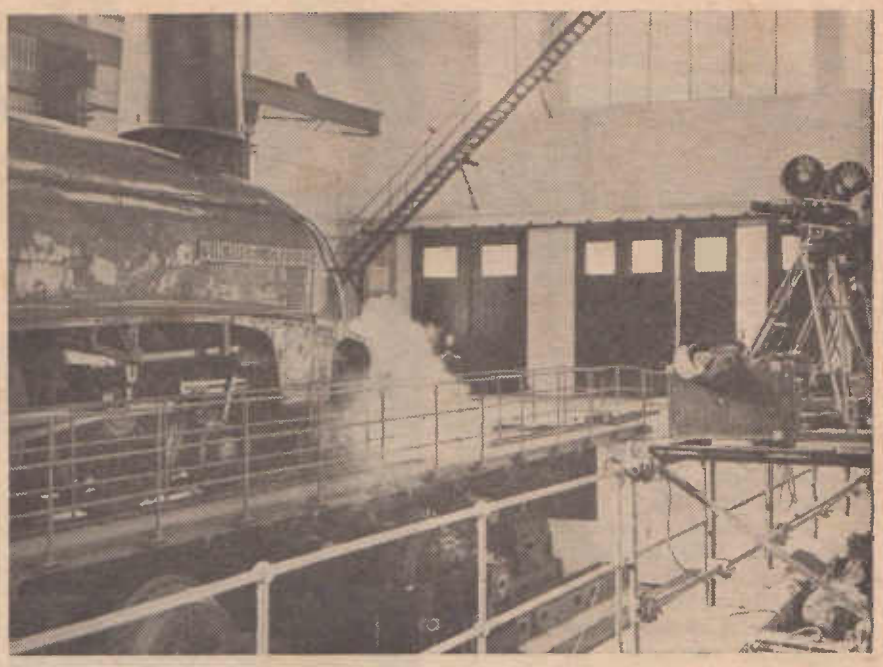
One of the J. Arthur Rank film studios, at Shepherd's Bush, London, has been purchased by the B.B.C. for conversion to a television studio, indicating clearly that the virile youngster is needing room for expansion. Indications are that in time to come, television is likely to be in the front rank, with "movie" entertainment a runner-up or accessory to the fact.

Radio and Teleneus

SHALL WE HAVE A TELEVISION FACE?

Norman Collins, the Controller of B.B.C. Television, writing about the future of television in "The B.B.C. Quarterly," a journal for those engaged in broadcasting, disposes of a number of bogeys. He is reassuring about television's effect on family life, and he does not believe that it will ever destroy the cinema or the theatre. Social and gregarious human beings will always enjoy being together in the cinemas, and the flesh and blood of the theatre will always be more exciting than figures on a frosted screen. Films, plays, and television will, in his view, be co-existent.

But all the same the B.B.C's television chief foresees that when there are as many viewers as there are now radio listeners television's effect in the home will be enormous. Its likely influence on the young, for instance, he describes in these words: "Remember that the new generation will be able to switch on television as their parents once thought themselves lucky to switch on the light. Television is something that children will learn to accept as they now accept the toys in their nurseries. The faces and voices of the announcers will be as familiar as the faces and voices of their own families. They will be part of the everyday background of the home. But they will also represent something larger than the home: they will stand for the exciting adult world that is outside. In consequence, these announcers, even the most junior ones, will become tremendously powerful persons. On a ten-inch screen, they will still be lifesize. And ten times as recognisable as any film star. The clothes they wear, the accent in which they speak, the way they stand, the manner in which they do their hair, will all be important and significant. Remember, too, that they will not be film stars. They will *not* be acting any role but their own. In consequence, it will be assumed by the young that everything they do is what people are supposed to do. How they look is how men and women are expected to look. And how they speak is the people's English as well as the King's. Not that such a prospect is entirely unalarming. The B.B.C. is charged already with having, through its broadcasts, killed local accents and ruined local idioms. Shall we have a television face? A television collar-and-tie for males? A television hair style for women? A television smile?"



● The TV camera goes to the Railway Workshops. A B.B.C. TV camera is seen here recording the roller bench testing of one of Britain's powerful locomotives. A speed of 120 m.p.h. can be obtained in these tests.

Australia's P.M.G., Mr. Anthony, in denying that television will be delayed because of colour investigation —said that he had been misquoted at Canberra. Trust the daily press somewhere to get things cock-eyed—and to throw a spanner in the radio industry works!! Yet, some manufacturers are supporting newspaper advertising and cold-shouldering magazines which have helped to put the industry where it is to-day.

* * *

RELATIONSHIP OF HEARING AND SEEING

THERE is a relationship between sight and hearing which is closely connected with broadcasting technique. It is in the use of speech in drama that the sense of vision becomes particularly useful to the auditory sense. The absence of vision is definitely a hindrance to the understanding of the spoken as compared to the written word. When reading, the eye moves along the printed line ahead of the word on which the attention is concentrated, and thus assists the mind in its interpretation of that word in relation to what will follow.

In stage drama, sight helps in the advance understanding of what is conveyed by expressions and movements of actors, but in broadcast speech this advance information is absent, so that increased concentration of the word actually being heard is necessary.

Television, with its simultaneous transmission of immediate impulse to the vision and auditory senses, overcomes the disability of dis-associated sound and sight which handicaps our regular broadcast entertainment. We have become so accustomed to our 20 or more years of sound broadcasting technique, however, that the absence of vision passes virtually unthought of. With even a casual acquaintance of Television broadcasting it may well be that the effect will be akin to sound-film entertainment in comparison to the old "silents." On the other hand, there are people for whom the concentration of watching a screen for any length of time becomes arduous. Such people, because of sight deficiency, are not likely to be attracted over-much to Television. For them, the established system of sound-broadcasting amply fills the bill.

—S.E.T.

FIRST TELEVISION MOVES IN SOUTH AFRICA

Advanced British television equipment including television on a full size cinema screen, a complete two camera studio and a portable outside television unit for field work will be flown to Johannesburg from England by the Marconi Wireless Telegraph Company for the famous Rand Agricultural Show which yearly attracts more than half a million visitors.

The South African Broadcasting Corporation in co-operation with African Consolidated Theatres have arranged the demonstration through the offices of J. Arthur Rank. Marconi's will also fly to South Africa, British Engineers and Television Specialists to handle the demonstration.

ANOTHER TELEVISION STATION UNDER CONSTRUCTION

REPORTS sifting through of the surprising ranges of 150-200 miles being achieved by Britain's new Television station are arousing the keen interest of Television engineers throughout the world, but until these ranges have been sustained over a 12-month cycle, radio physicists are reluctant to accept that the theory of Television's range being bounded by the aerial's horizon has been upset.

It is known that the unique aerial system which plays such a vital part in Television's range and reception was supplied by the Marconi Company and resulted from the collaboration of the B.B.C.'s own research teams and those of the Marconi Company, who also supplied the new type sound transmitter, and the vision transmitter's Radio Frequency Drive.

Britain's next Television station is already on the stocks at the Marconi Company's Chelmsford plant, and it is interesting to note this station, intended for the North of England, is the first British Television station to be constructed under a single roof.

In view of the interest aroused among engineering circles by the success of the Birmingham Television Station, the following description of the new audio transmitter supplied, with the R.F. Crystal drive for the vision transmitter, by the Marconi Wireless Telegraph Company.

"The sound transmitter has an output power of 12 kW (unmodulated carrier) to the aerial feeder and a frequency range of 40 to 67 mega-cycles per second, the power consumption, including that of all the auxiliaries, being 73 kVA at 60 per cent. modulation. The overall frequency response is level with plus or minus 2 decibels from 30 to 10,000 cycles per second, while the radio frequency harmonics amount to less than 200 milliwatts of radiated power. Four stages of radio-frequency amplification are used. The first consists of two TT 12 valves in push-pull, which feed a second amplifier stage made up of four TT 16 tetrode valves in parallel push-pull. This stage is inductively coupled to the penultimate amplifier, which consists of two BR 125 triodes in a Class-C circuit. The final stage is formed by a single-ended earthed grid amplifier, in which an air-cooled triode type BR 128 valve is used.

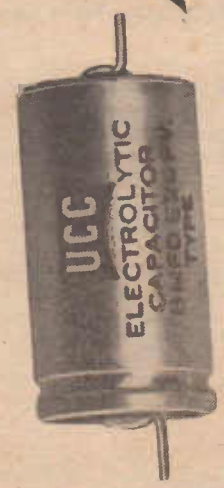
"The audio-frequency amplifier is made up of six stages, a negative feedback of 14 decibles being employed in the last four stages. The amplifier terminates in a pair of ACT 14 air-cooled triodes, which are driven by four DET 21 valves arranged in a parallel push-pull cathode circuit. With a sinusoidal input signal of four decibels above 1 milliwatt into the input impedance of 600 ohms, the carrier is modulated to a depth of 40 per cent. Some radio frequency power is rectified and fed back into the input of the

(*Continued overleaf*)

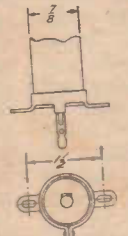
UCC ELECTROLYTIC CAPACITORS

INFORMATION BULLETIN

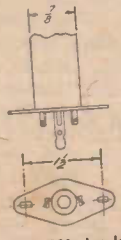
U.C.C. Electrolytics are designed and developed in the U.C.C. Laboratories for conservative ratings. They are extremely small in size, being made with high-gain etched foil possessing a purity of 99.98%. Extreme care is taken in manufacture to control purity of all solutions. Extended life tests at 140° F. show very good characteristics and shelf life. Available in ratings from 1½ to 525 peak volts in several types of mountings (see below). Stocked by leading wholesalers.



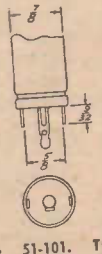
Type 51-130. Pigtail Type—universally used in any position where capacitors can be supported on tinned copper pigtails. Capacitor body is insulated.



Type 51-134. Flanged Clamp — used where above chassis mounting is required and capacitor is earthed. Capacitor body is not insulated.



Type 51-126. Insulated Flange—used for above chassis mounting and where capacitor is insulated for bias supplies. Capacitor body insulated.



Type 51-101. Twist Lug—used for above chassis mounting by inserting lugs through slots and twisting to hold in position.

SPECIFICATIONS

1. Capacity Tolerance: — 10% + 40%.
2. Power Factor: 15% max.
3. Max. Operating Leakage: 0.1 mA/mfd.
4. Max. Operating Temp.: 145° F.
5. Electrolyte: Semi-dry.
6. Container: Hermetically Sealed Aluminium.

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65/HP2

★ Grand Ballet—in the London TV studios of the B.B.C. "Nouvelle Divestissement" by Serge Lifar. Yvette Chauvise as Princess Aurora and Max Bozzoni as the Prince.

(*Continued from page 13*)

modulator with the object of reducing the overall noise level.

"The combined vision and sound aerial consists of eight folded dipole radiators, arranged in two tiers of four, with a vertical spacing of one wavelength (about 15-ft. 6-in.) between them. The radiators of each group are spaced at intervals of 90 deg. round the circumference of a circle, the diameter of which is 0.4 wavelength (about 6-ft. 2-in.). The diametrically-opposite pairs of radiators are fed from common binocular coaxial feeders, so that their radiation is anti-phase. On the other hand, the radiation from adjacent radiators is phased in quadrature by interposing an extra quarter wavelength of line in one of the feeders. The system is capable of radiating simultaneously vision transmission with a peak power of 40 kW and sound transmission with a carrier power of 12 kW.

"The two feeders (one for vision and one for sound) from the transmitter to the aerial consist of concentric copper tubes, in 12-ft. sections, with a total length of 850-ft. Each outer tube has an internal diameter of 5-in., while the external diameter of the inner tube is 2-in. The two tubes are insulated from each other by ½-in. Frequenite rods, which are bedded against the inner tube at 12-in. intervals and are arranged so that those forming adjacent pairs are at right angles to each other. The inner tube, with the 'spokes' thus formed, is a sliding fit in the outer. Each 12-ft. section is flanged like a water pipe, rubber sealing rings being inserted to secure air-tightness, while at intervals of 150-ft. there is an air-tight sliding joint to allow for expansion. Just above these joints the feeder is secured to the mast, so that each clamp supports one section, the weight of which is about half a ton. There is also a sliding clamp on each section to prevent bending and whipping. Dry air is pumped continuously into the feeder and leaks out through special bleeder holes.

"At the top of the slot-aerial structure the feeders are connected to a 'diplexer', in which the vision and sound signals are combined, so that the mutual interference is low compared with the radiated power. These combined signals are transmitted to two split-drum transformers, in which a balanced pair of outputs in anti-phase are produced from a single feeder output. These outputs are next taken to the centre point between the two tiers of dipoles, where the signals are led off to each of the upper and lower tiers. The loss in power from the transmitter to the aerials in this system is such that the reduction in field strength is less than 6 per cent., while the reflection factor of the aerial and diplexer is low as 1 per cent.

"Finally, it may be mentioned that the crystal drives for both the vision and sound transmitters were designed by the Marconi Company to have a power output of 5 watts and an output frequency at any value in the 40 to 72 megacycle range. The

stability is plus or minus 5 parts in 100,000, and the noise level is more than 60 decibles below 5 watts. The crystals, which have a low temperature co-efficient, have been ground for a mean temperature that was determined from their position in the chassis; no temperature control is therefore necessary. They operate in a vacuum and are mounted so that they are insensitive to external vibration. The circuit consists of three twin-tetrode TT 15 valves. One half of the first valve is the crystal maintainer, while the other is the doubler. The second valve operates in a Schmidt-type push-pull circuit and acts as a trebler, so that the crystal operates at one sixth of the output frequency. The trebler is capacity-coupled to the third stage, which is a push-pull amplifier. By operating a switch, this trebler stage can be changed into an oscillator, which is adjustable over a limited range on both sides of the mean frequency. This enables tests on the radio-frequency response of the transmitter and aerial circuits to be carried out. This facility is valuable in vision transmitters with wide-band tuning, which are also tuned symmetrically for vestigial side-band working. The unit is supplied from the single-phase alternating-current mains, the voltage being stabilised."

* * *

New Ambulance Engine Appeal: Tasmanian Coastal Network Station 7DY in north-eastern Tasmania met with a wonderful response when it broadcast an appeal for funds to help Scottsdale Hospital purchase a new engine for its ambulance. To give all listeners a chance to help, 7DY asked that donations be 1/- and 2/- each. More than 500 people in ten different towns subscribed, with the result that the £100 sought was exceeded by £24/8/- in a very short time.

* * *

The 2GB Community Chest: The Eleventh Annual Report of the 2GB Community Chest, which is under the direction of "Uncle Frank" Grose, quotes many instances of outstanding service rendered to the community during the year ended June 30, 1949. Charitable activities included the Maitland Flood Relief Appeal, which resulted in £48,000 worth of garments being sent to victims; £6,782 worth of clothing raised for the poor and destitute; £1,080 for particularly-requested articles, such as invalid chairs, bassinets, bedding, furniture, etc.; £850 spent on 85 concerts given at hospitals military camps, etc.; £1,154 raised at Macquarie Auditorium Concerts for charities and other worthy causes; and donations to Marrickville District Hospital (£180), Mosman Spastic Centre (£293) and other needy institutions (£172). In all, no less than £58,513 was raised by Station 2GB for charities during the 1948-49 period.

● A small table type of British Television Receiver showing the simplicity of controls—only two knobs for adjustment. Sound aperture is below picture tube.

PAT HODGINS has his nose well to the grindstone all day and every day at 2UW digging out suitable questions for his "King of Quiz" session which happens every Thursday at 9 p.m. If he's not exactly the proverbial walking encyclopaedia, at least he never walks far without one. We'd like a few listeners to send him some questions from time to time, just to relieve the strain. It's worth a try—you'll get a prize for every question used. Just send them in to "King of Quiz," c/o 2UW.

SILENCE IS GOLDEN

Jimmy Parker is a sweet maker whose first attempt at chocolate making nearly ended in disaster. This mistake was not found out until after the chocolates, made into caramels, had been put on sale. A man bought half a pound and came back to the shop to ask who had made them. "Jimmy," said the assistant. "My wife's teeth," said the customer, "got stuck in those caramels and she couldn't speak for half an hour!" "I'm sorry, sir," said the repentant apprentice, wondering what his punishment would be. "Good for you, Jimmy!" said the customer unexpectedly. "Silence is golden, my boy," and he gave the astonished youth half a sovereign and walked out.

Despite sweet rationing in Britain Jimmy is still busy and in his time has made a lot of fantastic chocolate articles. He told listeners to a B.B.C. programme that in his time he has made a football in marzipan for the local team, windmills with chocolate sails that go round and chocolate models of film stars. He is particularly busy in the springtime with Easter eggs, which are made in two half sections and then joined together after the filling has been put in. Jimmy has customers who bring in various gifts to be put in the eggs as filling, though not many have provided a present such as a woman gave her mother-in-law, a face flannel embroidered with the initials N.B.G.

How to Know Television

YOU MUST PREPARE NOW FOR TO-MORROW'S NEEDS

An up-to-date course is available in PRACTICAL F.M. and TELEVISION by the world-famous I.C.S. Home Study Method. Instruction based on results obtained in America from three years of experimentation and actual commercial usage. Prepared by men who have come up against all of the problems associated with installation and service. The results of their experience have been incorporated in this course so that you may be aware of likely contingencies and know the methods of overcoming them.

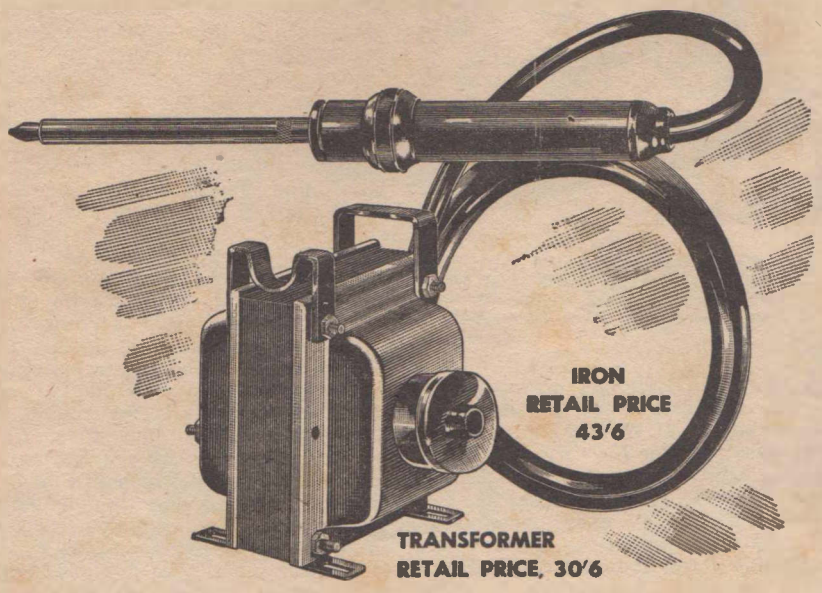
Write or call for information.

International Correspondence School

140 Elizabeth Street, Sydney.

When writing, please mention this magazine.

In Tune with the Trade



BOON TO MANUFACTURERS AND CONSTRUCTORS

At infrequent intervals in the every-day life of those concerned with radio, electronics, etc., in technical capacity—there comes to light some development which surprises by virtue of a combination of utility and simplicity. One is apt to say, "Why didn't I think of that before?" It remained for the designers and makers of the new "SCOPE" electric soldering iron to provide an answer with telling effect by introduction of their revolutionary accessory to better and speedier soldering. The standard resistance element type of iron has been with us for about three decades, and has served electrical and radio trades with varying degrees of reliability. The limitations of the heater iron are well-known—overheating and bit burning, bit corrosion in the mounting, and in the widely used 240 volt types, the ever-present hazard of faulty wiring at high potential. These points are, of course, counteracted by suitable provision, and do not, in the case of reputable makes, constitute any serious objection. The new "SCOPE" iron removes at one swoop these previous faults of electric appliance usage and puts small and medium copper bit soldeting on a new plane and in a different class.

The principle of the new iron is simple to a degree, but with the overall advantage that there is no wire-wound element to burn out. From stone cold to heat enough to solder quite extensive surfaces is but a matter of seconds, actuation being by a finger-operated ring switch. Bits are quickly removable with no likely oxidisation of threaded surface to cause difficulty. The quick heating action of the "SCOPE" iron is the primary utility of the product, and coupled with that is the safety factor—it operates, of necessity, at a low voltage with high current. The transformer supplied by the makers is for 4 volts at 30 amperes. The iron is workable between 2½ and 6 volts. This Australian product puts electric iron soldering in a very different category to the long familiar methods, and is about the most useful accessory development we have seen in a dozen years. It is a sheer pleasure to use. After so doing we cannot fancy a return to the old way. Our sample is from the Australian and overseas agents, Wm. J. McLellan & Co. Pty. Ltd., 55 York Street, Sydney.

ORDER "R. & TVN" FROM YOUR NEWSAGENT IN ADVANCE

Manufacturers, agents, and traders handling all kinds of radio and electrical items are invited to forward information on new equipment and accessories to the editor for consideration in this section.

New Manager Philips N.S.W. Branch

Mr. W. L. Gibson has, on medical advice, been compelled to relinquish his position as N.S.W. Manager for Philips Electrical Industries of Australia, and the following new appointments have been made effective as from May 1:—

Mr. H. B. A. Hendriks has been appointed Branch Manager for N.S.W., and Mr. H. J. Frost has been appointed Sales Manager for N.S.W.

Mr. Gibson will be away on three months' sick leave, and his friends from Philips and in the trade all wish him a complete and speedy recovery.

Why not join?

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Our aims are:—"To bring together the short-wave enthusiasts of the world regardless of race, creed, or politics, to their mutual benefit. To foster and promote international goodwill through the medium of short-wave radio interest."

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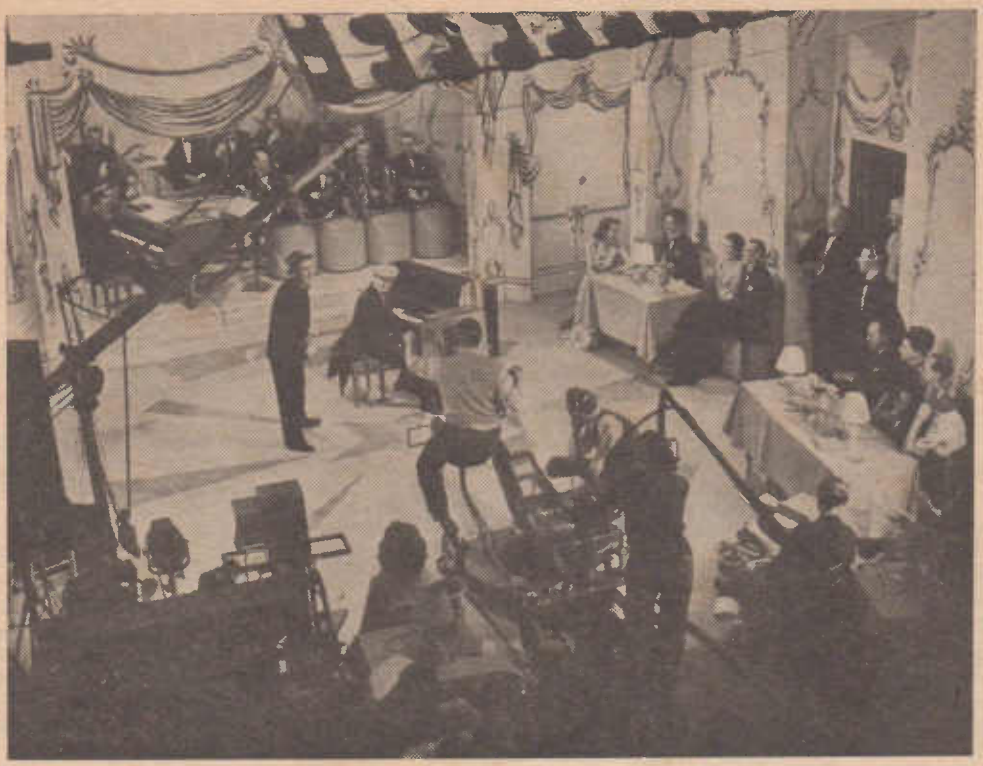


TOMMY TRINDER

★ Tommy Trinder playing at the British Broadcasting Corporation Television studios at Alexandra Palace, North London in a reconstruction of the popular Embassy Club, London, where he performs so frequently.

Trinder believes in advertising himself thoroughly and at one time the West End of London was plastered with enormous advertisements stating "If It's Laughter You're After Trinder's The Name," a statement that was perfectly true.

He is a typicol Cockney, shrewd as they make them, hard-working, quick-witted and saucy. He is no respecter of persons and also an incorrigible practical joker.

—B.B.C. photograph.

ABOUT BROADCAST TALKS

A lot of energy, to say nothing of fees, is wasted in broadcasting talks which the average listener refuses to hear. The speakers have something worth while to say—the talks editor sees to that—but many of them do not realise that their audience is composed of very shy birds. The best qualified speaker is useless if no one listens to him. A good talk, well delivered, painlessly instills knowledge into people who have stopped educating themselves, but a bad talk, or one badly delivered, only helps to propagate the idea that all talks are boring.

When people go to hear an actor or a lecturer they usually stay to the bitter end. They have paid their money and always hope, even against hope, that they will get something to repay them. Sheer inertia will often keep them in their seats, especially when there is nowhere else to go. The radio listener has only to turn a knob in order to obtain what he considers better fare.

When children are playing noisily and other members of the household talking or arguing, the listener's environment is not ideal. Someone is sure to be insistently demanding music instead of talks. The listener must have something definite to repay him for listening. The speaker's words must come through clearly and distinctly, so that the listener hears and understands without effort. The voice needs to be pleasing. A whining intonation, indistinct diction or a patronising manner invites a prompt switch to another station.

Many speakers talk as if they were bent on cramming in the greatest possible number of words in the shortest time. A reader is helped by the familiar appearance of the words, and he can cast his eyes back over any obscure paragraph. The facial expression and gestures of a flesh-and-blood speaker help out his audience. The radio listener has no such aids, and once he loses the thread it is gone for ever. A distinct pause must allow each sentence to sink in. Many speakers emphasise the unimportant and slur the important words where right emphasis is doubly necessary.

Suppose the man at the receiving end has begun to listen to a talk, he is by no means convinced. He is probably saying to himself: "Well, I'll give this fellow a go." He expects the speaker to know his subject, and has no use for modest or mock-modest apologies on that score. He is quite indifferent as to who a new speaker may be. He either likes him or he does not. A long string of academic titles will not make him listen a moment longer than he chooses. But once he has appreciated a talk he will look for more from the same speaker.

A good title is excellent bait to attract the listener, but he must be given something interesting right at the beginning to rivet his attention. He cannot follow long and involved sentences. They must be short and clear. Everything must be clean-cut and direct. The listener wants to be talked to in an intimate and conversational way. A talk is a talk. It should not sound as if it were being read; but, since it is read, there is no excuse for hesitancies of any kind. Loud breathing in front of the microphone is objectionable. It sounds like the carburettor of an old car-engine.

—"DICTO."

HE WAS DEAD BUT HE WOULDN'T LIE DOWN

An astonishing thing happened recently on the B.B.C. television screen at Alexandra Palace. It was during the production of the television version of Agatha Christie's thriller, "Ten Little Nigger Boys." Viewers watching the show gasped with surprise and then laughed loudly when one of the characters, who had been stabbed to death on the balcony a few minutes before, got up and walked calmly off the stage. The explanation for the actor's peculiar behaviour was quite simple. He thought, quite wrongly, that he was out of camera range and therefore need spend no more time lying full length on a somewhat draughty floor, but could assume a vertical position without further delay.

* * *

ERRORS OF THE ERUDITE

MRS. MALAPROP is not dead. We smile indulgently when we hear her speak of the "Sympathy orchestra playing a lovely garrotte," the music being "like the tones of a linoleum harp," but are we ourselves above criticism?

When we make a slip that sees print we promptly blame the linotype operator, for a printer's error covers a multitude of grins.

Doubtless the sometimes careless or occasionally festive comp. is responsible for a good many typographical solecisms, as, for instance, when he enhanced the record of a gallant officer by saying "he served in the A.I.F. throughout the war as a mayor," or when he mentioned that "'Hamlet' was played last night by a highly culpable company."

A monthly parish paper of an Anglican church once announced that "So-and-so and other fiends addressed the meeting." But an English blue book went one better when, in recording a conversation between the British Ambassador at Berlin and the German Chancellor, it said, "His Excellency concluded his filthy remarks." Nobody seems to know what the adjective should have been. Perhaps "pithy" was intended. The "Clarion" at Woop Woop said of an alderman who had returned from a health trip abroad, "His friends were much surprised and disappointed at finding him unhanged."

But apart from such mechanical slips, some weeds and false growths of speech and thought are tolerated and perpetuated until they are accepted as canonical.

If we write of "fresh woods and pastures new" we are liable to be accused of misquoting, "fresh fields" having become a journalistic cliche.

Shakespeare is the victim of more misrepresentation than any other poet. He never said, "Alas! poor Yorick, I knew him well," nor "There's method in his madness," nor did he say, "to pale his ineffectual fires"—in was "uneffectual fire." He did not write,

There's a divinity that shapes our ends,
Rough-hew them as we may.

It was "how we will." Again, "We are such stuff as dreams are made of" is wrong, "made on" is correct. "A beggarly array of empty benches" —or "bottles"—is a common misquotation. It should be "a beggarly account of empty boxes." Also Shakespeare made Macbeth say "cabin'd, cribb'd, confin'd," not "cribb'd, cabin'd and confin'd" as it is usually printed.

The Bible does not say that the tongue is an "unruly member," but an "unruly evil," nor does it mention Esau's "mess of pottage"; in point of fact, the word "mess" does not occur in the Bible.

The phrase "just cause and impediment" belongs neither to the publication of banns nor the marriage service, 'cause or just impediment" is how the Prayer Book puts it. "To love, honor and obey" does not appear in the "Solemnisation of Matrimony" either.

Pope wrote, "A little learning is a dangerous thing," not a "little knowledge." Dryden said, "None but the brave deserves the fair," not "deserve," which is ungrammatical.

Why are these mistakes commonly accepted and repeated to infinity? Why do we speak of "type-written manuscript"? why "calves'-foot jelly" instead of "calf's foot," which is correct? Why is the last book in the Bible invariably called "Revelations" when it should be "Revelation"? and why is the Shakespearean play usually called "Love's Labour Lost," when the bard called it "Love's Labour's Lost"?

"Bill Sikes" is called "Bill Sykes" as often as not, and most newspaper readers would call it an error if "Robert Lewis Stevenson" appeared instead of "Robert Louis Stevenson," but the author of "Treasure Island" was christened "Lewis," and his friends wrote to him, and of him, under that name.

The harassed sub-editor, blue pencil in hand, nods sometimes, and the trained readers blink their Argus eyes. A heading in a paper the other day was "Woman Molestor," which suggests an interfering female. It referred, however, to a male assaulter of women, and perhaps, if the reporter hadn't been in a hurry, he would have written "molester."

A writer recently said, "he must not be like a dumb dog, afraid to bark."

After all, we should be glad that in the bright lexicon used by the linotype-man, there are still such words as etaoin and cmfwyp.

"HIXTAT."

ENGLISH UNDEFILED

"Didn't you see a bike and a feller near it?" asked the barrister.

The Judge looked pained. "Do let us talk English," he pleaded.

—*News item.*

We all must cordially commend
His Honor's attitude,
And with him we must reprehend
Such jargon coarse and crude,
For if a bicycle's a "bike,"
It's clear an icicle's an "ike."

Oh, let us not pervert our speech
With vulgar alterations!
A bad example this we teach
With coarse abbreviations.
And, as his Honor has exhorted,
Let us speak English undistorted!

And if, perchance, we're haled to court
"In re" a "fi. fa." or "mandanus,"
Shun alien words like "Rex" and "tort,"
And let no "certiorari" shame us;
The Bar may use the, "ad captandum,"
WE can't, "quod erat demonstrandum."

Don't designate a pound a "quid,"
Say "see" and not the legal "vide,"
Speak English, don't use "ab" or "id,"
Such pedantry is "mala fide":
So "verbum sap." "a fortiori,"
The Judge—but that another story.

THE GREATEST LONDON CHARACTER

"When it comes to real London characters, the palm undoubtedly goes to Winston Churchill, who breathes the spirit of London town and whose appearance in the streets is calculated almost to cause a traffic hold-up."

—Robert Reid speaking in the B.B.C. programme, "Across the Line."

SHORT WAVES

A Plan for Better Listening

By J. A. HAMPEL

WITHOUT doubt the reporting on reception of radio stations is an absorbing and educational hobby which provides almost endless scope for its followers—the "DX-ers". True, anyone can tune in stations from all over the world, but, just like everything else, there is a right and a wrong way to explore the short waves. If you want to merely pick up the B.B.C. occasionally or like to hear the jive the AFRS stations in San Francisco offer once in a while, there is no need to read any further. On the other hand, if prize verifications, coveted station mementos or unusual loggings would be yours, a listening plan is an asset, and really, a necessity.

In other words, no longer should you just sit and knob-twist in the hope of landing a station or two, but plan ahead when to listen and on what waveband. For instance, there is no use listening for stations on the 49 metres band at noon, when you know the 19 metre band is "open", and vice versa. So first of all you should acquaint yourself with the various bands as used by short wave commercials, the amateurs, the morse code stations, and what is equally important, what time the various bands are open.

PLANNED LISTENING

THE first requisite is a reliable source of station information from which can be gleaned the frequencies and times of operation of stations likely to be heard in this country. A good deal of patience can also be counted in with our requirements because sooner or later, if you take your listening seriously, there will be night after night spent on chasing just one station—a fact which will later cause a glow of pride when the verification from that station arrives. These verifications are the most interesting phase of the DX hobby, for each new arrival brings with it the check on your report. Nearly every station will

● Since writing this SWL article for "Australian Radio and Television News," Mr. J. A. Hampel has joined the swelling ranks of transmitting amateurs. The Editor offers congratulations to VK5BJ.

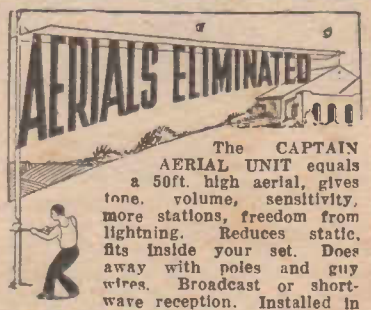
check your report letter by their letter or special card which will give details of the station, sometimes the country and its customs, and so on. The few stations which do not send out verifications are probably quite justified in so doing, and the DX fraternity are liable to misjudge them. A station which runs a power of say 100 kilowatts knows it will have an effective coverage over most parts of the globe, and is therefore not very interested when a letter arrives telling them that the station is "very loud and clear". What they do want to find out though is if the station's signal is not up to the standard intended when it was designed to provide a good service for listeners in the Pacific area.

REGARDING AMATEUR SWL REPORTS

THE same applies to amateurs. I pity any poor newcomer to the hobby who writes off a report to the amateur in the next suburb and tells him his signals are R5 S9! Similarly, don't write to the strong DX stations —they receive most of the reports and consequently get fed up with SWL reports a lot quicker! There are dozens of W's to be heard here every evening, quite regularly, at the same strength. The fact that they are working VK's at the time is all the more reason not to report but write to those heard working other countries. When you tell a W you heard him working a PA over Holland he knows your report is genuine and not possibly compiled on hearing the VK end of a W-VK contact, as I know some chaps do! In reporting, be sincere, genuine. If a station is only S6, tell him so in your letter, for the odds are he won't believe a S9 report anyway when his VK friends don't even give him that rating.

It must be remembered that a station is under no obligation to reply to you; the verification sent is merely an expression of gratitude for your assistance in ascertaining the station's coverage. As with the amateurs, pick a time when your report will be appreciated and not merely another letter to be thrown in the WPB! **Many listeners send return postage for the reply, and they are held in higher regard than the individual who blatantly sends out dozens of reports to amateurs expecting them to pay the postage.** Put yourself in the same position as the other fellow—would you want to spend two or three shillings a week on stamps for SWL's besides the QSL's to stations worked?

(*Continued overleaf*)



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REG COOKE

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I KNOW many chaps who have complained that they have sent out as many as a hundred reports to VK's, and all with a stamp for reply, but have only received one or two replies in some cases. There are doubtless numerous chaps buildnig up a tidy pile of stamps for their own use and pulling down their own reputation at the same time. The writer knows of one case where an amateur received an overseas SWL report (complete with an International Reply Coupon) who tore it up without even reading it, but remembering, of course, to pocket the Coupon for future use. This, to say the least, is a deplorable state of affairs, but serves to show the newcomer not to despair if the first reports don't get results and to bear in mind that for a report to go overseas and the reply to come back takes as much as three or four months. Australian broadcast stations are, on the whole, anxious to receive reception reports as long as they are of a DX nature or provide some information helpful to the station engineers. There are a few low power stations in the country areas that do not value reception reports, because, as they point out, their purpose is to provide a reliable coverage over a restricted area and are therefore not interested in DX reports.

Having become established on the road to DX, it is wise to join a club where you will meet others like yourself in search of the elusive DX and talk over the latest stations heard. Most clubs run competitions as a stimulus to added activity, and the listener soon finds himself deriving twice the pleasure from his hobby. It is a well-known fact that a great number of the short-wave listeners sooner or later graduate to the ranks of the amateurs and to what is the finest hobby of all—amateur radio. With these thoughts in mind, it is hoped that more of the after-dinner "knob-twisters" will take their listening more seriously and derive the pleasure that thousands before them have done.

Oh, yes, one other requirement was forgotten earlier—a "dog-house"—if you're married and do take up DX-ing seriously you'll be in it often!

PART OF THE LANDSCAPE

"I've been in England almost three years now. That's long enough to have acquired a favourite soccer team, to have learned to say cheer-ho instead of ta-ta, and long enough to recognise a *queue* as part of the English scenery—as much part of it as the oak tree, the raincoat or the umbrella."

—Jon Cleary, an Australian novelist, speaking in the B.B.C. programme, "Calling Australia" on the "Man in a Queue."

TV has America by the nose, as well as by the eyes and ears.

By ERIC IRVIN

"We in Australia are lagging behind the rest of the world as far as TV is concerned. We should congratulate ourselves."

TV has turned America topsy-turvy. People who do not own sets look with envy on those who do. Set owners smile in smug superiority on those without sets, and, if reports are to be believed, are spending more and more of the leisure time before TV screens, and less and less with films and radio.

The craze for this new form of entertainment has reached such a peak in New York that when, not long ago, Sir Cedric Hardwicke made the public pronouncement that it would be better to be killed by an atom bomb than to sit indoors and let the mind be slowly ruined, there were shocked protests. He was labelled Jeremiah, stick-in-the mud, and Mother Grundy.

Other equally gloomy prophets have said it now seems surer than ever that, with motor cars and TV, atrophy of the lower limbs will characterise the race of the future.

It cannot be denied that TV has caught the popular fancy in America, and that people there are staying at home now more than they ever did before. Figures quoted by Alastair Cooke in a broadcast to the B.B.C. leave no doubt about this.

Alastair Cooke predicted that by the end of this year there would be 3,000,000 TV sets in use in America. Other figures quoted by him revealed that last year there were 250,000 TV sets in use, serviced by 16 transmitting stations. Already this year there are over 64 transmitting stations in operation.

"The TV people have made their calculations and laid their plans, and have simply guaranteed that wherever the next political conventions are held, they will be seen on any TV set across the 3000 miles of America. In other words, by 1952 they are sure the network of stations will reach from coast to coast, and that 20,000,000 families will own a set," he said.

A PREDICTION was also made by the president of a big radio company that in five years' time there there would be little, if any, blind radio. The Americans, with their passion for polls, then asked the listening public: "Would you rather listen to your favorite radio programme, or look at any TV programme?" The answer, solidly in favor of TV, was again taken to spell the death of radio.

But not everyone, naturally, subscribes to these gloomy prophecies. The radioites answer by quoting the old- radio/gramophone argument. When commercial broadcasting first began, the question asked everywhere was: "Will the radio kill the gramophone business?"

But in the ranks of the highly-paid radio actors, who have reaped such a rich harvest over the last 20 years, there is both doubt and fear. That beautiful, disembodied voice which enabled the listener to picture the perfect hero to himself, is revealed by TV as belonging to a short, unprepossessing body. And that body, enslaved so long by mike technique, has lost the art of movement—particularly stage movement. What now? the radio actors are asking unhappily.

Nor is the change likely to affect only the actors. Artists of all kinds are betrayed by TV's revealing, inquisitive eye. Not now the ugly grimace while playing, the twisted mouth and quivering chin while singing, the deadpan motionless face while talking. Genius, and near-genius, must now cultivate something more if it is to succeed, and that something is a quality the films have taught audiences throughout the world to expect—glamor!

But the American public is taking it all gamely. It sits through, "You, too, can have a body like mine" commercials; news, cooking and fashion sessions; plays of all kinds; ballet, opera, vaudeville; games and boxing matches—and goes on asking for more.

AT present, TV has an open sesame to almost every public event in America. This may not always be so. It is not now the case in England, for instance. In that country, boxing matches, Test matches, important race meetings and ballet have closed their doors to TV, because of the fear that attendances will drop if people can view these things in the comfort of their homes.

It is still too early to say who is right in the TV versus radio argument. Present conditions indicate that the majority of people are taken with the novelty of seeing as well as hearing (a free picture show in your home every night). How long the novelty aspect of TV will last is anybody's guess. Ultimately, the real question must be: "What can TV offer to hold its audiences, once novelty is gone?"

Plays and other theatrical performances, games, forums and debates, certain outdoor events, will always draw. But music gains nothing from TV. There is little, if anything, to be gained by watching musicians. This fact is subtly emphasised by a cartoon in "The New Yorker," which shows a man seated before his TV set at home, listening to a symphony. The caption reads: "It's even better if you shut your eyes!"

Meantime, America, England and France continue to report increased TV sales and activity as each month goes by, while the radio and film people pooh-hooh TV as a passing craze, damn it as a nuisance, or see it in new possibilities for the technical and artistic talents.

We should congratulate ourselves on our good luck. By the time Australia has TV in full force, a lot of to-day's TV problems in America and elsewhere will have been solved, and we will be able to take over without a tremor the advantages which other countries will have bought with bitter experience.

THIS MALADY

An unnamed pestilence, carried among humans by a germ called "Obsessionata Radioticus" rages unchecked. So far, it has affected about 100,000 people and smites down all ages and both sexes with equal intensity. The attack is presaged by a shrill "dit dit" sound which strikes terror to the few that escape, but to which the stricken ones listen with glee. First symptoms are the building of all manner of strange instruments, with which they communicate with fellow incurables at distant points, casting aside their given names for odd letters and numerals. Eventually the victim is bereft of sound mental and physical health—and money. Demise is not the result of the malady — that usually comes about by starvation or homicide.

THE STRANGER

"A sad little story is told about a journalist who had one small daughter. During the week he worked every night and slept every day. When the little girl grew old enough to talk she said: 'Mummy—who's that man who comes here at weekends?'"

—John Bond, a journalist, speaking in the B.B.C. programme, "Meet the Commonwealth."

INVENTORS FORWARD!

Are you troubled with flies? If so you would welcome the invention which B.B.C. reporter, Thomas Cadett, saw at an exhibition of inventions in Paris, and described in "Radio News Reel." The inventions on show ranged from large and expensive things that the average citizen could not possibly afford to simple gadgets that would be appreciated and useful in many homes. Such a device was a fly catcher. It hangs from the ceiling and has a coiled metal stem ending in a metal bowl that looks rather like a lamp. the idea is that flies land on the stem and get a severe electric shock. This makes them faint and they fall into the bowl itself. And then there is no hope for them, for in the bowl is a red hot coil, which first kills and then cremates the fly. Cadett was unable to test its efficiency because there were no flies round the stand at the time. Whether there were none in Paris, which seems unlikely, or whether all those in the vicinity had been killed by the gadget's efficiency was not stated.

And then there was the anti-bag snatching invention, which was something of a two edged weapon. This was a container of gas which, placed inside the satchel in which a bank messenger may be carrying a large quantity of money, is released if and when the bag is snatched. The gas immediately affects the criminal, who falls to the ground unconscious and lies there till the police arrive. Should the messenger be unlucky enough to let out the gas himself by mistake, it is presumably he who lies unconscious until the criminal arrives to steal his satchel.

B.B.C. BULL

Dudley Davenport, played by Maurice Denham, is one of the most popular of the many characters appearing in the B.B.C. Variety show "Much-Binding-in-the-Marsh." And Dudley has recently been paid a very high compliment by Mr. Roger Denham, Maurice's younger brother, who owns the Denshurst herd of pedigree Jersey cattle at Sevenoaks, in Kent. The latest and best of these, a small bull, has just been registered in the Jersey pedigree book as Denshurst Dudley Davenport. There is little likelihood that the bovine Dudley will ever broadcast but it is to be hoped that he may one day become as celebrated in his own particular line of country as his namesake is on the air.

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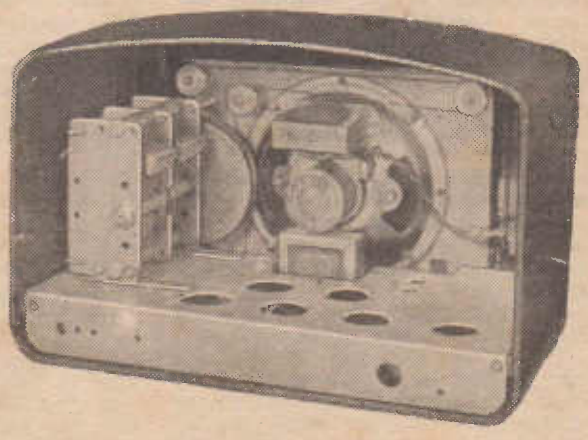

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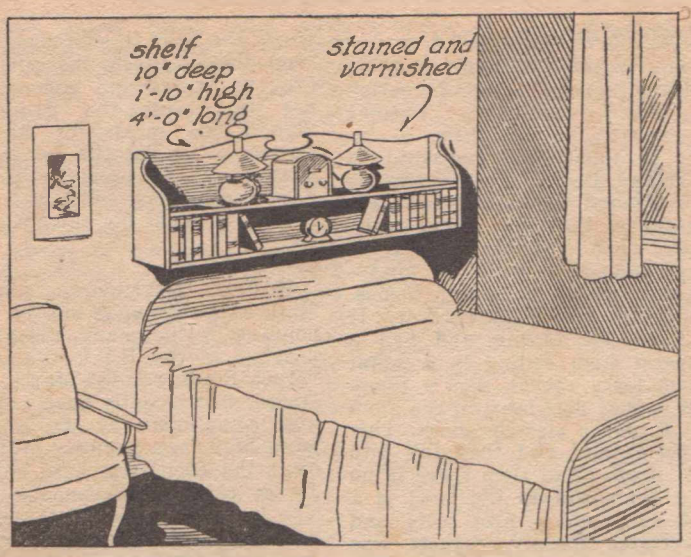


HANDY BED SHELF

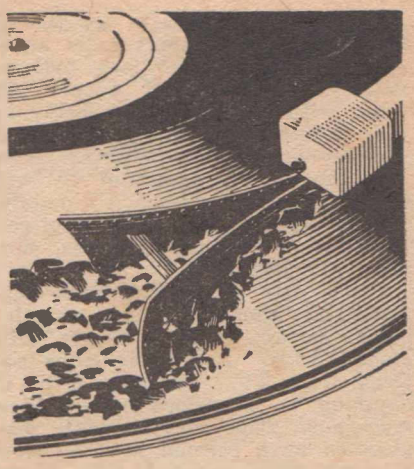
You can stack your favourite books or magazines, within easy reach, on this colonial bed shelf, directly above the head of the bed. There is room for a cosy lamp and a small radio set, alarm clock, and other odds and ends. Make the shelf case from pine, or from some hardwood which you can stain and finish to match the bedstead. It should be about 4-ft long, 10-in. deep and from 22 to 24-in. high. Two wide boards form the back, the upper edge of the top board being sawn out in a scroll as shown. The bottom and shelf are attached to the upright end boards with screws, with two screws fastened in each shelf through the back. The distance between bottom and shelf is about 10-in. Fasten the shelf to the wall with long screws, or hang it with stout picture cord or wire to the ceiling moulding.

PICTURES UNDER WATER

In the B.B.C's "Radio Newsreel" John Collins, of the Admiralty Research Laboratory, told listeners about an interesting new development in under-water camera technique. The idea was put up in 1945 when the Admiralty wanted a method of recording the exact conditions and situation of under-water wreckage before starting salvage operations. Accurate information about the wreckage is needed, its appearance, the type of sea bed in which it lies, its angle, the extent of the damage and so on, but when divers are sent down they usually stir up so much mud that little can be clearly seen.

Collins was a member of the team that worked on this problem. They made experiments in submarine photography, working under the direction of a scientist and with the help of a cameraman. After two years of research a small team of Admiralty divers then carried out tests in the Mediterranean with a cine camera that is usable under water. It is easily operated; a button is pressed with one hand and the focus adjusted with the other. The new diving equipment, a development of the frogman type of apparatus used during the war, allows men to stay under water for as much as three-quarters of an hour, with their own air supply on their backs and frogman attachments on their feet. In their early trials they photographed fish, wreckage and sunken ships and, as an example of high-speed work, photographed a torpedo leaving the torpedo tube. There is a haze on the water in the daytime and the best results were obtained at night when they worked in the glare of floodlights lowered from the surface. It was good fun swimming up to fish and photographing them before they turned away. These moving pictures of life under the sea were so informative and picturesque that they have been handed to a film unit for incorporation into a documentary feature.

This new under-water technique is a big step forward and means that ships will be salvaged more quickly and more cheaply. Absolutely accurate assessment of under-water damage to ships can be made and if the new technique is used for the study of fish it may quite possibly have an appreciable effect on the world's fishing industry.



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Australian Record Co. Pty. Ltd., 29 Bligh St., Sydney. BW3339.

OPERATION PORTABLE

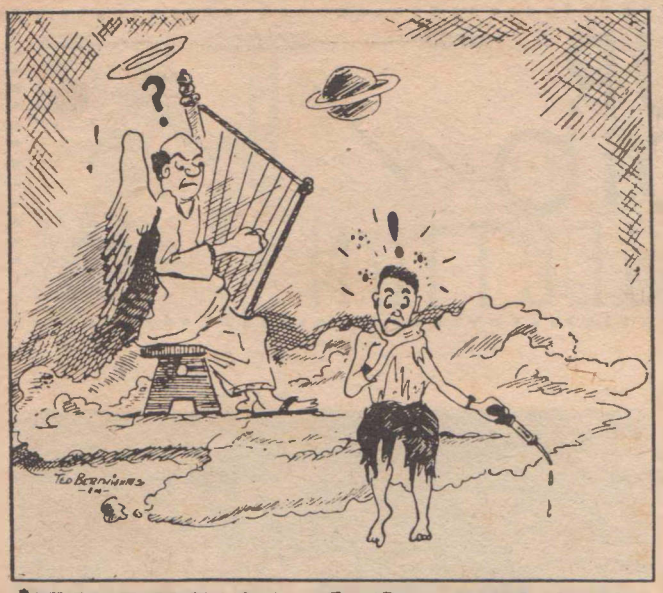
A portable week-end was enjoyed by VK's 2AMV, 2WH and VK2NS, who established themselves on Mount Panorama, near Bathurst, N.S.W. They landed quite some DX, working on 20 m C.W., ZL3IF, 2HC, 2FA, 2LB, 1MB, OH4NF, G6CJ, G6OY, G6RH, W3BKH, W3LMA, VS6AX, and VSIDZ. The transmitter ran 18 watts, with a 6V6 crystal oscillator and 807 power amplifier. Folded dipole antennae were used for 20 and 40 metres. VK2WH, who has become an ardent six metre enthusiast, spent a lot of time on that band, using a converted SCR522 and 3 element wide-spanned beam. He worked five VK5's, VK2LY and VK2WJ. Receiver line-up was an AR7 and AMR300, with 3 stage converter for six. A good time was had by those participating. Outdoor radio "expeditions" of this kind have a value not immediately apparent, but realised by those who undertake them; good, training for emergency work—one of amateur radio's best publicity agents. The "shots" are by courtesy of Trevor Evans, VK2NS, of Bathurst, N.S.W.

● The happy group of Portable-Trekkers with the equipment at Mount Panorama, N.S.W. They are: (Rear) David, the Cook; (Front) VK's 2WH (Hugh Stitt), 2NS (Trevor Evans) and 2AMV (John Meagher).

Inside the shack, the team get down to breakfast.

CALL BOOK EDITION, "BREAK-IN"

From N.Z.A.R.T. we have received the January, 1950, Call Book edition of their official publication. It makes the Australian P.M.G's two-and-sixpenny "List of Amateur Wireless Stations" look poverty-stricken by comparison. Not only is it a very complete and right up-to-date directory of New Zealand, Fijian and Tongan amateurs, but the 80 pages are a mine of information relative to amateur radio. This ZL Call Book is a good example of what can be done under private business incentive—it is made possible by trader advertising support—instead of a complacent effort with reliance on public funds. N.Z.A.R.T. keep this Call Book up-to-date by printing each month through the year the latest amendments to the ZL list—and the P. and T. Department doesn't adopt a pompous attitude about "Crown copyright." The book includes Frequency Allocations, Operating Codes, DXCC Countries' List, Countries' Prefixes, Radio Emergency Corps' Procedures and Station Callsigns, the Q Code, Awards and Contests, and WWV Schedules. The list of ZL licences now totals 1800.



"LET ME SEE NOW, — THERE I WAS CHECKING BATTERIES, — I LIFT UP MY BUTT — AND THEN **BOOM!** AND HERE I AM."

By Courtesy of RADIO OFFICERS' NEWS. U.S.A.

TOO FAR

The speed of light and radio waves being of similar order, reflection on the latest astronomical happening gives some idea of the stupendous distance involved. In a portion of the "milky way" where no star was charted, a "Nova" or exploding star has been under observation at leading observatories. Estimated distance away of this colossal explosion is 8000 light-years. That is to say, the star "blew up" before Stonehenge was built in prehistoric Britain—and the light impulses are just reaching earth. At 186,000 miles per second —that is a fair distance—at least a bit too far to work radio "DX"!

* * *

"KEYOP". Britain's progressive RSGB held a very successful amateur radio exhibition; the third of its kind. It was opened by Lord Sandhurst, who stressed the tendency for newcomers to neglect the key for the microphone. How many post-war licensees could still send and receive at 12 words per minute? He advocated that licensees should pass a P.M.G. morse code test *once every year* for the first five years after being licensed. In the event of a further National emergency radio amateurs might become "the saviours of mankind." There's a lot in what the worthy peer of the realm says.

That tubular 300 ohm ribbon introduced in recent months by American manufacturers of RF cables has a counter part in the Sterling area. Britain's R.S.G.B. Bulletin now carries an advertisement for a new line of Telcon 300 ohm tubular feedline, No. K35. This is claimed to have stabilised electrical characteristics in wet weather, which is certainly more than can be said for the ribbon material. Price isn't mentioned in the Ad., but our guess is that the tubular stuff will 'catch on' quickly.

* * *

About the most attractive design for an all-dry cell powered amateur transmitting/receiving station is a natty little 160 and 80 metre job by G2MI. It is featured in R.S.G.B. Bulletin for December, 1949. The receiver audio channel is utilised as the speech amplifier for a Heising modulator for phone, and the receiver set-up is a "straight," tuned RF arrangement. We still consider that there is a lot of room in this amateur world for the "straight" receiver, especially for portable equipment.

* * *

The Pakistan government has again issued amateur licenses to qualified persons. Active there is AP2J; who is Wing Commander Kenneth Jowers, R.A.F. Pre-1939 amateurs may remember him as the short wave editor of "Television and Short Wave World," a very popular British magazine of those halycon days.

"VHF". The 580 megacycle allocation is receiving plenty of attention from enthusiasts, headed in Victoria by VK3ANW, who has worked over an elevated 90 mile path at that frequency. In Sydney and round about, there are several stations using the allocation, and an attempt is being made by VK2RU, Gosford, 50 miles to the North, to tie up with VK2XX and others slightly south of Sydney. The helical beam has come in for application and the investigators have found that with such arrays, all the helices need to 'corkscrew' in the same direction, otherwise receivers are greeted by silence.

* * *

Welcome back to Australian amateur radio to Elgar Treharne, brother of Ross (VK5IQ) and son of Fred (VK2BM). Elgar has been on Commonwealth business in G-land for two years, and has maintained contact with Australia as G3CSJ, and latterly from G3EIL. In pre-war days his Australian callsign was VK2AFQ.

* * *

VK2's "out West" can probably explain the meaning of the increasingly popular saying, about one "Sugar Apple" . . . "What did Wal get at Walgett?"

* * *

Bill Brooks (VK2ACT), depicted in our January issue, denies the impeachment by VK2SA that he "feeds his pet pig on 813's and egg insulators"!

A Fine Hotel

FACING A PARK

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

THE WENTWORTH

in Sydney

'Phone BW 1361 (10 lines)

C. D. Maclurcan. Managing Director

"Hotbit". What an unwitting but potent force for the spreading of news by grapevine can be our amateur 'phones. Have heard so many discussing modern electric solder irons that I have lost count. Head of a business house distributing those natty little "six second" gifts to radio-mankind, said that for some undefined reason, his stock had almost cleared out. I could have told him why—the power of the spoken word—despite the fact that amateurs don't "advertise". Any reference to makers' goods is of necessity of an oblique nature. He who advertises his goods in the amateur radio pages of appropriate magazines—such as this—is a wise man—if he has the right goods.

"VK-OP". If anything is calculated to 'get a DX man's goat,' it is those misguided individuals who *will* zero on to a station and keep on calling him long after he has hooked up with somebody else. There seems to be a dog-in-the-manger attitude about it, but of late the impression conveyed is a sort of "If *I* can't have it, then I'll see that *you* can't."

* * *

How Many Turns To Hit Forty?

Technical inquiries often ask to give exact coil specifications to hit a certain frequency with a variable condenser (size usually unspecified), from which half the plates have been removed. No details as to the coupling method or the internal capacity of the associated tube or tubes are given. We usually specify medium-high C because most amateurs find it easier to add capacity than to eliminate turns. Some efficiency is sacrificed because low C tank circuits allow the use of higher impedance plate loads.

Here is a method of finding how many turns are necessary to just hit the desired frequency with the condenser plates nearly out, which is desirable. Build the amplifier stage and make a test tank coil about ten to twenty per cent. larger than you think is about right. Then use a shorting clip to progressively short-out some turns on the tank until resonance is found with just your particular amount of C in the circuit. When the correct number of turns is determined, you can cut off the excess turns and then permanently mount the tank coil.

If the newcomer will appreciate that the number of turns on a forty metre 3-inch tank coil can vary as much as 150 per cent., depending on the associated capacities, he will see why it is so hard for anyone to give exact dimensions of the coils for his transmitter. Therefore, cut and try and use all the turns you can. Ordinarily Bakelite should be avoided for coil forms. The use of low-loss Ceramic or polystyrene materials pays big dividends in increased output and efficiency.

Use good tank condensers and keep them as small as possible. 25 to 50 micromikes is ample capacity for everything except possibly 80 metres, and not more than 100 micromikes will be necessary for that. Cheap midget condensers in tank circuits are to be avoided. If you must use them, it is advisable to solder a flexible connection directly to the rotor shaft and thus avoid the troubles resulting from poor bearing contact.

"Ugh". From a self-styled 'second Op,' gabbling about nothing in particular into a flinching microphone . . . "I'm gettin' outta form so far as this 'ere ear-bashin' goes." Not a bit of it OM, the form is remarkable!!

* * *

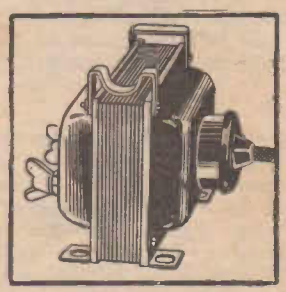
"SHRAP". Quoth a hopeful apologist for a slightly wuzzy phone "it's not always a case of the wick being full up, sometimes splatter is due to UNCONSCIOUSLY making an antenna adjustment. Unconscious is the word!

HOT in 6 seconds
solders biggest jobs . . .

The biggest job, the toughest job is quick and simple with this amazing new Scope Soldering Iron. Lloyd G. Hosking & Co.—Radio Manufacturers and Agents — write: "We have now discarded all other irons and use the Scope exclusively, even on work previously done with a 150 watt iron." This company adds that Scope gives instant heating nothing short of perfection and satisfaction superior to anything purchased in the past 20 years. The Scope operates from 2.5/6.3 volts, A.C. or D.C. To use, the switch ring is merely pressed forward with a light thumb pressure and in 6 seconds is ready for continuous use. Try Scope for yourself! It's fully guaranteed, and the trade price is 34/6 plus tax.

BIG JOBS

The Scope soldering iron is ideally suited for use in factories, laboratories and for work normally met by servicemen. It is 10" long and weighs only 3¼ ozs. It is supplied with or without the transformer and is also equipped with a special holding bracket for the iron when it is not in use.



The transformer illustrated is designed to supply 4.3 volts from A.C. mains for the Scope soldering iron. It is available at extra cost on request and may be used for continuous operation. Trade price, 24/6 plus tax.

LITTLE JOBS

A smaller edition of the iron illustrated is available for precision work. The specifications are exactly the same, except that the iron is smaller, shorter and lighter. It is extremely suitable for delicate instrument work.

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S.2A.14

THE YOUNG FELLOW

Seen through the eyes of one of the younger generation of amateurs, the atmosphere surrounding our hobby takes on an aura of commonsense and candid repartee. Our YF has plenty of technical "gen" to offer also:—

TO open fire this month, some good news. A couple of pirates finally stuck their necks out too far, and have been "pinpointed" beyond doubt. By the time this goes to Press, it is confidently predicted that official action will have taken place against them. To say more at this juncture might prejudice such action, therefore I confine my remarks to the foregoing. It is, however, significant that the information had to be supplied by a Sydney Amateur to the authorities.

* * *

To take up the cudgels again re this business of "splatter". Splatter is sometimes held to be an effect caused by extreme proximity of the receiving station to the relevant transmitter. This is only partly true. In actual fact, the symptoms of splatter can often be heard on certain Sydney broadcast stations (not, we hasten to add, the A.B.C.), who tend to "flog" their peak-limiter equipment overmuch, thus creating a nasty string of odd-order audio harmonics which cause the very thing the peak-limiter was installed against! But the B/C people are allowed a 10-kc bandwidth, considerably more than we should use in Ham fone work. Six to seven Kc. is tons, absolutely tons, for good, readable fone under any and all conditions. As a parting shot on this subject, I entered upon a discussion on the air recently, which showed all the signs of becoming an argument (had I so allowed it!), and the character in question is a 20-fone merchant who claims immunity against splatter because of the inclusion of a three-section high-level filter. Frankly, I've never seen any rig with such a filter, and more frankly, I don't believe him. Three sections at low-level—YES! But three sections at high-level, with air-core inductors, as they would surely have to be—well, don't tax our credulity too far, O.M., just to get clear of an argument.

* * *

Once again to confuse the critics, a 40-meter identity recently suffered from a bad case of collapsed antenna. At least, we gather that one end of it was lying on the deck. But did this stop the signal from being S-9 at 150 miles range? Correct—it didn't! (Dear Heavens, Jeeves, does this mean we climbed that 80-foot tree for nothing?).

* * *

As near as I can make it, the gain of a "hot" pentode like the 6AK5 or the EF50 is some 30 to 40 db. in a pre-selector circuit using tuned plate and tuned grid circuits of good efficiency. Altering the gain by inserting a pot. in the cathode sometimes appears to detune the signal slightly (Miller effect?)—and screen-potential control might be a shade more satisfactory. Did you know that the recommended method of gain control with the EF50 is negative suppressor potential?

* * *

I wish someone would put a really satisfactory HAM LOG BOOK out. There seems to be rather a lot of superfluous detail in the current commercial version, with things like "best DX", "best miles-per-watt" and similar trivia, which are, to my mind, a dead loss. Harsh words, but I maintain it could be simpler. What we need is more space for remarks, and a better time-date-group column. F'rinstance: if we QSO some guy at 5.15 p.m. on March the ninth, 1950, there should be a column wide enough to write in "090715/z./3/50" —which ties it all up in a neat little bundle and leaves no question as to the time, because GMT is standardised.

WITH winter coming on, you can keep heavy-duty batteries up to the mark by purchasing a six-disc, push-pull selenium rectifier which will handle 24 AMPS, for a round fiver. The associated transformer must, of course, have a centre-tapped secondary, and voltage-stepping should be done on the primary side. The main thing is to use wire on the secondary which will deliver a 20-odd ampere load without showing undue heating or poor regulation. But it's worthwhile having a bash, as they used to say in "I.T.M.A.", because there is real need for something intermediate between the silly little trickle-charger units and the "battery-boilers" which thump about 70 amps. into a flat battery and bring it up to the "charged" state in half-an-hour or so. A man wants to be able to charge a battery from dead-flat overnight, or in perhaps four hours IF IMPERATIVE. Take my tip and investigate the matter from the transformer angle—the rectifier is a commercial job with overall dimensions of about 9-ins. by 9-ins. by 6-ins., and has it all over the Tungar, because it does not create "hash".

* * *

I note that 20 has been free from that imbecile with the unidentified, parasitic-ridden carrier, located uncomfortably close to myself, and thus coming in for a very solid share of censure in this column. It's as good as a holiday with double pay, when some of these guys stay off the air. Fair-dinkum, it is! Guess he has had the perspicacity to read my former diatribe, or maybe he finally got across a section of his ghastly haywire.

* * *

HIATUS VALDE DEFLENDUS (relax, son, it's only Latin), but there are still far too many of us without monitoring equipment for CW and fone. Nor mortal Ham should NEED to be told, or indeed have the gall to argue about any shortcomings in QRI or fone quality. Let's do it NOW—if we are honest with ourselves, we will admit that NO guy can be as busy as we pretend to be!

I have taken it upon myself to check the number of persons who listen on their own frequency between tests, and immediately after calling. There are modifying factors, of course, such as the tendency to listen between, say, 14,300 and 14,200 after calling CQ-W. But, even weighing such factors, the upshot of The Young Fellow's "Gallup Poll" is this: I reckon that considerably less than one half of all the VK's I heard during the check-up do listen on their own frequnecy in the prescribed manner. Indeed, I have "buzzed" a few of them just on a hunch, and sure enough, big chunks of nuffin' in reply.

* * *

There are signs that CW might be staging some sort of quiet revival on the popular bands. It is really refreshing to find someone who can give and take an honest 20-and-up, with all the abbrev's thrown in. Try it sometimes, even if CW is not your "forte"—you may even get to like it. And don't tell us you haven't a keying jack in the rig, or, BROTHER, you're name's mud!

* * *

WHILE CW has been resurgent, there has been a drought of female charm on the air. There used to be one or two very nice voices, owned by obviously gracious and intelligent ladies, heard on 20 and 40 a while back. I have often thought that a Ham with a radio-conscious YL or XYL is indeed the possessor of a pearl beyond price! How many of our clan have had to cope with the incessant anti-Ham complex of the womenfolk . . . and how big a fool can it make a man look when other Hams visit his shack, only to receive thinly-camouflaged hostility instead of hospitality! It has given me some satisfaction in the past to tell some of these unreasonable battle-axes a few truths, not the least of which is the fact that their menfolk could quite easily be out "doing their dough" on the dogs, horses, grog—or other dames! It usually makes 'em think a bit, too.

* * *

In extension of the previous "par.", it is as well to remember Item Five of the Amateur's Code—and I quote: "The Amateur is balanced. . . . Radio is his hobby. He never allows it to interfere with any of the duties he owes to his Home, his Job, his School or his Community." Unquote. As I see it, the ideal has a habit of lying somewhere between two extremes. On the one hand, we have the woman who is now reduced to the position of being, in effect, a Wireless Widow, by being rated second to an inanimate collection of equipment; on the other hand, we have the Termagant Shrew Type, who would, if allowed, deprive the Ham of his hobby altogether (to be replaced by Heavan knows what!). Neither of these domestic set-ups should be permitted to develop. Fair is fair. Avoid dropping solder on the carpets; don't electrocute the kids; try to clean up after your current building phase if you are doing the building in a part of the home not exclusively dedicated to your own pursuits; see if you can get to meals within five minutes, at most, of being called. And, Ladies, try to co-operate on your part, because there are (and, believe me, I know!) many worse hobbies, from YOUR point of view, than Radio.

* * *

How I ever got talking in this philosophical strain, beats me, but I s'pose it does prove the presence of some degree of mental activity over and above the Colour Code, or the socket connections of a 6AK5. It is undoubtedly true that some of us do get in a mental rut, to the point where we are dull company to all but other radiomen. It might be as well to try the cap for size—if it falls down over your eyes, you are discharged honourably! But if it's a neat fit, beware . . .

* * *

"Sinhue". Was amused to hear one fellow on forty 'phone telling another how to get away from carbon mike quality when using a Number Eleven Set. Which is a laudable suggestion; but what tickled me was the fact that he who was advised what to do about it happens to be a prominent engineer of the Australian National Radio Organisation we all wot of. That concern turned out "Elevens" like shelling peas during the big Stouch, and the engineer concerned happened to be in that picture. . . on production and test.

● W9KXK evidently believes in good luck as an aid to DX as shown by the jet black friend atop the National receiver.

Technical Triumph

Reliable under Every Test! . . .

QUALITY TRANSFORMERS

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The Beginner v. The Newcomer

The rapid growth of amateur radio has brought into the fold two distinct classes of people, beginners and newcomers. Too often the newcomer is called a beginner, whereas it is a fact that among the newcomers are may of the old-timers of the pioneer days in radio. Thus a distinction should be made between the two.

A few weeks ago our station was visited by a man who had not listened to a radio signal in fourteen years. He was amazed to learn of the rapid progress which has been made by the amateur and he decided then and there to build a transmitter and receiver so that he could once more get back on the air. In those fourteen years which have elapsed he had not forgotten the Morse code . . . can copy almost everything that comes over the air.

Before constructing his transmitter he asked for our candid opinion as to what he should build. We advised him to start right . . . with crystal control. Even a single-valve crystal control transmitter, properly adjusted and operated, will avoid trouble with mis-adjustment of VFO's and out-of-band possibilities. After re-breaking into the hobby with enough experience of crystal operation, introduction to VFO control can come later.

Let us draw a distinct line between the two classes of people who are flocking into amateur radio. Let us call the old-timer, who is again coming back into the ranks a NEWCOMER. And let us refer to the inexperienced army as BEGINNERS.

If every newcomer and beginner would first consult his local radio club or make the acquaintance of several good amateurs in his community, the air will not be replete with wrong-sounding signals. All of us, newcomers, beginners and old-timers alike will get more out of amateur radio.

Amateur readers of this rather particular breed of publication, will notice that, except under compulsion, "R. and TV. N." does NOT use the term "Ham". Frankly, we just don't like the sound of it. Too often it is used in contempt, and as G2UK's "Short Wave News" points out, there were instances in the late war of VIP's alluding to one as being "another of those crazy hams". In the theatrical profession, to say that a man is a "ham actor" is to brand him as inexperienced, and merely an awkward amateur at the business instead of a professional. In amateur radio, of course, the term doesn't imply the same kind of thing, but even so, we still don't like it. Because we don't use it doesn't mean to say that others won't continue to do so, nevertheless.

"Kaptah". How DO you like being addressed at very frequent intervals as "Fella"? It is not particularly noticeable once in a blue moon, but when every sentence is copiously interlarded with "Fellas", the utterance more than grates on the nerves a bit . . . it starts a violent shudder along the spine. The "Chaps" form of address is not calculated to send one into raptures, either. Yes, yes, we know we may be a bit hypercritical, but we know we aren't alone by a long chalk.

* * *

"Merit". Ever get up in the early Sunday morn in quest of 'phone DX on twenty, and found a virtually dead band. Excepting, of course, for Leo Meyers, VK2KS, over at Yagoona. Leo can be heard working Africans with remarkable ease, conjuring excellent reports both ways, despite seemingly poor conditions. In the case of VK2KS, the rotary adjunct to DX-snaring "goes places" with a vengeance.

* * *

"D.B.K." That's a handy little one-way beam described in issues of N.Z.A.R.T.'s "Break-In" by ZL3MH, and it does work, as he claims. To satisfy my own curiosity, I made up a scaled down model around 400 mc/s, using an 8025 oscillator. The forward gain is fully equal to a 4 element parasitic W.S. array. The arrangement could be slung on off-centre spreaders for "flop-overs" reversal, but that is not so convenient as it sounds. The G8PO, of course, in its variations, achieves similar result but with convenience of reversal control right at the operating position. ZL3MH's array is an excellent scheme and is well worth some forethought when planning a rotary array.

* * *

Perhaps you don't use quartz crystals in these "enlightened" VFO days? Maybe you do, and if you have any ex-disposals L.F. specimens, you might at some time or other rub them down to 80. If you want to reduce L.F. blanks quickly, try automobile valve grinding paste. You can take a 1.5 mc/s crystal to 3.5 mc/s in 20 minutes.

* * *

Stuck for a method of matching a 300 ohm feedline to the driven element of a close-spaced YAGI type array—impedance of which will be around 15 ohms?

What's wrong with a quarter-wave length of 75 ohm co-axial cable?

Physical length of 11 feet 6 inches will do the trick.

"Molnya". Phonetics with a meaning? What about that lad I heard on twenty 'phone describing himself —in good English—as UA "one beautiful Europe"? Hi!

* * *

"Aziru". What word is the most overdone these times in the amateur 'phone vocabulary? Not, as you might suppose—"Roger"—but that ever popping up foil, "INCIDENTALLY". Please, will someone change it to "By the way"—or even the handy Russian "NITCHEVO".

* * *

"The Fox". One man's meat is another's poison, 'tis said. Beam affairs as for one man, don't always work out in another's location, even though locale be just along the way, and not a decade of miles separated. Remarkable the people who achieve nothing but disappointment with Triplex and G8PO variations, yet others, in close proximity, have no complaints. Heard one station, obviously nettled at failure as a result of half-baked effort, criticise an outstandingly successful user with the inference that "the power some people use is not beyond suspicion." Thus the effect of the green-eyed monster!

R.C.S.

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AMATEUR Chatter

South Australian News

By "WOOMERA"

VK5RG. Shortly leaving for VK2, but still taking up his portion of 20 with a very nice signal on phone. Hope the new QTH is OK for DX, Rob, and that we hear you on soon.

5LJ. Another of the fraternity who is going interstate to VK3 at some stage. When ARE you going, Reg ? We've been hearing rumours for a long time. The 50Mc gang will lose a staunch supporter when he does finally make the move.

5QP. Ken is still putting out a nice signal there. Maybe it's that plumber's delight, OM. Hope to see you around and about again.

5JS. Bumped into Jack a short time ago with a pile of QSL's that a thriving racehorse couldn't clear, but the "Count" was still bemoaning the fact that there were no new countries amongst the pile. Bad luck, Jack; they tell me you've only worked 167 odd countries, too.

5WW. A real OT not heard a great deal of these days, except for brief moments on 40, was heard on 20 one night with a definitely "un-number 19" working Don, 5DX. The latter has just had three weeks' annual leave, and apparently used the ether to advantage during that time. They tell me the W's don't like that soft keying of yours, Don.

5YQ. Heard Ted using FM on 20. Sounded FB OM, and put some of the AM signals to shame. By the way, what's the secret of working those YS's? Ted used to be VS2BF, so if you worked him then, I'm sure he would like to renew any old acquaintances.

5RX. Meet VK5's QSL man who leads a very busy life what with card distribution, DX and fishing. From all accounts the DX produces the best results, George. RX sports more certificates than a prize poodle from DXCC to RCC.

5BY. Known throughout the country for his copperplate sending, Doug. is an asset to the CW end of the band. Believe you are still mounting up those countries OB with the folded dipoles and the Mark 3.

5LC, a keen follower of 50 mc, has just made WAS on that band, with a QSO with 5JD/Port at Alice Springs. Congrats., Les; now, how about 144 Mc?

5BZ. Sorry to hear Cec hasn't been in the best of health lately. Sincerely hope that you are back on the right road now, OM, and can maintain that sked with G5BZ. Haven't yet sighted that new auto of yours, but they tell me it's real.

● This is VS6BO at the operating position of his QRP station. The receiver is one of those "super-dooper" AR88's.

5HI. If you want a ragchew any time of the day stay around on 20 for awhile, and if you don't hear John, drop down to 10 and you'll be sure to find him. The signal sounds fine, OM, and I must admit you have saved me from pulling the big switch on one or two occasions.

5MS. That S9 signal that popped up during the BERU contest was definitely not the man next door but the voice of Mt. Gambier making use of the short skip. Hope the score was all you desired, OM.

5HN. A stickler for 40, has a signal that leaves little to be desired. How about trying 20 just once, Harry. It really isn't as bad as it is painted.

5GF. The staunchest supporter of the UHFS in the State, Max sticks exclusively to 50 and 144 mc, but believe he is doing something on 576. Glad to hear it, Max.

Had a visit from 2OT (Broken Hill) lately, and the 6-metre gang may like to know that Max has a signal on that band, rotary beam and all.

Heard a nice signal from 5KE on 28mc fone one day working ZL1RI. From all accounts the QTH at Kilkenny produces results, OM. Did you know a KX6 was calling you just down the band? Wouldn't it!

'Twas rather a pleasant surprise to hear the great Bailey, 5NW, pushing a signal through to town during the short skip on 10 one afternoon. It's so long since we've heard you, Bob, that I was beginning to think you'd gone QRT. How about coming down on 20 or 40, just to let the town chaps hear that signal? ZL2ABA certainly did have a nice spot of quality, we agree.

(*Continued overleaf*)

Another of the country gang rarely heard was 5TL, Ceduna, who peaked up to S9 on 14mcs about 8 one night. We gave you a call, OM, but you know that short skip . . . . it just went.

While down south at Victor Harbour I called in on 5KM, but Pat was a little too busy to attend to other than legitimate customers, so I spent my time viewing the QSL's on the shop wall. They make a fine show, OM. However, to compensate for not having a chat, we heard you on 40 working a few of the locals, Pat, and, except for a little QSB and QRM which one does seem to get on 40, the signal was quite nice.

By the way, Luke (5LL), is Adelaide really THAT good? Heard the description you gave of the panorama from the Adelaide oval, and, on the level, OM, it sounded like Paradise. Anyrate, 2APP like it, so that's the main thing.

With some of the fists around these days, it was a pleasure to hear 5MR calling KL7SQ on 7ms one evening. Called according to "the book" with a T9x note, I hope it made lots of people sit up and take notice. Congrats., OM, and, by the way, I'm darned if I could hear the KL7.

Am very sorry to hear that 5FL, Ross, has been putting in a spell in hospital. I always said you should have joined the Army or Navy, OM; they didn't get half the wogs. etc., that the RAAF did. However, heard your familiar note on 20, so presume it's a spot of convalescence

Heard 5LA bemoaning the loss of his 28mc beam during a QSO on 14mc one day. Haven't you coached Lynn into the chores of tightening guys yet, Bob?

From sources unmentionable comes the rumor that a real OT in 5LP is coming back on the air. It only goes to show, the bug never leaves once it has bitten. Welcome, Laurie, we'll be looking for that famous fist of yours.

Believe 5KZ and 5GL are still habitating the 2 and 6 meter bands, particularly the former. Stick to it, boys, one of these days it will break . . . . just as 6 did . . . . and the reward will be waiting to be reaped.

5RX is still using the old contemptible in his full wave zepp which has landed him his 175th country with OQ5DC. Congrats., George. Incidentally, did you really work that OX3, or did he send you a card as a SWL? RX has applied for the VK DXCC, too. Just before sending this off, heard from George, 5RX, that his VK DXCC has been O.K.'d., it being the 11th to be issued. With only one zone left to get (23), his next effort is WAZ, which will be the complete ARRL issue. Well, OM, there is still THE RSGB yet.

Another one with close on George's score is 5BY now with 164 countries. He has been an active Ham since 1927, except for an eternity in the RAAF. Heard him knocking off MD7XP, LU7DJF and CT1BI in the course of a few weeks.

I guess it's old news now of 5JD's portable effort on 6 from Alice Springs, but I wonder how many of the interstate boys are still kicking themselves over the fact that they passed him over as just another VK5? Bob Manuel, 5RT, was the first Australian to make WAS on 50 mcs. Good work, Bob. After all the effort you've put in you deserved it.

Ex-VK5SU (and also 5MU), now VR2BJ, continues to put an excellent phone signal in on 14mcs, and was heard in a round-table with a VK3 and VK 5LK one evening in March. Believe the latter is contemplating rebuilding a complete new outfit. Hope you don't have the strife I did, Frank. My advise is . . . let sleeping dogs lie.

The signal signing 5DR isn't the BC stn. at Darwin gone all High Freqish; it's one of three now emanating from Kangaroo Island. Sounds definitely crystal from what I have heard of it, too. Eavesdropped on a QSO between you and 5JT, OM. Joe is the old VKZ of Alice Springs of many moons ago, and still an ardent key pusher both for DX and for RAAF Reserve.

If you want to hear an excellent quality phone signal on 28mc around 7 or 8 a.m., keep a look out for 5IT and his sked with KH6FD. It sounds good, Thom, but how about letting us in on the secret of learning Hawaiian?

Was very bucked to hear a good word from an OT regarding the "Wolf pack". Pete, 5FM, was telling W6CTC that he was highly delighted with the behaviour of the boys during the contest. During one hour he worked 46 stns., and not once was there any instance of "jumping". 700 contacts isn't exactly a bad effort, either.

A very nice line-up of home-built gear is that of 5LR, who sports 95W from a pair of 809's modulated by a pair of 830B's, all of which goes into a 3 EB, the receiver being a 12 tuber. Jack has had a ticket since 1930.

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Did You Hear:—

That SSSC Signal from VK2JW on 20? After getting the general idea of just how to tune it, it sounds good.

The VK2 in QSO with YJ1AA on 20 fone one day in March. The 'over' lasted 35 minutes, during which time everything was repeated three times at odd intervals. DX was thick and heavy—including Central Americans —but the voice went on and on.

The VK5 who ran a broadcast programme as a test for hours on end on the high end of 40?

The numerous people who dispense with the use of "de" between call-signs?

And the new idea of calling CQ a couple of times and the call sign 15 or 20 times?

Always a "20 meter man", 5BS surprised the 40 meter gang one week-end. Appeared to be very tickled at the fact that with 2.5 watts input from the VFO only feeding into a single wire 10 feet high at one end and 3-ft. the other and keying the antenna, had been working VK2 and 3 with S7 reports.

AMONG THE VICTORIANS

From our VK3 correspondent, Mart Chaffer, VK3MH, we have the following notes and individual news:—

VK3CP. Portable at McCrae. Putting out a nice signal, Athol; also a nice fist. Glad to meet you on CW.

VK3KR, Benalla. Ken has been knocking off the DX on 20. Back to the old 8JK again? Nice going, anyway.

VK3ABJ, Gadensborough. At last in the new QTH. Look out, boys, when you visit Basil. He has a few spades as spares . . . yes, for help in the foundations. Still pushing out a hefty signal on 40.

VK3GR, Ballarat. Bob visited Melbourne. Believe he has some very good contacts there? Ask him about waiting in the "queues" at Kooyong. Was it worth it, Bob?

VK3AWO, Oakleigh. Nice to hear you on again, Arthur, after "long time no see." Did you get that new antenna up? Am waiting to hear results.

VK3RU, Thornbury. Roy, you are not on as frequently as before . . . how come? After-effects of Ballarat New Year, maybe?

VK3VA, Ballarat. Bert had a quick three days in Adelaide. Must have been pretty hectic, as only heard on the air once or twice since returning.

VK3CA. Portable at Hepburn Springs. Certainly got that 'phone going fine for portable rig, Clive. Hope you keep that promise of a visit on the way home.

SOME DX "GEN"

KC6KR on 14mc CW is a coast guard on ULITHI in the Western Carolines and requests QSL's via W6TI.

HS1BY whose signals are quite frequently audible on 20, wants all cards sent c/o ARRL please.

ZS9D owns the following QTH for cards . . . Ivan Quarmby, Box 14 P.O. Francistown, Bechuanaland Protectorate, South Africa, and usually habitates around 14100 Kcs.

C2TK becoming a rare country these days wants QSL's via Box 409, Shanghai. Name, Chune.

Another Box No. which may be of use . . . KG6GC, Box 100, Guam.

PZ1RM is a QRP signal worth chasing; running 30 watts phone to an 807 is: O. W. Morroy, Box 118, Paramaribo, Surinam, Dutch Guinea, South America.

If you work SP8XA, please note ALL QSL's via W3JKO.

Other sources have listed MP4BAE as located at Trucial Oman, but he actually hails from Bahrein Islands, Persian Gulf. Wants cards c/o International Aeradio Ltd.

CZ2AC is not a phoney but operates from Principata di Monaco. He is worth working if you can, as he uses 10 watts input to an 8JK. QSL's to home address . . . Rosetta Nonsini, Vicolo teatro Ristori 10, Verona, Italy, or via ARRL.

QST DX Editor is W9BRD, Rod Newkirk running 100 watts to PP 6L6s.

KR6DG ("Denny") wants cards to 1962 AACS, APO 239, c/o PO Master 'Frisco.

* * *

"Zeppo". Another station (again a VK2) who knows how to get consistently good DX results on twenty 'phone with a simple radiating system is old timer Neil Gough, VK2NG. He both "hears 'em and works 'em", and the antenna is nothing more or less than a Zepp type. It isn't a half-hearted job, though. Neil doesn't do things that way . . . . it is well in the clear, nicely engineered, and just what a good Zepp should be.

"Jeto". Reported from an observatory that astronomers have observed a vast explosion cloud on the planet Mars. Seems that the red planet is living up to its terra-bestowed name. We do hope that warring Martians won't wipe each other out before our "new country DX fanatics" get a chance to work them!

No wonder G2PU has a strong signal in Australia on 20 metre phone. His antenna is a multi-section Sterba array, 75 feet high, and the final stage uses two Eimac 150 TH's.

Extract from a South Australian letter:—

"We appreciate 'Radio and Television News' with its policy of something of interest for all. By ALL, we mean that, unlike other publications it is not solely a VK2 or VK2UHF publication. What is more, it isn't just a kit-set builder's encyclopoedia — thank Heaven — its about time someone printed a few facts. . . ."

(As stated from our first issue, this magazine is intended to be something different to the stereotyped kind of publication, and the pages are open to all classes of readers. At no time will editorial policy be influenced by people who offer "advice" to suit their individual likes or dislikes, as in one or two instances. We shall continue to serve the interests of the "plain man" kind of reader. —Editor).

* * *

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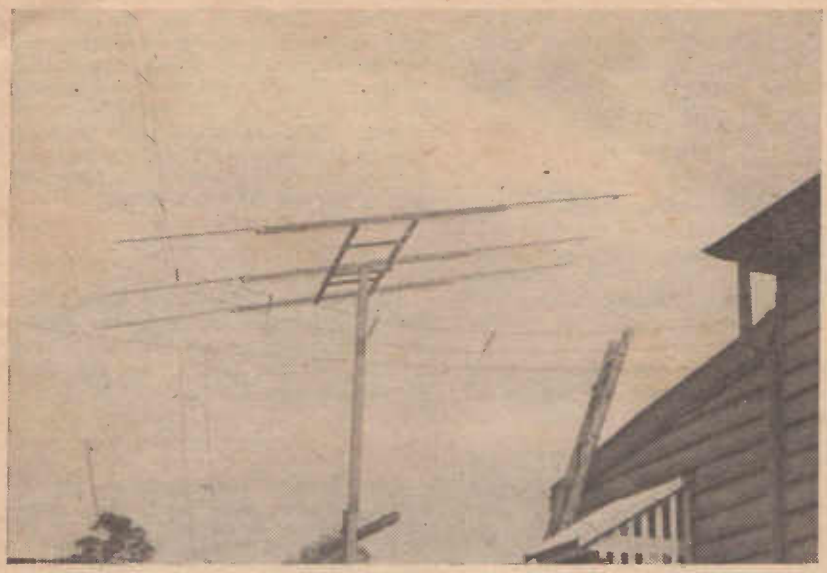
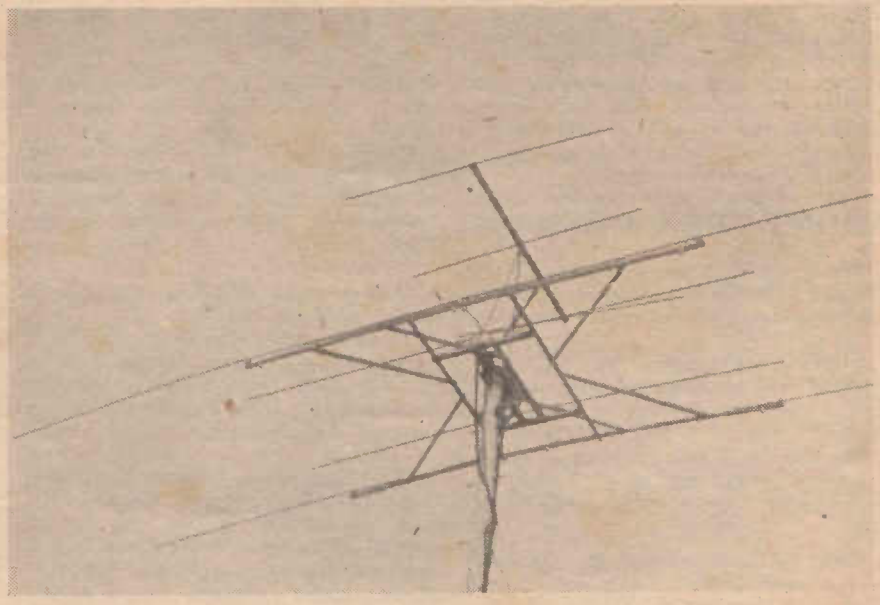


LEFT:—

● At Kurri Kurri on the New South Wales coalfields, E. M. Austin (VK2KZ) uses this 3 element beam on six metres.

BELOW:—

● Dave Davies of VK2BZ is the six metre pioneer in the Newcastle, N.S.W. area. Shown here are his 144 and 50 mc/s arrays, both above a 2 element array for 28 mc/s.



OHM'S LAW

In any electrical circuit, a definite relationship exists between the resistance, the impressed voltage, and the current that is flowing. An ohm, the common unit of resistance, may be defined as the resistance through which 1 amp. will flow when a potential of 1 volt is applied. As set forth in Ohm's Law,

$$I = E \div R$$

where I is current in amperes, E potential in volts, and R resistance in ohms. Thus amperes = volts ÷ ohms.

Where resistance is the unknown quantity, this formula becomes $R = E \div I$ (ohms = volts ÷ amperes); and where voltage is the unknown factor, $E = R \times I$ (volts = ohms × amperes).

A simple way to memorise Ohm's Law is to remember the expression

$$E = (R \times I)$$

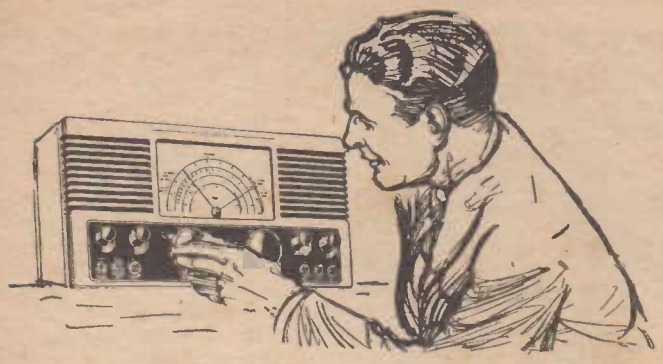
Remove from this the unknown to be determined and place it before the remaining symbols with an equals sign between, and you will have the formula applicable to the problem. Thus, to find E, place it outside and obtain $E = R \times I$. To find R, remove it and use the formula remaining: $R = E \div I$.

EXAMPLE: A 3-volt bulb is rated at .8 amp. What is its resistance? Apply the formula $R = E \div I$, we divide 3 by .8 and obtain the answer 3.75 ohms.

EXAMPLE: What current will be drawn by a 10-ohm resistance connected across a 6-volt storage battery? Substituting known values in the formula $I = E \div R$, and so dividing 6 by 10, we find the answer to be .6 amp.

EXAMPLE: An ammeter shows that 5 amp. flows through a 22-ohm resistance. What is the applied voltage? Since $E = R \times I$, we multiply 22 by 5 and find the answer to be 110 volts.

THE EDITOR of this magazine has a considerable amount of radio equipment for disposal owing to pressure of business precluding customary activity in amateur radio. Equipment includes brand new transmitting valves, e.g. 808's, 829B's, etc. Plenty of used valves of transmitting and receiving types. Two receivers are offered for reasonable bids, but purchaser must collect in situ. Have also, completed RF portion of new Six metre transmitter using 6AG7 crystal oscillator multiplier with four switched crystals in 50-54 Mc/s band, QV04/7 doubler, 807 buffer and push pull 834's in final. Will accept any reasonable offer for this RF assembly with valves in grey lacquered wooden rack. Has LT and HT switching provision so that another RF setup (say, 144 Mc/s) can be thrown into action in same rack. What offers also for double conversion Rack and Panel turret-changed amateur band crystal locked receiver complete? This receiver was described in "Australian Radio and Television News" for June, 1949. Not a "commercial finish" job but it really does work! Also for disposal, lots of "bits and pieces" of innumerable variety . . . the accumulation of 25 years of radio constructional activity, including condensers, plug-in coils, IFT's, audio transformers, etc., etc. Magazines by the thousand, also ARRL and Radio Handbooks from the start of them. Mail transactions for heavy material cannot be undertaken . . . cash and carry is the answer. Write or telephone and see whether the gear you want is on hand. Don B. Knock, VK2NO, 43 Yanko Avenue, Waverley, N.S.W. Phone FW2443.



About the outstanding G station gracing the HF end of 20 is that solid Old Timer, Gerald (Gerry) Jeapes, of Cambridge. He is in the category of the VERY strong Britishers, such as G8IG, G6XR and Co. Gerry is well and truly as per local oft-times when not another G can be heard anywhere round the dial.

SUNKEN GOLD

THE hazards and excitement of a diver's life were depicted in a recent BBC talk by Captain Lawson Smith, a master diver who specialises in underwater acetylene cutting and exploring. He described his recovery of the gold from the St. Piran, a liner which sank off Jamaica in 1930, involving the insurance company concerned in heavy loss. They asked him to locate and report on the wreck, and Captain Smith found the liner in twenty-seven fathoms of clear water. He examined the deck above the strong-room, which contained ten boxes of gold, each valued at nearly £8000, and decided that if an opening six feet square were cut in it he should be able to go through to reach the strong-room's forward bulkhead.

Nothing more was done until 1948, when the plans of the vessel were re-examined. His proposed method of getting at the treasure — now worth £140,000—was found to be good, and he was asked to carry out the work at £40 a month, plus 1 per cent. on the gold recovered. The vessel chosen for the job was a converted salvage boat fitted with the latest devices, including compressed air driven tools, oxy-acetylene underwater cutters and powerful underwater lamps of 2000 candle-power. They reached the St. Piran for the second time, and Captain Smith was just getting ready to be lowered to the sunken ship when a shark appeared, a brute who refused to go even when shot at. They got rid of him by splitting open a recently caught fish and inserting a stick of dynamite with a three-minute time fuse. The dynamite-filled fish was tied to a buoyant cork, the fuse lighted and the tasty morsel thrown in the shark's direction. The shark swam forward greedily and swallowed the fish; a minute later there was a fierce explosion—and it was then safe for Captain Smith to descend.

He found that the St. Piran had canted very slightly since his last visit. She was encrusted with pure white barnacles mingled with pink coral growth and there were myriads of strange fish around her. There were also ground sharks that, like the surface one, refused to go away. Smith tried an old dodge to dispel them, very slightly closing down the outlet valve of his diver's suit, so that the stream of bubbles discharged from it was temporarily lessened. When the sharks came very near he discharged a broadside of pent-up bubbles from his rubber cuff straight at them. They were terrified, and made off.

He re-examined the area of deck to be cut and in the afternoon returned with the cutter, attached by pipe to two cylinders of inflammable, hot burning gases under a pressure which no steel plate could withstand. With the fiercely burning torch in his hand—it had to be quickly submerged or it would have burned itself up—he descended and started work on the steel, and within 20 minutes had cut through the deck. The next job was to get the 2000 candle-power lamps in position in the opening.

Next day he began to cut at the strong-room bulkhead. As he worked he felt something encircle his body tightly. It was an octopus tentacle. Another one was round his left arm, but the arm holding the cutter was free. He could see the beast's head through the side window of his helmet and plunged the flame between its eyes. He was thrown to the deck as the octopus tore itself free and shot out its inky black protective fluid, and he signalled to the surface that he was coming up immediately.

On the following visit he at last cut through the bulkhead and entered the strong-room. Everything was topsy-turvey, and for three days he searched amongst packages. At last he found, intact, the ten boxes of gold, now worth £14,000 each. In less than a week they were on the surface.

YOUTHFUL TRAVELLERS

The United Nations Educational, Scientific and Cultural Organisation has set up in Britain a Central Bureau to make it easier for young people to move about and see the world, and so provide international understanding. The Bureau's headquarters are in London and its Director is Francis Cammert, who believes that it can do a very great deal of good work in fostering international friendship, especially at the present time, when economic difficulties hamper travel.

Cammert told listeners to the BBC's "Radio Newsreel" about the work of his office—and said that their first job was to find out what was being done to help young people to travel and who was doing this work. They discovered more than three hundred organisations which were sending young people abroad, not including schools and colleges that run their own travel schemes. The aim of the Bureau is to bring all these people together and to co-operate with them in building up a service for young people of all nations who wish to go abroad. They are giving advice to various organisations which write to them and putting groups in this country in touch with similar groups abroad. On the economic side, their job is to find out how to overcome such obstacles and also to see what can be done to reduce travelling costs. An instance of this was a recent agreement between France and Great Britain which gave reductions to young parties of young people travelling together.

The scheme is not only for the rich, for Cammert cited an instance of a senior elementary school where most of the pupils travel abroad with their headmaster and go as far as Switzerland, where last year they stayed a fortnight for only £14 each, which included their fares. Others, he said "spent several weeks abroad at a cost to them of only £5 or £6. A bicycle and Youth Hostels now allow almost everyone who has the initiative and interest to travel to go abroad and see and learn for themselves. Personally I think that much that is learnt in the classroom, languages, history and geography, for instance, will become real and better remembered when thought of against the background of the foreign country in which we have travelled. And so the Central Bureau of Education for visits and exchanges hopes to make the information on how young people may travel available to everyone in Great Britain.

WHAT ODDS?

One of the most popular of all BBC Variety programmes is "Much Binding in the Marsh," a gay and lighthearted frolic which is broadcast to both Home and Overseas listeners. These weekly doings at the Much Binding Country Club, of which Richard Murdoch is the general manager and Kenneth Horne the managing director, with Sam Costa and Dudley Davenport as their two helpers, are a source of constant amusement to millions of listeners, who laugh consumedly and repeat delightedly the show's various catch phrases. Murdoch, Horne, Costa and Dudley Davenport are household words in countless homes.

Recently a young Englishman was called up for military service, received his training and was posted to a regiment on the East Coast. This humble private had the job of taking tea to two officers whose names, believe it or not, were Lieutenant Murdoch and Colonel Horne. The odds against such a combination arising must be very high, but not so high as those against the fact that, when Colonel Horne asked the new private what his name was he should reply, quite truthfully, "Koster, sir." The new private could not understand why his innocent answer should be greeted with shrieks of laughter and was only enlightened by his fellows later on. Now he is wondering how long it will be before he forgets himself when sent for, and opens the door and says, in the real Costa's inimitable tones, "Goo' mornin', sir, was there something?"

THE "INVENTOR OF CINEMATOGRAPHY"

THE Encyclopaedia Britannica corrected a previous omission by printing the name of William Friese-Greene, an Englishman, as the inventor of the first motion picture camera.

Speaking to B.B.C. listeners, Mr. Ray Allister reviewed the pioneer work of Friese-Greene in the development of cinematography. He described how, after a successful career as a still photographer in the "Glass Plate" days, Friese-Greene worked to create the picture that moved.

"Friese-Greene," he said, "wanted to take at least sixteen snapshots a second and you could not move glass plate as quickly as that. By 1887 he had invented a camera to take a roll of sensitised paper, but paper was not much good. It tore too easily.

"One day in a workshop he saw a sheet of thick yellow stuff, and was told it was the newly invented celluloid which was still opaque. For months two assistants worked for him in a laboratory near Holborn. They melted celluloid, spread it thinly on glass sheets, coated it with sensitive emulsion, and, when it was dry, cut it into strips. At home, Friese-Greene was designing a camera to take celluloid film.

"On a Sunday morning in 1889 he went to Hyde Park with his new camera and in it about fifty feet of celluloid film on a roller. He took a shot of the traffic at Hyde Park Corner. That evening, alone in the Holborn laboratory, he developed the film. When he treaded the film into his projector he was sickly nervous. He put out the light and began to turn the handle, his eyes tightly shut. When he opened them, horse-drawn 'buses, hansom cabs, people were moving across his whitewashed walls. And suddenly he couldn't bear to be alone. He rushed out into Holborn shouting, 'I've got it! I've got it!' He met a policeman and dragged him in to see the wonderful new invention—a moving picture. As a consequence of these experiments, Friese-Greene patented his camera on June 21, 1889—just sixty years ago.

"In that same month Friese-Greene wrote to Edison in America. He gave a detailed description of his moving-picture camera and suggested it might be combined with Edison's phonograph to make 'talkies'. The letter was acknowledged by an assistant, not by Edison himself, and Friese-Greene was asked to send drawings of his camera, which he did. Two years later Edison patented in America, but not in Britain, a sort of cinematographic peep-show machine, which he called a kinetoscope. A kinetoscope was brought to England in 1893, and it was from this, and from a Frenchman, Lumaire, that the British public learned about moving pictures. For Friese-Greene was out of the limelight by then, he was bankrupt.

When did you see your first colour film? In the nineteen thirties, wasn't it? Friese-Greene took out a patent for a natural colour motion-picture camera in 1898. A newspaper reporter records that the colours were very good.

"Friese-Greene was interested in many other things besides cinematography. He took out, in all, more than seventy patents, covering an amazing variety of scientific experiments. In his laboratory hung models of an airship and an aeroplane which he had patented, long before Bleriot flew the Channel. On the floor was a complicated set of railway lines over which moved a model train controlled from another room by wireless beam. There was an apparatus for what he called 'seeing through the wire'; it seems like a forerunner of telesion."

WEEKEND IN WARSAW

Bernhard Forbes, the B.B.C's staff correspondent in Warsaw, sent a despatch home telling of the way in which he and many other newspaper correspondents spent a weekend. They forgot politics and nationalism, turned labourers for a few hours and did some hard work on the reconstruction of Warsaw.

The Polish capital was destroyed almost completely during the last war, by bombs from the air, by fire and by dynamite. Street by street, house by house, the city on the Vistula was reduced to rubble. Building a new Warsaw from such a sea of desolation and destruction is an immense task and Forbes said that the amount of rubble waste to be cleared away when the Germans were driven out was estimated to be enough to fill a goods train stretching right round the world. It has to be removed brick by brick before reconstruction can take place and the few small bulldozers at the disposal of the city authorities are usually needed for other purposes. It is a situation where every helper is warmly welcomed.

The volunteers were put to work amongst the ruins of the old City Hall overlooking the Theatre Square. Men used to pens and typewriters were given shovels instead and began to work amongst the twisted girders which stood out from amongst the rubble like the ribs of a ship. This rubble undisturbed for seven years, was twenty feet high. "We worked between the ribs," said Forbes. "There was a Tass Agency correspondent on my right and a News Chronicle correspondent on my left. They were flanked by Czechs, Hungarians, Americans and a Swedish correspondent. This was a job where we all spoke the same language."

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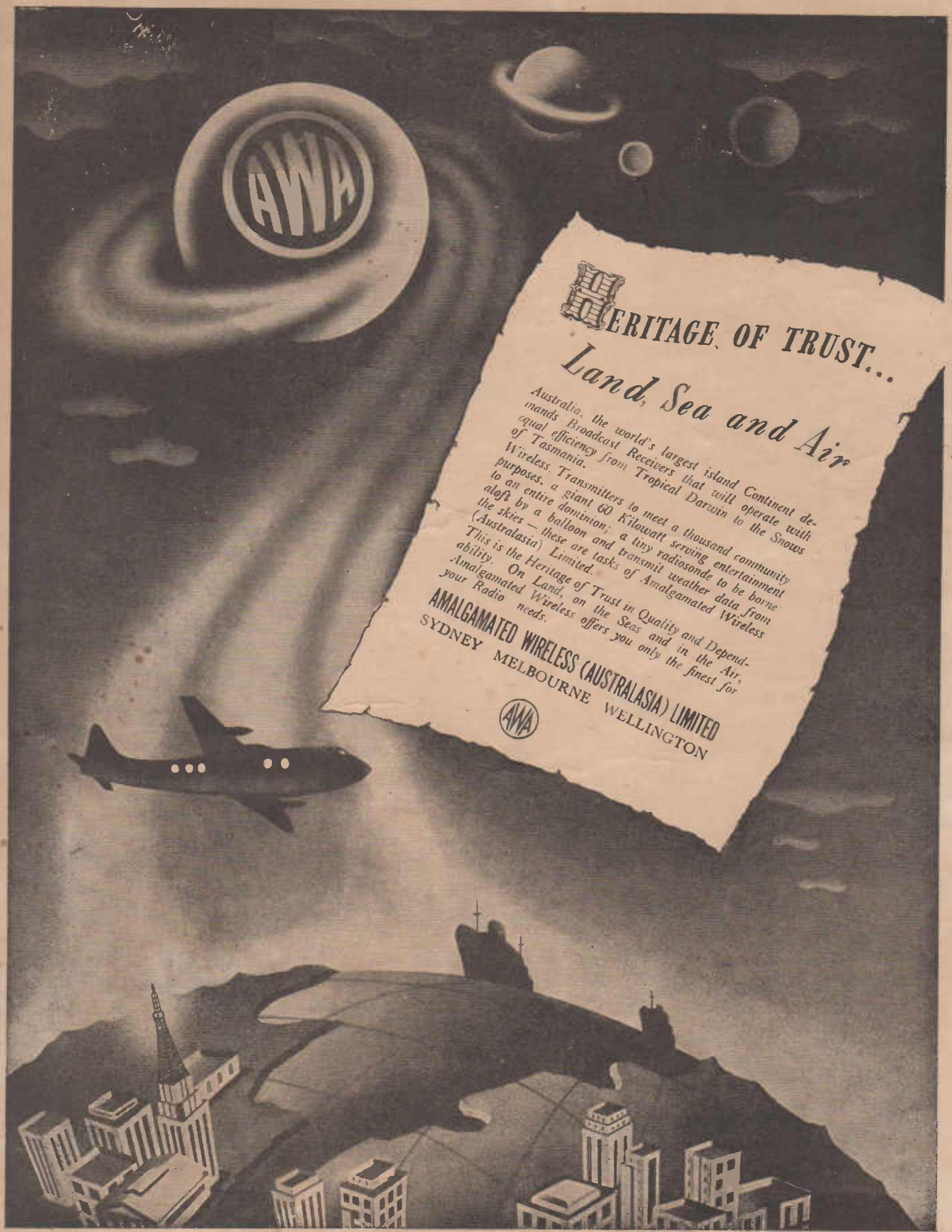
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