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# *Australian* RADIO AND TELEVISION NEWS

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

# Mullard

## PIONEERS IN ELECTRONICS

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

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

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

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

### IN THE FIELD OF ELECTRONICS — “COMMUNICATE WITH MULLARD”

#### Some of the Mullard Electronic Products

##### Electronic Tubes:

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

##### Electronic Apparatus:

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

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

# MULLARD, AUSTRALIA Pty. Ltd.

HEAD OFFICE: 33-43 CLARENCE STREET, SYDNEY



# —Editorial—



WE have been receiving a few opinions suggesting that by our continued reference to television, we are creating an impression that the prospective purchaser of a good radio broadcast receiver should wait until television is here. Nothing could be further from the truth. Television will not replace the present broadcasters, and by the same token the receiver bought to-day will not become outmoded by virtue of the advance of television. Secretly, we suspect that this is just a form of sales resistance on the part of the public to ever changing models of broadcast receivers, and their ready acceptance of the midgets; nevertheless, we wish to make it entirely clear, that television is still too far off to replace the hundreds of thousands of receivers now in the hands of the public.

When television comes into general use, so that the rural districts as well as city folks will have their radio pictures, even then — unless there is some radical change in the wave-lengths and methods of transmitting television signals—the modern broadcast receiver will not be able to do a thing towards receiving a telecast.

So go ahead and buy that broadcast receiver, and if you must hold off the salesman, do not do it on the basis that the receiver will be outdated by television. That is not true. And in the long run, you will find that a fine musical instrument like one of the bigger receivers, will give far better reception from an aural angle than will the midget. This is so because of the infinitely better baffling and larger speaker in the big receivers.

DON. B. KNOCK.

# AUSTRALIAN RADIO AND TELEVISION NEWS

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EDITED BY DON B. KNOCK

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# DON'T LET THEM

# FOOL YOU!



Take no notice of people without technical knowledge who say that television will take the place of radio  
**BROADCASTING.**

## THEY ARE WRONG

You can purchase that new Broadcast or Dual-Wave Receiver with full confidence that the Broadcasting services you enjoy to-day will be with you for your lifetime.

Don B. Knock

### RETURN JOURNEY

During the war the B.B.C. maintained a number of war correspondents, who went with the Allied Forces to every theatre of war. One of them, Wynford Vaughan Thomas, went back to Italy recently, to revisit the Anzio beachhead, where five years ago free men were engaged in the final desperate battles to destroy Fascism. Vaughan Thomas remarked that the returned warrior who revisits a familiar battlefield is always due for a shock, for he forgets that time does not stand still and that the place he has fought over will not be kept as a museum piece for his benefit "yet I did find," he said, "that the beachhead had covered its scars at a terrific rate. Once again Anzio is one of Rome's fashionable seaside resorts; the only invasion it expects now is from the summer visitors. The cafes and restaurants are all up again around the quay and the pier, where we used to duck in and out of the shelling." In the blue water of Bomb Bay, as the soldiers called it, where the great armada of war transport used to lie off shore, sardine fishing boats are now seen in great numbers. On the beaches to the North, where Vaughan Thomas remembered wading ashore on the

memorable night of the landing, waiting for a tense dawn, among the pinewoods a new seaside settlement, Lido di la Nuvio, is being built. "It's only when you move West of the fly-over—the notorious bridge across the main road where we held the final German attack—that you see signs of our four-months long siege," he said. "There the farms are mostly in ruins and minefields still lie unlifted beyond the line of the trenches. On the fly-over itself, well, another sort of war has been waged, political slogans in white paint urge all the Anzio inhabitants to vote for every conceivable political party.

"It's all a little shaking to the returned warrior, but as the green-corn comes up from the front line and life itself, frivolous and intense, from seaside bathing to local politics, comes back again to Anzio—well, I began to feel that after all, maybe that's what we were fighting for."

### PASSPORT TO PARADISE

"If there are queues at the Pearly Gates, I think women should be excused and allowed to pass right on inside—they've done their share down here."

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

### INTRODUCING MRS. PLACKETT

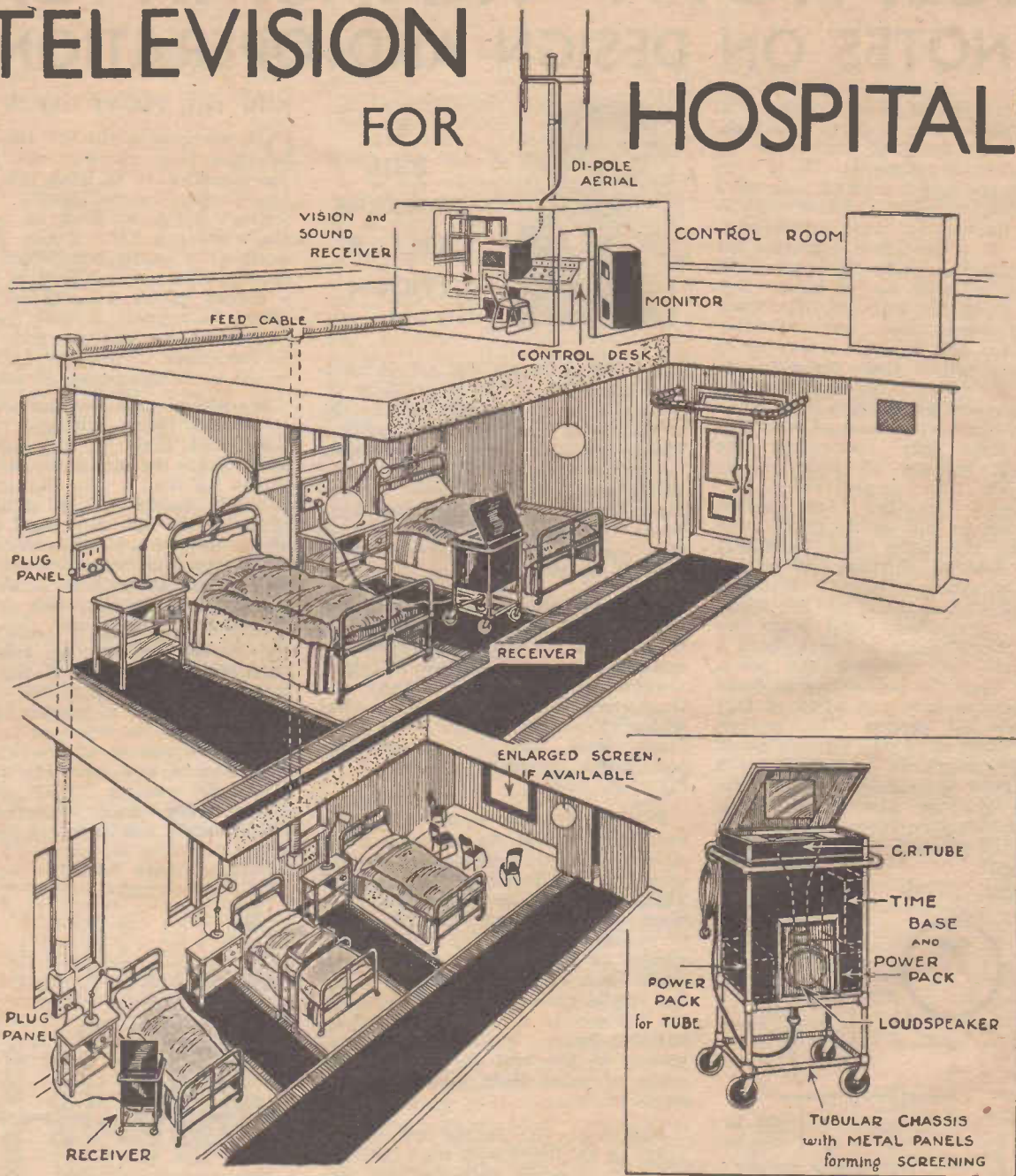
At Much-Binding-in-the-Marsh, the mythical village whose country club is so well-known to listeners to B.B.C. Variety programmes, there is a village store. This village store, like all the best of its kidney, sells everything from bacon—when there is any—to bootlaces, from scrubbing brushes to soapless shampoo, from plimsolls to jelly babies. It is run by a good natured creature called Mrs. Plackett, one of those invisible radio characters who are constantly mentioned. But Mrs. Plackett, though she still remains invisible, has now a separate existence. Richard Murdoch, with Kenneth Horne the star and author of "Much Binding," has had a sixteen foot yacht built for him at East Cowes. The name of the little vessel is Mrs. Plackett.

### OXFORD v. CAMBRIDGE

"I once asked an English girl whether there was any difference much between an Oxford man and a Cambridge man, and she said: 'Oh yes! An Oxford man walks along the street as though he owns it. A Cambridge man walks along the street as if he doesn't care who owns it!'"

—Jane Graham, a young Sydney artist who is now painting in Britain, speaking in the B.B.C. programme, "Calling Australia."

# TELEVISION FOR HOSPITALS



● As distinct from the studentary application of television to hospitals—here is a suggestion from Britain for patient-television entertainment. Why not indeed? This also can be expected to come to realisation before the world is much older. The idea appears to be practicable, utilising a receiver mounted on a trolley, to be plugged in to points near the side of each bed. Such a receiver would be for vision only, and comprising tube, time bases and power packs. The sound receiver would be in a central position and connected to each bedside point by means of a feeder. This idea was suggested in a pre-war British Television magazine.

# TELEPHONY TRANSMITTERS

## NOTES ON DESIGN AND OPERATION

**A**MATEURS in this country still have a long way to go, technically speaking, to catch up with overseas standards. It is true that we are hampered and (literally) hamstrung by all manner of regulations, limitations and "thou-shalt-not's". It is therefore a matter for some national pride that we have achieved as much as we have. Our power limit, for instance, has made us aerial-conscious; our Advisory Committee acts in such a way as to steer us, rather than force us, to keep our techniques satisfactory. But there are times when some of us wonder whether, instead of worrying about some guy frustrating the country's revenue of tuppence by asking VK...?.. to give VK...?.. a message, whether more accent should not be laid on the disciplining of those Amateurs who habitually radiate drifting, chirping CW or distorted, splattering 'phone. Some of these characters seem to get away with it perennially, and since we cannot record them and give them a "playback" to illustrate the point, we rely upon the authorities to make them toe the line. In point of fact this does not happen often enough to suit those of us who do care about technical standards. And since it is no good merely coming on the air and "binding" about such things, minus constructive comment, here is a series of pointers that all who run may read!



By  
**PHIL  
EDWARDS,**  
A.M.I.R.E.  
(VK2GS)

(1) Never switch the actual oscillator tube off. Let it oscillate on some other frequency when the station is in the "receive" condition. This is obviously done by arranging to have a small SPST relay in the VFO unit, which throws a wee capacitor across the oscillator tank when "going over". This idea is good enough for Collins—it's good enough for you!

(2) Add voltage regulation at 105 or 150 volts to the oscillator plate if a triode, or screen if a pentode, and there you have a tube which is always oscillating, and always has the same voltage on the critical electrode. Even the crudest VFO must reach some sort of temperature-equilibrium eventually, even if it takes an hour.

Surely you must agree that these modifications will not consume many of those artistic dark-green "rugs" issued by the Treasury Department? Then why not go ahead and put them in! You will then be able to calibrate your VFO periodically, either on your own, or someone else's Freq. Meter, and in the interim feel confident that the dial markings are not merely a set of meaningless, variable figures, but a close approximation to the real frequency. The peace of mind alone makes the job worth-while.

Naturally, you should try to develop an oscillator with high inherent stability to begin with—several versions of the Clapp seem quite satisfactory in this regard, and ratio-coupled oscillators as in the "Command" Transmitter are of course ideal.

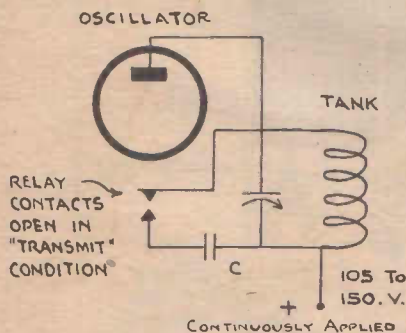
There are always those who like to key the oscillator, for real "break-in" work. These people have a problem peculiar to their own insistence on this feature. The other group—those who do not believe in keying the oscillator (of which I am one)—will be well advised to follow the foregoing suggestions.

### NOW THE 'PHONE DEPARTMENT

**D**O you have a CRO? Do you realise how cheaply one can be put together, to do basic jobs related to 'phone transmitters? In the writer's view, working on a 'phone rig without a CRO is like throwing darts at a board blindfolded. Let's face it—if we can afford to lash up a decent 'phone transmitter, we can afford to support it with basic test equipment, to analyse and monitor its behaviour. The money, otherwise, would go in cigarettes, or even beer!

We will assume that you are "sold" on a CRO, then. Will you now consider that there is only one right phasing for the modulator, as applied to the RF final? The characteristics of male speech are a symmetrical (unbalanced) and in general one half of the waveform exhibits sharp peaks or "fingers" of instantaneous energy, whilst the other half tends to be blunt and less peaky. See sketch.

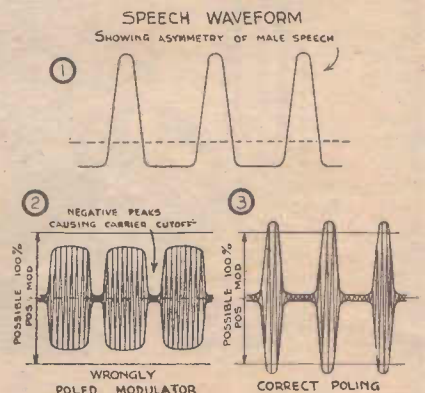
Now it is generally accepted that the severest cause of splatter is negative-peak cutoff. If the instantaneous relationship of the audio to the RF wave is as shown in sketch B, then it can be seen that the sharp, peaky components of the audio are extending downwards into the zero plate-volts region. This of course causes very steep wavefronts or "transients", and is accompanied by



"C", Frequency-Shifting Condenser: Value depends on tank circuit constants. Typical value around 30 PF. Note that "C" is OUT when transmitting, otherwise it will spoil the tank "Q" in the critical condition.

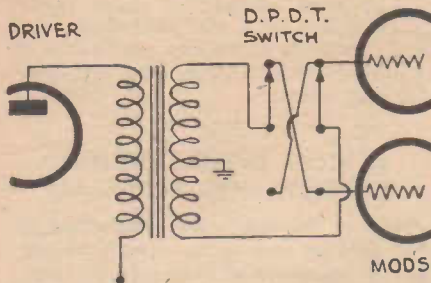
### VFO STABILISATION

Since VFO became the normal, rather than the unusual, frequency-stability standards have become infinitely worse than they were pre-war. This is plainly retrogression. Can it be helped? Try doing these things, and you will obtain an affirmative answer.



shocking splatter. Now consider the sketch. Here the modulator is polarised correctly. The sharp peaks extend in the positive-modulation direction, and do useful work in boosting the effective peak-modulation capacity of the transmitter. The ratio between the correct and incorrect conditions can be sometimes on the order of 2 to 1, in terms of maximum modulation capability. In the writer's transmitter, about 120 p.c. modulation in the positive direction

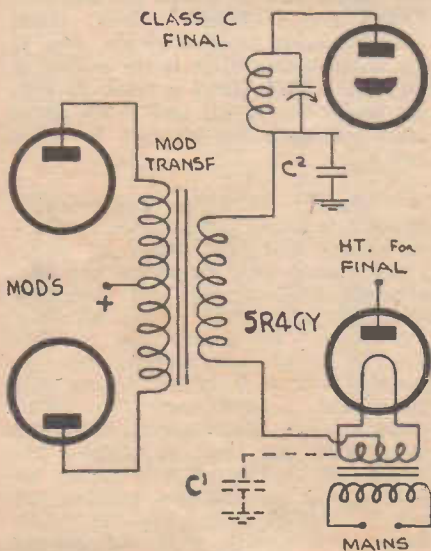
can be achieved before negative-peak cutoff sets in. It is more true for some voices than others, this theory, and not true at all for female voices. But for typical transmitters, the correct polarisation of the modulator is supremely important. Said polarisation can be reversed, for experi-



Showing how "polarising" of speech wave relative to carrier can be instantaneously changed. Note that no difference will be observed if SINE WAVEFORM is used, but a prolonged male voice sound must be used for observations on CRO.

ment, by a DPDT switch in the leads to any one winding of an audio transformer; by reversing the plate caps on a pair of 807's; by reversing the leads inside the microphone; and so on. Adding, or removing, one stage, will also do it, assuming RC coupling.

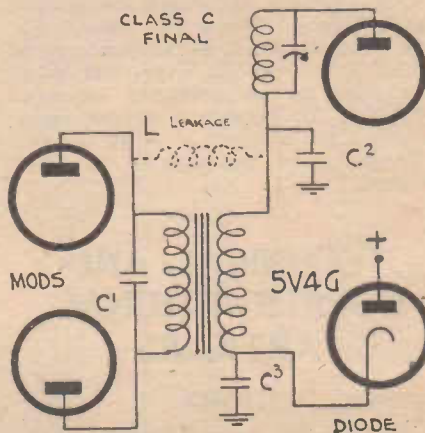
The CRO will leave no doubt whatever in your mind when the correct condition has been established. Instead of a small modulation envelope, with blunt peaks, and bright green splashes in the centre of the pattern, you will see a much deeper envelope, with sharp instantaneous peaks and very few traces of the bright green splash, which of course is caused by the steep wavefront of the negative carrier-cutoff.



Negative peak clipper diode in circuit. C1 = Distributed C of rectifier heater winding to earth. LP filter formed by C1, inductance of secondary winding on mod'n transformer and C2.

### HIGH LEVEL CLIPPER

A further improvement can now be effected by introducing another relatively cheap modification. A few condensers, a rectifier such as a 5V4G, and a well-insulated filament transformer for the rectifier, are all the necessary bits. See sketch. Note that a high-vacuum rectifier seems to work better than a mercury rectifier, and has the added advantage of being suitable for horizontal mounting if space is restricted. It is thought that the "go-no go" characteristic of the mercury rectifier at the threshold of about 15 volts does, in itself, cause a bad transient, and makes the demands on the LP filter more severe. The capacity from the rectifier filament winding to ground is the input capacity of the LP filter, but if this proves insufficient it can be supplemented by a small HV condenser of perhaps .001 or .002 Mfd.

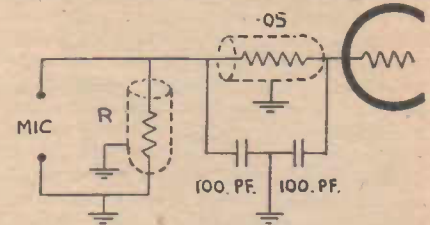


"Building Out" for Class B Modulators, retaining NP clipper. Note that C2 and C3 are effectively in series across the transformer secondary. L leakage = leakage of inductance of transformer.

For those with Class B modulators (and there will be many of them soon, with this new 807 triode circuit by RCA) the virtues of the diode-and-filter can be augmented by the old scheme of building-out the modulation transformer. This idea is used to work in conjunction with the leakage-reactance of the transformer to form a rough band-pass filter for the audio. Some effort may be necessary to juggle the capacities until a sharp cutoff is evident around 3000 to 4000 cps. This introduces the question of an audio signal-generator, but here again, the Wien-Bridge types have good waveform and are not complex. They are, also, dirt-cheap to build, which is a major sales-point in this age. All modern Radio Handbooks carry recommended circuits, although not always called Wien-Bridge specifically.

General sentiment these days seems to be turning against low level clipper-filter systems. The troubles

associated with these seems to hinge on phase-shift. The nett result of some, currently heard in operation, seems to be violent distortion without very dramatic rise in average audio level. As a "W" 'phone station recently told the writer, clipped speech of this type becomes very hard to read when selective fading is present—and when it is not present!

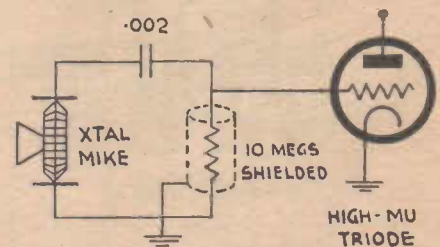


Pre-Amplifier Design. R = microphone load resistance. Both R and the 50,000 ohm RF stopper should be shielded. Earth returns must be short and taken to an earthing system as in "AR & TVN", November, 1949.

For simplicity, the combination of built-out modulation transformer, high-level clipped diode in the system shown, and properly-polarised audio seem to be a satisfactory compromise. This is not intended as a slur on those who use LL clippers, but is merely a considered opinion borne out by practical experience with many typical combinations.

### PERTINENT POINTS

NOW the matter of hum and RF feedback in the Modulator. Did you absorb "Design and Construction of Low Level Voltage Amplifiers" (A.R. & T.N., Nov., '49)? If not, why not? Contained therein are causes and cures of many types of hum, as encountered in normal audio equipment, which of course includes modulators. However, special considerations govern the construction of the Modulator when used (as in typical Amateur practice) in the presence of strong RF fields. All the techniques mentioned in that issue still hold good, but, added to these, please note the following:—

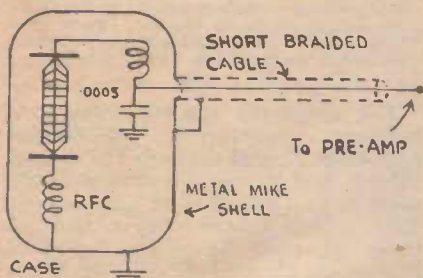


Showing DC isolation of crystal microphone when using grid leak bias on 6F5, 6Q7, etc.

(1) The first grid of the audio chain is the most susceptible to RF injection. Some people do not seem to grasp this, as witness the haphazard addition of another "front" (Continued overleaf)

stage without RF suppression to an otherwise sound modulator which does not have quite enough gain. See sketch for recommended input circuit using crystal microphone.

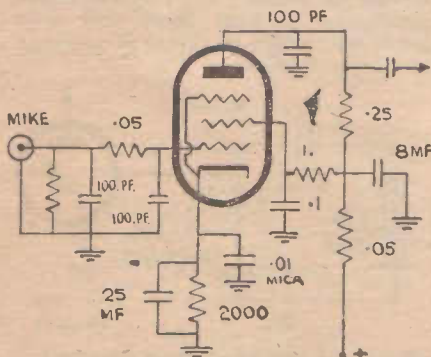
(2) Crystal microphones can be burnt out, or rendered U/S, by a dose of RF. This might account for how-come some of the current transmissions featuring crystal mikes do not sound as good as some using carbon mikes. The crystal will continue to function, often, but with altered frequency response and output, and possibly severe distortion. It is advisable to block RF from the microphone as shown. Also, never run a 5 or 10-meg. grid leak to a high-MU triode with a crystal microphone without isolating the microphone for DC. See sketch again.



Showing RF chokes and by-pass mounted in metal microphone case to suppress RF attempting to get to earth via industrial cartridge. If RF chokes cause hum in crystal, replace with 1/4 watt 50,000 ohm resistors.

### CONCLUSION

(3) Considering a pentode, RF suppression should be used in grid, plate and cathode circuits. If RF traps on all three electrodes of the first voltage-amplifier do not effect a cure for RF feedback, there is something basically wrong with the layout and earthing of the low-level section of the modulator, and re-design is indicated, along the lines mentioned above, and in the November article.



Showing pentode fully suppressed for RF.

(4) How many of us monitor our 'phone, visually or aurally, all the time? For this op's guess, not too many. No Amateur should need to be told that his 'phone has a high

hum level, or severe distortion. Further, the guy who persists in transmitting such stuff should shut down under a guarantee to modify his transmitter until it complies with reasonable standards. We do not suggest that every Amateur's rig should be a virtual SW broadcast station as regards its standards, but fair is fair! The prestige of the individual Amateur bears a direct ratio to his technical and operating activities. If you personally don't care what your neighbouring Amateurs' opinion is, this article is not for you. If you are, however, a straight-thinking citizen first and foremost, ask yourself frankly how many of the techniques mentioned in this article are employed by yourself. If self-analysis reveals a preponderance on the debit side of the ledger, here is your opportunity to "come good". Certainly, you can no longer say that no one ever told you how to go about it.

The opinions expressed are necessarily strong. The writer admittedly has a commercial background upon which to draw for ideas, but does not pose as an authority on any subject. To borrow a phrase from a great philosopher of other days—"These truths we hold to be self-evident" . . . .

## TECHNICAL AND CONSTRUCTIONAL ARTICLES

### INDEX

Up to the present issue, "Australian RADIO and TELEVISION News" has featured the following technical articles in the issues quoted:—

MAY, 1949: "Reversible Beam Array for 20 Metres"; "The Wide World Two" Receiver.

JUNE, 1949: "Improving Your Loudspeaker"; "Dual I.F. Receiver for Amateur Bands"; "A Wall Type Writing Cabinet"; "A Simple NBFM Transmitter".

JULY-AUG.-SEPT., 1949: "Making a Receiver By Numbers"; "The HAY Aerial System"; "Lamp Bookcase for the Writing Table."

OCTOBER, 1949: "A Wide Range Grid-Dip Oscillator"; "Lecturer's Reading Device"; "A Simple Sign Flasher."

NOVEMBER, 1949: "Design and Construction of Voltage Amplifiers"; "Push-Pull 7193 Triode Amplifier for 2 Metres".

DECEMBER, 1949: "Making an Electronic Metronome"; "Locating Troubles in Simple Receivers"; "Noise-Free Receiving Aerial"; "Floodlight Accessory for the

Amateur Photographer"; "A Simple, Efficient Modulator".

JANUARY, 1950: "Intercommunication System for the Home"; "A Miniature 'Phone Transmitter".

FEBRUARY, 1950: "Single Valve Receiver for Boys"; "Eyes for Your Receiver—a Panadaptor".

A limited number of these issues is available from the publishers, and copies will be mailed to applicants at a cost of one shilling, plus 3d. postage per copy.

## DUCON INTERFERENCE SUPPRESSION MANUAL

ONE of the most useful publications we have yet seen on the ever-present subject of suppression of radio-inductive interference is that now available from the Head Office of Ducon Condenser Ltd., 73-91 Bourke Street, Waterloo, Sydney. A mass of information with relevant diagrams is contained in the 12 pages. The introduction deals with the why and wherefore of interference with radio reception, and classifies in detail the various sources. Sub-sections cover the many methods of suppression as applied to DC motors and generators, AC motors, Fractional horsepower motors, rotary converters, battery chargers, rectifiers, vibrators, car ignition, adding machines and cash registers, refrigerators, door bells, multi-contact electric signs, neon signs, medical apparatus, sewing machines and dental drills, lifts and noisy wiring. A tabulated chart shows the various kinds of Ducon suppressors suitable for the many applications. The importance of a publication such as this is at once evident to radio users and traders alike, and it should be unnecessary to mention that the information contained therein will have even wider significance when the problems of Television Interference arise; a time which is now very close. We suggest that all readers of "Australian RADIO and TELEVISION News" should avail themselves forthwith of the offer by the Ducon people which is the mailing of the bulletin FREE, merely in return for written application. A post card to the Ducon office will bring the literature by return mail.

"Querex": Television engineers in London, hunting down sources of interference find that when an aeroplane passes over or along the line between transmitting and receiving locations the picture slides all over the place. Even with the aircraft a mile away interference can be serious, and a flight of 'planes will affect the picture from five miles away. The interference does not arise from the ignition system, but is due to the aeroplane's acting as a reflecting medium and putting the sky wave back to the receiver, as in Radar. Normally, only the ground wave is used in ultra-short-wave television, and the sudden appearance of a reflected wave, out of phase, displaces the picture on the screen.



CONVERSION TABLE

Centi- metres or Metres	Mega- cycles	Metres	Mega- cycles	Metres	Kilo- cycles
1 cm.	30,000	95	3.153	415	722.9
5	6,000	100	3.0	420	714.3
10	3,000	103	2.913	425	705.9
50	600	106	2.830	430	697.7
		109	2.752	435	698.7
1 metre	300	111	2.703	440	681.8
2 metres	150	113	2.655	445	674.2
5	60	115	2.609	450	666.7
7	42.86	117	2.564	455	659.3
9	33.33	120	2.50	460	652.2
10	30.0	122	2.459	465	645.2
11	27.27	124	2.419	470	638.3
12	25.0	126	2.381	475	631.6
13	23.08	128	2.344	480	625.0
14	21.43	130	2.308	485	618.6
15	20.0	135	2.222	490	612.2
16	18.75	140	2.143	495	606.1
17	17.64	145	2.069	500	600.0
18	16.67	150	2.0	510	588.2
19	15.78	160	1.875	520	576.9
20	15.0	165	1.818	530	566.0
21	14.28	170	1.765	540	555.6
22	13.64	175	1.714	550	545.5
23	13.04	180	1.667	600	500.0
24	12.50	185	1.622	650	461.5
25	12.0	190	1.579	700	428.6
26	11.54	195	1.538	750	400.0
27	11.11	200	1.5	800	375.0
28	10.71			850	352.9
29	10.35	<b>Metres</b>	<b>Kilocycles</b>	900	333.3
30	10.0	210	1,429	950	315.8
31	9.678	220	1,364	1,000	300.0
32	9.375	230	1,304	1,100	272.7
33	9.090	240	1,250	1,200	250.0
34	8.823	250	1,200	1,300	230.8
35	8.572	260	1,154	1,400	214.3
36	8.332	270	1,111	1,500	200.0
37	8.118	280	1,071	1,600	187.5
38	7.894	290	1,034	1,700	176.5
39	7.692	300	1,000	1,800	166.7
40	7.50	305	983.6	1,900	157.9
41	7.317	310	967.8	2,000	150.0
42	7.143	315	953.4	2,200	136.4
43	6.977	320	937.5	2,400	125.0
44	6.819	325	923.0	2,600	115.4
45	6.667	330	909.0	2,800	107.1
46	6.522	335	895.6	3,000	100.0
47	6.383	340	882.3	3,500	85.7
48	6.250	345	869.6	4,000	75.0
49	6.122	350	857.2	4,500	66.7
50	6.0	355	845.0	5,000	60.0
52	5.769	360	833.2	5,500	54.5
54	5.555	365	822.0	6,000	50.0
56	5.357	370	811.8	6,500	46.1
60	5.0	375	800.0	7,000	42.9
65	4.617	380	789.4	7,500	40.0
70	4.287	385	779.2	8,000	37.5
75	4.0	390	769.2	8,500	35.3
80	3.750	395	759.4	9,000	33.3
85	3.530	400	750.0	9,500	31.6
90	3.333	405	740.7	10,000	30.0
		410	731.7		

NEWCOMER'S CONVERSION TABLE  
FREQUENCY—WAVE-LENGTH

Which gives the most suitable mental picture to the newcomer to radio technicalities—frequency or wave-length? Both references are widely used, and the chart above provides an "at-a-glance" answer to the relationship throughout the useful radio spectrum.

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

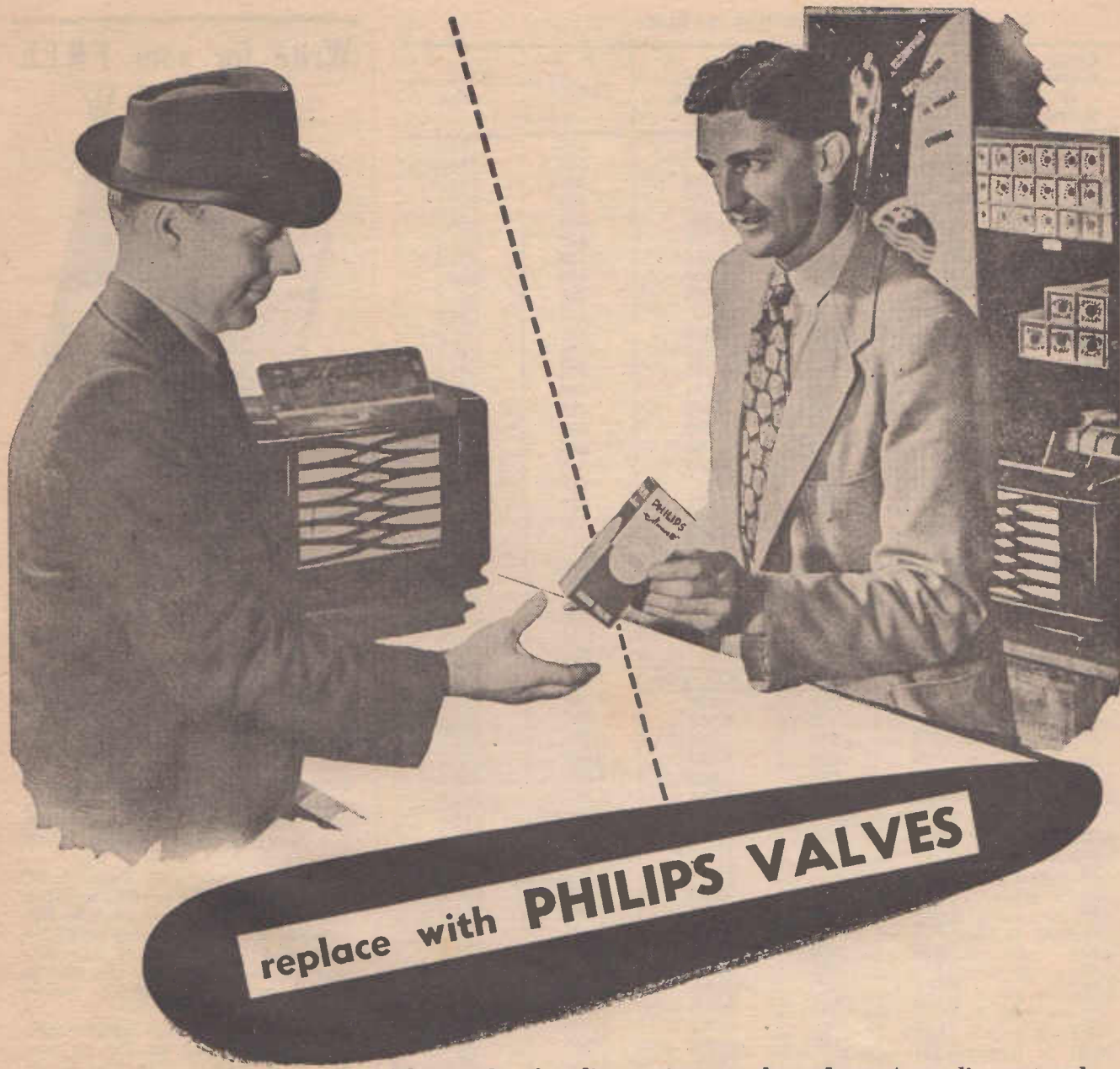
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# LAGERRADIOFIZIER

By NATILUS

The writer, under his pen-name of "Nutilus", is a veteran Australian Marine Radio Officer who still treads decking after a lifetime, inclusive of two World Wars—at sea. His experiences as a prisoner of the Nazis are continued and completed here. Last month's issue contained the first portion of this interesting biography. —Editor.

Continued from February, 1950,  
Vol. 1, No. 8.

Geoff got the earpiece that didn't burn out and sat for hours stroking the magnet pole pieces with a pole piece ex a cycle generator . . . and . . . was successful. This man spoke four languages, each one self taught, and spent his time listening to the broadcasts from the German propaganda broadcasts, translating them, and comparing same with British news.



"Many a German worker had the generator pinched off his bike."

## WAR PRISONERS' RADIO SCHOOL

THE German authorities encouraged studies in the prison lagers, and many and varied were the studies followed by their unwilling guests. Only one study was forbidden, and that was radio in any form. Nevertheless, the radio fraternity decided it would have a radio school, Gerry willing or not, and we had it under the directorship of a very good friend of mine, Dick Soper, ex-university graduate, and a "wiz" at maths. Of text books we had but two . . . one section of the Admiralty Handbook of Wireless and the 1939 copy of the ARRL Handbook, the latter bound and re-bound as "old man time" took toll of it. We had a real big affection for that book, and it was suggested that it be returned to the American Relay League for their museum after the war. Our classroom had a selection of large automobile wiring circuits on its walls, and one day when a visiting German Admiral opened the door and caught us in a decided discussion on superhet design for marine usage, Soper switched

● Kriegesgefangen-lager (War Prisoners' Camp). The German guard is on the outside of an electrified wire multiple fence.



his large pointer to an ignition circuit and blandly went on to that subject. The Admiral was tickled at our interest in autos.

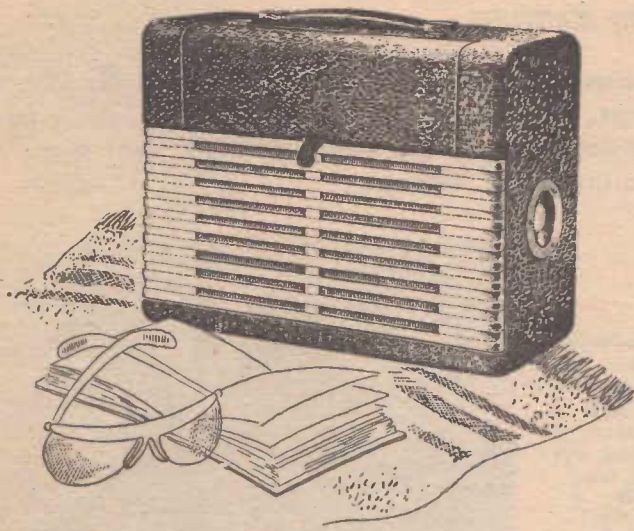
Actually the formation of this somewhat unique Radio School came about as a result of a "get together" among the senior radio officers, who decided that something ought to be done to keep an interest alive in the profession. There were men holding first-class certificates, second-class certificates, and "permits" or "limited" certificates issued by the British Government, in the lager, and it was felt that a lot could be done for all hands by a little co-operation. The "limited" certificated men, who were known as "dog ticketers", were a bit of a problem. The qualifications for this certificate were a reputed ability to read morse at 16 w.p.m. and to have some idea of how to switch gear on and off, plus a bit of simple theory to enable them to know what they were doing when turned loose as watchkeepers in merchant ships.

Among the second-class men were newcomers to the profession and some old-timers who could meet the requirements of watchkeeping alright, but who had forgotten most of their theory. "A" Class, it was argued, could be capable of bringing the "dog ticketers" up to second-class standard of proficiency, the second-class men to where they could sit for first-class certificates, and the fully certified men would have a "refresher" that would do them no harm. It was obvious that no half-measures would have to be taken. . . . Instructors had to be found who were

prepared to lecture, and a lot of hard work would be done by them in preparing lectures and schematic drawings for the class instruction, as it must be born in mind the amount of technical literature was strictly limited. Jimmy Morrison, 2nd Radio Officer, who was only at sea for the war period, volunteered to instruct a maths class, which was most necessary as an adjunct, and so the project went into action.

Five afternoons a week were given over to radio work, and three evenings per week taken up by maths study. The results were most gratifying. Apart from a couple who dropped out after the first week's school, the rest stayed on and did good work indeed, and that included a few who, from lack of keen interest, had decided the class wouldn't get very far. Soper did magnificent work, ably abetted by men who had a specialised knowledge in some particular item of radio. Arthur Webb, I.M.R. Company, was a particular help in lecturing on Frequency Measurement; Burch handed out some good stuff on Echosounders, and your scribe was even rung-in to lecture on Transmitter and receiver power supplies and regulation units. Everyone worked hard, both instructors and instructed; it was no uncommon sight out of class hours to see men unselfishly giving of their time, knowledge and experience to help someone else who wanted a point cleared up that was worrying him. The spirit of "camaraderie" was terrific, and an Amateur Radio Club was also formed with the idea of

(Continued overleaf)



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This new A.W.A. Radiola portable is the finest receiver of its type available. It provides long distance reception, perfect tone, very economical operation and the high standard of workmanship and reliability always associated with A.W.A. products. The easy carrying case is available in a range of attractive colours. Any Authorised Radiola Distributor will be pleased to give you a demonstration. Ask to see the Radiola portable Model 452P or 453P (dual wave).

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R. 3

(Continued from page 11)

maintaining contact between class members when the war was finished and members returned to their normal vocations. Much interest was shown in this project, and many and varied were the transmitters and receivers tentatively designed against the day when they could be used. Jimmy Morrison went on with his maths class and did fine work indeed, starting with the definition of a "prime number" and finishing up at the introduction to Calculus.

### DIVERSIONS

**F**URTHER study was then impracticable, as our troops were fighting but 11 kilometres away, and shells from the retreating Germans were continuously passing over our heads; our 'planes were flying up and down the old Bremen-Hamburg Road only 100 yards away and strafing German transport unmercifully. I am afraid our interest had strayed a bit from permutations and commutations. However, I am afraid I have got a bit ahead of myself in chronicling the natural sequence of things in reference to this fighting. Some little time previously, the British Postmaster-General had been contacted and had agreed to send a set of papers over for examinations, to be held under standard examination conditions, for the 1st and 2nd Class Certificates of Proficiency. Twenty-three men sat, and all did excellent papers; all that remained for them to do was the Morse and oral tests on return to Great Britain.

The whole business had been a huge success and reflected credit on all concerned. Apart from class-work, quite a lot of other work had been done in helping other lager members with their radio problems. Crystal sets were made up, existing receivers serviced, and often help given in the illicit purchase of bits and pieces receivers, etc., in order that the buyer should not be swindled by unscrupulous traders both inside and outside the camp. The business of collecting news had become a big and serious thing; a cavity had been scooped out under one of the huts, and four men kept watch at the latter part of the war, doing yeoman work, which wasn't even known of by the average man in the camp. In the main, each room in the camp had a large map, hand-drawn, behind the door, and from news made available from the news service, the advances of the Allied troops were marked in red crayon. It was no very unusual sight for one to see the guard who came to chase the lads out of bed in the mornings or on to parade during the day, to first have a look at the war position as accurately given on the maps. Many Germans have told me it was

the only decent news that they could get. Their worries about how we came to be in possession of it . . . to them the war was lost, and their main interest, like ours, was to get home.

### LAGER "BLACKETEERS"

**B**OTH German soldiers and civilians held the opinion that the British prisoners had just about everything that one needed, and in this they were more or less right, unless a transport hold-up cut off Red Cross and tobacco parcels. Therefore it was only natural that some of them should not be above doing a snide business in anything from onions, through flour, meat, cigarette lighters, radios and crystals of a type like an aspro that could be clamped between a couple of bits of metal and needed no fiddling with cats-



● Listening to foreign broadcasts could be punished with being "bumped off".

whiskers. This latter item selling at 50 to 100 cigarettes . . . coffee and cocoa were also good trade lines, so it will be readily observed that the lot of those who were P.O.W. in Germany, was immeasurably better than those unfortunates who were held by the Japs.

When the fuel positions became acute, as it did on occasions, home-made radiators flourished, as also did a hot water heater, principally used for shaving water or making tea. This heater was simplicity itself in ease of manufacture. All one did was to secure an empty 1-lb. powdered milk tin, across which was placed a stick to act as a support for a second element, and was also long enough to act as a handle. The second element was a 4-oz. cocoa tin lashed to the wooden suspender, and a lead run from both outer and inner tins to the 240-volt line after the large tin had been filled with water. These units boiled in quick time, but the amount of juice that they pulled must have been considerable. The extra load thrown on the German supply was evidently of considerable magnitude, because, after some of these instruments of torture had been found and confiscated by the lager guards, a notice was issued to the effect that continued use by prisoners would be treated as an act of sabotage and suitably punished. The use still went on. . . . You can't keep a good

Gefargener down. . . . No, sir! The Germans came to the same conclusion after they found that threatening shooting for offenders did not stop us chopping down large pine trees for fuel whenever he failed to produce sufficient quantities for us.

In conclusion, I think the reader will agree that Radio Fraternity as a whole in the camps pulled their weight, were good and helpful to both their own kind, and not found lacking in public spirit when it came to assisting the community as a whole. In their own small way they had, although "out of commission" as far as active service was concerned, contributed to united war effort in making things a little more pleasant for their fellow Britons.

### ABOUT NAZI MARINE TACTICS

**F**OR those who might be interested in the Hilfskreuzer Kommando under Herr Admirale Eisen, the following is a very brief contraction of a full-page article that appeared in the "Hamburg Volkischer Beobachter" (the Hamburg People's Observer), giving a brief resume of the actual conception of the project, and the way that it came to be operating in the Pacific.

It appears that the German High Command, at the beginning of the war, were somewhat worried about the activity of British naval forces operating in northern waters, interfering successfully with the ingress and egress of German raiders from Germany itself and occupied northern territory. Admirale Eisen evolved a plan in which he conceived the possibility of a ship being fitted out as an armed cruiser, and in lieu of taking the normal passage northward and westward into the Atlantic, and from thence south about and round the Horn into the Pacific, it was put forward that with Russian aid, i.e., the supply of an ice-breaker, that the ship could go north about and through the ice sea, and so on its journey to the Pacific via a specified route, later to amalgamate with other units of a Kommando operating at that time in another part of the world.

Admirale Eisen set out with his plan for a personal interview with Hitler, and received the latter's permission to carry on with the plan, and to select whatever ship he thought most suitable for the success thereof. A small passenger vessel of some 4000 or so tons was selected, strengthened to stand the stress and strain of the weather and fitted with both 5.9-inch guns, guns of lighter calibre, and torpedo tubes. The vessel had twin engines, both geared to the one shaft, and she was capable of 21 knots. Consensus of German naval opinion was that the ship would be superior in speed to a great number of British auxiliary cruisers,

and could do a good sort of "hit and run job", which so very naturally was the German intention. Where the ships rendezvoused was not given, but from the amount of Japanese stuff I saw from time to time, it could be assumed that the meeting took place in or near Japanese waters. The ship duly set out, and to quote Admirale Eisen, "after varying delays caused by the stalling of the Russians in providing the ice-breakers, as per promise, they got through the ice sea safely and were in free waters once again." The first time the Kommando made its presence felt was when they sank the "Turakina" in the Tasman Sea. This ship, with its single 6-inch gun, fought the raiders "Komet", in



● "The extra load thrown on the German supply was evidently of considerable magnitude."

which the Admirale flew his flag, and his other raider, "Orion", for six hours in a raging sea. The ship was alight from stem to stern as darkness set in, and Eisen decided to torpedo her, probably in an endeavour to extinguish a beacon that might have led to his undoing. The torpedo was fired and unfortunately struck a ship's lifeboat alongside "Turakina", killing the 38 members of the crew who were in it. He later picked up the remaining 20 members of the crew from the other boat and the water, and went "Hell bent for Election" down to waters below 40-degs. south latitude.

His next move was to return again and capture a small Norwegian ship, the "Homewood", and later the passenger ship "Rangitani" was sunk; from there onward is, of course, well known to the Australian public.

Write to the Editor about  
**YOUR RADIO  
PROBLEMS,  
YOUR LIKES OR  
DISLIKES**  
about "A.R. & TV News"  
or **ANY SUBJECT** in  
**RADIO or TELEVISION**

# Television NEWS

## FACTS ABOUT B.B.C. TELEVISION

### STATION AND AUDIENCE

Resumed on June 7, 1946, after a wartime break of nearly seven years, the B.B.C. Television Service has its headquarters at Alexandra Palace on a site 300-ft. above sea level overlooking London's northern suburbs. Vision and sound transmitters, with two studios, staff accommodation, workshops, etc., are grouped round the base of a 300-ft. tower and mast radiating television entertainment over a nominal radius of 40 miles. (In practice many "viewers" enjoy programmes at distances of 60 miles and beyond).

Television receiving licences, which cost £20 (double the ordinary wireless licence) numbered 82,400 at the end of November, 1948, but considerably more sets are now in use.

The television transmitter operates on the Marconi-E.M.I. system, with a definition of 405 lines per picture, interlaced to provide 50 frames a second.

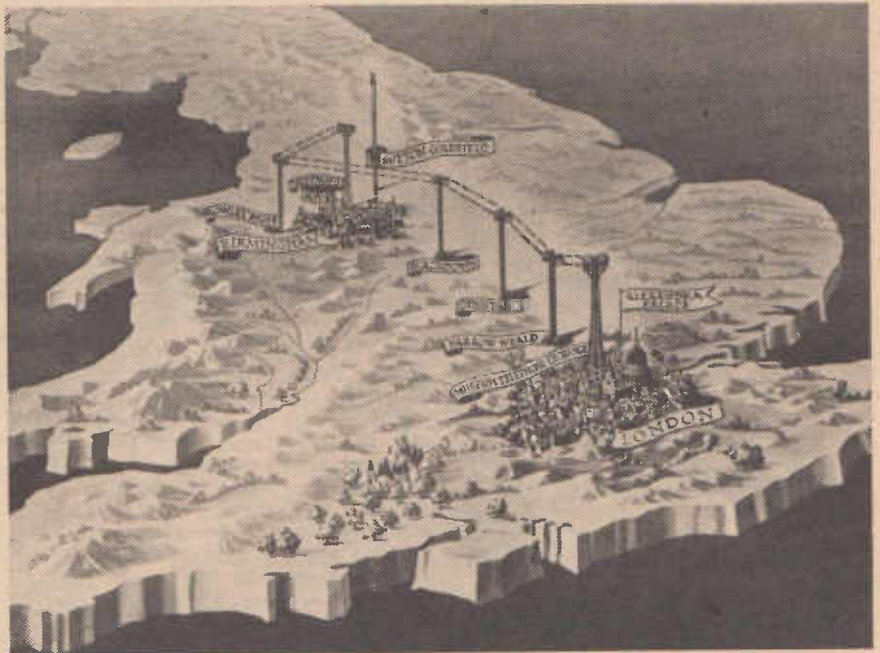
Television receivers are manufactured by a number of radio firms, and the average picture size is 10-in. by 8-in.

### PROGRAMMES

Programmes are transmitted every day of the week, Sundays included, with sessions each afternoon and evening. Afternoon programmes run for approximately an hour, from 3 to 4 p.m., with extensions in the case of plays or special "outside" broadcasts. Evening programmes extend from 8.30 to 10 p.m. In addition, a demonstration film is transmitted between 11 a.m. and 12 every week day morning for the benefit of the radio industry.

Studio programmes cover a wide range of interests. Plays, averaging about 2½ weekly, are perhaps the most popular, but the transmissions include weekly editions of "Picture Page" (interviews with people in the news), documentaries, illustrated talks, dance and variety shows, ballet, sporting interviews, demonstrations of amateur wrestling and boxing displays, newsreels made by the B.B.C.'s own film unit, and many short films. (Permission has not been obtained to televise commercial newsreels or featured films.)

Studio shows are supplemented by outside events provided by two mobile television units, which can range London and the Home Counties to distances of up to 30 miles from Alexandra Palace. In sport they



Below This relief map shows the various micro-wave points for linking the new British Midlands TV Station with the Alexandra Palace Studios in London.

have covered racing at Ascot, tennis at Wimbledon, cricket at Lords and the Oval, football and Wembley, rugby at Twickenham, the boatrace and numerous other items. In national events they have given viewers "actuality" pictures of the Victory Parade, Cenotaph Ceremony, Lord Mayor's Show, the Royal Tour to South Africa (departure and return) and the Royal Wedding—to name only a few.

### STAFF

Head of the Television Service is Norman Collins, formerly in charge of the Light Programme. The Programme Director is Cecil McGivern, recently returned from film work and formerly a B.B.C. feature writer. Programme Organiser: Cecil Madden. Pat Hillyard is in charge of Light Entertainment, Mrs. Mary Adams of Talks and Talks Features, Philip Dorte of Outside Broadcasts and Films, and Robert MacDermot of Drama.

There are about twenty television producers, and the total programme staff numbers about 300.

Television Superintendent Engineer: Douglas Birkinshaw.

### SPECIAL PROBLEMS

There are at present two television studios, each measuring 70-ft. by 30-ft. and 25-ft. high. Studio A has four camera channels, Studio B has three. Camera rehearsals are usually only possible for a few hours

before actual transmission; earlier rehearsals for plays, etc., are carried out in rehearsal rooms in town. A play usually takes a fortnight to rehearse.

Unlike ordinary broadcasting, television demands that the actors learn their lines. In this, as in almost every other department, television is more difficult and complex than sound broadcasting. Scenery has to be designed, built and painted, dresses must be made or hired, facial make-up must be devised to suit the varying moods of the cameras. Television make-up, lighter than that for films, aims at a sun-tan effect.

Stage and film artists make regular appearances, but television variety has been handicapped because many performers who are under contract to the big music-hall combines are not allowed to televise. A number of new television acts have been discovered by the Television Auditions Unit.

### TELEVISION ADVISORY COMMITTEE

The present high definition service originally started in the autumn of 1936, and was the first of its kind in the world.

Its progress is now guided by the Television Advisory Committee, which makes recommendations to the Postmaster-General on such matters as the introduction of higher definition and extension to other parts

of the country. The Committee is composed as follows:—

Chairman: Lord Trefgarne.

Treasury: Mr. R. J. P. Harvey;  
Mr. D. J. Wardley, C.M.G., M.C.

Post Office: Mr. A. J. Gill (Engineer-in-Chief); Mr. H. Townshend, C.B.

Board of Trade: Mr. H. A. Binney.

Ministry of Supply: Mr. F. C. How;  
Mr. F. S. Barton.

Department of Scientific and Industrial Research: Sir Edward Appleton, K.C.B., D.Sc., F.R.S.; Mr. O. F. Brown.

B.B.C.: Sir William Haley, K.C.M.G.; Sir Noel Ashbridge.

Col. Sir Stanley Angwin, K.B.E., D.S.O., M.C. (late of the Post Office), serves on the Committee in a private capacity.

Secretary: Mr. R. J. S. Baker, Headquarters 1234; Extension 4567.

### FUTURE DEVELOPMENT

Ultimately the B.B.C. Television service will cover all the main centres of population. The first of the provincial stations is that at Sutton Coldfield, near Birmingham. The station opened on December 17, 1949, and a station is planned for the North of England.

\* \* \*

The British Broadcasting Corporation, now operating two television stations, in London and the Midlands respectively; has placed orders for two high powered television transmitters of advanced design. These will serve the West of England and Scotland, and the four stations will then bring TV to a population of 35,000,000. Thus, Britain gets on with the job, not delaying because of the dubious advantages of colour TV. Meanwhile, Australia remains in the television doldrums.

*This publication listens to all manner of opinions about the vexed question of Television for Australia. One publicity man tried to convince us of a "gentleman's agreement" between manufacturers to the effect that Sydney's Royal Easter Show will, this year, bar any reference in the radio exhibition to television—that the policy was to avoid it. We wonder? What's the betting that the concerns to whom TV is a future stream of industrial life-blood won't have lots to show and talk about?*

### LATEST IN TELEVISION

Mr. Harold S. Aspinall, M.I.Mech. E., Director and Export Manager of the English Electric Export Company, is at present in Australia on a survey of the company's general interests. The English Electric Company is one of the largest electrical undertakings in the Empire, and some years ago acquired as one of its subsidiaries Marconi's Wireless

# Teletnews

Telegraph Company, with all its interests.

Mr. Aspinall said that "Australian television activity was attracting a great deal of interest in Great Britain, where there was considerably increased interest in television brought about by the completion of the new Birmingham station.

"The Marconi Company, which, as is well known, is the pioneer wireless organisation of the world, was now able to obtain the research facilities of the English Electric Group, and the pooling of the resources of the English Electric Company and the Marconi Company in their joint laboratories must place them in the unique position for the development of television research technique. It was in these laboratories that the aerial system of the new Birmingham station was designed, as well as the audio transmitter and the crystal drive of the vision transmitter.

"The Marconi Company is, of course, the oldest wireless company in the world, and they are the leaders in British television to-day. They played the pioneer's part in supplying much of the original equipment for the first television station to

commence public service at Alexandra Palace, and these transmitters were still in operation. Britain's latest and third station, which will be installed in the north of England, was well on the way to completion in the Marconi organisation. This station will be unique in British television, as it is the first ever to be built in its entirety by a single company.

"As far as Australia is concerned, the Marconi Group had always been associated with Amalgamated Wireless, who had full access to Marconi rights and manufacturing data, so that when the time comes for Australia to set up her own television industry, Australia would be well served from the point of view of availability of the latest and most up-to-date technique available in the world.

"As far as the English Electric Company's activities generally are concerned, their interests in Australia are all-embracing, as they have executed and have on hand large contracts for electrical equipment for industrial application, steel works plants, power generators, railways electrification, and domestic appliances."

## How to Know Television

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Write or call for information.

## International Correspondence School

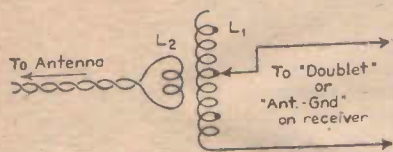
140 Elizabeth Street, Sydney.

When writing, please mention this magazine.

# SHORT WAVES

## MATCHING RECEIVER INPUT

THE ordinary twisted pair—or better yet a twisted pair designed for radio transmission line purposes—makes an excellent noise reduction lead-in, and its impedance, about 75 ohms (length has nothing to do with this, and the twisted pair can be any length) matches that of the centre of a half-wave doublet—particularly if “fanned” slightly at the antenna end.



The chances are the low impedance of this line will not match the input impedance of the receiver. Connect according to whatever directions accompanied the receiver. Try it across doublet terminals, if any, with earth connected—and across antenna and earth terminals with earth disconnected. If excellent results are not secured, try link coupling as shown in the circuit. Coil L1 is wound on a standard 1½-inch coil form with 21 turns, close wound, of any convenient wire tapped every third turn. L2 consists of 3 turns wound over L1. When L1 is connected to the antenna and earth of a receiver, try it both with and without earth.

\* / \* \*

## SHORT WAVE BROADCAST STATION LIST

Fre- quency	Wave Length	Call Sign	Location
17775	16.88	PHI PJCI	Hilversum, Holland Willemstad, Curaco Athens, Greece
17770	16.88		KCBF Delano, U.S.A.
17770	16.88		Colombo, Ceylon
17765	16.89	BEA6	Nanking, China Paris, France
17760	16.89	KWID	San Francisco, U.S.A.
17760			Manila, Philippines
		VUD3	Delhi, India
17755	16.90	WRUW WRUX WRUX	Boston, U.S.A. Boston, U.S.A. Boston, U.S.A.
17750			Boston, U.S.A.
17750	16.90		Moscow, USSR.
17730	16.92	GVQ	Daventry Colombo, Ceylon
17720	16.93	LRA5	Buenos Aires, Argentina

17715	16.93	GRA	Daventry
17700	16.95	GVP	Daventry
17630	17.02	PLD6	Batavia
17445	17.20	HVJ	Vatican City
16666	18.00	GNR3	Rabat, Morocco
16214	18.50	FZR2	Sagon, F. Indo-China
15898	18.86	CR6RL	Luanda, Angola
15825	18.96	WBC	New York, U.S.A.
15620	19.20		Madrid, Spain
15595	19.24	FZI	Brazzaville, F.E.A.
15500	19.35	ZLN5	Wellington, N.Z.
15450	19.42	GRD	Daventry
15440	19.43	RW98	Moscow, USSR.
15435	19.44	GWE	Daventry
15410	19.47	RW96	Accra, Gold Coast
15405	19.48	PZC	Moscow, USSR.
15390	19.49	RW99	Paramaribo, Surinam
15385	19.50	FHE2	Mosooov
15380	19.51	RW98	Dakar, Senegal
		ZYC9	Moscow
15360	19.53		Rio de Janeiro, Brazil
15350	19.54		Mosooov
15350		WRUL	Luxembourg
		WLWRI	Boston, U.S.A.
		VUD9	Cincinnati, U.S.A.
15345	19.55		Delhi, India
15340	19.56	RW102	Athens, Greece
15335	19.56		Moscow, USSR.
15330	19.57	WGEO	Dacca, Pakistan
		KZFI	Soheneotady, U.S.A.
15330		WLWRI	Manila, Philippines
		WLWR2	Manila, Philippines
15325	19.58	OQ2RC	Cincinnati, U.S.A.
15320	19.58	RW97	Cincinnati, U.S.A.
		OZH2	Leopoldville, B. Congo
		VLC4	Moscow, USSR.
		OLR5B	Copenhagen, Denmark
		CKCS	Shepparton, Australia
		HEI7	Prague, Czechoslovakia
15310	19.60	GSP	Sackville, Canada
15305	19.60	HER6	Berne, Switzerland
15300	19.61	RW96	Daventry
		GWR	Berne, Switzerland
15290	19.62	LRX1	Moscow
		VUD3	Singapore
		VUD11	Paris, France (UN)
		WRUA	Daventry
		WRUL	Buenos Aires, Argentine
15285		WNRE	Delhi, India
15280	19.63	ZL4	Delhi, India
		RW98	Boston, U.S.A.
15270	19.65	WCRC	Boston, U.S.A.
		RW96	Bound Brook, U.S.A.
		WCBN	Wellington, N.Z.
15260	19.66	GSI	Moscow, USSR.
15250	19.67	KNBX	New York, U.S.A.
		BEA4	Daventry
		WLWRI	Dixon, U.S.A.
15250	19.67	KRHO	Nanking, China
		KCBR	Cincinnati, U.S.A.
			Honolulu, Hawaii
			San Francisco, U.S.A.
			Manila, Philippines

## INSENSITIVE RECEIVERS?

It is surprising the number of SWL's who complain that they are unable to pick up DX stations in the short-wave ranges of their receivers. Most of these complaints are directed at stock model receivers, which is even more surprising, and

we are at a loss to explain the reasons.

There is always the possibility, of course, that a receiver insensitive to weak signals is merely out of alignment, in which case a good serviceman can put matters right. Stock receivers are not these days usually out of alignment when they leave the factory. Most sets produced by reliable companies are properly aligned to begin with.

There is the further possibility that the avc action in a given model of receiver may function too well on weak signals and thereby “hold down” the sensitivity of the receiver. If the avc action is delayed so that it does not go into effect except on moderately strong signals, the sensitivity of the receiver to weak signals is not reduced.

The average modern receiver is protected against the loss of sensitivity to weak signals. In sets where

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this is not the case, the condition can be rectified by the installation of a switch to cut out the AVC action when hunting for DX. It is only necessary to use a single pole, single throw toggle switch that will connect the AVC lead to ground (chassis) when AVC is not desired. It should be pointed out, however, that other means of cutting out the AVC must be used in receivers wherein the AVC lead also carries the initial bias voltage for the controlled tubes.

But it is still our opinion that most complaints come from people who either do not employ an efficient antenna system in conjunction with the receiver, or have not as yet mastered the art of tuning in weak stations in the short-wave bands. There are few receivers so bad that they will not bring in some DX—and by DX we do not mean merely the powerful stations.

#### METAL RECTIFIERS

WHEN using metal rectifiers for mains units it is important to bear in mind that the output voltage is dependent upon the capacity of the filter condensers used in the circuit. Once or twice lately we have met instances where this has been overlooked by a constructor and 8-mfd. condensers have been employed, with consequent reduction in the output from the rectifier owing to damage sustained from the overload. It will be found that in most cases a capacity of 4-mfd. should be employed.

#### LEAKAGE IN TEST LEADS FACT OFTEN OVERLOOKED

ONE of the factors concerning leakage that is rarely given the least consideration is the effect of test leads. The insulation rods in which the probes or 'phone tips are seated naturally go directly to circuit being measured, only the path is supposed to be non-conductive.

If the insulation on the wire itself that constitutes the leads proper is of the best, no trouble will be experienced from that source. But even if the wire is perfect, if the insulation rods do not furnish all the insulation they should, for instance are made of fibre, the leakage may be so great than in measurements in the meg-ohm range the error introduced by pressing the fingers strongly against the rods, especially at the ends near the tips, may amount to as much as 20 per cent.

In considering the purchase of test leads, therefore, it would be well if they could be tested on a high-resistance measuring circuit, so that the shunting effect of the pressure of fingers against the rods would show up. If a sensitive meter is used, and even if the ohmage range is not high, some additional battery voltage, say, 45 volts, with extra



limiting resistor, to get somewhere near, though not beyond full-scale, will extend the range enough and enable an adequate test of the leads.

\* \* \*

#### KEEPING THE SOLDERING IRON POINT CLEAN

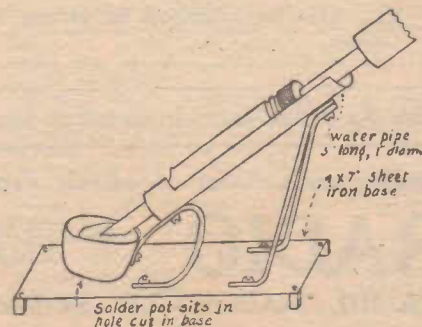
NOTHING is more annoying to the constructor than to have his soldering iron point always dirty, the tinning burned off the point every time a joint is to be soldered or unsoldered. Even a clean, well-tinned iron while heated and exposed to the air becomes oxidised and the tinning burns off, requiring cleaning and re-tinning.

The arrangement shown is about the best to keep the iron always clean and well tinned, ready for use. It essentially is an arrangement which holds the point of the iron in a bowl of solder which the point keeps melted. The point is next submerged in the solder and is thus free from exposure to the air. Besides, the heat is conducted away from the tip.

By building the holder at the proper slope and by regulating the level of the solder in the bowl as much of the point as desired may be kept clean.

Any small iron crucible or the dipper part of a small ladle can be used as the solder pot. A 5-inch length of one-inch inside diameter water pipe cut as shown constitutes the cradle and holder for the iron.

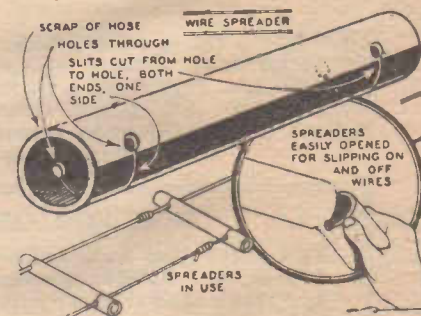
The pipe is cut as follows: One-



half inch from one end cut the pipe crosswise, half the diameter. Then cut the pipe lengthwise from the other end, cutting down the middle to meet the first cut evenly. Remove the loose piece. In a piece of 4x7 inch sheet iron and near one end cut a hole to accommodate just the bottom round of the solder pot. Fasten the pipe and the bowl together as shown by a small iron strap of sufficient length to enable bending it around, and fasten to the base when the solder pot is in the depression cut for it and the iron pipe is at the right slant. Two thin iron straps fasten to the other end of the pipe with a small bolt and are spread as an inverted V and fastened to the base. The base is elevated sufficient to clear the bottom of the bowl by any kind of legs or small wooden blocks.

#### SPREADERS FROM PLASTIC HOSEPIPE

Short lengths of the popular P.V.C. garden hose now available at any hardware store make inexpensive spreaders for spaced feeder lines, as shown in the sketch.



Cut the hose into 6-inch lengths and drill holes about 1/2-inch in from the ends. If you slit the hose on one side, between the holes you can then string the feedline and slip the spreaders into position afterward. P.V.C. manufacturers could well produce a "commercialised" version.

\* \* \*

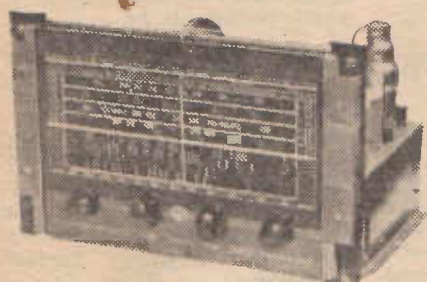
"MOO": The radio manufacturer can be devoid of humour. Witness the names he gives to products. For example, a low frequency loud-speaker is a "whooper" and a small high frequency one a "tweeter." Put the two together and you're supposed to get high fidelity. Sometimes, though, the big one makes animal noises and the little one twitters like a canary.

# CLASSIC RADIO

## for QUALITY with ECONOMY

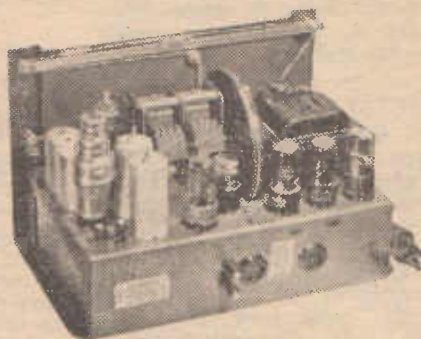
*Complete Radiogram Unit Comprising*

- 8 VALVE WORLD-RANGE RADIOGRAM CHASSIS +
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F.O.R.



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Five valve dual wave chassis specially designed for operation direct from 12V, 24V or 32V lighting plants, with specifications as above but with R.F. stage and single output valve and speaker, less motor and pick-up. **£22/10/-**



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four valve broadcast receiver in attractive bakelite cabinet, walnut finish, size 11-in. x 7-in. x 5½-in. deep. New type high gain coils and valves make this set an outstanding performer.

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COMPLETE

F.O.R.

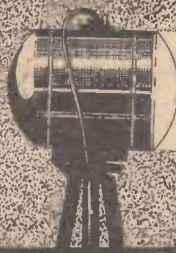
Six Valve Radiogram Units As Advertised In Previous Issues Are Still Available.

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# CLASSIC RADIO

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# READER'S FLOODLIGHT

**L**ETTERS to the Editor, on any aspect of radio or television, are always welcome. Where space permits, selections will be published. A pen name may be used but it is essential that the writer's correct name and address be supplied. The Editor holds the right to abbreviate letters where necessary. The publishers do not necessarily agree with the opinions expressed in letters.

Lot 35,  
Gleeson Avenue,  
Bankstown, N.S.W.

The Editor,  
"R & TVN"  
Dear Sir,

Having read the editorial . . . (February, 1950, issue), in which you so freely criticise readers for lack of participation, I feel that I should write a few words . . . the reader should not participate actively in the supplying of reading material, but should be able to purchase a magazine worthy of its price, in which he is supplied entertaining and educational reading matter, contributed not by readers, but by specialists or experts . . . the editor himself is responsible for the supply and maintenance of new wells of interest . . . your television policy is quite sound . . . but why fill valuable space with photos of television entertainers and articles on English Shows. Articles of technical nature would be more welcome. In my opinion and that of others with whom I have discussed the subject, both members of the radio world, the public for which you are catering simply does not exist . . . at present . . . your own opinion is that a purely technical publication would have a limited circulation. No one can deny that "—" was not a purely technical magazine. The amateur section and technical articles in "R & TV" are good, but not sufficient to warrant the purchase price . . . I suspect the majority are too disappointed to make a second buy.

Yours sincerely,  
N. J. Flood.

(No doubt some readers will have their own opinions, and will wish to comment. In the main, our own observations are as follows:—The purport of the editorial in question has been misread. No editor can be a mind-reader and only by correspondence can it be determined just what the MAJORITY of readers would like. There is no suggestion that readers supply all the reading matter; that idea is fantastic. Our files show a large volume of letters in praise of R & TV and Mr. Flood's is about the fourth to express disapproval. If there are similar thoughts in the minds of any readers, we would like to have them. The reference to English TV News and illustrations is answered by the fact that we consider a picture-less periodical to be as dry as dust and the British Broadcasting Corporation graciously obliges with a constant flow of material which we really do believe is of interest to the majority of readers as indicative of the TV trend overseas. The same kind of thing will be happening here very soon. Australian TV News is yet in a very embryo stage, but we are looking ahead. A periodical dealing with radio alone will be of minor interest in three years time. We were the first to

plan thus openly for the future, and as we have stated in editorials, we do not intend to be deterred by minority opinion. We have no illusions either about public response to a purely technical radio periodical in these days. Four years ago it was very different—a scientifically conducted radio-boosting war had just concluded, and the public would snap up anything the bookstalls had to offer, technical or otherwise. That same public doesn't want to read any more about radar, glide-path aircraft control or complex electronic devices. Mr. Flood mentions another publication. Again we reiterate that the solely technical-reading public is very limited, other than in a very elementary manner. Large circulation can only be built up over a period of time, no matter how good the reading material. Finally, we thank Mr. Flood for his concession that our technical articles "are good," but don't agree that they aren't worth a bob. And as for amateurs being "too disappointed to make a second buy"—that is indeed a very long way off the beam. We leave it to our Australian, New Zealand, British and American amateur readers to supply the answer to that.—Editor.

12 Farrell Road,  
Kingsgrove

Dear Don,

The G8PO is now complete and is giving even better than expected results.

As I am keen on working into both the States and Europe, have been toying with the idea of erecting an experimental model of a full wave W8JK as described by John Krans in an excellent article in "Radio", February, 1939. The idea would be to apply the G8PO principle to the full wave W8JK to suppress the patterns on one side. This if successful would provide beamed coverage to both Europe and U.S.A. from a fixed array with the line of the wires running east and west. It would no doubt be necessary to use 1/4 wave stubs in each element for feed purposes.

Yours,  
Sel Weston (VK2SY)

Rev. R. J. R. Delbridge,  
Stanthorpe.

20th January, 1950

Editor, "Radio and Television,"

Sydney.

Dear Don,

I have just received my current copy of your esteemed journal. In it I noted your kindly reference to my late wife, and your thoughtful expression of sympathy. Will you please accept my heartfelt thanks for the remembrance so freely and feelingly offered. I sensed that it was genuinely given and it touched me deeply.

It was certainly a keen sorrow to me and still is. Not only was she gifted as a splendid helpmeet in my work, but she happened to be an expert operator on the key! We worked together very early in life in the old country as commercial ops, and frequently worked duplex on TS (London) from Worthing in Sussex.

Whilst writing I would like to pay tribute to your fine spirit. As an Editor you probably don't get very many bouquets, but I have always felt that over the air you breathe a camaraderie of rare vintage, and I have rejoiced in it. To me it seems like a liberal education to belong to the goodly fellowship of the old-

timers, and it is good to find that age does not weary them from continuing the good work. Again, many thanks.

Yours fraternally,  
"Del"

Some readers have written asking why we have discontinued the "Provincial Broadcaster" series. Simple. We made the space available to managers of country broadcasters, but apathy results in poor response, and space is valuable for other purposes at present. If the provincial people take enough interest in our telling their story to readers, well and good. If they suffer from "tropical inaction" we have no alternative than to apply our column inches otherwise. These remarks apply also in a general sense.

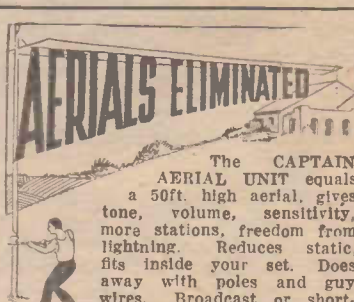
—Editor.

We hereby duly apologise to John Miller, VK2ANF, for a bit of a mix-up in an exchange of mail. You received a letter intended for VK2XO by error, John, and vice versa. No harm done, but we are sorry that the surprise of the gift from Grieff was lost. As long as you get your copies of "A.R. & TV. N." regularly, that's the main thing.

\* \* \*

## CREDITS

In the process of compiling a monthly publication, reference may be made to technical data and illustrative material in overseas periodicals. Such reference is accompanied by acknowledgment of the source, but instances occur of unintentional omission. Due to temporary difficulties during the industrial hold-up last year, we omitted to give credit to illustrations originating with overseas contemporaries. We apologise for such omission to "Radio-Electronics", "Radio and Television News" and "Radio Officers' News" (U.S.A.).



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# COMMERCIAL BROADCASTING NEWS and NOTES

## 2UW SYDNEY COMPLETES 25 YEARS OF BROADCASTING

THE silver anniversary of Station 2UW fell on February 13, 1950, exactly 25 years from the day on which a licence was granted to Mr. Otto Sandel, radio and electrical engineer of Bellevue Hill, to operate a broadcasting station under the call sign of 2UW Sydney.

In actual fact, the station had been transmitting on an experimental basis for two years prior to the granting of the broadcasting licence. Mr. Sandel, however, was a pioneer in a commercial as well as a technical sense. His faith in the power of radio as an advertising medium was well established in radio's earliest days, and in order to use the station to advertise his own business, he took out a licence in 1925. Studio equipment was confined within one room, and, with one turntable, he himself acted as engineer and announcer. His transmission hours averaged four per night, with spasmodic broadcasts during the day as time from his regular business permitted.

To this day, Mr. Sandel asserts that his primitive little radio station, transmitting the simplest of programmes, which were received on sets as primitive as the transmitting equipment itself, proved immediately to be a first-class and wholly effective advertising medium.

Incidentally, there has been considerable conjecture regarding the significance of the letters in the call sign—"UW". A search through the records now reveals that they hold no significance at all! They happened to be the letters available at the time of the granting of the licence and represent no more than a chance selection by an anonymous clerk in the P.M.G.'s Department back in 1925.

WITH the gradual strengthening of radio's public appeal, the larger business enterprises began to realise its commercial possibilities, and in 1928 the combined interests of W. H. Paling & Co. Ltd., Farmer & Co. Ltd., and J. C. Williamson Ltd., bought out Mr. Sandel, and commenced to operate on 2UW's licence. The station was established in Ash Street in October, 1927, and the first manager of the station

● Robert Montgomery, well-known screen star, taking part in a BBC programme during his 1949 visit to England.

(By courtesy of the B.B.C.)



under its new ownership was Mr. F. W. Leighton-Bailey. His announcing staff consisted of Mr. J. M. Prentice and Mr. Clifford Arnold, both of whom are still active in local radio, the former having continued his association with 2UW to the present day, and the latter being connected with the production of one of 2UW's principal features, "Australia's Amateur Hour".

Shortly after this, the J. C. Williamson interest in the station was withdrawn, and in 1930 the whole of the station's operations passed under the management of Mr. Oswald Anderson. Soon after this, the Farmer & Co. interests were also withdrawn, and Palings became sole owners.

In 1933, the station again changed hands, and was moved to the State Shopping Block, Market Street, there to remain to the present day.

The new owners of the station were the Australian Broadcasting Company, out of whose organisational work in those early days the system of broadcasting as we know it in Australia to-day has evolved.

The directorate of the Australian Broadcasting Company at that time comprised the late Mr. Stuart F. Doyle (Chairman), Messrs. M. F. and A. F. Albert, Sir Benjamin Fuller and Mr. John Fuller.

IN 1929, this company had inaugurated the National Broadcasting Service—an organisation which

undertook to co-ordinate the management of and provide programmes for the A Class stations of Australia, which had lately been acquired by the Government. In 1932, the contract of the Australian Broadcasting Company having expired, the Government decided to use the machinery of its National Broadcasting Service as a basis on which to establish the Australian Broadcasting Commission. This move left the Australian Broadcasting Company free to enter the commercial field, which it did by the purchase of Station 2UW in Sydney, for the operation of which a new company—the Commonwealth Broadcasting Corporation Pty. Ltd.—was registered. Under this organisation, 2UW has operated to the present day. Mr. Anderson continued as Station Manager until 1935, with Mr. C. F. Marden, of the Australian Broadcasting Company, as Supervising Manager. Following Mr. Anderson's resignation, Mr. Marden was appointed General Manager, and remained at the 2UW helm until his retirement from broadcasting in 1946, when the present General Manager, Mr. John Taylor, was appointed.

In a very literal sense, 2UW may be regarded as having grown up with its own industry. In the earliest days of commercial radio in Australia, the station was pioneering the new industry, and its history has been one of continual expansion

within a continually expanding industry.

2UW has no political or religious affiliations and has pursued, and will continue to pursue, an independent policy untrammelled by any ties whatsoever.

**F**ROM the four-hours-daily transmission of 1925, the station now broadcasts continually for 24 hours a day, seven days a week, and has done so since February 23, 1935—the only station in Australia successfully to attempt this tremendous “never off the air” service. The recently constructed modern transmitter at Homebush is operating on a power of 1000 watts, frequency 1100 KC, and wave length 270 metres. From regular checking of station mail, it has been proved that 2UW is heard easily and regularly, in daytime, over a distance of more than 300 miles, whilst at night the transmission covers the whole of Australia, and well beyond.

As key station of the Major Network, 2UW is linked with stations in all capital cities—3DB Melbourne, 4BK Brisbane, 5AD Adelaide, 6IX Perth, 7HT Hobart, together with all their relay stations, and including also 2KO Newcastle and 7EX Laun-

On behalf of its various adver-

tisers, the station has presented, over the years, some of the most famous and popular of Australia's national radio shows, notably the “Lux Radio Theatre”, “Atlantic Show”, starring Bob Dyer, “Australia's Amateur Hour”, etc.

In the radio serial field, 2UW has for years held the largest and most consistent listening audience in the Commonwealth with such dramas as “Crossroads of Life”, “Mary Livingstone, M.D.”, “Big Sister”, “My Husband's Love”, and the two record-breaking marathons, “Dad and Dave” and “Martin's Corner”, both of which have been broadcast regularly from 2UW for twelve or more years.

**I**T should be noted in passing that 2UW's association with George Edwards Productions, which began in 1936, has undoubtedly been responsible for establishing the serial drama as one of the most universally popular listening features in Australian radio.

In the sporting field, the station holds a high record for service, particularly for its cover of week-end racing events in both Sydney and Melbourne, whilst it is still remembered vividly for the introduction of the lively ball-to-ball Test cricket match descriptions which began with

the 1930 series, and for introduction of the aerial surf patrols over Sydney beaches. Every sporting event of local or international interest is fully covered by 2UW's Sporting Department.

### “The Curfew tolls the Knell” and of its own Accord

Across the hills and dales of Kings Cross, Sydney, the gentle tolling of the Angelus at dawn, and the curfew's knell of parting day, will sound from the ghost fingers of an unusual device contrived in the model shop of the Amalgamated Wireless Laboratories.

An electronic carillon similar to that which heralded from the A.W.A. tower and the Melbourne Town Hall, the birth of the Royal Prince, has been installed in the Church of the Sacred Heart, Darlinghurst.

The Carillon is operated by an orthodox piano key board, when played manually, by which means either the orthodox bell changes can be tolled or a recital of simple melodies played.

The carillon installed in the Church of the Sacred Heart is unique in that the special attachment fitted will sound the Angelus at pre-set intervals, or by merely throwing a switch can be made to toll a peal of bells of its own accord.

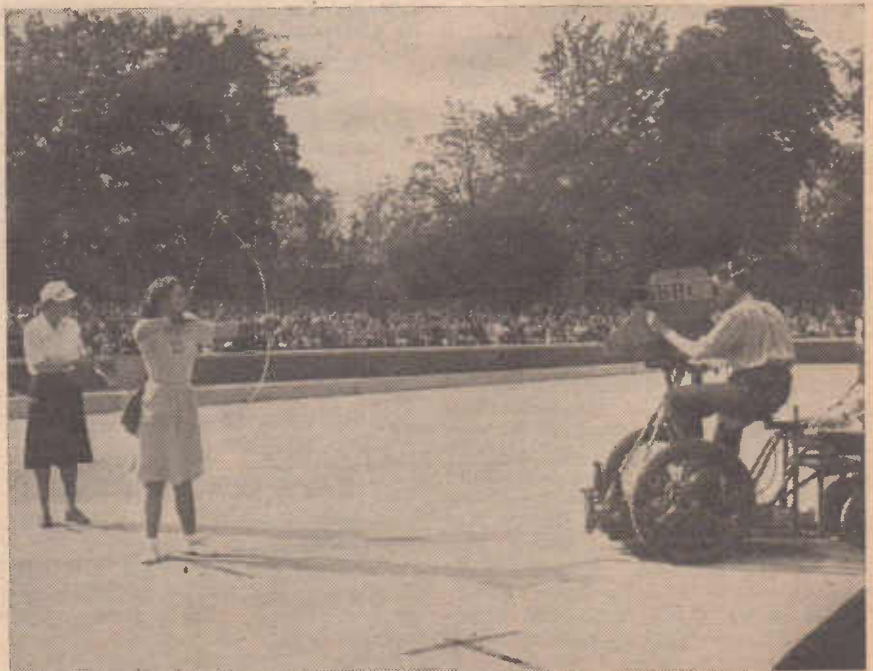


(B.B.C. photograph).

● Television outside broadcast cameras in action during a British International Association football match at Highbury, London.

● Below: The variety of subjects for outside broadcasts in television is virtually unlimited. This scene in Victoria Park was during an archery display. A Czechoslovakian competitor is shown in action during a world championship match.

(B.B.C. photograph).



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

### COMMUNITY SERVICE

**3BA Backs Hospital Appeal:** More than 7,000 listeners to Station 3BA Ballarat (Vic.) between them donated £8,500 when the Ballarat and District Base Hospital conducted a radio appeal for funds recently. Station 3BA made available a full day's broadcasting time, all local sponsors donated their usual time, and the full announcing staff was on the job from 9.30 a.m. to midnight. Although nine clerks were busily noting promised donations, so prolific was the response that acknowledgements had to be continued on two following afternoons.

**Something to Write About:** Recently a Yorkshire (U.K.) sailor was landed in Queensland from his ship, "City of Albans," and admitted to the Mackay District Hospital. Needing books to read, he wrote to Paul Rasmussen, who conducts Station 4MK's hospital hour. The sailor has since informed 4MK that so many Yorkshire people, now settled in the Mackay District, had called and issued invitations for him to stay with them while awaiting his ship, that he had difficulty in making up his mind about his future course of action. He writes: "That's something to write home about!"

**2SM Aids Boys' Home Appeal:** The President of the Honorary Management Committee of St. Vincent's Boys' Home (Westmead), Mr. H. L. Guest, has written thanking Station 2SM Sydney for publicity given to its recent appeal.

"You will, I am sure, be pleased to know that a record crowd of about four thousand was present and the response so far exceeds £4,000 which has given us great encouragement to continue our efforts for the underprivileged orphaned boy.

"We feel the result was in no small way due to the publicity it received from the Broadcasting Stations, to whom we are deeply grateful."

**United Nations Day Coverage:** The Acting Federal Secretary of the Australian National Committee for the United Nations (Miss Eileen Davidson) has written to the Federation expressing sincere thanks to the commercial broadcasting stations throughout Australia for their very complete coverage of United Nations news on the occasion of United Nations Day celebrations (October 24).

"We feel confident," Miss Davidson writes, "that a little more understanding of U.N.'s aims and objectives has percolated through the Australian community as a result."



● Station 2SM is supplying a long-felt want in broadcasting a full description of the Rugby League match of the day every Saturday afternoon. In these broadcasts Sporting Commentator Reg. Grundy describes the play from the kick-off to the final bell.

### 2SM

**Bowlers!** Listen to Gordon Sargeant's weekly talk on **BOWLS**. It's heard from Station 2SM every Tuesday evening at 8.45 p.m. With cheery Gordon discussing all the Club activities, it's the Bowlers' very own session, so keep it active and interesting by sending him your news. Gordon will personally answer any queries you may have, and all information intended for this 2SM feature should be addressed to "Bowls," the Oceanic Hotel, Coogee.

**Bluey and Curley** need no introduction to readers throughout the Commonwealth. The antics of these two "Diggers" in the famous cartoons by Alex Gurney have captured the hearts of the public. It needed only a top-ranking comedian like Rex "Wacka" Dawe to breathe life into the characters and make them live on the radio . . . and that's why the "Bluey and Curley" series is one of the most popular features from 2SM. Listening time for this laugh-raiser is 7.15 p.m. on Monday . . . and the same time on Friday evening.

### "CAFE CONTINENTAL"

Josephine Baker, one of the greatest names in the Parisian's world of After Dark Entertainment, was heard in the opening session of 2SM's new feature, "Cafe Continental". This session brings listeners many of the famous European artists, and listen-

ing time is 9.15 p.m. every Tuesday night.

### FLOODED STATION CARRIES ON

**DURING** the recent disastrous flood at Kempsey (N.S.W.), Station 2KM kept on the air until water at the transmitter was knee-deep. Then rising flood waters caused the power station to blow up, all light and power was cut off and 2KM went off the air.

Earlier, the station had been broadcasting urgent police warnings for the people to evacuate.

The audio sections of the transmitter were now taken out and placed in the Kempsey Hotel. By this time, the flood waters were a raging torrent and it was impossible to cross Smith Street. The Hotel proprietor gave 2KM permission to establish itself temporarily on the back verandah, and on the following evening, the station was "on the air" again for a brief period, during which a 20-minute broadcast was made giving a description of what Kempsey was going through. This short broadcast was made possible only by considerable ingenuity on the part of the two 2KM engineers who had to rig up a temporary transmitter and use borrowed batteries.

When the flood receded, it was found that the station equipment could be written off as a total loss. Undaunted, 2KM borrowed the P.M.G.'s 500-watt mobile transmitter and established a temporary studio at Kempsey Post Office. The first period of resumed broadcasting was donated by 2KM to personal messages to and from flood victims and regional reports to and from outlying districts.

Soon afterwards, A.W.A. despatched their 2CH "stand-by" transmitter equipment to Kempsey, and 2KM was able to resume its normal daily programme.

Once again a commercial station, crippled in time of national disaster, has proven its ability to get quickly back on its feet and carry on in the service of the community.

### WHAT'S YOUR NAME, GIRLS?

There are literally hundreds of names in the English languages that have been immortalised in song and ballad—from "K-K-K-Katy" to "Jeannie With the Light Brown Hair"!

2UW have built a charming session round this theme, entitled "Beautiful Girl", and all the Marys, Mimis, Annabells and Louises will hear themselves serenaded in some of the most melodious songs ever written. They'll hear also the meaning and origin of their names, with odd little bits about famous women who bore them and who inspired the songs.

"Beautiful Girl" makes pleasant listening at 3.15 p.m. every Monday on 2UW.



# In Tune with the Trade



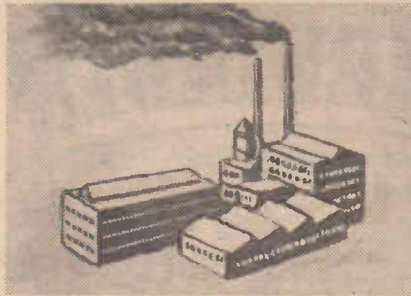
## PROMINENT CERAMIC ENGINEER FOR DUCON

A valuable addition has been made to the staff of Ducon Condensers Ltd. by the arrival from U.S.A. of Mr. J. M. Gleason, Bsc., a ceramics engineer of wide experience. During the war, Mr. Gleason was brought to this country by the Federal Government to assist in the urgent development of Steatite. He has now returned with the object of settling permanently. After studying at the Ceramic College of Rutgers University, Mr. Gleason joined the staff of General Ceramics and was mainly



responsible for the development of Steatite for HF low loss insulators. At the conclusion of the war he joined the company of Curan-Pfieff, New Jersey, Porcelain manufacturers, and it was here that Mr. C. S. Gittoes, Ducon's technical Director, contacted Mr. Gleason and induced him to return to Australia in the interests of his Company. Ceramics play an increasingly important part in radio engineering to-day, and that of course, embraces the future important field of Television. Mr. Gleason's experience will be of direct value to the Australian television industry of the near future.

*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 A.W.A. APPOINTMENTS

Managing Director L. A. Hooke has announced new appointments to the executive of Amalgamated Wireless (Australasia) Ltd.

In consequence of the vacancy created by the appointment of Mr. A. H. Longstaff as General Manager of S. Smith & Sons (Australia) Pty. Ltd., a company jointly owned by A.W.A. and S. Smith & Sons (England) Ltd., Mr. W. J. J. Wing is appointed to the post of Victorian Manager.

Since 1924 Mr. Wing has managed the Company's retail radio merchandising during which time more than half a million Radiola receivers have been sold.

Mr. A. P. Hosking relinquishes the post of Manager, Amalgamated Wireless Valve Company Ltd. to take over the management of A.W.A. Sales and Merchandising and Mr. A. E. R. Fox is appointed to the post of Sales Manager, A.W.A. Valve Company.

## NEW "GOLDEN VOICE" RELEASES FOR 1950

A. G. Healings have announced the first of their new releases for 1950:—

- 4 Valve B/Cast—Minor—Model 402E "Comper" and
- 5 Valve D/Wave — Console — Model 579E "Superior."

Both feature modern cabinet stylings with particular emphasis to dial treatment, and the very latest in technical design. Special attention has also been given to service and transport problems and the design of chassis and carton will ensure a minimum of trouble in this regard. We commend these Models as a progressive step forward in the modern trends of Healing "Golden Voice" Radio.

**TECHNICAL FEATURES:—** Model 402E Comper—4 Valve B/Cast. Chassis for AC operation in plastic cabinet measuring 11 in. x 6½ in. x 6 in.—Totally enclosed — Ventilated back assembly ensures full protection with cool operating efficiency—Inbuilt Aerial—Large unbreakable "AirspeX" dial of unique design which, when lit, appears to make the station symbols "float" in front of the silk which extends the full length of the cabinet—On/Off switch combined with volume control—Chassis, speaker and dial assembly one integral unit easily removed for quick servicing should it be required.

**RETAIL PRICES:—** Walnut, £18/5/-; Ivory or Green, £18/15/-.

**MODEL 579E CONSOLE "SUPERIOR":—** 5 Valve D/Wave Chassis for AC operation—Low-boy cabinet measuring 32 in. L x 29 in. H x 13 in. D; piano finished in Walnut with Ivory relief—Large dial 13 in. x 4¼ in.—Quick action direct coupled dial movement developed by, and exclusive to Healing, which permits instant tuning from one end of the dial to the other without twisting of knobs—final tuning permedium of vernier action. (This special feature obviates troublesome dial cords)—All controls semi-concealed rotary type operating in Ivory escutcheon—On/Off switch combined with volume control—12/0-12 in. Rola Speaker ensures a tone exclusive to "Golden Voice" alone—Pick-Up Plug—AVC etc.

**RETAIL PRICE:—** £49/15/- inc. tax. Stocks available now.

## SYDNEY DIVISION I.R.E.

Members were treated to an interesting lecture last month, when Mr. O. L. Wirsu dealt at length with micro-wave applications and developments. He displayed several items of equipment consisting of wave-guides, a travelling-wave valve generator and measuring instruments. Mr. Wirsu is an engineer in the Radio Transmission Section of Standard Telephones & Cables Pty. Ltd., and was previously a CSIR research officer and latterly Communications Superintendent for Australian National Airways. A vote of thanks for the lecture was moved by Mr. Don Lindsay, of Amalgamated Wireless (A'sia) Ltd.

## LABELS FOR PLASTICS

Labels to describe the properties of new plastic articles—and how to care for them—will soon be attached to all plastic products, according to plans now being worked out by the Plastics Institute of Australia.

There are so many plastic materials and they can be used in so many different ways, that the industry has been forced to adopt a widespread educational campaign to ensure ready acceptance of its goods.

Leading plastics firms have approved this Informative Labelling Plan and major retailers are known to favour it.

Un-informed publicity added to post-war misuse of plastic materials was sometimes brought disappointment to plastics buyers. The Informative Labelling of approved articles is expected to build sales and reinforce public acceptance of the products of this £10 million per year Australian industry.

A special committee of the Plastics Institute is handling this sales-building development and indications are that the complications of plastics will be far less for buyers during 1950. Also, it is expected, many new uses for the twenty-odd types of plastic materials commercially available will be developed as consumer confidence grows through this useful plan.

*TALKING about mu, recalls a bit of "backfence philosophy." Said one alley-cat to the other: "Just between you and I, Tom, how many mews make a multi-mu?"*



### NEW RECORDS

For H.M.V. on EA3857 two attractive new numbers are presented by top-ranking American bands. These are "The Huckle-Buck" by Tommy Dorsey, and Vaughan Monroe's first waxing of "Dreamy Old New England Moon." "The Huckle-Buck" is a novelty blues that has proved a tremendous juke-box favourite in the States. The Dorsey band gives this typical "jump" treatment, the vocal honours being taken in grand style by coloured trumpeter, Charlie Shavers.

On Decca's Y6186 Bing Crosby features the sentimental hit song, "Last Mile Home." For extra value, Bing gives his army of fans a special treat on the reverse side with the always appealing old favourite, "Easy To Love."

Bob Eberley, with the Sunshine Serenaders, introduces on Y6187 a new number in the romantic Western style called "One Has My Name, The Other Has My Heart." It's coupled with Jimmie Davis singing "Let's Be Sweethearts."

That famous vocal team, The Ink Spots, group around the microphone for the Decca offering on Y6188. They bracket the overseas best seller, "Who Do You Know In Heaven," with "A Kiss And A Rose."

Dynamic Judy Garland, star of the film "In The Good Old Summertime," has recorded four numbers on M.G.M. discs 5010 and 5011. The first duo is "Put Your Arms Around Me Honey" and "Meet Me Tonight In Dreamland," sung with all that particular drive that has made her famous. The other disc links "I Don't Care" with "Play That Barber Shop Chord." In the last item Judy finds rousing support in The King's Men, a vocal team which enters into the full spirit of the old-fashioned barber shop quartettes.

Among the imported releases from England there's splendid variety, everything from smouldering Spanish songs to a Trumpet Concerto.

The first disc on the turntable is Columbia LX1194, a modern recording by pianist Walter Gieseking of three favourite Grieg pieces—"Wedding Day at Troldhaugen," "Solitary Traveller," and "To The Spring." Gieseking's return to records is a boon to all lovers of fine pianoforte playing. His delicate touch and romantic temperament are ideal for such pieces as these, miniature portraits of Norwegian life that are unique in music.

The "Trumpet Concerto in E Flat" by Haydn comes from the same studios on DX1535/6. This delightful work, part of which has achieved excellent sales on DOX616, now appears in complete form, occupying three sides. The fourth side is "A Trumpet Voluntary" by Purcell, and the solo artist is Harry Mortimer.

Another work which finds completion is that delicious music from Constant Lambert's ballet, "Horoscope." You will remember that previously issued DX1196/7 introduced "Dance of Followers of Leo," "Valse for the Gemini," "Invocation to the Moon," and "Finale." The new DX1567/8 gives us "Saraband for the Followers of Virgo" and "Bacchanale," and their rightful positions are the second and fourth sections in the suite. This remarkable music deals with the emotional significance

of the signs of the zodiac, and the ballet tells the story of a man and a woman whose stars are in the opposed signs of Leo and Virgo. Their stars struggle to keep them apart, but by their mutual sign, Gemini, they are brought together and united by the Moon. The final side of DX1568 is occupied by a galop from the ballet "Apparitions" by Liszt. The Philharmonia Orchestra is conducted by Constant Lambert.

Giuseppe di Stefano provides tenor singing of the finest order on H.M.V.'s DB6868, finding support of vigour and finesse in the London Symphony Orchestra. His choice of arias affords distinct contrast of mood: the tender "Far From the World of Fashion" from Act II of Verdi's "La Traviata," and the tortured "Ah, Depart, Image Fair!" from Act III of Massenet's "Manon."

"Tzigane" by Ravel is, as its name implies, a bravura work inspired by poignant memories of gypsy melody. Rhapsodic in form, it is particularly suited to the superb technique of Gluette Neveu, now made immortal in these H.M.V. discs DB6907/8. The first half is entirely for solo violin, the pianoforte—played by Jean Neveu—delaying its entry for a considerable time. Side Four is "Nocture No. 20 in C Sharp Minor" by Chopin.

Berlioz the Shakespearean is nearly always Berlioz at his best. An unashamed Romantic, he found in Shakespeare inspiration for several fine works. Among them "Romeo and Juliet" holds a high place, and this new performance on DB9386/8 by the N.B.C. Symphony Orchestra under Toscanini is one of the most vivid sets the great conductor has given us. This vital reading of what is described as a dramatic symphony, introduces sections which are recorded for the first time.

William Hill-Bowen, featured soloist in George Melachrino's recordings of "Warsaw Concerto" and "Dream of Olwen," is again heard on H.M.V.'s C3877 in "Ante El Escorial." This is a mood piece by Cuban composer, Ernesto Lecuona, whose well-known rhumba "Siboney" brought him fame in 1929. On the reverse is "Dance Mexicaine," a bright number in 6/8 time with an attractive beguine movement.

The Latin mood is further expressed in a record of which "The Gramophone" critic says, "Only superlatives will do for this superlative disc." This is DA1913 starring the young soprano, Victoria de Los Angeles who sings in Spanish "Habla De Amores" (Fuste), and "El Mirar De La Maja" from the "Collection of Tornadillas" by Granados. In this one record Los Angeles clearly shows just why she is making such a sensational world-wide success.

More music new to records is to be heard on Decca AK1584/6, an outstanding performance of Suites 1 and 2 that comprise Ravel's "Daphnis And Chloe," that exquisitely radiant pastoral. The first suite is made up of "Nocturne" and "Warrior's Dance," and the second includes the familiar scenes entitled "Daybreak," "Pantomime," and "General Dance." The orchestra is that of The Concert Society of the Paris Conservatoire, under the leadership of the distinguished conductor, Charles Munch.

On C7750/4 "His Master's Voice" releases a splendid new recording of Dvorak's "Symphony No. 4 in G Major." This set (A94), by the Philharmonia Orchestra under well-known conductor Rafael Kubelik, is a notable addition to the series of first rate works by artists of world reputation for the standard label category. (C series imported records retail at 8/6 each). Nowadays the Fourth is generally considered not only as Dvorak's finest symphony—eclipsing the over-played "New World"—but as one of the best in orchestral literature. Kubelik, as a Czech, has the temperament for the music of his countrymen, and he possesses a sense of musical architecture which makes the utmost of the sound construction of this melodic and subtle symphony.

### Pat Hodgins to Compere 2UW's "King of Quiz"

With Pat Hodgins now on the compering staff of 2UW, the new "King of Quiz" session is handled by him. It commenced last month, and is broadcast regularly every Thursday at 9 p.m. E.A.T.

Members of the theatre audience are contestants in each session and receive a cash prize for each question answered correctly. At the end of the general questioning the contestant with the highest score is proclaimed "King of Quiz" and is given the chance of answering the "King of Quiz" question, the value of which is £20, and which jackpots a further £20 each time it is left unanswered. Each week's "King of Quiz" continues into the next week's programme to be challenged by the next group of contestants, and continues to hold the title until a challenger manages to top his score.



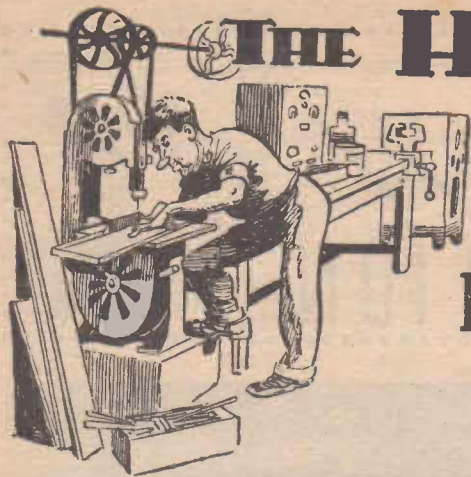
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# THE HOME WORKSHOP

## AND RADIO TIPS

For

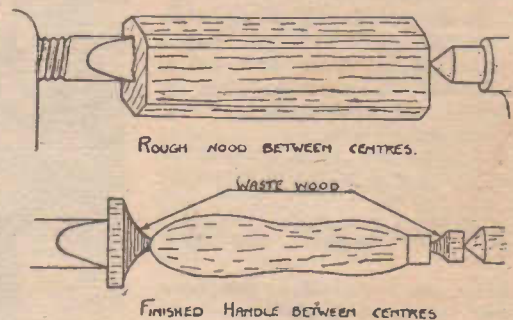
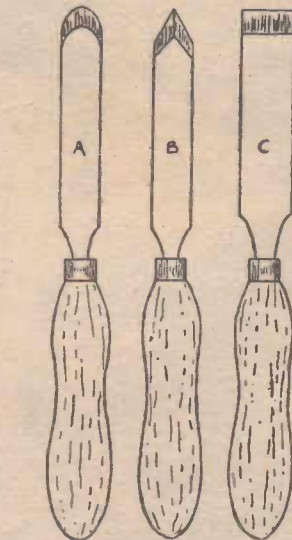
# PRACTICAL PEOPLE

## SIMPLE WOOD TURNING FOR THE BEGINNER

WOOD turning is the production of circular objects. This is done in a lathe and requires suitable cutting tools. The tools used at the lathe are different from those used at the bench, and the reader who wishes to try his hand at this interesting branch of woodworking must provide himself with a set of these tools. All turning tools or chisels are long and stout and have long handles—about 9-ins. long. The illustration shows three different forms of chisels. The chisels can be bought, but very good ones can be made from old files. For the benefit of those who would like to make their own chisels the following will be helpful.

The old file is taken to the grinder and all the "teeth" are ground off. This takes time and care, as we don't want to overheat the file and lose its temper, and we must grind the surfaces flat. The shaping of the chisels is then done, taking care that we do not burn the temper out of the steel. A little at a time and frequent dipping into water will keep this right. We now have a set of chisels which are capable of turning out good general work, but like bench chisels, they must be kept sharp and the worker must know how to do this. These chisels are not sharpened like paring chisels. With paring chisels we remove the "barb" by rubbing the flat side of the chisel on an oilstone, but with turning chisels this "barb" is left on. It is this "barb" which does the cutting in the same way as the "barb" on a scraper. The amount of "barb" to leave on is only gained by experience.

Once the chisels are made the next job is to fit them with handles, and the turning of these is a nice little job for the beginner to try out his new tools. (The chisels can be fitted temporarily with file handles.) We need a piece of hardwood about 10-in. long and 1½-in. square. Saw diagonals on each end to find the centres. Next plane off the corners with a jack plane until the wood is roughly



- A ROUND NOSE
- B DIAMOND POINT
- C FACING CHISEL

Illustrating Tools and Methods for Simple Wood Turning.

octagonal. Place it between the centres and screw up tight. Test it and see that it is running true, and adjust the rest so that it clears the wood. In turning we use the round nose. We will assume that the lathe is running and our octagonal piece of wood is revolving rapidly between the centres. We take the round nose and rough it down until the wood is round. During this operation the chisel is moved along the rest fairly rapidly. When the wood is round we now form the "waist" of the handle—still using the round nose—and complete shape roughly. With the facing chisel we now form the end for the ferrule. This is fitted by caliper measurement and should be a tight driving fit. (Ferrules can be made by cutting up brass tubing with a hacksaw.) When the ferrule has been fitted, replace the handle in the lathe and finish the job with diamond point, face chisel and round nose. Lastly, we give the handle a good rub with No. 1½ sandpaper. The sandpaper is kept moving lengthwise during this operation or the surface of the handle will be scratched. The handle is now removed from the lathe and the waste wood at each end is

removed and finished off with a paring chisel. It can then be varnished and, when dry, a hole is bored with a shell bit to fit the tang. This needs a little care to ensure that the hole is vertical both ways or the chisel and handle will be out of alignment.

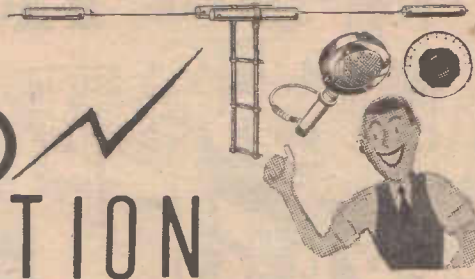
The experience gained with the first handle will enable you to turn the others much more quickly.

\* \* \*

"Uncle Ike." If you run across any rubber-like tape in Disposals shops and such places, called "Parafilm," it is worth a second look. This material was produced in G-land during the war, for aircraft work. It is quite different from the usual sticky tape in that one binds a joint with "Parafilm" and applies heat from a match or something to mould it solidly. Even the heat from a hot hand will suffice. A Sydney shop had rolls of it at 6d. each, but that was a few moons ago.

ORDER "R. & TVN."  
FROM YOUR NEWS-  
AGENT IN ADVANCE

# AMATEUR RADIO SECTION



## MARYBOROUGH (Q'LAND) AMATEUR RADIO CLUB

G3CUD spent his third night in VK at the local club meeting. Hopes to remain in the town and get a VK call, and is already sorry he gave away his transmitting gear before leaving G-land.

Twelve members were present at a Xmas party, and prizes of receiving tubes, donated by VK4AI, were won after a spirited debate by associate members Len Collishaw and Bart. Casey.

VK4AI has acquired a telephone pole, and plans a 3 element beam for 20 mx.

VK4GH has bought a house, and some impressive 40 mx antenna systems are under way.

Keith, VK4KG, is working DX on 20 with a long-wire only 10 feet from the ground. Keith hears DX that the others miss, with the aid of a home-built multi-tube receiver with three IF channels.

A new receiver at VK4BG is keeping Ron busy, and between times he operates on 20 mx CW and fone.

Visitors to local shacks recently with VK4RU (Townsville), VK4XJ (Bundaberg), and VK4WG (Brisbane).

The club has been allotted the call-sign VK4MO for future operations. Phonetics used will NOT be "M for McCackie" and "O for One-of-my-mob".



Scheduled for Easter week-end, April 8, 9 and 10th, is the popular N.S.W. North Coast Convention to be held at Urunga. Shown here are some well-known VK2's, in deep discussion about portables, at Urunga Convention last year. They are VK's 2XO, 2PA, 2KR, 2ASF.



The 1950 Urunga Convention will again be favored by a lecture from Joe Reed, VK2JR. Here, with Peter Alexander on his right, Joe is introduced by the prime mover, Crieff Retallick, VK2XO, during last year's session. A large attendance is expected this year.

"Horemheb". If you want to know how television is catching on in the Old Country, ask that indefatigable G."phone DX man, Dennis, of G3BUU about it. Since Sutton Coldfield started up, Den has been using a home-made receiver of the ex-radar variety with great success, and goes into raptures about the programme fare radiated nightly from London (through the Birmingham station). It MUST be good stuff for Den to keep out of the shack after 8 p.m. there, or . . . has TVI anything to do with it? And here in VK, people are still talking, and stalling, and shying away from the subject of TV. Like lots of other progressive things in this world, TV is inevitable here as elsewhere, and the sooner we get on with it the better.

## SOME TASMANIAN NOTES

By "C.C."

WHO says low power is no good? VK3JR portable will supply an answer to that. Located in Rosebud, on Port Philip Bay, Chris has been keeping a daily sked with VK's 7MC and 7XW in Launceston, right across Bass Strait, for ten consecutive days. Chris calls the VK7's regularly on 7 Mc/s with 0.5 watt, and frequently goes down to 0.09 watt to continue the QSO. On one occasion he has worked Tassie with 0.01 watt, and last January he had a four-way with VK's 7BQ, 7MC and 7 XW. Signals are generally reported 4 by 5. Fine business, Chris, also for the fellows on the receiving end.

An old timer to return to the amateur radio hobby is VK7XW. Well-known in VK3 in the twenties under 3XW and various prefixes, Chris is now running 20 watts into a Command transmitter, and is very active on Forty with a 'phone that packs a good punch.

Reason so few VK7's are on these days is that they are chasing the DX on six metres. Len, VK7BQ, has such an impressive list of stations worked on Six that he is now getting gear ready for the 576 meg band. His antenna array for this frequency is a model of neatness. Here's hoping for DX, Len.

NBFM fans should listen for VK7PF, who has a super phase-modulated job running.

### DX STATION "GEN"

From overseas sources, we find the following information of interest mainly to the "new country" DX-hounds: You will find AC4NC on 14325 Kc/s 'phone, and QSL's should be routed to Amateur Radio Club of India, P.O. Box 6666, Bombay, India.

VP1SJC is Rev. Gregory B. Sontac, St. John's College, Belize, British Honduras, Central America.

YU7KX is under cover; so is PJ5KO in Curacao. Known active stations in Ruanda Urundi, Belgian Congo, are: OQ5AS, 5AY, 5DG and 5MW.

Points about Swiss stations: When operating portable the prefix HB1 is used, with letters following being the same as for the HB9 home station. HB7's are Swiss Army Amateur stations.

CR5UP, that elusive "bird", is Lionel Pierce, St. Thomas' Port, West Africa.

FF3CN is c/- Box 566, Dakar, West Africa.

ZP9FA: P.O. Box 716, Asuncion.

CR4AD: Box 16, Praia, Cape Verde Island.

YK1AB is Saba, N. Saba, Antioch, Turkey, but operates from Damascus, Syria. Address: c/- Mezza Airport.

EA8LS: Box 346, Las Palmas, Canary Islands.

MP4BAE: International Radio Ltd., Bahrein Islands, Persian Gulf. Station at Sharjah.

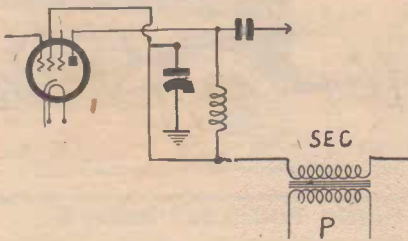
MT2BFC: Bill Wheeler (G3BFC), c/- B.O.A.C., Tripoli.

MT2DZ and MT2DZ/A: P.O. Box 260, Tripoli, North Africa.

VQ5ALT: Box 27, Entebbe, Uganda.

VQ5PBD: Box 444, Kampala, Uganda.

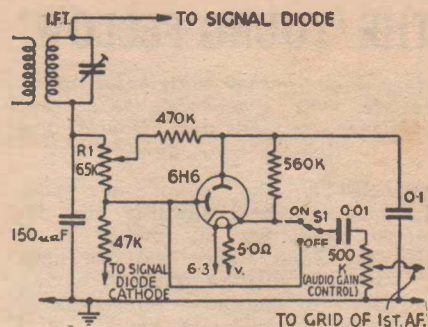
YU3A: Box 180, Ljubliana, Yugo Slavia.



## N.F.M. FOR 80 THE EASY WAY

A HINT in QST's "kinks" section on about the simplest method of applying N.B.F.M. for 80 (and 40) is worth passing on. The diagram shows the essentials. The scheme amplitude modulates the plate and screen of a 6SK7 VFO similar to the ARRL Handbook arrangement, using two isolators following the oscillator. All effects of amplitude modulation are washed out in the following stages as they work under Class C conditions, leaving only the FM component. Audio is applied to the oscillator by including the secondary (500 ohm) of a small speech amplifier output transformer in the common plate and screen supply. It takes but a few minutes to do, and the originator, W1IXO, says that results are excellent.

"Blister". High standing plate current? Final won't drive to a reasonably low reading? Maybe you are using an old type variable to tune the tank, and the insulation isn't all it might be. There were some good-looking pre-war variables around, other than the ceramic insulated kind, but the strips of material of bakelite-looking stuff might have been anything. Change such rubbish for strips of polystyrene, WT22, or Perspex, and you make a good item out of a handicap. Some of those old condensers are really well-made from mechanical points of view, but the insulation between stator and rotor might have been made of moulded mud.



## AR88 NOISE LIMITER

A NOISE limiter that really works, is the one incorporated in the AR88 receiver of war-production fame. The circuit is given here, with values. Little needs to be said about constructional points except that shielded connecting leads should be used, in order to minimise hum. R1 is first set to minimum, and limiting action commences at 100 per cent modulation. As R1 is advanced, the control is reduced to any wanted level. This arrangement does more than "reduce" interference; it really does eliminate it.



Reliable under Every Test! . . .

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## THE 'YOUNG FELLOW'

Here is our breezy contributor again, replete with comments, ideas, suggestions, and what not. How do you like his style, gang?

DESPITE the scorn in many quarters held towards the 40-metre band, for my money it is still the band where one can have a sane, placid yarn without having to listen to continual references to "rag-chewing in a DX band". - And furthermore, if a handful of people "net" on one frequency in the 20-metre band, after having established that it is a suitable part of the band, and that it is "clear", why NOT rag-chew? Rag-chewing is as legitimate a form of Hamming as panting after DX is; and we have to remember that some folks are locked on this band, having no provisions for multi-band working. Some are in spaces too small to erect an effective 40-meter antenna; and some just prefer the band 'cos the average noise level is lower than 40 and 80, and when the DX is coming thru, they can open up on CW and lasso a chunk. Let's have a more tolerant attitude toward those who pursue their own hobby in their own way.

o—o

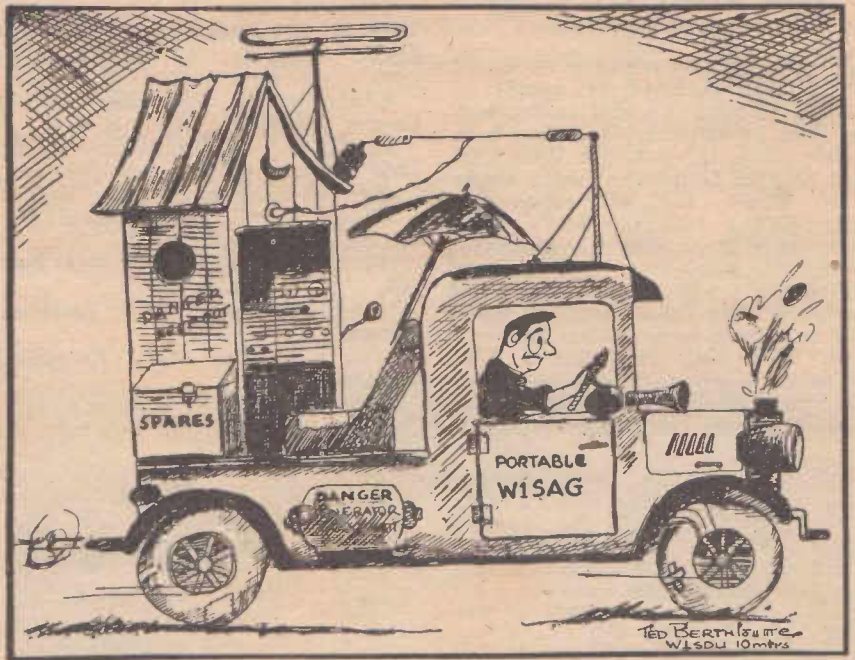
Heard a recent discussion re splatter. Contention of the defendant was that the plaintiff was coping the splatter because of sheer promixity (stations involved being separated by about one mile). This was upset by a third station, pretty much on the third corner of an equilateral triangle as regards distance from the other two, who said he did get splatter from the defendant, but not from the plaintiff. Fair enough? The prosecution rests its case.

o—o

Notice that the RCA 807 Z.B. triode circuit is now so well established that one manufacturer has put out a commercial rack-mounting panel housing the complete job as a modulator, minus power supply. Only 75 watts secondary power output is claimed, in connection with the plate-voltage figure of about 650 on the 807's. Would you like to see that raised to 750, tho' the first figure should modulate any 100 watt fone rig even with a high speech "form factor" as occurs with clipping. You haven't heard about this? Time you looked up the Eleventh Edition, E. & E.!

o—o

An electronics-lab. technician I know sez that speech transmissions which are peaked in the "highs" (typical xtal mike stuff) are N.G. when received on a very selective receiver, e.g., as when xtal filter is being used. His theory is that there is no appreciable speech energy



GOING PORTABLE-MOBILE,

An American amateur's idea of it. (From "Radio Officers' News" New York).

lying within the very narrow, low-frequency bandpass of the rock. Practical experience tends to bear this out, but whether it is also true when the receiving station is using a Q5-er, I doubt. A typical Q5-er has a bandwidth of some 2500 c.p.s., very much more than that of a sharply-adjusted xtal.

o—o

WE know that oodles of stations haven't a satisfactory dummy aerial for protracted tests, but one has hitherto felt that reasonably conducted tests whilst actually radiating are a fair thing UNLESS the transmission contains violent parasitics or other joys which make it cover half the band. There are still two characters (both in the same district, and one, by Hokey, a BC engineer!) who persist in punishing the 20-metre fraternity with just this sort of thing. One tests for ages without announcing his call, the other splatters so violently that his best friends are starting to get a bit frayed 'round the edges of their tempers!

o—o

Editor, please note: On 20 during early January of the brave new year, a delightful female voice, accent Liverpuddlian, young and fresh, with bags of humor, and really easy on the ears. Believed to be owned and controlled by an ex-VK5, recently moved to that old "9-miles southwest of Central" district! He dodges efforts to scrape up intro's with this succulent voice—guess his attitude is fair enough, too. Some people have all the FB YL's!

One of the New Year's most ironical jests is the story about the two flying-commercial ops. who are getting cars, so that they can "get around a bit" . . . .



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## 'THE YOUNG FELLOW (Continued)

That gentleman among gentlemen up Bellingen way is threatening to drum up something fresh in April. If past form is any criterion, hold us back! We'll be there, oscillating strongly and excited up to full output . . . if fate be kind re the supplies of ale.

o—o

Why doesn't someone in VK print those smooth, glossy, two-colour cards like the W9BHV print? We always know when another W card has rolled in, by the feel of those satiny, silk sides . . . and such a good, sensible style of card, too, with all the essential "gen" and minus those long, egotistical records of the station's accomplishments which must give many of us (specially the commercial op's.) a great big horse-laugh.

o—o

**T**HERE are one or two peak-limiting devices on the air which seem to be working FB, after the initial adjustments and ironing-out of joeys. They are necessarily complex, however, and not for the tyro. Some say that four tubes are needed—the push-pull controlled stage, one rectifier, and one side-amplifier. Plus, possibly, a VR tube. But the end-effect is one which seems to justify the system, at least for those who have very peaky voice-delivery. We gather that we may expect an article in "A.R. & TV N." dealing with the subject, soon.

o—o

There is still far too much of this intentional jamming going on. Can you picture the mental calibre of a type who is prepared to spend real dough to put up a fair-sized rig, plus antenna on two bands, for the vicious pleasure of wilful interference with the transmissions of decent citizens? Attention, all those unlicensed persons with transmitting equipment: Several of you are known to this column, and your names are already before the authorities. So, either get your ticket, or make darned sure that stuff is in U/S condition, because off go your heads if not!

o—o

Although it is yet too early to judge clearly the trend, it does seem that there is heartening evidence of "new leaves" having been turned over, by some of our heretofore most erstwhile offenders, in the matter of transmitting malpractice. Dare we hope that this column's views are being received in the spirit in which they are intended? — which is, sincere desire to help, aided where necessary by strong terms! More news-and-views next month, meanwhile 73's all round.

This yarn is good enough to repeat, 'cos it has local parallel: One day a Group-Captain in the RAF took off in a Tiger Moth to go from one English airfield to another, close by. He got hopelessly lost, and eventually had to land at any 'field before his fuel failed. When he rolled up to the tarmac, he effected not to have arrived by accident, and strode importantly up to the Station Mess, where he looked up D.R.O.'s to find out what 'drome he was at!

"TEE EMM", the RAF's official magazine during the last war, said that the culprit was not any one of the four Group-Captains who had recently rung up their office, asking "How did you find out about ME?"

The local parallel, referred to above, is that already several amateurs with a persecution complex have asked this column to get off their backs—although none of them has ever been named. The cap appears to fit in some cases, albeit rather too tightly for comfort. . . .

\* \* \*

Heard around the Australian coast on twenty 'phone has been G3DWI/MM aboard the MV Durham. Name is Geoff, and he uses fractional power, but gets out with a long wire 115 feet up in the rigging.

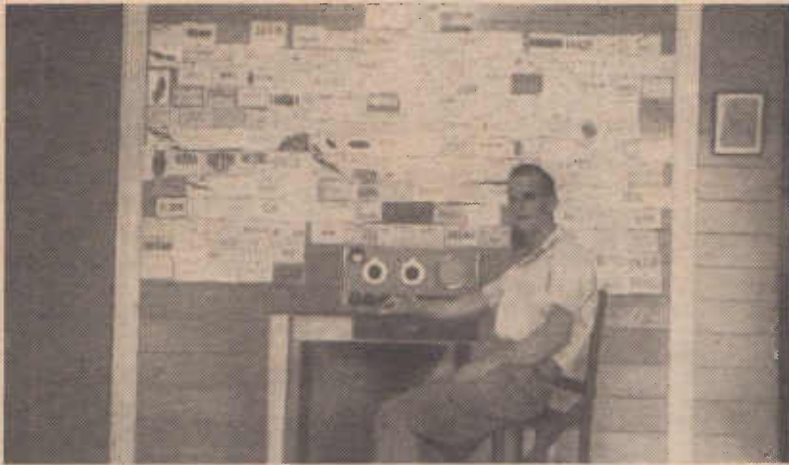
## ACHTUNG!

We thought that in the so-called democracies at least, the "mailed fist" manner of doing things had passed out with the late war. Even "Uncle Joe" permits amateur radio full swing in *his* curtained domain. The December, '49, issue of "Radio and Television News" (U.S.A.) carries news reminiscent of the time when Musso banned the I's. The FCC has notified American amateurs that a number of foreign governments have clamped down on inter-country contacts. According to the information these countries are:—Austria, Burma, French Oceania, Greece, Indo-China, Indonesia, Iran, Israel, Lebanon, Madagascar, Mauritius, Netherlands Antilles, Siam, St. Pierre and Miquelon, and Togoland. Under international agreement communication between amateurs of different countries is forbidden if the government of one of the countries objects. The ruling is now in effect and any attempt on the part of Americans, says the FCC, to contact amateurs in the named countries, could lead to a suspension of license. We suppose that this really IS the post-war 1950 era that we are living in, and that we DID fight a dickens of a scrap in order to free the world? Look at it now, for Heaven's sake!!



● A group of British amateurs at the station of G6XR, Harry Cook, Keresley, Coventry, on the occasion of a centenary of consecutive 14 megacycles telephony contacts between his station and that of a Sydney amateur, George Gray, VK2XG (Turramurra). Identities are—left to right: G6XR, G6WX (Mayor of Coventry), G6YU, Ellen (XYL at G6XR), G8LH, and G6TD.

Photograph by courtesy of VK2XG. A note from G6XR says: "To George, VK2XG, from Harry, G6XR, with many thanks for your co-operation in making 146 consecutive contacts on 14 Me telephony—sorry we could not make 150 on the trot."



● Charles Thorp, of Rockhampton, Queensland, is a keen listener to amateur stations, as evidenced by the array of "wallpaper".

### THIS PIRACY BUSINESS

**D**ESPITE the hope that when the flow of Disposals gear eased off a bit, piracy and other forms of unwanted and illegal transmission would diminish; such has not been the case. Now and again one or two "joey's" bob up and disport themselves, mainly on forty, but there have been instances on twenty also. Under the heading of "Piracy", of course, we can classify the maliciously-minded individuals who appear to delight in and make a hobby of the practice of causing wilful and unnecessary interference with amateur stations. Oft-times we hear it said that "surely no licensed amateur would be guilty of such behavior" and that the offenders are most likely people with a grouch . . . a sour-grapes outlook at not being able to make the licence grade. We are not so sure at all about that viewpoint, and we do not subscribe to the idea that all licensees are lily-white people with nothing but friendly feelings to their fellow amateurs. Straight-out piracy is a horse of a different colour. From the time almost when amateur radio cut its teeth there have been pirates in some form or other. There have been, and still are, instances of piracy which are looked upon with understanding and acceptance. For example . . . the Italians, who, despite the ban by their now departed Dictator, carried on under cover, with hidden gear and concealed radiating systems. To-day we have a similar state of affairs in certain totalitarian countries where licenses are given only to those considered to be "politically reliable". One cannot but feel a warm regard for the enforced pirate who sticks to the spirit of amateur radio in his activities on the air, and whenever possible hands one a broad hint that is station is "unofficial". In happier times he

would be a licensed operator, and in the meantime we can but express the hope that he continues to get away with it. Selfish piracy is another thing . . . those who "borrow" other people's legitimate call signs and amuse themselves therewith. In good faith the overseas contact sends along his QSL card for a contact which has not really taken place, and which, if the log be consulted, must be repudiated. Those who think up a call sign in a letter series not yet allocated by the P.M.G. may arouse some interest for a brief spell, until the majority of amateurs wake up to the fact and pass word far and wide that so-and-so is a pirate.

**I**N our way of life it is essential that there must be some form of law and order so that affairs shall progress sanely and smoothly, and therefore the pirate in amateur radio is somebody who cannot be tolerated. The effective way to check piracy is for amateurs and listeners to follow up any suspicious activity in their own areas, and not be deterred by any maudlin idea of "playing the policeman". It is not just a matter of hamstringing some youngster carried away by enthusiasm, but a consideration of the facts.

Piracy brings the amateur movement into disrepute with the authorities. The poor operation of the average pirate station will spoil many contacts. Non-genuine QSL cards and reports clutter up the Bureaux, and the expectant recipients of his card are disappointed people. "Borrowing" a call sign causes more than annoyance to the licensee, who is faced with the need to return cards with explanations.

By example, the pirate gives a false value of ideas to the younger would-be amateur, who thinks that "others get away with it, why

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shouldn't I?" and that licenses are really a bunch of red tape. Wider realisation of the damage pirates can do to this hobby would result in greater eagerness and co-operation in suppressing the evil. The "interference-machine" miscreant in particular should be the first target for offensive . . . he should be hunted and run down instead of just sitting back and commenting about it. Closer co-operation between the P.M.G., through the Advisory Committees and the W.I.A., could bring quick and lasting results.

\* \* \*

**"Passband":** Want a really selective receiver for C.W. work only? An answer lies in a receiver described in QST (U.S.A.) for August, 1948. It features double conversion, from 1600 Kc's in the first channel, and the really important feature is the second I.F. channel. There are no less than FIVE stages at 72 Kc/s. Australian amateurs could duplicate this job nicely with those Aegis 100 or 50 Kc/s I.F. transformers now readily available. Needless to say, a receiver of this kind is "out" for the 'phone man, but what price the C.W. marathon contest man?

#### TESTING CAPACITORS FOR DRIFT

About the simplest way of determining if mica condensers are what you want for VFO padding is given in QST (U.S.A.) by W9MBI. He makes up an inductance of 10 turns of 20 wire on a 7/8-in. form, spaced to occupy 5/8-in., and with short clip leads to the ends of the coil. The condenser to be checked is then clipped across the coil and the resulting L/C circuit checked against a grid dip oscillator to determine frequency. The latter is not important—it merely serves a purpose. Next, a hot soldering iron is brought close to the condenser and held there until the condenser becomes warm to the touch. The resonant frequency as shown by the GDO is then rechecked. The difference between the two resonant points will tell you if the condenser is suitable for the VFO circuit. It is easy to find which condensers will be least likely to cause oscillator drift.

\* \* \*

*Candidates for the A.O.C.P. are likely to find questions in exam papers these days, dealing with such subjects as N.B.F.M., S.S.S.C., etc., but in elementary form only.*

\* \* \*

VK2WI's Sunday morning broadcasts are now done from a Sydney locale (VK2VW) and are radiated simultaneously on the 40, 6, and 2 metre bands.



● Shown here working 14 mc/s 'phone DX is British G6WX, Mr. W. H. Malcolm. The receiver in use is the ever-faithful HRO type. G6WX was Mayor of Coventry—of Blitz fame—in 1948-49.

**"Enno".** Safe to say that in the last few years, no amateur transmitting antenna system has aroused so much interest, and comment, as Ted Ironmonger's (pro tem VK3WU) handy G8PO system. In most cases it has done just what he claimed—provided a two-way electrically reversible simple array, with, above all, a whacking big back to front discrimination. There have been one or two of the know-all breed of dabbler, who have shouted o'er hill and dale that "it's no good—I've tried it, and it didn't work." They couldn't have tried it very hard, for the set-up is "sure fire". Several versions have been used with conspicuous success, perhaps the most outstanding being the "HAY system" ("A.R. & TV. N.", July, 1949.)

Commander Ironmonger, R.N. may be returning to Britain this year, and we bet he will be back on with a G signal of note—as of yore.

\* \* \*

**"V.H.F."** The Six Metre band has opened up widely for interstate working this season. An unexpected contact has been VK5JD at Alice Springs, Centralia.

\* \* \*

**"Querex".** Taylor "Super-Modulation" is showing up these days. In the Sydney area VK2ACH is putting out a good transmission on twenty. Advantage over S.S.S.C. in that normal A.M. Receivers don't need juggling to clear up intelligibility.

Famous sayings—"I never heard the band so bad." When somebody says they never heard it so good—that'll be a change!

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**L**INE voltage fluctuation is a nuisance, but there is no need to put up with it, when a regulator can be made up easily, to keep voltage at a required level.

This regulator employs one of the fundamental laws of electricity. In a transformer, the voltage across the secondary is exactly out of phase with the voltage across the primary winding (Lenz's Law). Since the secondary voltage is out of phase, it will either add to or subtract from the voltage across the primary winding, depending upon series aiding or series opposing connection. We connect the transformer into the circuit as shown in the diagram, to a double-pole double-throw switch, to place the secondary either aiding or opposing the primary, thereby raising or lowering the voltage across the combination. A variable resistance is placed in series with the A.C. line and the transformer, to provide fine adjustment of the voltage. An A.C. voltmeter is connected across the output, which is connected to an outlet. It is necessary that the voltage of the secondary be equal to or greater than the departure from normal line voltage. Thus, if the secondary were 25 volts, the device would regulate the line voltage from 25 volts under, to 25 volts above normal. Let us consider a normal voltage of 240. The regulator will take care of 265 volts to 215 volts.

### HOW TO USE THE TRANSFORMER

An old transformer having several filament windings may be connected in series, making sure that they are series aiding and not opposing. Assume that you can obtain a total thus of 15 volts. The variable rheostat (of about 1000 ohms) may be any wire wound type that does not heat too much while working. If the line voltage is 240 volts and a 15 volt secondary is used, the voltage across the combination (primary and secondary) would be 265 volts, or too high for a normal 240. In this case resistance is added to the circuit by the variable rheostat until the voltage decreases to 240 volts.

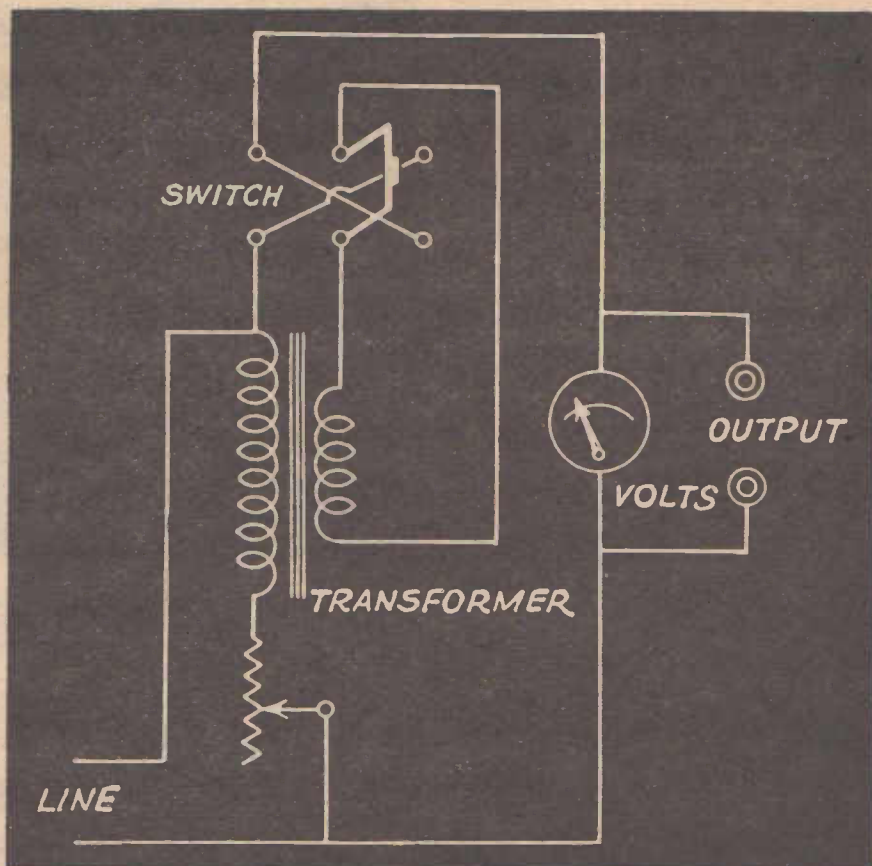
### NOT FOR HIGH POWER

Where the line voltage is 250 volts, which is 10 volts above the 240, the primary and secondary would be connected series-opposing, and the result would be 250 minus 15, which is 235, that being below the required 240. Increasing the value of the variable resistance has the effect of lowering the voltage across the secondary, which increases the voltage across the combination. Thus resistance is added until the voltage across the combination equals 240 volts.

The device works only on A.C. and the voltmeter may be a 0-250 volt

## LINE VOLTAGE REGULATOR

Main parts of this useful electrical accessory are a transformer, switch, and a rheostat.



A.C. meter. The 240 volt position may be marked on the meter scale by a heavy black line so that one can tell at a glance if line voltage is normal. This regulator is not intended for use with large wattage equipment, but for low wattage needs only. To find which is series-aiding and which is series-opposing position of the switch, note the reading of the voltmeter with the series resistance set at zero. The position of the switch resulting in the high deflection of the voltmeter is series-aiding, whilst a low reading indicates series-opposing.

### PARTS LIST

- One transformer having secondary voltage of approximately 20 volts.
- One A.C. Voltmeter, 0-250 volts.
- One wire-wound I.R.C. Rheostat of 1000 ohms.
- One double-pole double-throw knife switch.
- One panel for mounting.

That quizz picture on page 30 of last month's Issue:—VK3GE, Col. Every (then Major) with W.O. Stan Cropper before an exercise at ASOS, Casufa, N.S.W., 1941.

### YOUNG SQUIRT?

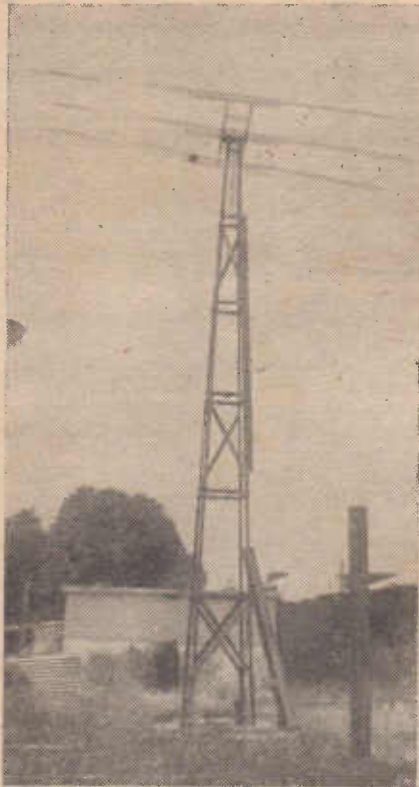
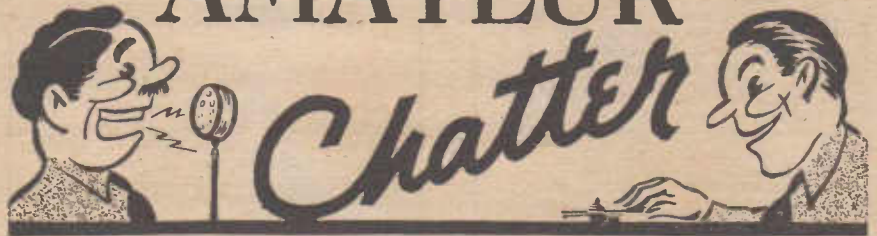
Gale damage is one thing, and in windy New South Wales many a VK has contemplated with rueful mien an aftermath of antenna wreckage. DX and VHF-man Jack Hill, VK2ADT, of the N.S.W. coalfields region, encountered another kind of antenna damage. The main pole halyard of stout rope had apparently given up the ghost and thereby let a variety of wire arrays down. Being a school-teacher versed in the ways of teen-age lads, Jack had an idea; he found an unmistakable tomahawk cut on the pole. The youngster was traced—said he just "tapped the pole playfully, and then everything came down round me ears!" Seems that the halyard must have got in the way. Nice shiny "tommyhawks" are taboo with VK2ADT's youthful students these days.

\* \* \*

Tapping point for a single-wire feedline for a half-wave radiator (Windom antenna)? Measure one-third of the length in from one end, and that is as good a position as any, Handbook formulae notwithstanding.



# AMATEUR



● SWL Charles Thorp, of Rockhampton, Q'ld., uses this 3 element 10 metre beam.

"Blitzen". Somewhere in the archives of American amateur radio there is a reference to BCI as it was in the "bad old days—out West." I recall reading, probably in QST around 1924, of the bitter war that raged in many cases, between amateurs and BCL's. The BCL, of course, had reason to raise a protest with a 2KW broadly tuned brass-pounder for a neighbour; but the amateur had to contend with "broad-band" B/C receivers of the Neutrodyne or Blooper variety. One Seventh District QRO lad with a shack some distance from his house, frequently found his big mast halyards and counterpoise cut down by irate BCL action, and operated his gear with a .38 Colt alongside the key on the table. The BCL's, however, only attacked during his absence from the station, so nobody got shot. But one got near-electrocuted by another line of defence. The brass-pounder fixed things so that his counterpoise carried, during his absence, 4000 volts A.C. from his H.T. supply, to earth. A badly knocked about, burned, scared and lucky-to-be-alive BCL was told by a judge that as he was trespassing on private property with malicious intent, he had no redress. That American 7 henceforth worked his DX undisturbed.

"Frazzle". In some form or other, BCI is with the amateur who perforce must exist in a "built-up" area. Instances of QRM are usually hunted out meticulously, with final freedom from the pest. There are times, however, when BCL's won't co-operate in helping the amateur to cure the trouble. I remember a classic instance in Britain, when two friends, "TOC EMMA" and "ELJAY", were in a state of having "had" an un-intelligent—unhelpful BCL next door, who would persist in writing the P.O. epistles of complaint, bringing "blueys" from the R.I. The BCL's antenna finished up about 14 inches away from the amateur set-up, and an idea was born. It was impressed upon the BCL that under no circumstances should he try to listen during thunderstorms; the aerial might attract lightning, etc., etc. Over the horizon rumbled an English summer storm, and "TOC EMMA" and "ELJAY" clipped a wire across from their own to the end of the BCL antenna. A knife switch in series with that, to the 240 volt mains, and one side of that to earth, and all was ready. A vivid flash of lightning was awaited. It came, and the switch was closed, whereupon the earthed antenna coil of 36 enamelled copper in the BC receiver disintegrated with a bang. Friend BCL rushed around to the perpetrators shouting that his "set had been struck by lightning." Helpful advice was given by the amateurs than an "inside aerial would be safer for receiving only", and the advice was quickly acted upon. The BCI went down to negligible proportions.

Chief instigator of that drastic cure for BCI, then a youthful member of the amateur fraternity, is to-day one of Britain's top-ranking radio scientists, and looks like breaking into the hobby again at any time—as a VK3.

A year or so ago, it was possible, on twenty, to tie up with one or more of the prominent G 'phones, and to enjoy a relatively uninterrupted chat. Not so these times, for stations no sooner appear than they are "snowed under" by "Ned Kellys", people who simply will NOT wait until a QSO is through, but try to take it over.

"Eemeef". Interest has been aroused in Britain's "Wireless World", where columnist "Diallist" has raised a point about some old kinds of paper dielectric condensers. He says that many instances have come to light of such capacitors, when tested, having acquired the properties of dry cells. Voltages as high as 3 may be shown, and shorting the terminals doesn't "discharge" other than momentarily. The charge is thus not static, and has definite polarity. Trouble has been traced in some radio receivers to unwanted bias voltage being provided by such capacitors. Where a bias-varying volume control on an RF stage has been open-circuit, a steady potential of 2 volts negative may be applied to the valve grid, thus rendering the receiver silent. If you have a few old paper condensers in the junk box, try your HR voltmeter across them; you may be surprised.

Hearty congratulations to Billy Bryant, W9BUL, on his marriage recently after returning to his home city from a brass-pounding visit to Australia. Bill was radio officer on the U.S. "De Pauw Victory", and gave us an article on marine radio operation as he saw it. This useful bit of information for would-be sea-going operators was given in our December, 1949, issue, on page 26. Bill will not be returning to sea (good for you, Mrs. W9BUL) and plans to return to college to get on towards a degree in Electronics. Good luck, OM.

Heard at times from Pat's station, ZL1BQ, of Musick Point, Auckland, N.Z.:—Bill Marshall, VK2XM. When pushing a key in his marine R/O capacity, Bill, in off-watch periods can be heard between 14 and 14.1 Mc/s as VK2XS/MM.

John Bull, VK4FH, of Mackay, Queensland says it is impossible to keep 300 ribbon feedlines for long in that climate. The poly-ethylene crumbles and breaks up. Try enclosing and sealing them in P.V.C. garden hose John.

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**WILL EXCHANGE—**One brand new ID8GT valve for equally new IG6G twin triode. Have other 1.4 volt types. Editor "R & TV."

**WHAT OFFERS?** New CR300 Marconi Receiver. This is the Marine version of the famed Marconi B28 (CR100). Has panel-mounted speaker and all accessories. Write to VK2AGW, c/o Box 5177, G.P.O., Sydney.

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

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**AMATEUR CHATTER**

In our January, 1950, Amateur Chatter, we mentioned that nothing had been heard of OM VK2AW for ages. He comes to light with a nostalgic letter full of vibrant memories of the days when CW was king and 'phone the next thing to tabu. We quote extracts: "Congratulations on the standard of the publication. One of these days I hope to be on the air again, but what with experimental colour stereoscopic projection for movies, photomicrography, and my ordinary technical photographic work, to say nothing of writing, lecturing and general work. . . I seem to have more than ever to do to-day, and less time in which to do it. I have received a few QSL cards (American, Chinese and New Zealand) from time to time, indicating that I am being 'pirated', or the vowel sounds in Australian 'phone are being misread. I often think of the good old days when Morse was king and 'nights' were cold, also of the little frog that used to crawl up the window pane of the shack . . . seriously, however, I have some gear, and trust that sooner or later your comments will be on substance rather than shadow." FB OM, it is evident that you haven't lost any of that old enthusiasm!

How heartily do we agree with Arthur Milne, G2MI, who asks a few pertinent questions in his "Month on the Air" in R.S.G.B. Bulletin. He says . . . will some tell him "What IS a what have you?" and "which is the more nauseating, HI or H.I.?"

"Aknaton". Ever heard a battle between giants? One January, 1950, evening on twenty 'phone the Sydney, Melbourne and Brisbane ionospheres resounded lengthily to a frantic spate of calling CR5UP. Overs were rapid and tense, and in the midst of it all, a whacking signal from a prominent ZL2 dropped into Eastern Australia calling the same elusive Portuguese. This worthy and a very well-known VK3 DX 'phone man suddenly broke off the chase to accuse each other of splatter. One said he knew that his clippers and filters were doing the job they were designed for, and the other said "non-sense", or words to that effect. Obviously nettled, both returned to the fray, and for all I know, they are still calling that will-o-t-wisp bloke on the island off Africa. CR5UP has but to be audible at S2 and sheer pandemonium appears to break out all over this globe. We wouldn't be surprised if Martian or Venusian DX men aren't calling him as well! What a game!

Many Melbourne and Sydney VK's will recall that sterling personality, Jim Wetherill, ex-G5UB, now VE7ALG. Jim is still in the world of amateur radio, and among other things, say, in a letter to us . . . . "When at Bridge River I worked on a 3.5 mc/s using the McMurdo Silver 701 tx and Aircraft receiver, but the noise from 230,000 volt line was very bad; I've obtained a Meissner Signal Shifter from U.S.A., and it should be going by to-night. I have a BC221 freq. meter also, and am obtaining National MB150 and MB20 tuning units to make a final without coil-changing or switching; they aren't such a finished job though for the MB150 is only a copper finish and not nearly as good as B. & W. coils.

He sends 73 to VK2VN and hopes to be active on twenty CW in the near future.

Can anybody beat this for tube life? VK2NO has in daily use a pair of 866 rectifiers, delivering power to an 813 final at 1000 volts 100 Ma.

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