

THE KW-160 ON 80 METRES

AN EASY MODIFICATION

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As shown in our review in the November 1961 issue of "Short Wave Magazine," the circuitry and performance of the KW-160 are excellent. Originally intended for AM/CW operation on Top Band only, it has been found that it can be made to go very well on 80 metres.—Editor.

MANY users must have noticed that there is a second PA dip at near minimum capacity in the *pi*-tank output. This is, of course, on 80m. On Top Band, in the unloaded condition, the dip is to about 8 mA, rising to 40 mA or so under normal working conditions. The second-harmonic (80m.) dip is around 15 mA, and it was thought that this indicated reasonable efficiency—fully borne out when fed into an artificial load. One cannot really expect an efficiency better than about 50% when power-doubling, but as the transmitter can be loaded to around 12-15 watts input, possibilities of QRP 80m. operation were envisaged.

It was clear that the tank LC ratio would be far from optimum, and there would be no room for manoeuvre for matching a load with both variable condensers near minimum. Furthermore, the second harmonic of the VFO would take one into the 'phone section of 80m. only.

Alteration to the tank coil presented no problem, as a tapping was made three-quarters up from the

loading capacitor end, this giving about half the inductance. Care should be taken when soldering not to short adjacent turns.

Adjusting the VFO

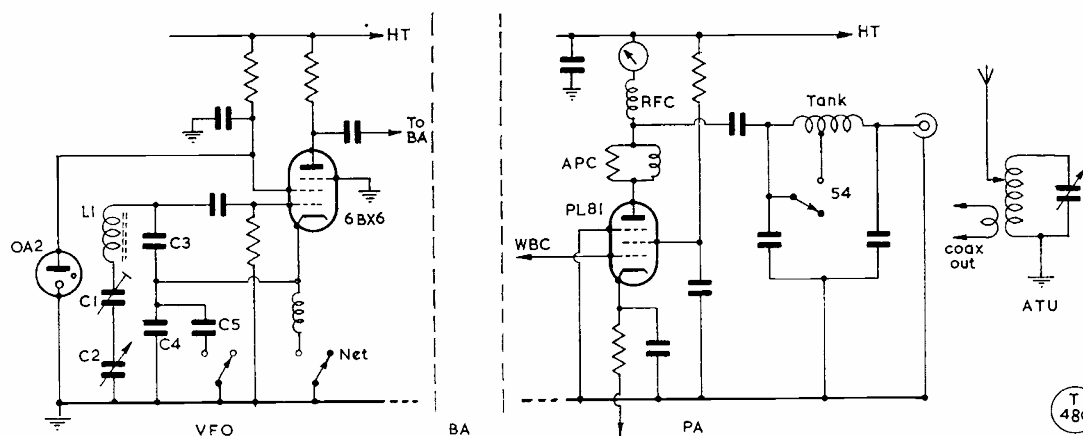
Difficulties arose when modifying the VFO. Though a pre-set capacitor in parallel with existing C1 in the diagram seemed the obvious answer, as C1 is 30 μ F maximum only, it was found that the capacity of the leads (to a miniature Yaxley switch on the panel) was sufficient to make it impossible to track on Top Band and maintain calibration, even by adjusting L1. Upon reflection, there seemed no reason why extra capacity should not be switched across C4, if operation of the Clapp VFO was not adversely affected, with the advantage that one end would be "earthy."

By trial and error, it was found that .001-.015 μ F was the solution, enabling one substantially to cover the CW portion of the 80-metre band. Furthermore, no adverse effect was evident in the working of the VFO, as regards either output or stability. The additional condenser C5 is wired in on the underside of the chassis.

The inter-stage wide-band coupler confined driving of the PA to power-doubling. Alteration here would have meant substantial modification, hence it was thought one could "push one's luck!"

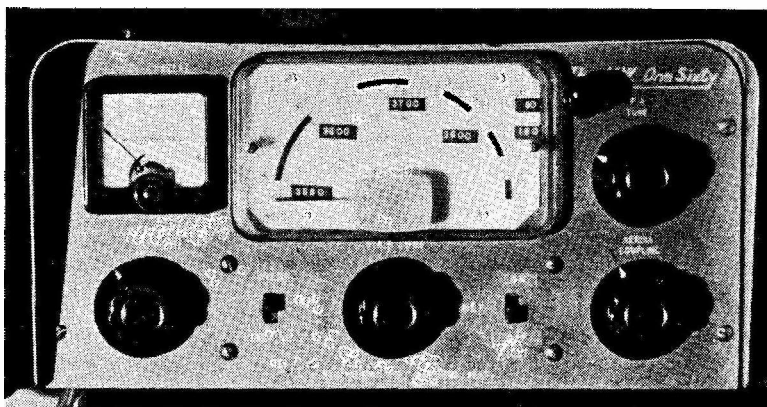
A worrying thought was the strength of any 160-metre component which might get through. For this reason, it is considered essential to use an ATU, although the *pi*-section will load happily direct into an aerial approaching a half-wave. Without an ATU it was clear from the wave-form shown on an oscilloscope that excessive 160m. RF was being radiated.

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In modifying the KW-160 for 80m. operation, the BA section remains untouched and the PA side is arranged to work as a power doubler. Main alterations are to the VFO (see text), the switch bringing in the .001/.0015 μ F capacitor C5, with S4 in the PA tank also changing over to 80 metres. All other circuit elements marked are as fitted in the original.

The KW-160 dial markings modified for 80-metre calibration — see article by G2HR.



Results

So far these have exceeded all expectations, country-wide operation on 'phone having been achieved with frequent reports of S9 and S9+.

Continental reports on CW have been very rewarding, and there is no reason why the transmitter should not be followed by a linear amplifier, thus further extending its scope.

ROYAL SIGNALS AMATEUR RADIO SOCIETY

Past and present members of the Army and its Reserve formations are invited to apply for membership of the Royal Signals A.R.S. Formed in 1961, the society now has extremely active world-wide support, its members ranging from the old guard, *e.g.* G2EC and other senior two-letter callsigns, to G3VYT of the newly-licenced fraternity, and including some intrepid DX types, such as VS9KRV and VS5JC. The less adventurous prefer the weekly nets on 80m. Enquiries, from all ranks past and present, are welcomed by the Field Secretary, Major L. S. Beaumont, G3RUS, Royal Signals A.R.S., 24th Signal Regiment, Catterick Camp, Yorkshire.

“CREDIT WHERE 'TIS DUE”

On p.568 of the November issue, we had some observations to make about the poor quality of transmission from the BBC radio-car when reporting from-the-spot. We are glad now to say that the BBC radio-car transmission on January 30 (when reporting the Hatton garden robbery) was a great deal improved and the quality was excellent, except for some rather pronounced switching plops. But all that crackle-ackle and PSU hum has been cleared up.

INDEX, VOL. XXIV

Every copy of this issue of SHORT WAVE MAGAZINE—the first of the new Vol. XXV, as you may have noticed from the cover!—should contain, as a free loose supplement, a full Index to Vol. XXIV. Study this Index carefully—it gives guidance to the treatment of a very wide range of subjects (it took long hours of work to compile, so we would like it to be used!). If perchance this Index was missed from your copy, as can happen, you can have one free of charge on request, with a *large* s.a.e. As

mentioned with the Index, full sets and single copies of all issues March, 1966, to February, 1967, are still available, though for some of these months only a few copies remain in stock.

REMINDER—PICTURES

We use a large number of photographs in every issue of SHORT WAVE MAGAZINE. This means that we are always glad to see prints for possible publication—either of equipment, SWL and AT stations, or personalities. Photographs should be *good quality* black-and-white, any size (though postcard is preferred), and accompanied by full descriptive notes, on a separate sheet. Payment is made for all pictures we can use, immediately on publication.

JOHN ROUSE, G2AHL — R.S.G.B.

Members of RSGB who see this will be glad to know that John Rouse, G2AHL, General Secretary of the Radio Society of Great Britain and Editor of the *RSGB Bulletin*, is now convalescing at home following his recent illness and is well on the way to making a good recovery.

THE “GOT-IT-ALL” STATION

When you hear or work G3VZN, you will be in touch with a station equipped for all amateur bands 1.8 mc to 1296 mc (160m. to 23 cm.), using only the best commercial equipment, with full recording and monitoring facilities. Operating modes are to be CW, AM, SSB and RTTY, and the aerials will be carried on 80ft. masts. And who is the (millionaire) owner of this most desirable installation—none other than the Middlesex Education Authority, at their Enfield College of Technology. The fortunate fellow with the control of G3VZN is G3LAS (Berkhamsted, Herts.), whose only complaint is that the site may not be too good for VHF . . . well!