

station G3DQW will be 1980 kc from 1 p.m. Special exhibition of old-time wireless gear—please bring anything you can produce from the 1920's. Trips down the river. Usual trade-stands and lucky dip! Further details from the hon. sec.—D. Byrne, G3KPO, Jersey House, Eye, Peterborough. (*Eye 351*).

September 2: Mobile Rally at Pipers Hill Common, south of Bromsgrove, Worcs., on the B.4091, organised by the Bromsgrove & District Amateur Radio Club, with talk-in on Top Band.—J. Dufranc, 44, Hazelton Road, Marlbrook, Bromsgrove, Worcs.

September 13-15: Fourth International Amateur Convention at Knokke, Belgium, with a varied programme for all comers, as in recent years. Full details from: Lucien Vervarcke, ON4LV, Lippenslaan 284, Knokke 1, Belgium.

Closing date for Rally reports and Mobile notes to appear in the September issue: *Monday, August 12*, "The Mobile Scene," *SHORT WAVE MAGAZINE*, BUCKINGHAM. Any Rally photographs offered for publication should be sent in as soon as possible, and in any event not later than *August 9* for the next issue.

NOTES ON THE KW VESPA

DISCUSSING THE MK. I AND MK. II ALL-BAND VERSIONS

THE current production of the *KW Vespa* is the Mark II form, where a 6HF5 is used in the PA to give a 220-watt p.e.p. output on SSB; the earlier Mark I is similar in all respects saving only in the use of a 6146 PA, and a few minor changes of component values in consequence. The transmitter under review is a second-hand Mark I, with about 18 months' service on the log before purchase by the writer from K.W. Electronics, Ltd.

With a second-hand piece of equipment one is always inclined to expect minor faults, and so it might have been with this one; but it has to be said that the first owner of this specimen must have cherished it, for the appearance was immaculate, with the external finish quite as good as the day it first left the works with no evidence of retouching. And the Tx had, of course, been fully serviced by K.W. Electronics, Ltd. before resale.

The first contacts proved that the transmitter put out a good signal, approved by all stations worked and that, as compared with AM at the same sort of power level, the potential to raise them was greater—a situation which more than bears out the theory of SSB, particularly when the QRM is heavy.

Eventually, attention was turned to CW, and here an unexpected snag arose—sparking at the key, which wiped up the family TV set on all bands. A look at the transmitter schematic indicated that there was no obvious reason why the sparking should occur. A quick call was made to the firm, which brought forth a suggestion for a key-click filter circuit; this was hooked up and found to produce the sort of keyed signal which the text-books say a perfect transmitter should possess.

TVI Aspect

Some investigation was made of the TVI characteristics. At the writer's QTH, it is fair to say the Channel 1 signal is far from strong, and HF working during TV hours is normally a near-impossibility. However, SSB operation on 14 mc and 28 mc was possible without interfering with the domestic TV Rx provided that the PA was not "talked up" beyond the currents mentioned

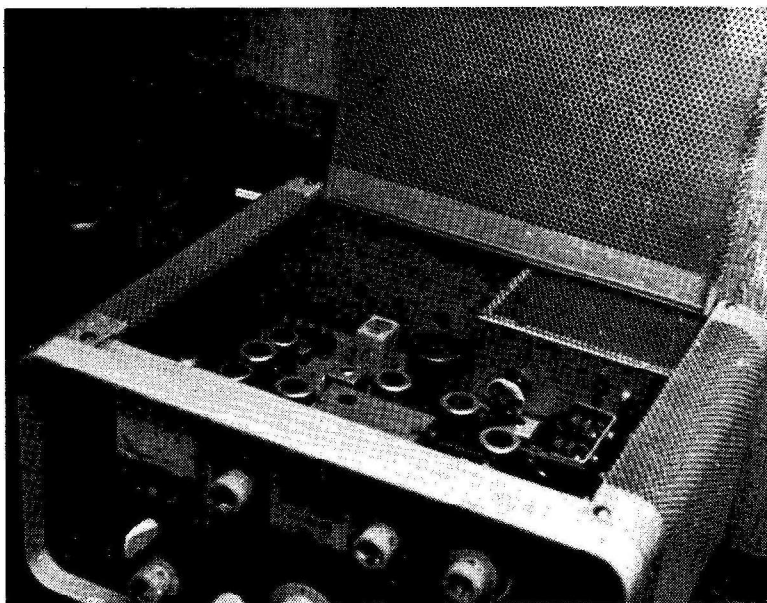
in the handbook. Of course, 21 mc is always the most difficult band when the local BBC is on Ch. 1, and is indeed normally regarded as impossible—but here we were surprised to find that the picture was not lost, but only a mild herring-bone was produced. It should be noted that not only were these tests related to a fringe-area signal on the most difficult channel of all, but that there was no more than the usual external high-pass filter on the TV Rx, and a low-pass filter, ATU, and three-band aerial on the transmitter. No complaints of TVI came in from the nearby viewers. The domestic Rx on 21 mc was cured by the simple expedient of putting the high-pass filter *inside* the Rx, and cleaning-up and remaking all the connections to the transmitting and TV aerials.

An interesting sidelight on this is that it was found that *none* of the TVI was generated by the transmitter itself—all was coming from the TV Rx set front-end when its RF stage ran into grid-current from the transmitter fundamental-frequency pick-up. It was also interesting to note that with a VSWR of 2 : 1 on the line between the ATU and the transmitter, the SWR indicator used generated far more TVI, until the thing was modified to have an "off" position on the forward/reverse switch, by which the diodes were cut out!

What it boils down to form the TVI point of view is this: With a Vespa, the transmitter is so designed that if *correctly operated* it will not generate TVI. However, that is not to say that incorrect operation, or external circumstances, may not produce some interference—but one has at least the consolation of knowing, when the complaint comes in, that the fault will not involve tearing the rig to bits.

Top Band

One of the joys of the K.W. Electronics range of equipment is the fact that they embody Top Band facilities. A high/low switch is fitted to the power supply, and all that has to be done for SSB working on 160 metres is to flip the switch to the low-power position, and follow the instructions. Operation on CW is not quite so easy, because the standing current on the PA valve is set for a dissipation of more than 10 watts. The answer is to tune up in the usual way but with the standing current reduced to *just zero* with no drive. However, this does put the honest operator at something of a disadvantage, as with the PA valve running with *no* grid current one gets about five watts out for a DC input of ten watts. One could wish the Post Office would amend the power-input limitations for use with CW/SSB transmitters so



An inside view of the K.W. "Vespa" transmitter, showing general construction. It is completely self-contained, and runs 220 watts p.e.p., AM/CW/SSB.

that in such cases one could load up to a specified RF output regardless of the standing current in the PA—which would preserve the perfect signal such a rig can generate when driven without grid current.

Power Supplies

One of the noticeable differences between the Mark I and Mark II Vespas is the power-supply—the latter is three pounds heavier at 18 lb. than the earlier one. However, a weight of 18 pounds is not much, when compared with the weight of the PSU for an AM rig of similar power—typically about 50 lbs.—and leads one to consider the actual power taken from the mains. Here the comparison is indeed startling—the AM rig soaks up 600 watts while the Vespa Mk. II takes only 250 watts at full modulation. As for the Mark I under test, a mere 180 watts mains load sufficed.

Specification and Handbook

The transmitter not being new, some deviation from the K.W. specifications might have been expected but in fact when tested on the bench it met all the requirements of the specification, and indeed handsomely bettered it in some respects. The figures against which the Tx was measured were those laid down in the handbook, and the methods of making them were taken, where applicable, likewise. But in all cases the accuracy was checked against other laboratory test gear and different methods, with similar results. The handbook is about the best your reviewer has seen from a British manufacturer in the Amateur Radio field, and while the pages are duplicated—which is only sensible in this sort of context—there is no doubt that there is enough information for anyone, with all the setting-up procedures and tables of voltages and resistances, also drawings of

the interconnections to the receiver, aerial, and linear amplifier (if one is used).

Setting it Up

And talking of connections, it is a pleasure to note that here is a manufacturer who realises that most well-equipped stations do have a receiver. The Vespa provides the connections for switching the aerial over to the receiver, and contacts to mute it when transmitting—and, thank Heaven, has so arranged things that none of the plugs can be cross-mated.

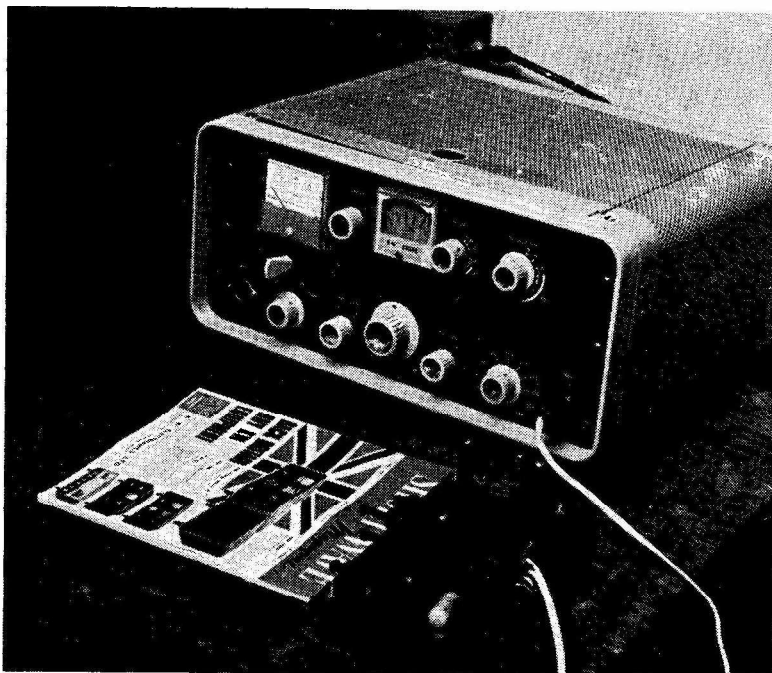
Performance

On the air, the expected improvement in range of QSO's was experienced, as compared with the old AM rig. Netting was a trifle more complicated in that the netting switch has to be thrown and some carrier inserted, but this was more than cancelled out by the fact that this enables one to set the netting to a level appropriate to the incoming signal. The stability was impressive, as was the dial calibration accuracy on all bands. As with most transmitters of this type, sustained operation at full stick into a dummy load is not possible due to the method of use of the PA valve, but it can be said that after prolonged periods of operating no deterioration in output was noted, nor was the transmitter excessively hot; the power-pack indeed ran quite cool.

Criticisms

No equipment is perfect, but fewer comments than usual can be levelled at the Vespa under this heading. The front panel layout is fine for the SSB operator, but one could wish, for CW operating, that the key-type switch for change-over could be above the meter rather than below.

As for the circuits, there is little that can be levelled



General appearance of the K.W. "Vespa," with a size comparison.

at them; ALC would be a desirable addition, as it would to any transmitter, and those who prefer a Vox will miss this facility, although it is quite possible to build a suitable outboard unit to do the job.

The power supply is an admirable piece of work, and is intended to be fixed under the operating table out of sight. This being the case, a fibre cover is acceptable, and does not tear one's trousers when bumped against—but your reviewer would admit he would much prefer a metal case to the unit!

Service

A word should be said about this. When the transmitter was purchased, the writer was given the name of a contact at the Works where the service department is located. As indicated earlier, occasion arose to use this contact. No words were wasted in platitudes but plenty of information was immediately forthcoming to solve the problems, both verbally over the telephone, and in the way of a follow-up letter with circuits in the post the same day. One was left with the feeling of someone extremely capable and interested in the reputation of his firm's products.

Conclusions

Knock-about use on the bands has given much pleasure and demonstrated that the Vespa transmitter fully lives up to the expectations inspired by its specification; appearance and finish are good, as is the circuit design and layout. This review has been written around a piece of second-hand equipment treated as though it were straight off the line; and on this basis one can reasonably say the transmitter would represent a very good buy indeed as new equipment, and is a credit to its designer's ability when looked at as a second-hand

item. Finally, as no one was aware that the writer was intending to review the transmitter for *SHORT WAVE MAGAZINE* till after it had been safely stowed away in the car for the journey home, confidence may safely be placed in the statement that this rig is no better than any other of its type.

The criticisms, such as they are, are minor when set against the ability to operate the HF bands with freedom from TVI in most locations, and to have a station set-up which is not an eyesore.



"... Am a really keen CW operator ..."