

All transceiver equipment reviews appearing in Ham Radio Today are undertaken in three parts. In the first instance we send the equipment to experienced amateurs who provide a subjective opinion — we allow them to be as nasty or as nice as they like — on the practical operating aspects. We ask them specifically not to undertake any technical tests but simply to tell us — and you — if it is fit for the use intended by the manufacturers. For instance, are the knobs in the right place? Is it too slow to use for a meteorscatter contact? Does it sound OK (in the reviewer's opinion)?

After the reviewer has operated the set(s) for a couple of weeks, we take them away for delivery to our review laboratory, in reality, the research and development labs of Redifusion Radio Systems — Redifon — a sister company of the publishing house which brings you Ham Radio Today. The lab runs a series of tests devised by us and prepares a report. At no time does the 'practical' reviewer see its contents

until he hands in his own report to us. The result is that the reviewer has to go out of his way to be fair. He knows that if he makes unsubstantiated claims about the performance aspect of a particular piece of gear, a jaundiced view is open to exposure in the dispassionate light of the testing lab.

As Editor of Ham Radio Today it falls to me to weigh up the balance of the review — the third part of the process — and add notes and observations as I see fit. For instance, I have tried to put the rather bald figures from the lab tests into perspective.

In searching for the most objective viewpoint I believe that we have succeeded in a way that no other amateur radio magazine has ever done before. However we have not yet reached the end of the line and we welcome suggestions to improve the process still further.

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editor, Ham Radio Today

gives details on how to convert the European model to greater frequency coverage (143.5-148.5MHz) and to different synthesiser steps (eg 20kHz, 100kHz etc) by the insertion of diodes, in case you intend travelling with the 480R.

The general impression gained is that Yaesu is not trying to hide anything and anyone with the irresistible urge to tweak or modify the rig should feel reassured. If more manufacturers took heed of this, the hobby could benefit greatly.

The Icom manual gives a similar impression being 44 pages in length and having a circuit diagram on a double-sided unfolding sheet. Although slightly smaller than the Yaesu diagram, this one still does not necessitate the use of a microscope to follow the circuit, as do some other manufacturers'. One rather novel touch is the use of a large fold-out component layout for the circuit board. Good open top photographs, block diagrams and comprehensive circuit operation notes make this manual very useful indeed. Icom does seem to blow its own trumpet rather too much with comments like "Outstanding performance" and "The IC290A/E has everything you need to truly enjoy VHF operation". This tone tends to detract from an otherwise extremely readable manual. After all, who need sales talk after you've bought it?

The usual advice when writing articles is to save the best till last, but unfortunately this is not the case

here for the Trio handbook is honestly quite disgraceful. The unfolding circuit diagram does need that microscope and it is rather disconcerting that lines seem to change their labelling as you trace along them. Block diagrams help a little but the complete absence of any discussion of the circuit operation is a deplorable omission. Only one tiny photograph of *half* the lower board is shown and this is primarily to indicate where to plug in the memory back-up battery. To be quite honest, I don't know why Trio bothered! With the exception of the circuit diagram, one could learn at least as much information from the two-page glossy advertising sheet. One glance at this manual would be enough to put anyone off with the intention of: (a) learning a little more about VHF construction techniques and (b) getting one's hands dirty in modifying or tweaking the last scrap out of the rig.

One of the purposes of amateur radio is for self-training and experimentation and Trio needs reminding of this fact, for not everyone wants to treat their rig as a black box. However, having said all this, I have recently found out that service manuals, intended primarily for the trade, are soon to be made available. These are supposed to be very comprehensive including such things as abridged specifications for all those integrated circuits with funny reference numbers, extensive setting-up and fault-finding chapters, board layouts, approved modifications etc. The only problem

being that you will have to fork out an extra £7 or £8 for the privilege. Check with Lowe Electronics for further details.

Technical summary

Which rig is the best technically? Well, it's swings and roundabouts really. All three rigs have such similar RF line-ups that apart from odd little quirks, such as inductor pulling of oscillators or the redundancy of active devices (could it be considered 'belts and braces'?) there seems little to choose between them. I feel, therefore, that the decision needs to be made on ease of operation and synthesiser functions.

Visual impressions

Often first impressions can be valuable, but equally they can be misleading. I state this here simply because it is usually first impressions that sell a rig during that quick, embarrassed flick around in a crowded shop with dozens of other amateurs avidly peering over your shoulder.

Physically all three rigs are about the same size, the 480R being slightly heavier. The first point I noted was that the 290E has a double fused lead — nice touch you think until your gaze travels up to the connector. Although no trouble was experienced with this during tests, I feel that in time it could become loose especially when the rig will probably be put into and taken out of the car many times during its life.