

BOOKEND



This handbook is the hardy perennial of amateur equipment design. Published by the American Radio Relay League, the Stateside equivalent of the RSGB, it has become the standard reference manual for the

around the right way. The authors then go on to describe a few performance measurements that they made while using a diode ring in a DCR. To anyone with an interest in building radio gear, this is a delightful present-

SOLID STATE DESIGN FOR THE RADIO AMATEUR by **Wes Hayward W7ZOI** and **Doug DeMaw W1FB**. 256pp A4 format. Published by the **ARRL** and obtainable from the **Radio Society of Great Britain** at **Alma House, Cranbourne Road, Potters Bar, Herts EN6 3JU**. Price **£6.53**

HF build-it-yourself brigade. I've got a copy, a well thumbed edition purchased back in 1977. G3WPO has a copy — as does nearly every other builder that I know. It is a *very* useful book.

It is not the sort of text which offers a complete set of instructions on how to build an HF rig step-by-step, even though there are numerous circuit diagrams, drawings and photographs of the building blocks which make up the equipment. Rather, it offers a dissectioned view of what goes into an HF design and presumes a basic practical understanding of electronics on the part of the reader. Frankly, it's not a reference book for a complete beginner. Having said that, *just a little knowledge* will allow the lucid style of the text to throw up a succession of little golden nuggets of information. Despite the fact that I have owned the book for some five years I continue to glean further understanding of radio-type electronics from its pages.

Let me illustrate the usefulness of the book. You may wish to build a direct conversion receiver, for example. The knowledge that you will already probably have about this type of circuit tells you that a DCR requires a product detector. You may remember that diode detectors are the normal thing to use but you have forgotten the precise arrangement of transformers, diodes, etc to build a product detector. Turn to page 74 and all is revealed in both drawings and words. The text makes some general points about diode product detectors while the circuits should make sure that you get the things

tation whose effect is to fire the imagination with ideas of one's own.

Almost every aspect of equipment design comes in for the same, practical treatment. You really get the impression that the joint authors are a pair of informed home-brew merchants who went to enormous trouble in order to document their own experiments for the benefit of others. Wideband amplifiers, low noise oscillators, specialist radio test gear (most useful) active mixers, crystal filters, power supplies — to list but a few. The book also offers a number of look-up tables for filter design together with detailed explanations of such things as dynamic range, reciprocal mixing and other of these 'buzz' word parameters which magazines so love to include in their articles and reviews.

Having said all these wonderful things about *Solid State Design*, it comes in for quite a bit of stick. First of

all, it's American. I've got nothing much against N's, W's and K's (except perhaps that they all seem to run more power than I do!) but the components shown in the book's circuits are not always easily available over here. This is particularly true of the toroid cores which are used in nearly all the illustrations. It is true that the authors meticulously provide winding details for inductors, but their instructions are not worth the printer's ink if you can't buy the right core. This is an instance where a degree of practical experience is necessary in order to 'adapt' the components shown in a US circuit diagram to those available from UK sources.

I have another gripe. This reference book was first published some seven years ago. Although the theory holds up excellently some of the practical circuit example are starting to look a bit dated. Many of the building blocks described could be better implemented by some of the multi-function radio ICs currently on offer. The circuits themselves seem rather old fashioned; no designer would dream of putting together a piece of amateur gear based purely on the designs shown in this book. (*Oh dear! I'm obviously not state of the art enough.* — Ed.) Specifically, the chapter on radio synthesizers was positively atavistic. You just wouldn't put something together based on SSI and MSI TTL.

However, there is another side to the coin; IC circuits make a very poor teaching aid. Too many electronics engineers these days are at the mercy of the semiconductor companies' applications labs. Discrete circuit examples allow a *much* greater understanding of the design process and are probably more instructive for the equipment building radio amateur. I have no complaints as an enquiring reader. **G4JST**

