

BOOK REPORTS & REVIEWS

1. Book Review by Gerry O'Hara G8GUH;/VE7UH as published in Radio Bygones No. 123 follows this sheet. **This is a 500 kB file and will take approx 4 minutes to load if you are on a dial-up connection!**

2. On 4 June 2010 the **postings below on this sheet** were made on the HBR reflector by KE9XQ and N6KYR/4, both recent buyers of "Recollections":

Subject: Re: [HBR] Recollections of a Radio Receiver, by Jay Helms, W6HHT
From: William Wood <ke9xq@charter.net6>
Date: Fri, 4 Jun 2010 10:02:03-0500
To: HBR Receiver List <hbr@mailman.qth.net>

I have to ditto Cal's remarks here, I'm only a little more than half way through on my first read, and have already learned several things. One of which is something I need to read up more about is tapered coils. For one reason or another this never sunk in, or I never ran across it, very interesting for sure :) Glad I got the disk before I started...

73
Bill

On Jun 4, 2010, at 8:29 AM, C Eus wrote:

> I know there are some of us out there who are "HBR" neophytes who are just
> now starting out in our adventures with this legendary receiver. I thought
> I could get by with simply following some of the printed material available
> on the hbr website and various sundry information sources, however, this
> book is a gem!
>
> HHT's book goes into explicit detail about how to build this receiver and
> some of the reasons why Ted and others designed things the way they are in
> this receiver, such as the use of certain frequencies and circuits were used
> during the design and build phase of this radio. Even more "entertaining" is
> some of the communique's and some of the remarks of some of the builders.
>
> If I had obtained a copy earlier, I might have avoided some inane questions
> I posted. Folks, this is a good read, probably one of the few things I
> can say that it was money well spent. I highly suggest getting a copy and
> going through this book. This book can help you avoid mistakes and perhaps
> make your building experience much more enjoyable. You will receive a
> healthy amount of a practical RF electronics education as well.
>
> I'm a happy customer! Thanks.
>
> Cal, N6KYR/4.
>
> See www.w6hht.com
>

> HBR mailing list
> Home: <http://mailman.qth.net/mailman/listinfo/hbr>
>

Book review

By Gerry O'Hara, G8GUH/VE7GUH

Recollections of a Radio Receiver – The W6TC (SK) Adventure 1956 – 2009

A Collection of Observations, Remembrances, Letters and Notes

by Jay F. Helms W6HHT

What have Tom, Dick and Harry, evening meals, toothpicks, breadcrumbs, 'wobble-wobble', chimneys, a 'two-hand dance', a 'perfect storm', 'scavenger hunting', moaning and even beauty contests to do with an amateur-built radio receiver, a 'WOW' factor and a 'crazy old cool' called 'Cros'? – the answer can be found by reading *Recollections of a Radio Receiver...* by Jay Helms, W6HHT. The book covers (almost) everything you would ever want to know about the 'HBR' series of amateur band receivers first conceived by Ted Crosby, W6TC (SK) in the mid-1950s.

My first encounter with an HBR receiver design was an HBR13C that had been donated to the *SPARC Radio Museum* in Coquitlam, BC in 2008, along with a large box of coils and volumes of paperwork relating to its design and construction. I was quite intrigued by this receiver, in terms of the circuitry, mechanical design – especially the plug-in coils – and the quality of workmanship, together with the use of an Eddystone slide-rule dial (I am a bit of an 'Eddystone man') – so intrigued that I decided to write a short article on the HBR13C for the EUG website. Soon after, Jay contacted me for permission to

use my HBR article, and others I had written, as reference texts in a book he was preparing on the HBR – in return I unexpectedly received a copy of his book.

I have read many, many books on radio over the years, but this text is a very unusual and interesting tome and I must say, is quite different to what I was expecting before I opened the covers – yes, although the 'e-book' format has a good indexing and hyperlink system, and you can easily search for key words, I found it easier to read and cross-reference by printing it out from the Adobe Acrobat file. The human touch provided by the numerous personal letters presented in the book, often reproduced in original copy and re-typed for clarity or highlighting a particular issue, character descriptions, and interaction of the various 'players' in the story (because it is a story), numerous anecdotes, etc. is a great way of bringing the book to life – so much so that I actually got 'hooked'.

Altogether it was a bit like reading a good novel, rather than a textbook that you dip in and out of. Not that you cannot use



the book as a technical reference though, as there are all sorts of useful tidbits buried inside for anyone interested in any form of HF receiver construction, from mechanical and circuit design tips to coil winding information and even operating techniques.

Technical Details

As an HBR 'newbie' I found many of the technical details very interesting, eg. that the front-end is designed to be regenerative to maximise sensitivity and increase the effective Q of the coils 'for free' (almost invariably, double superhet designs do their best to avoid regeneration in their front ends, and regenerative receivers are simple, low tube-count sets). However, this essential ingredient in the HBR design philosophy was sometimes lost, even by well-intentioned changes to the design by its constructors.

The author even admits to a booboo here, where an overly-neat wiring effort in his HBR13C caused it to fail to regenerate properly because of stray pickup in the wiring loom affecting the AGC, resulting in reduced gain and below-par performance. I am sure that other details, eg. the use of a Hartley oscillator to improve stability, or the finer points of coil construction covered in Chapter 5, will mean even more to folks that have built an HBR, own one now (built by someone else), or are thinking of building one from scratch.

Three Parts

The book is divided into three parts: the first contains the major text, the second a series of HBR-specific references (reproduced in the book) and the third containing more general technical references pertaining to receiver design. Part 1 is preceded by notes on using the e-book format and a Prologue that provides a brief introduction to the book's subject, a lexicon of terminology and index of QST articles on the HBR.

Chapter 1 opens the story with an introduction to the men who made the 'HBR adventure' happen, the reasons why it did, and the design concept of the receiver. Chapter 2 picks up on this concept, defining the design objective in four 'rules' and then moving onto the set's specifications and the expectations of those constructing the receiver. An interesting reference presented here is part of an RSGB booklet on the contemporaneous GRB Thornley (G2DAF) homebrew receiver design originating in the UK, together with comments on the different methodologies of the two designers.

Chapter 3 is the start of the real technical 'meat' – here each of the HBR models is described in a series of 'thumbnails' along with the associated schematics and comments on differences between them, as well as details of some additional circuitry, such as slot and notch filters. However, the real in-depth discussion on the HBR circuitry and its evolutionary path from 1956 through to 1969 is dealt with in Chapter 4. Here, the regenerative front-end is highlighted, followed by the various circuit elements – mixer stages, IF stages, marker oscillators, AGC, filters, detectors, audio and power supply, concluding in a 'things not to do' section. The all-important plug-in coils are given to the entirety of Chapter 5 (over 70 pages), which is illustrated by photographs and diagrams.

Achieving receiver stability ('staying put' in 1950s radio jargon) was one of the holy grails of receiver construction in a world without low-cost synthesisers and digital electronics, and Chapter 6 is devoted entirely to this subject. Here you will find discussion on various factors that may affect receiver stability,

from power supply issues through mechanical stability, circuit design, components, and thermal effects, including some very good discussion on the use of temperature compensation capacitors, and methods for testing receiver stability.

Alignment

For anyone constructing a receiver from scratch, alignment is one of those things that can be a daunting prospect. Fear not, as Chapter 7 covers HBR alignment (which is actually quite straightforward) and also includes voltage check tables to help troubleshoot other problems in a newly-constructed or restored HBR.

The HBR design is a bit different from the norm, eg. it is the first receiver I have seen that has a mixer gain control, and Chapter 8 provides the reader with some very useful tips on how to operate these rather unique sets. The main text concludes in Chapter 9 with a review of the 'development, 'repose' and 'revival' phases of the HBR story, stretching from 1956 through 2009 (only a year less than me) – an interesting contrast of the driving forces for building an HBR in the late-1950s and in the early-2000s is provided here and even some speculation into the future of the HBR design.

Part 2 includes a chapter on Builders Notes for the HBR14, HBR16, HBR11 and HBR13C, plus many other technical tidbits, notes on the author's 'HBRXX' receiver and details of the popular Eddystone 898 dial mechanism. Part 3 comprises a compendium of *ARRL Handbook* extracts, information on inductors, including the Meissner *Radio Coils and Circuit Applications* instruction manual, and even cover and spine inserts if you decide to print the book (or sections of).

My only suggestion as to how this book could have been improved would be that, although the text is extremely detailed, there are many times when a diagram or photo would have helped enormously in visualizing what is being described – especially if you do not happen to have an HBR sitting beside you. However, although this addition would enhance the readability of certain parts of the text, their absence does not detract from the overall value of the material presented.

Conclusion

In conclusion, this is no 'brain dump', no dry technical treatise on a long-forgotten homebrew amateur receiver design, but is a real story, about real people that were dedicated to achieving the very best receiver performance they could with the proven technology of the time. What's more, Ted Crosby's design philosophy concluded that any Tom, Dick or Harry should be able to replicate his design and achieve similar performance. To this end, Ted spent much of his spare time helping others by corresponding with constructors and by producing simplified and expandable versions of his receiver design.

The author must be congratulated for being able to thread the human story, the design philosophy and the vast amount of technical information presented into a coherent, readable book. It is not only useful as a historic piece about the development of amateur radio in the mid-twentieth century, but also as a great technical reference and compendium of information for the HBR constructor, owner, operator and anyone interested in constructing and operating radio receiving equipment – if you are one of these folks, then this is one of the best-value \$10 (US – available from the author's website www.W6HHT.com) you will ever spend.