

Title: *Rothammel's Antenna Book*

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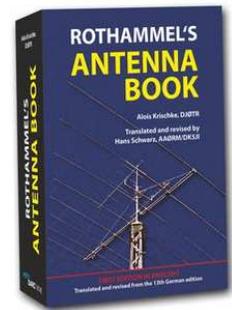
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Reviewer: Whitham D. Reeve



This massive book is an encyclopedia of the many types of antennas and accessories used by radio amateurs at one time or another. It is 65 mm (2.5 in) thick. What is relevant to this review is that many of the antenna types covered by *Rothammel's Antenna Book* can be and have been used in amateur radio astronomy including Yagis, dipoles, horns, conventional and spiral log periodic dipole arrays and reflectors. The book includes more than just antennas, though, and has chapters on electromagnetic propagation, transmission lines, baluns, impedance matching networks, bonding, grounding and counterpoise systems, practical materials, construction methods, and testing. The book has over 40 chapters. It originally was published some years ago in German and was recently revised and translated to English.

The publisher's website [{Rothammel}](#) states: *In the interest of a generally comprehensible presentation, theory is deliberately simplified, but practice is treated in great detail so that even readers without special technical training are able to reproduce the described antennas without any problems.* What this means to the reader is that unlike many antenna books this one has practical value and is not mathematically opaque. Sure, there are equations but anyone with technical inclination and basic knowledge of algebra can use this book.

Rothammel's Antenna Book is organized into broad categories of antenna types, with a chapter for each category. They are, in order: Horizontal HF Monoband Antennas; Horizontal HF Multiband Antennas (this chapter is incorrectly titled Horizontal HF Monoband Antennas, the same as the previous, but all the sections are on multiband antennas); Long Wire Antennas; Broadband Antennas; Broadside and End Fire Arrays; Loop Antennas, Compact Antennas; Active Antennas; Horizontal Directional HF Antennas; Vertical HF Monoband Antennas; Vertical HF Multiband Antennas; Miscellaneous HF Antennas; Vertical Directional Antennas; Omnidirectional VHF/UHF Antennas; Directional VHF/UHF Antennas; Antenna Arrays and Stacked Antennas for VHF/UHF; Miscellaneous VHF/UHF Antennas; Frequency-Independent Antennas; Antennas for Mobile and Portable Operation; Antennas for Radio and Television Reception; Antennas for 160 m, 11 m and 6m; and Microwave Antennas. There is some overlap – a number of antenna types appear in more than one chapter.

The above listing does not include the many chapters on related subjects noted above. If there is any logic to the chapter sequence, I could not determine it. Chapters 33 and 35 are both titled Practical Antenna Construction, but chapter 35 actually appears to be about commercial and industrial antennas, including parabolic microwave antennas for point-to-point radio relay, direction finding antennas, aircraft antennas and radar system antennas. It also has some section numbering problems that could be due to inadequate proofreading. There are many antennas mentioned in chapter 35 but the descriptions are very brief.

If readers are like me, they will look up an antenna of immediate interest and then end up going through the whole chapter because it is a hard book to put down. Reading through the immediate chapter will remind them

of another interesting antenna type, so they will then find the corresponding chapter and end up reading through it, too. Such is the way of all antenna-enthusiasts around the world.

I know of few endeavors that produce more bogus claims than antenna design. Some of the antennas in this book probably could be painted with that brush. Serious students of antennas know what I am talking about. I do not think appearance of a particular antenna in this book can be considered an endorsement. The authors usually mention who made the first claim about a particular antenna. I was relieved that there is no coverage at all of the "rain gutter antenna". Many VHF and UHF arrays are discussed including 12-, 16-, 30- and 48-element arrays, all of which are just as complicated electromagnetically as they are mechanically. Yes, Bruce (*Merry-Go-Round*) antennas are discussed as are Sterba antennas. And, let us not forget the *Ringo Ranger II* and *Super 'C'* antennas. No, the huge Mills Cross dipole array and other similar arrays used in radio astronomy and made from simple dipoles are not covered, and they normally would not be covered in an antenna book like this for the amateur radio market.

The information in ***Rothammel's Antenna Book*** appears to be taken from both amateur and professional literature and patents from around the world. Having this book generally will save readers considerable time when looking for details on a particular antenna type or for ideas on what antenna to build for a certain application. Each chapter has an extensive list of references, so it may be possible to get to the original source document. Some references date back to the 1920s (for example, the Yagi-Uda antenna). The references may be in English or in German, and in some cases, the references are necessary to see the full details of a particular antenna design (for example, nomographs used to determine element lengths). Many antenna types also include a patent number, which could be handy for in-depth research; some patents date back to the early 1900s.

Because the book is largely based on literature and not necessarily independent verification, the coverage is somewhat uneven. In other words, the same level of detail is not given for every antenna, but this is not a distraction given the overall breadth of coverage. For example, chapter 27 on frequency-independent antennas is almost entirely devoted to logarithmic antennas, and considerable detail is given for log periodic dipole arrays. On the other hand, the Biplane Antenna, which is a compact antenna consisting of two double plates, is covered in only three paragraphs in chapter 15. Nevertheless, most antennas have sections that describe the mechanical, electrical and construction details. These sections really are of great value, especially to someone like me, because I find it very useful to see how others have dealt with construction or materials challenges.

The illustrations are line drawings or black-white photographs and are well-done for the most part; there are a few omissions (for example, missing dimensions) and some editing and proof-reading problems. However, readers will find charts with legible vertical and horizontal scales and other labels, unlike a lot of the modern technical literature. Amateurs and professionals alike never have been shy about stealing other people's ideas.

Rothammel's Antenna Book is well worth the money if for no other reason than to have as a shelf reference. The next time you see what you think is a harebrained antenna with "superlative performance" described in an amateur radio magazine, check this book to see if it has been previously described. Similarly, if you think you have invented a new antenna, save yourself some time and money by looking in this book before you run to the patent office.

Citations:

{Rothammel} <https://rothammel.com/Rothammels-Antenna-Book>



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