

Preface

The first edition of this book (now out of stock) was published in 2010. Back then, I had little knowledge of the 'electron tube community'. But a first-ever visit to the European Triode Festival (ETF) in that year, to present my book, was a real eye-opener. I met people sharing the same interest and passion for electron tube amplifiers but from a variety of backgrounds. Not every audiophile is an electronic designer. The way some approach an electron tube amplifier is often completely different to that of an electronic designer, and the results from their amplifiers are amazing. I learned a lot from my encounters with ETF participants, and not just from those with electronic backgrounds.

Having asked for comments about the first edition, which could help me with improvements for a possible second edition, I received some inspiring feedback. Many thanks to all who contributed. It has also given me great pleasure to undertake additional electron tube studies, to present two ETF lectures, and to write three articles for the Linear Audio Magazine.

All of these experiences have helped to inspire me to write this second edition.

Chapter 3, covering the application of the diode as a rectifier, has been reorganized and extended to include a discussion about the behaviors of the currents from the secondary windings of supply transformers. These currents, which are very different for capacitor input and choke input rectifiers, are presented as a function of the rectifier load.

Additionally, I learned that the Otto Schade method to design a rectifier with capacitor input is easy to achieve in practice.

This second edition sees me also returning to my hobby of the ultra-linear power amplifier. I thought that using my own method to determine the screen grid tap at the lowest Total Harmonic Distortion (THD) was valid. But I was wrong. With my method, I can achieve only the most linear anode characteristics. This insight was helped by using an excellent μ Tracer which easily created anode and transconductance graphs for each specimen triode and pentode. When I also used it for the ultra-linear mode, I managed to discover the forgotten anode dynamic transconductance. As a result, I've significantly reworked section 6.10. I've also been able to include the relationship between the screen grid tap expressed as part by turns and part by impedance. Often a cause of mistakes, which I once made myself!

It will be of no surprise to you that the approach of my narration, just as for the first edition, is that of an electronic designer. Finally, I hope that you take great pleasure in reading this book and find it useful when designing your own electron tube amplifier.

Rudolf Moers

Eindhoven, January 2018

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