Electric Railways

An International Correspondence Schools Textbook
Circa 1901

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I bought a copy of a correspondence school textbook at a train show used book seller. The book is actually two books in one. The first part describes electric railways in some detail and has many excellent hand engraved illustrations. The second part describes structural interior wiring circa 1901. This particular copy has seen hard times and is clearly deteriorating so I have elected to scan the part on electric railways for preservation and to present it here. The second part on interior wiring is much less interesting, in my humble opinion, so I did not scan the text although the table of contents is preserved. There is also a section at the end with examination questions that I did not scan.

In the decade before this book was published, electric railways had gone through a period of tremendous advancement. After Frank Sprague had invented and installed the first practical electric street car system in 1888, it was clear that street cars were the best way for a city dweller to get around. Automobiles, trucks and buses were essentially nonexistent at the time and many of the "streets" were still dirt. The trolly cars could run in almost any weather, were reliable and incredibly fast, at least in comparison to horse drawn buggies, wagons, horse cars and omnibuses. The streetcar ruled urban public transportation for the next 20+ years and are an important transportation resource even today. Just because this book is 100 years old doesn't mean that it is irrelevant. Many of the devices, structures and circuits described in this book are still in use in present day light rail systems. There are examples of the EXACT equipment described in this book still running in traction systems and museums all over the world.

This book gives an overview to all parts of a streetcar system from the power house, the trackwork, the power distribution system, the trolly cars themselves (with all their electrical parts individually treated) to the shops necessary to keep it all running. The greatest detail is provided on the construction and maintenance of the electrical equipment. The book doesn't go deeply into technical details because it assumes that the reader isn't an engineer already. It seeks to train the reader to be as prepared as anybody to dive in and operate a turn of the century trolly system.

I scanned each of the six relevant sections, the table of contents, and the index into their own PDF files. Each section was broken up to make the files small enough to be downloaded over a modem connection.

You'll need a copy of Acrobat Reader version 4 or better to view the files. Click on the links in the table below to download the PDF files. Depending on how your browser is configured, it may download the file or it may display the file which you can then save. I have no control how this happens, it all depends on how your browser is set up.

The original work was copyrighted in 1900 and 1901 so the original copyrights have long expired. I have elected to copyright the electronic image of the book because I put so much time in reproducing it in electronic form. Rights are granted to make use of the images for personal or educational purposes.

The book is organized in sections and pages. Each major subsection is numbered, but the numbers do not appear in the table of contents.

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Section	File Size (MByte)	Contents
TOC	0.28	Title Page Table of Contents
20-1	2.69	The Powerhouse
20-2	3.72	Powerhouse Equipment
21-1	4.52	Power Distribution
21-2	1.65	The Trolly Wire
22-1	3.28	Trackwork
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23-1	3.41	Power Distribution Analysis
23-2	1.40	The Carbarn and Carshops
24-1	0.89	Carbodies and running gear
24-2	2.77	Motor Controllers and Car Wiring

24-3	2.64	More Motor Controllers and Car Wiring
24-4	2.87	Traction Motors
25-1	3.83	Trolly Car Electrical Appliances
25-2	3.81	Trolly Car Mechanical Appliances
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Sourced by George Schreyer