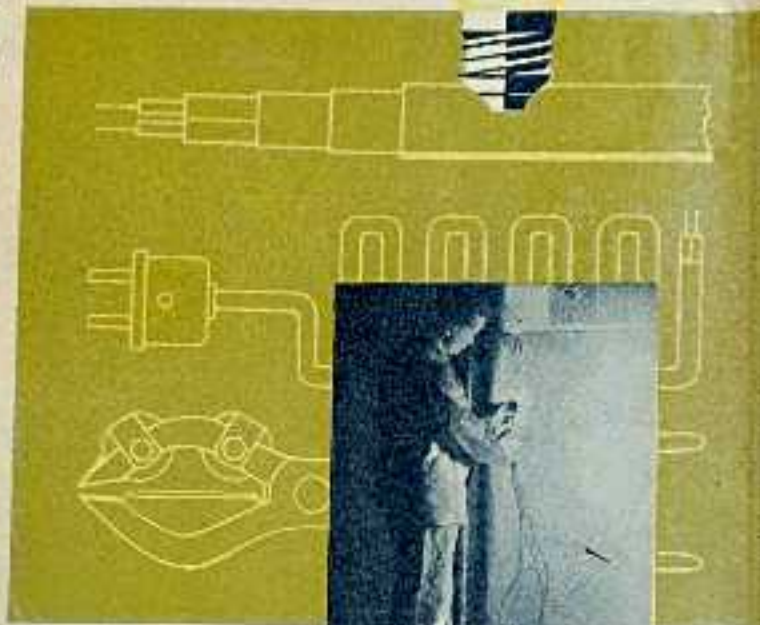


TECHNICAL FUNDAMENTALS

Electrical Installation



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BY HEINZ GRAFF

VEB EDITION LEIPZIG

When you go for a walk through a large town, modern traffic, illumination advertisements, cinemas, public buildings and the like will show you that nowadays life is inconceivable without electric current. The increasing importance of electricity becomes still more apparent when you pay a visit to a modern industrial firm where not only single machines are electrically driven, but also whole departments and plants operated fully automatically by an ingenious utilization of electricity. In the private sphere of every man, in his home or club, electric current has also become indispensable. It is only by the aid of electricity that telephones, wireless and television sets, modern heating installations, refrigerators, lighting fittings, and the great number of big and small household appliances can be operated.

Electricity is gaining upon even the remotest regions of the earth, directed by the ingenuity of man. Power-distribution networks are more and more spreading from year to year, and new steel towers are being erected in uninterrupted succession to carry current even to the most out-of-the-way village and last cottage.

It took a long time before man got to know how to master electric energy. Today, millions of expert workers and engineers are engaged in the production of electric current, the construction of electric machines and apparatus, and the installation of electric lines.

A high degree of technical knowledge and manual skill is required of those who are in some way or other engaged on the task of controlling electric energy. Wrong connections in electric lines or appliances not only will cause great material damage, but also form a danger of life. This is why it is of particular importance that an electrician undergoes a thorough technical training, acquires the fundamental manual skill and also familiarizes himself with the theoretical problems of his own field.

The present book, "Technical Fundamentals — Electrical Installation", is particularly suitable for workers and apprentices who are qualifying as expert workers in the field of electrical installation. The physical fundamentals of electrical engineering have been dealt with only as far as it seems advisable to facilitate an understanding of the practical work explained in this book.

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