

UNIT 4 TRACTION

Merits of electric traction – requirements of electric traction system – supply systems – mechanics of train movement – traction motors and control – braking – recent trends in electric traction.

Merits of electric traction:

The locomotive in which the driving or tractive force is obtained from electric motors is called Electric traction.

Electric traction has many advantages as compared to other non-electrical systems of traction including steam traction.

Electric traction is used in:

- i) Electric trains
- ii) Trolley buses
- iii) Tram cars
- iv) Diesel-electric vehicles etc.

Traction systems:

All traction systems, broadly speaking, can be classified as follows:

1. Non-electric traction systems:

These systems do not use electrical energy at some stage or the other.

Examples: Steam engine drive used in railways at some stage or the other.

These are further sub divided into the following two groups:

a) Self contained vehicles or locomotives

Examples:

i) Battery-electric drive ii) Diesel-electric drive

b) Vehicles which receive electric power from a distribution network or suitably placed sub-stations. Examples:

i) Railway electric locomotive fed from overhead A.C supply,

ii) Tramways and trolley buses supplied with D.C. supply.

Here power is applied to the vehicle from an overhead wire suspended above the track. Electric traction systems may be broadly categorized as those operating on:

1. Alternating current supply
2. Direct current supply.

In general following electric traction systems exist:

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L. W. Gant



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Electric Traction-motive Power and Energy Supply Andreas Steimel, 2008 *Electric Traction* A. H. Armstrong, 1908 **Electric Traction - Motion Power and Energy Supply** Andreas Steimel, This book has evolved from the lecture series Elektrische Bahnen Electric railways which has been held at Ruhr University Bochum since 1996 Its primary audience are students of electrical energy technologies control engineering and mechanical engineering as well as young engineers of electrical engineering especially in the fields of power electronics in railway industry and in railway operating companies The book intends to convey mechanical fundamentals of electric railway propulsion which includes rail bound guidance transmission of traction effort from wheel to rail under t **Elements of Electric Traction** L. W. Gant, 2015-06-17 Excerpt from Elements of Electric Traction For Motormen and Others Elements of Electric Traction is based upon a short series of lectures and practical demonstrations which have been given by the Author during the last two years to a class of motormen and others at the Leeds Institute Technical School During these lectures and the subsequent period the writer has had repeated inquiries for a suitable textbook and while he has recommended from time to time books dealing with the Elements of Electrical Engineering as well as Handbooks for Motormen he has always found a need for a book dealing in a simple manner with the fundamental mechanical and electrical principles underlying electric traction To fill this need this work has been written The work is intended to serve as an introduction to the more advanced works on electric traction and to supplement the information given in the various Handbooks for Motormen and others To make the work more helpful to students of Electric Traction generally a number of formul have been inserted and to further illustrate the text examples have been added to the more important chapters Electric Traction is a branch of Electrical Engineering of rapidly increasing importance and the Author trusts that this volume will help those intending to follow up this career by giving them a sound knowledge of the fundamental principles of their subject About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books Find more at www.forgottenbooks.com This book is a reproduction of an important historical work Forgotten Books uses state of the art technology to digitally reconstruct the work preserving the original format whilst repairing imperfections present in the aged copy In rare cases an imperfection in the original such as a blemish or missing page may be replicated in our edition We do however repair the vast majority of imperfections successfully any imperfections that remain are intentionally left to preserve the state of such historical works *Elements of Electric Traction* L. W. Gant, 2017-10-30 Excerpt from Elements of Electric Traction For Motormen and Others Elements OF electric traction is based upon a short series of lectures and practical demonstrations which have been given by the Author during the last two years to a class of motormen and others at the Leeds Institute Technical School During these lectures and the subsequent period the writer has had repeated inquiries for a suitable textbook and while he has recommended from time to time books dealing with the Elements of Electrical Engineering as well as Handbooks for Motormen he has always found a

need for a book dealing in a simple manner with the fundamental mechanical and electrical principles underlying electric traction To fill this need this work has been written The work is intended to serve as an introduction to the more advanced works on electric traction and to supplement the information given in the various Handbooks for Motormen and others About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books Find more at www.forgottenbooks.com This book is a reproduction of an important historical work Forgotten Books uses state of the art technology to digitally reconstruct the work preserving the original format whilst repairing imperfections present in the aged copy In rare cases an imperfection in the original such as a blemish or missing page may be replicated in our edition We do however repair the vast majority of imperfections successfully any imperfections that remain are intentionally left to preserve the state of such historical works

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web actually nowadays industry is doing much more in the field of environmental protection to comply with eu legislation and
maintain their reputation than citizens and most people are unaware of that i would encourage the petrochemical industry to
continue to develop new chemical feedstock and products that would help citizens become more