

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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Raffaela Di Napoli



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Table of Contents Electric Traction Lecture Notes Slibforyou

1. Understanding the eBook Electric Traction Lecture Notes Slibforyou
 - The Rise of Digital Reading Electric Traction Lecture Notes Slibforyou
 - Advantages of eBooks Over Traditional Books
2. Identifying Electric Traction Lecture Notes Slibforyou
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Electric Traction Lecture Notes Slibforyou
 - User-Friendly Interface
4. Exploring eBook Recommendations from Electric Traction Lecture Notes Slibforyou
 - Personalized Recommendations
 - Electric Traction Lecture Notes Slibforyou User Reviews and Ratings
 - Electric Traction Lecture Notes Slibforyou and Bestseller Lists
5. Accessing Electric Traction Lecture Notes Slibforyou Free and Paid eBooks
 - Electric Traction Lecture Notes Slibforyou Public Domain eBooks
 - Electric Traction Lecture Notes Slibforyou eBook Subscription Services
 - Electric Traction Lecture Notes Slibforyou Budget-Friendly Options

6. Navigating Electric Traction Lecture Notes Slibforyou eBook Formats
 - ePub, PDF, MOBI, and More
 - Electric Traction Lecture Notes Slibforyou Compatibility with Devices
 - Electric Traction Lecture Notes Slibforyou Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Electric Traction Lecture Notes Slibforyou
 - Highlighting and Note-Taking Electric Traction Lecture Notes Slibforyou
 - Interactive Elements Electric Traction Lecture Notes Slibforyou
8. Staying Engaged with Electric Traction Lecture Notes Slibforyou
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Electric Traction Lecture Notes Slibforyou
9. Balancing eBooks and Physical Books Electric Traction Lecture Notes Slibforyou
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Electric Traction Lecture Notes Slibforyou
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Electric Traction Lecture Notes Slibforyou
 - Setting Reading Goals Electric Traction Lecture Notes Slibforyou
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Electric Traction Lecture Notes Slibforyou
 - Fact-Checking eBook Content of Electric Traction Lecture Notes Slibforyou
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements

- Interactive and Gamified eBooks

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