



American Railway Engineering and
Maintenance-of-Way Association

CHAPTER 32

ENGINEERING MANAGEMENT SYSTEMS¹

Current until update of next edition

FOREWORD

Railroading has undergone significant change in all methods of operation in the last decade. Much of this change has caused all companies, and individuals within them, to reexamine their business objectives on a long term basis while also considering short term benefits. Particular emphasis has been placed on how to achieve these objectives in the most economical way possible. Automation systems and the thrust for a paperless office environment have played a key role in this change.

Automation systems, computer hardware and software, and communication technology also undergo phenomenal change each year. The power of computers continues to increase significantly while the price and size are dramatically reduced making it now possible to economically place powerful computers or data terminals on virtually every desk or even in the pocket of field personnel. These changes have altered the tasks of Committee 32 in much the same way as railroad companies and agencies as a whole have been affected. The Committee has constantly studied and analyzed evolving concepts, technology and railroad practices in an attempt to provide and communicate to the AREMA membership current and accurate information that can be used as a meaningful railroad engineering management tool.

It is with this concept of aiding AREMA members in mind that Committee 32 has concluded that it is time to move beyond previous efforts, and begin the ardent preparation of permanent manual recommendations. The Committee's studies have shown that all major railroads and rail transit agencies, including many shortline railroads, have developed, or are now developing, automated engineering systems that encompass some or most of the railroad engineering management functions described herein. The majority of these systems have been developed as an independent endeavor. Each railroad has taken a slightly different approach and expended their major efforts on different engineering management functions. All railroads perform most functions listed, but using uniquely differing levels of either manual or automated techniques to process and store the information.

¹ The material in this and other chapters in the *AREMA Manual for Railway Engineering* is published as recommended practice to railroads and others concerned with the engineering, design and construction of railroad fixed properties (except signals and communications) and allied services and facilities. For the purpose of this Manual, RECOMMENDED PRACTICE is defined as a material, device, design, plan, specification, principle or practice recommended to the railways for use as required, either exactly as presented or with such modifications as may be necessary or desirable to meet the needs of individual railways, but in either event, with a view to promoting efficiency and economy in the location, construction, operation or maintenance of railways. It is not intended to imply that other practices may not be equally acceptable.

FOREWORD (CONT)

It is the intent of the Committee in preparing Chapter 32 to provide recommendations for the design and development of Railroad Engineering Management Systems, whether manual or automated, that will:

- Reduce duplication of effort.
- Demonstrate the need for single entry of data as close to the source of information as possible.
- Provide a unified, standard format and standard direction for systems development.
- Enhance compatibility and the interchange of information between Engineering and field locations; other railroad departments; and outside railroads, agencies, vendors or customers.

The purpose of Chapter 32 is to provide a guideline for recommended practice within the scope of study of Systems Engineering. Furthermore, it is hoped that this Manual Chapter will become a useful aid to a wide range of Engineering personnel, as well as members of the AREMA.

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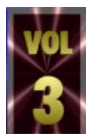
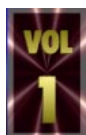


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INTRODUCTION

The Chapters of the AREMA Manual are divided into numbered Parts, each comprised of related documents (specifications, recommended practices, plans, etc.). Individual Parts are divided into Sections by centered headings set in capital letters and identified by a Section number. These Sections are subdivided into Articles designated by numbered side headings.

Page Numbers – In the page numbering of the Manual (32-2-1, for example) the first numeral designates the Chapter number, the second denotes the Part number in the Chapter, and the third numeral designates the page number in the Part. Thus, 32-2-1 means Chapter 32, Part 2, page 1.

In the Glossary and Bibliography, the Part number is replaced by either a “G” for Glossary or “B” for Bibliography.

Document Dates – The bold type date (Document Date) at the beginning of each document (Part) applies to the document as a whole and designates the year in which revisions were last made somewhere in the document, unless an attached footnote indicates that the document was adopted, reapproved, or rewritten in that year.

Article Dates – Each Article shows the date (in parenthesis) of the last time that Article was modified.

Revision Marks – All current year revisions (changes and additions) which have been incorporated into the document are identified by a vertical line along the outside margin of the page, directly beside the modified information.

Proceedings Footnote – The Proceedings footnote on the first page of each document gives references to all Association action with respect to the document.

Annual Updates – New manuals will be reprinted and issued yearly, in their entirety.





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Part 1

Railroad Engineering Management Systems Overview¹

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¹ References, Vol. 97, p. 234

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Part 2



Project Appraisal and Forecasting

Module (Planning)¹



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¹ References, Vol. 97, p. 234.



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Part 3



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¹ References, Vol. 97, p. 235.

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Part 4

Project Scheduling Module¹

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¹ References, Vol. 97, p. 235.

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Part 5



Gang Management Module¹

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¹ References, Vol. 97, p. 236.

