AREMA
AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION

CHAPTER 2

TRACK MEASURING SYSTEMS[1]

INTRODUCTION

The purpose of this Chapter is to provide information and establish recommended practices regarding the different types of track measuring systems in use by North American railways and transit agencies. In general, the systems mentioned in this Chapter are capable of measuring or inspecting the geometry of the track and its major components, assessing the condition and strength of basic track elements, measuring track clearances, etc. Usually these systems are mounted on a rail-bound or self propelled vehicle capable of testing or inspecting tracks at adequate speeds under certain dynamic conditions and able to collect and store data by automated means.

Typical track measuring systems include, but are not limited to, the following:

- Track Geometry Measuring Systems (including catenary and contact rail geometry);
- Rail Measuring Systems (including rail profile, rail cant, rail friction, etc.);
- Track Strength Assessment Systems (including gage restraint, tie strength, ballast and subgrade assessment, longitudinal track strength, lateral track strength, etc.);
- Track Clearances Measuring Systems (including tunnel and platform clearances, ballast profile assessment);
- Automated Track Component Evaluation (tie and fastener assessment, etc.);
- Other Measuring Systems.

[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.

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Page Numbers – In the page numbering of the Manual (2-2-1, 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, 2-2-1 means Chapter 2, Part 2, page 1.

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

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Part 1

Track Geometry Measuring Systems

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SECTION 1.1 INTRODUCTION

The purpose of this section is to describe the various track geometry parameters generally used by railroads and transit agencies to describe track geometry.