

**American Railway Engineering and Maintenance of Way Association
Letter Ballot**

1. Committee and Subcommittee:

- Committee 16 – Economics of Railway Engineering and Operations
 - Subcommittee 2 - Part 3: Power

2. Letter Ballot Number: 16-22-03

3. Assignment:

- Review, modify and update material in MRE Part 16.3 Power

4. Ballot Item:

- Proposed text to insert as new sub-article 16.3.2.5.1 Locomotive Classification
- Approved on May 10th, 2022

5. Rationale:

- Ballot approved the newly developed material for Chapter 16, Part 3, Section 2, Article 5.1: Locomotive Classification, and insert the new material into the existing articles of Chapter 16, Part 3, Section 2: Locomotive Characteristics. The proposed material will relocate and replace the existing legacy article "16.3.2.8 Locomotive Classification (1983)".
- This change is part of the ongoing effort to update existing material in Part 16.3 Power (dating to 1970 and 1983) to reflect modern locomotive designs and utilization practices, and better explain fundamental motive power concepts and characteristics.

Existing legacy article to be relocated and revised:

3.2.8

~~3.2.5~~ LOCOMOTIVE CLASSIFICATION (1983)

The Standard locomotive classification system is a more recent system devised to avoid confusion in distinguishing between driving and nondriving axles. In this system letters are used to indicate the number of driving axles and numbers to indicate the idle axles. Hyphens are used to indicate the separation of axles into groups. Thus 2-D-2 indicates a locomotive having a group (probably a truck) of two guiding axles, then a group of four driving axles, and finally a group (or truck) with two more guiding or idle axles. If one or more axles on a guiding or trailing truck are motor driven, letters are employed to indicate this. Thus 1A-C-A1 designates a locomotive in which the pilot and trailing trucks each have one idle axle and one motor-driven axle, and the main or center truck has three driving axles. Modern Diesel-Electric locomotives generally are either B-B or C-C.

Proposed revision to become Chapter 16, Part 3, Section 2, Article 5.1:

3.2.5.1 Locomotive Classification (2022)

A standardized locomotive classification system was developed by the Association of American Railroads (AAR) to categorize locomotive types on the basis of the number of powered and/or unpowered axles in the wheel arrangement. This system uses a combination of letters and numbers. Letters are used to indicate how many powered axles (equipped with traction motor) are present on a locomotive truck, and a number is used to denote an unpowered (or idler) axle. The following nomenclature applies:

- **A** = single powered axle
- **B** = two powered axles
- **C** = three powered axles
- **D** = four powered axles
- **1** = single unpowered (idler) axle

A hyphen (-) is used to denote physical separation between each truck on the locomotive.

The most common locomotive classifications that have been used in North American service include:

- **B-B** = two trucks, two powered axles on each truck
- **C-C** = two trucks, three powered axles on each truck
- **A1A-A1A** = two trucks, each with a powered axle on outer ends of the truck and an unpowered (idler) axle in the middle of each truck
- **B-A1A** = two trucks, lead truck equipped with two powered axles, trailing truck equipped with a powered axle on outer ends of the truck and an unpowered (idler) axle in the middle
- **D-D** = two trucks, four powered axles on each truck

Some Class I railroads use (or have used) individual locomotive classification nomenclature to identify different locomotive types. If clarification on this nomenclature is required it is recommended that the railroad's motive power or operating departments be consulted.