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# Code of Practice for ECP Braking

**CODE OF PRACTICE**



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## Document control

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### Code Change Procedures

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## Contents

1	Introduction.....	3
1.1	Source documents .....	3
1.2	Defined terms .....	3
2	Purpose.....	6
3	Scope.....	6
4	Brake system basic requirements.....	6
4.1	Stopping distance performance.....	6
4.2	Automatic response .....	7
4.3	Intra-train compatibility .....	7
4.4	Inter-vehicle compatibility.....	7
4.5	Driving diagnostics.....	7
4.6	Operational diagnostics .....	7
4.7	Crosstalk.....	7
5	Automatic Brake Control System.....	8
5.1	General.....	8
5.2	Brake system and control.....	8
5.3	Inter-train compatibility of braking systems for trains.....	9
5.3.1	Vehicles carrying out multiple trips on a network.....	9
5.3.2	Vehicles carrying out a single transit of a network.....	9
5.4	Inter-train compatibility and intra-train compatibility.....	10
6	Brake system couplings between vehicles.....	10
7	In-service static brake test for trains with ECP brakes .....	11
8	Static brake test of vehicles fitted with ECP brakes .....	11
9	Ending ECP operation.....	12
10	Emergency feature .....	13
11	Distributed power.....	13

## Appendix Contents

Appendix A	End of vehicle connection locations .....	14
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## 1 Introduction

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### 1.1 Source documents

Association of American Railroads (AAR) Manual of Standards and Recommended Practices / Section E-II - Electronically Controlled Braking System. Including the following –

- S-4200: Electronically Controlled Pneumatic (ECP) Cable-Based Brake Systems - Performance Requirements
- S-4210: ECP Cable-Based Brake System Cable, Connectors, and Junction Boxes - Performance Specification
- S-4220: ECP Cable-Based Brake DC Power Supply - Performance Specification
- S-4230: Intratrain Communication Specification for Cable-Based Freight Train Control Systems
- S-4240: ECP Brake Equipment - Approval Procedure
- S-4250: Performance Requirements for ITC-Controlled Cable-Based Distributed Power Systems
- S-4260: ECP Brake and Wire Distributed Power Interoperability Test Procedures
- S-4270: ECP Brake System Configuration Management.

### 1.2 Defined terms

**Automatic Brake:** A continuous brake system for trains that will automatically apply in the event of loss of continuity (including train separation).

**Brake Pipe:** The pipe connecting the brake pipe to the air brake equipment on rolling stock.

**Braking Energy:** The energy to be dissipated from the braking surface.

**Braking System Energy:** The stored energy used for braking, which conventionally is compressed air.

**Braking Surface:** An equipment surface at which braking can be developed by friction.

**Captive Unit Train Operations:** Train operations where rakes of wagons do multiple return trips as a complete unit. These rakes of wagons are shunted infrequently and rarely travel outside a defined area of operation.

**Car Control Device:** An electronic control device that is part of the ECP brake control system, It replaces the function of the conventional pneumatic service and emergency portions during electronic braking and provides for electronically controlled service and emergency applications.

**Continuity:** The continuous connection and the operability of the brake system of a train on all vehicles from the front of the train to its rear.

**Conventional Air Brake System:** An automatic air brake (non-ECP) configured in the manner of those generally in operation in the private Pilbara networks (AAR style) and in the shared networks formerly owned by State railways.

**Distributed Power:** A system for control of locomotive power distributed in a train which uses either a radio-based or a cable-based communication medium for the transmission of control signals between groups of locomotives.

**Driver:** A Competent Worker controlling the movement of rail traffic.  
Replaces the term "Engineer" in the AAR standards

**Driving Diagnostics:** Indicating system that provides information to the driver in relation to the amount of braking system energy available.