Province of Alberta

RAILWAY (ALBERTA) ACT

HERITAGE RAILWAY REGULATION

Alberta Regulation 352/2009

With amendments up to and including Alberta Regulation 216/2022

Current as of November 1, 2022

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Note

All persons making use of this consolidation are reminded that it has no legislative sanction, that amendments have been embodied for convenience of reference only. The official Statutes and Regulations should be consulted for all purposes of interpreting and applying the law.

(Consolidated up to 216/2022)

ALBERTA REGULATION 352/2009

Railway (Alberta) Act

HERITAGE RAILWAY REGULATION

Table of Contents

Interpretation

1(1) In this Regulation,

(a) "Act" means the *Railway (Alberta) Act*;

(b) "competent", in relation to an employee, means that the employee, in the opinion of the employer,

(i) is adequately qualified, having a degree, diploma or certificate appropriate to the work the employee performs,

(ii) is suitably trained, having received a health and safety orientation, specific work-related instructions and on-the-job training, and

(iii) has sufficient experience, having worked under direct supervision and having demonstrated, through performance, the ability to perform work safely without supervision or with minimal supervision;

(c) "contractor" means a person or company contracted to carry out one or more of the functions or duties of a heritage railway operator under this Regulation;

(d) "employee" means a person employed by or acting on behalf of a heritage railway operator, and includes an employee of a contractor;

(e) "heritage railway operator" or "operator" means a person to whom section 2 of the Act applies in respect of a heritage railway;

(f) "person in charge" means a person responsible for ensuring the safe conduct of the work of employees.

(2) In this Regulation, a reference to a rule approved under the *Railway Safety Act* (Canada) is a reference to the rule as it read on the coming into force of this Regulation.

Application

2 This Regulation applies to heritage railways.

Maximum speed

2.1 A heritage railway operator shall ensure that the rolling stock of the railway is not operated at a speed exceeding 16 km/h.

AR 169/2022 s2

Operator responsible for work of contractors

3 If a heritage railway operator contracts with a person or company to carry out one or more of the functions or duties of the operator under this Regulation, the operator shall ensure that the contractor complies with this Regulation as if the contractor were the operator.

Part 1
Heritage Railway Rules and Standards

4 and **5** Repealed AR 169/2022 s3.

Heritage Railway Passenger and Freight Car Inspection and Safety Rules

6 The *Railway Freight Car Inspection and Safety Rules* (TC O-06-1) and the *Railway Passenger Car Inspection and Safety Rules* (TC-O-26), approved by the Minister of Transport (Canada) under the *Railway Safety Act* (Canada), as modified for the purposes of this Regulation and contained in Schedule 3 as the Heritage Railway Passenger and Freight Car Inspection and Safety Rules, are declared in force.

7 Repealed AR 169/2022 s3.

Heritage Railway Freight and Passenger Train Brake Rules

8 The *Railway Freight and Passenger Train Brake Rules* (TC-O-7.01), approved by the Minister of Transport (Canada), as modified for the purposes of this Regulation and contained in Schedule 5 as the Heritage Railway Freight and Passenger Train Brake Rules, are declared in force.

9 to **11** Repealed AR 169/2022 s3.

Heritage Railway Safety Standards (Roadway and Pedestrian Crossings Protective Devices)

12 A heritage railway operator shall ensure that it complies with the Heritage Railway Safety Standards (Roadway and Pedestrian Crossings Protective Devices) set out in Schedule 9.

Heritage Railway Passenger Handling Safety Rules

13 A heritage railway operator shall ensure that it complies with the Heritage Railway Passenger Handling Safety Rules set out in Schedule 10.

Part 2
Consequential, Expiry and Coming into Force

Consequential

14 The *Railway Regulation* (AR 177/2002) is amended by adding the following after section 1.1:

Application

1.2 Except to the extent that it is inconsistent with the *Heritage Railway Regulation*, this Regulation applies to heritage railways.

Expiry

15 For the purpose of ensuring that this Regulation is reviewed for ongoing relevancy and necessity, with the option that it may be repassed in its present or an amended form following a review, this Regulation expires on December 31, 2027.

AR 352/2009 s15;55/2018;130/2021;169/2022

Coming into force

16 This Regulation comes into force on January 1, 2010.

Schedules 1 and **2** Repealed AR 169/2022 s5.

Schedule 3

Heritage Railway Passenger and Freight Car Inspection and Safety Rules

Part 1
General

1 Scope

1.1 These Rules prescribe the minimum safety standards for passenger and freight cars operated by heritage railway operators in trains at speeds not exceeding 10 mph.

2 Definitions

2.1 In these Rules,

(a) "bent" means a component, item or part of a passenger car which is altered to the extent that it no longer performs its design function and creates a hazard because of its condition;

(b) "break" means a fracture resulting in complete separation into parts. The terms "break" and "broken" are used interchangeably in these Rules;

(c) "competent car inspector" means a person who is trained and qualified to perform safety inspections of passenger cars pursuant to Rule 5.1;

(d) "cracked" means fractured without complete separation into parts;

(e) "Department" means the Minister's Department;

(f) "in service" means all passenger and freight cars except those which are

(i) in "home shop for repairs",

(ii) in a repair shop or on a repair track, or

(iii) on a storage track;

(g) "layover" means a situation where a train is temporarily positioned for 8 hours or more;

(h) "passenger car" or "freight car" means a heritage railway rail car used for the transportation of passengers;

(i) "person in charge" means a person certified in accordance with Rule 5.1 and appointed by a heritage railway operator to ensure the safe conduct of an operation or of the work of employees;

(j) "railway safety officer" means a railway safety officer designated pursuant to section 52(2) of the *Railway (Alberta) Act*;

(k) "safety defect" means any item or component that is defective on a passenger or freight car, as prescribed by Part 2 of these Rules and the *Railway Safety Appliance Standards Regulations* (Canada), (CRC, c. 1171);

(l) "safety inspection" means an examination of a passenger and freight car for safety defects while stationary by a competent person to verify that it may be moved safely in a train, and to identify those defects listed in Part 2 of these Rules;

(m) "safety inspection record" means a record in hard copy form or otherwise, including a computer record, that attests that a safety inspection was performed.

3 Safety Inspections

3.1 A heritage railway operator must ensure the passenger and freight cars it places or continues in service are free from all safety defects described in Part 2 of these Rules.

3.2 Safety inspections must be performed on passenger and freight cars at the beginning of each day of in-service use and thereafter as required and when cars are added to trains.

3.3 Where a safety inspection performed in accordance with Rule 3.2 reveals a safety defect on a rail car,

(a) the rail car may be moved to another location for repair, provided that a competent person determines that it is safe to move the rail car and identifies to employees involved the nature of the defects and the movement restrictions, if any, and

(b) the appropriate records shall be retained for 90 days.

3.4 A heritage railway operator must maintain a safety inspection record for the passenger and freight cars it places in service. This information must be retained for 90 days and made available to a railway safety officer on request.

4 Pre-departure inspection

4.1 A pre-departure inspection of the train or the rail cars must be performed by a competent person to detect hazardous conditions indicated by the following:

(a) car body leaning or listing to the side;

(b) car body sagging downward;

(c) car body positioned improperly on the truck;

(d) object dragging below the car body;

(e) object extending from the side of the car body;

(f) side door does not open or close, a double door that does not have at least one section that opens and closes, and end door does not open;

(g) broken or missing safety appliance;

(h) insecure coupling;

(i) overheated wheel or journal;

(j) cracked or broken wheel;

(k) brake that fails to release;

(l) any other apparent condition likely to cause accident or casualty before the train arrives at its destination.

4.2 When a pre-departure inspection reveals a hazardous condition that may affect safe operation, the competent person in charge of the train must take the appropriate action to eliminate potential danger by

(a) correcting the condition,

(b) reducing the speed of the train,

(c) removing the defective rail car from the train, or

(d) taking such other action as is necessary to ensure continued safe operation.

5 Qualifications of rail car inspectors

5.1 A heritage railway operator must ensure that car inspectors are trained and competent to perform safety inspections of passenger cars in compliance with these Rules. Car inspectors must demonstrate to a heritage railway operator, by means of oral or written examinations and on-the-job performance, a knowledge and ability concerning safety inspections of railway passenger and freight cars.

5.2 A heritage railway operator must keep on file a full description of the training program and criteria used for

(a) competent car inspectors, and

(b) qualifying those employees performing inspections in accordance with these Rules.

5.3 A heritage railway operator must maintain a record of all employees who have been qualified as competent car inspectors. This record must be made available to a railway safety officer on request.

5.4 Proof attesting to the employee's qualifications must be made available to a railway safety officer on request.

6 Railway reporting responsibility

6.1 Every heritage railway operator must reply in writing or by acceptable electronic means, within 30 days, to the Railway Administrator on the corrective action taken to correct a violation or defect reported by a railway safety officer. The reply, from the appropriate Heritage Railway, shall also include the passenger or freight car initials and number and the date of the corrective action taken or the expected date the corrective action will be taken.

Part 2
Safety Defects

7 Scope

7.1 This Part contains those safety defects that, when present, prohibit a heritage railway operator from placing or continuing a passenger or freight car in service.

8 Wheels

8.1 A heritage railway operator may not place or continue a rail car in service if

(a) a wheel rim, flange, plate or hub area has a crack or break. Heat checks or chips in a wheel rim are not considered to be cracks or breaks,

(b) a wheel has a chip or gouge more than 1.5 inches (38.1 mm) in length and 0.5 inch (12.7 mm) in width,

(c) a wheel has a shelled spot that is more than 1.25 inches (31.8 mm) in width and 1.25 inches (31.8 mm) in length,

(d) a wheel has a slid flat that is more than 2 inches (50.8 mm) in length,

(e) a wheel shows evidence of being loose,

(f) a wheel flange is worn to a thickness of 7/8 inch (22.2 mm) or less at a point 3/8 inch (9.5 mm) above the tread of the wheel,

(g) the height of a wheel flange from the tread to the top of the flange is more than 1.5 inches (38.1 mm),

(h) the thickness of a wheel rim is 7/8 inch (22.2 mm) or less,

(i) a straight plate wheel has

(i) a blue or reddish brown discoloration on the front and back face of the plate that extends more than 4 inches (101.6 mm) into the plate,

(ii) a combination of heat discoloration on the rim and plate with a rim thickness of 1.25 inches (31.8 mm) or less,

(iii) any visible tread defects with a rim thickness of 1.25 inches (31.8 mm) or less, or

(iv) 1 inch (25.4 mm) or less of rim thickness,

or

(j) a wheel is the wrong size.

9 Axles

9.1 A heritage railway operator shall not place or continue a rail car in service if

(a) an axle has a crack or is bent or broken,

(b) a journal or axle shows evidence of overheating or welding, or

(c) an axle is the wrong size.

10 Bearings

10.1 A heritage railway operator may not place or continue a rail car in service if

(a) an axle shows signs of having been overheated,

(b) a roller bearing has damaged external parts that are visibly cracked, broken or bent,

(c) a rail car involved in a derailment has not had its bearings inspected by a competent person,

(d) a roller bearing has

(i) a missing, broken or loose cap screw or improperly applied end cap,

(ii) a broken, missing or improperly applied locking plate, or

(iii) a backing ring that is loose or damaged,

(e) a roller bearing is the wrong size or has been submerged, or

(f) a roller bearing is losing grease to the extent that fresh grease is spread across the truck side frame.

10.2 A heritage railway operator may not place or continue a rail car in service if

(a) the journal bearing lubrication system has any of the following conditions:

(i) a journal bearing box has no visible free oil;

(ii) a journal bearing box contains foreign matter that can damage the bearing or affect the lubrication of the journal and the bearing;

(iii) a journal bearing box lid is missing;

(iv) a lubricating pad is missing, not in contact with the journal or the wrong size;

(v) a lubricating pad is scorched, burnt or glazed;

(vi) a lubricating pad contains fabric in such a condition that it impairs proper lubrication of the pad;

(vii) a lubricating pad has metal parts contacting the journal,

(b) a journal bearing

(i) is missing, broken, out of place or the wrong size,

(ii) has a crack in the back or lug portion,

(iii) on which the lining is loose, has a piece broken off, or

(iv) is overheated, as evidenced by melted lining,

or

(c) a journal wedge is missing, broken, out of place or the wrong size.

11 Trucks

11.1 A heritage railway operator may not place or continue a rail car in service if

(a) a side frame or bolster

(i) is broken,

(ii) has a crack of 0.25 inch (6.4 mm) or more in the transverse direction on a tension member. Shrinkage cracks or hot tears that do not significantly reduce the strength of the bolster or side frame shall not be considered cracked,

(iii) has a cracked or broken pedestal, or

(iv) has a missing or broken pedestal tie strap or retainer key,

(b) the rail car has a truck with

(i) a truck equalizer that is broken or missing,

(ii) more than one coil spring broken or missing in any spring cluster,

(iii) interference between the truck bolster and the centre plate that prevents free truck rotation,

(iv) a brake beam hanger that is cracked, broken or missing,

(v) any crack in an equalizer bar,

(vi) any crack in a swing hanger or a missing locking pin,

(vii) any missing suspension or attachment pins for brake rigging, or

(viii) a primary, vertical, lateral and rotational damper missing or not secured properly,

(c) a truck is equipped with an ineffective damping mechanism as indicated by

(i) a side frame column wear plate missing, except by design, or broken to the extent that it no longer performs its design function,

(ii) a broken or missing activating side spring,

(iii) truck springs or hydraulic snubber units that show evidence of not maintaining travel or load,

(iv) truck springs compressed solid,

(v) truck springs on which more than one of the outer springs in any spring cluster are broken, out of place or missing, or

(vi) a friction wedge is missing or worn beyond the wear indicator,

(d) the truck side bearings

(i) have part of the assembly missing, out of place or broken,

(ii) are in contact with the body side bearing on both sides at one end of the car, unless intended by design,

(iii) while on level track, are in contact with the body side bearings at diagonally opposite sides of the car, unless intended by design,

(iv) at one end of the car have a total clearance from the body bolster of more than 3/4 inch (19 mm), or

(v) at diagonally opposite sides of the car, have a total clearance from the body bolsters of more than 3/4 inch (19 mm),

(e) there is interference between the truck bolster and the centre plate, or the body bolster and the truck side frame, which prevents proper truck rotation,

(f) a brake beam support is worn to the extent that it does not support the brake beam, or

(g) a truck is designed with a spring plank, but the spring plank is missing, broken, bent to the extent that it no longer performs its design function or incorrectly installed.

12 Car bodies

12.1 A heritage railway operator may not place or continue in service a passenger car where

(a) any portion of the rail car body, undercar equipment and trucks, excepting wheels or their appurtenances, have less than a 2.5 inch (63.5 mm) clearance from the top of the rail when fully loaded, including passengers and baggage,

(b) any attachments for undercar equipment are loose, broken or missing,

(c) the rail car centre sill is

(i) broken,

(ii) cracked more than 6 inches (152.4 mm), or

(iii) permanently bent or buckled more than 2.5 inches (63.5 mm) in any 6 foot (1.8 m) length,

(d) a side sill is cracked more than 6 inches (152.4 mm) when the rail car is not equipped with a full centre sill,

(e) the rail car has a broken cross bearer or body bolster,

(f) the rail car body has been improperly positioned on the truck,

(g) the rail car has a centre plate that

(i) is improperly secured, with more than 25% of the fasteners missing or the centre plate observed to have moved,

(ii) is broken, or

(iii) has 2 or more cracks through its cross section thickness at the edge of the plate extending into the

portion of the plate that is obstructed from view while the truck is in place,

(h) a rail car side door does not open or close, a double door does not have at least one section that opens and closes, and an end door does not open,

(i) the rail car is a box car which has

(i) more than one door stop missing or broken per door,

(ii) safety hangers missing or inoperative on sliding or plug doors so equipped,

(iii) sliding or plug-type doors off the rails,

(iv) plug-type doors not closed and secured, or

(v) door rail supports cracked or broken to the extent that they do not perform their design function,

(j) the rail car is a loaded flat car with lading restraining devices worn or damaged to the extent that these devices will not restrain the load,

(k) an object extends from the side of a rail car body except by design, or

(l) the rail car has any object on its floor that is not properly secured and could fall off.

13 Couplers

13.1 A heritage railway operator may not place or continue in service a passenger car where

(a) the rail car is equipped with a coupler shank that is bent out of alignment to the extent that the coupler will not couple automatically,

(b) the rail car has a coupler knuckle that is cracked or broken on the inside pulling face of the knuckle. Shrinkage cracks or hot tears that do not significantly reduce the strength of the knuckle shall not be considered cracked,

(c) the rail car has a knuckle pin or thrower that is missing or inoperative,

(d) the rail car has a coupler retaining pin lock that is missing or broken if it was originally equipped with one,

(e) the rail car has a coupler with an inoperative lock lift or a coupler assembly that does not have a safety pin and

anti-creep protection to prevent unintentional unlocking of the coupler lock if it was originally equipped with one,

(f) the coupler lock is missing, inoperative, bent, cracked or broken if it was originally equipped with one,

(g) the rail car has a coupler that has a crack in the area of the shank and head. Shrinkage cracks or hot tears that do not significantly reduce the strength of the coupler shall not be considered cracked, or

(h) the coupler heights between 2 adjacent freight cars vary in excess of 4 inches.

14 Draft arrangements

14.1 A heritage railway operator may not place or continue a rail car in service if

(a) the rail car has a draft gear that is inoperative,

(b) the rail car has a broken yoke,

(c) a vertical coupler pin retainer plate

(i) is missing, or

(ii) has more than 25% of the fasteners either loose or missing,

(d) the rail car has a draft key or draft key retainer that is

(i) inoperative, or

(ii) missing,

(e) the rail car has a follower plate missing or broken to the extent that it no longer performs its design function,

(f) the draft gear carrier plate is missing or has more than 25% of the fasteners loose or missing,

(g) a draft stop is missing or broken to the extent that it no longer performs its design function, or

(h) the end of rail car cushioning unit is broken, inoperative or missing a part.

Part 3
Safety Design

15 Emergency brake valve

15.1 When originally equipped, every passenger car must be provided with a device at each end of the passenger car, or other accessible location on the passenger car, that, when actuated, must cause an emergency application of the brakes throughout the train from any time or stage of brake application and release.

16 Interior finish

16.1 The structures, furnishings and other components located in the interior of a passenger car must be free of any sharp projections, corners or rough finishes detrimental to the safety of persons within the interior of the passenger car.

AR 352/2009 Sched 3;169/2022;216/2022

Schedule 4 Repealed AR 169/2022 s7.

Schedule 5

Heritage Railway Freight and Passenger Train Brake Rules

Part 1
General

1 Scope

1.1 These Rules apply to all heritage railway operators and are intended to ensure the safe operation of brakes on all freight and passenger trains operating in Alberta.

2 Definitions

2.1 In these Rules,

(a) "brakes" means air pneumatic, electro pneumatic or hydro pneumatic brake systems;

(b) "brake test" means a test made for the purpose of establishing that the brake system functions as intended, as outlined in Part 2 of these Rules and heritage railway operator instructions;

(c) "calibrated" means an indication on the air flow indicator at a position that corresponds to a flow of air into the brake pipe of 60 cubic feet per minute;

(d) "communicating signal system" means a system which enables the train crew to communicate with the locomotive engineer in a passenger train;

(e) "competent car inspector" means a person who is trained and qualified to inspect and maintain rail car brake equipment;

(f) "continuity" means capability of transmitting a signal between the locomotive and the rear rail car of a train;

(g) Department" means the Minister's Department;

(h) "equipment" means locomotives, rail cars and any other vehicle designed to operate in trains;

(i) "locomotive" means a unit propelled by any energy form;

(j) "operative" means a brake that applies and releases and is in a suitable condition to retard or stop equipment;

(k) "psi" means pressure in pounds per square inch;

(l) "pull by inspection" means a visual examination of the brakes made while the train is in motion at a speed not exceeding 5 miles per hour;

(m) repealed AR 169/2022 s8;

(n) "safety control" means a device that must cause a brake application to be initiated automatically if the locomotive engineer becomes incapacitated;

(o) "safety inspection location" means a location designated by a heritage railway operator where competent car inspectors perform inspections and testing of train brakes;

(p) "train" means a locomotive with or without rail cars.

3 Qualification and compliance of heritage railway employees

3.1 A heritage railway operator must ensure that all employees engaged in the operation or inspection of trains

(a) are fully conversant with the requirements of these Rules and the heritage railway operator instructions, and

(b) comply with these Rules and the heritage railway operator instructions when operating trains or when engaged in the inspection and testing of brakes, associated control devices, safety controls and communicating signal systems.

4 Pre-departure requirements for locomotives

4.1 At a location where a locomotive has been laid over, altered or repaired, a competent person must test brakes, associated radio or

safety controls and communicating signal systems to determine that these systems are functioning properly.

4.2 If the testing is performed by a competent person other than the locomotive engineer, the results of the tests must be made available to the locomotive engineer.

5 Pre-departure requirements for trains

5.1 A train shall not depart from a safety inspection location until the appropriate brake tests as outlined in Part 2 of these Rules and the heritage railway operator instructions have been completed.

5.2 The tests will be performed by competent persons who will report the test results in the manner prescribed by the heritage railway operator. Any brake system defect discovered during the brake test must be repaired if reasonable and practicable. Any brake system defect discovered during the brake test and not repaired prior to departure must be reported to the conductor and the locomotive engineer.

5.3 The locomotive engineer is responsible for determining that the prescribed test has been completed prior to departure. A pull by inspection for brake release is acceptable. In such case, the locomotive engineer must be provided with the results of the release.

6 Operating requirements

6.1 A passenger train shall not be operated with less than 85% of the train brakes operative unless appropriate reduction in train speed, as determined by the locomotive engineer, is made.

6.2 Brakes must be operated from the lead locomotive.

6.3 When a train experiences a brake system or a safety control malfunction en route which cannot be readily corrected, the locomotive engineer must report the malfunction to the person in charge of the operation. Appropriate action, as prescribed by the heritage railway operator, must be taken by the locomotive engineer, including,

(a) if the leading locomotive ceases to control the train en route, the locomotive must be taken out of service immediately, and

(b) if the safety control on the controlling locomotive becomes inoperative while a train is en route, or is not equipped with a safety control, a competent second person must ride in the cab of the locomotive to remove the tractive effort and initiate an emergency brake application in the event the locomotive engineer becomes incapacitated.

6.4 A Number 2 brake test of passenger train brakes must be made before leaving any location where the crew is changed.

7 Exceptions

7.1 A rail car found to have inoperative brakes at a safety inspection location or while en route in a train may remain in the train provided all of the following requirements are observed:

(a) where appropriate, the brakes of the car or the affected truck shall be cut out;

(b) no more than 2 cars with inoperative brakes shall be coupled together;

(c) there shall be a minimum of 3 cars with operative brakes at the rear of a passenger train.

7.2 A heritage railway operator must control and protect the movement of a rail car with inoperative brakes.

7.3 The locomotive engineer must be notified of rail cars with inoperative brakes in the train.

7.4 Rail cars or locomotives with brakes inoperative due to damage may be moved in a train when authorized by a person in charge. This person is appointed by a heritage railway operator to ensure the safe conduct of an operation or of the work of employees. The person in charge will ensure that appropriate measures have been taken to move such equipment safely.

8 Communicating signal system

8.1 If a communicating signal system is used,

(a) the system must be tested for continuity and must be in operating condition before the train leaves a safety inspection location,

(b) at each location where the communicating signal system has been disconnected, or continuity interrupted, continuity must be restored, and

(c) the conductor must be notified immediately should any part of the communicating signal system become defective en route.

Part 2
Brake Test Requirements

9 General

9.1 Brake tests must be performed on every train as specified in these Rules by

(a) the brake pipe leakage method, or

(b) the air flow method for trains with a controlling locomotive that is equipped with 26L or equivalent brake equipment and a calibrated brake pipe flow indicator.

10 No. 1 brake test

10.1 A No. 1 brake test shall verify

(a) the integrity and continuity of the brake pipe,

(b) the condition of the brake rigging on each rail car in the train,

(c) the application and release of each rail car brake, and

(d) that piston travel on each rail car is within limits.

11 No. 2 brake test

11.1 A No. 2 brake test shall verify

(a) the integrity and continuity of the brake pipe, and

(b) the application and release of each rail car added to the train.

11.2 A No. 2 brake test must be performed by qualified persons when

(a) rail cars that have not been previously tested at that location are added to a train, or

(b) the locomotive engineer has been changed.

Part 3
Equipment Requirements

12 Maintenance

12.1 All brake equipment must be maintained in a safe and serviceable condition and

(a) car brakes shall be maintained according to the Association of American Railroads (AAR) requirements and the heritage railway operator procedures, and

(b) locomotive brakes shall be maintained according to procedures issued by the heritage railway operator and the system manufacturer.

12.2 A heritage railway shall maintain records for each locomotive noting the date of testing or cleaning of brake equipment and the name of the shop at which the work was done. Records must be made available to a railway safety officer on request.

13 Brake cylinder piston travel

13.1 A rail car with a body-mounted brake cylinder has piston travel out of adjustment when

(a) piston travel is less than 7 inches (180 mm) or more than 9 inches (230 mm) on a passenger car, and

(b) piston travel is less than 6 inches (150 mm) or more than 9 inches (230 mm) on a freight car.

13.2 A rail car with truck-mounted brake cylinders must have piston travel, unless otherwise governed by design, sufficient to provide brake shoe clearance when the brake is released. On a passenger car, piston travel shall not exceed 6 inches (150 mm). On a freight car, piston travel shall not exceed 5 inches (125 mm).

13.3 A freight car with a special type of brake equipment not covered by the above must have piston travel adjusted as indicated on the badge plate or stencilling applied in a conspicuous location near the brake cylinder.

13.4 On a locomotive, the maximum physical limit of brake cylinder piston travel will be indicated in the cab. In operation, piston travel must not come within 2 inches of the limit.

14 Locomotive feed valves and pressure settings

14.1 Air pressure feed valves must be adjusted to the following pressures:

(a)	Minimum brake pipe pressure with automatic brake valve in release position:	psi
	Passenger service	70
(b)	Minimum differential between the brake pipe and main reservoir air pressures with the brake valve handle in release position	15

(c)	Independent brake cylinder pressure (Full application pressure)	As posted in cab

AR 352/2009 Sched 5;169/2022;216/2022

Schedules 6 to **8** Repealed AR 169/2022 s9.

Schedule 9

Heritage Railway Safety Standards (Roadway and Pedestrian Crossings Protective Devices)

Part 1 General

1 Interpretation

1.1 In these Rules,

(a) "AREMA Communications and Signals Manual" means the Communications and Signals Manual of Recommended Practice published by the Communications and Signals Group of the American Railway Engineering and Maintenance of Way Association, as amended from time to time;

(b) "cross-product" means, in respect of a grade crossing, the product of the average annual daily traffic of trains and engines on the line of railway and the average annual daily number of vehicles and pedestrians on the road that pass over the grade crossing;

(c) "grade crossing" means a road crossing whose road passes across a line of railway at grade. Each road crossing is considered a separate grade crossing;

(d) "qualified person" means, in respect of a specified duty, a person who, because of their knowledge, training and experience, is qualified to perform that duty safely and properly;

(e) "sightlines" means lines of sight drawn between a person on a grade crossing or its road approaches and the grade crossing, crossing warning signs, signals and trains, engines and other railway equipment approaching or occupying the grade crossing.

2 Scope

2.1 These Rules apply to heritage railways and are intended to ensure that heritage railway signals are installed, modified and maintained in a safe manner.

2.2 These Rules set out the design and installation requirements for vehicle and pedestrian level crossings on heritage railways. The Rules provide guidelines for determining the most appropriate protection to be given to these crossings, relative to the degree of safety risk involved, based on sight distances, train speeds, train frequencies and pedestrian usage.

2.3 These Rules apply to heritage railways that operate on standard gauge track.

3 General Requirements

3.1 Railway signals that affect the safety of heritage railway operations shall be installed and modified in accordance with the AREMA Communications and Signals Manual.

3.2 If a heritage railway wishes to depart from an AREMA Communications and Signals Manual recommended practice, it must request the Railway Administrator for an exemption and must file an alternative practice which must provide an equivalent level of safety.

4 Sightlines

4.1 The following requirements and standards must be met in respect to sightlines for a heritage railway grade crossing:

(a) the heritage railway within 50 feet (15 m) of the tracks or up to the right-of-way limits, whichever is less, must be clear of brush, trees and other vegetation for a minimum distance of 100 feet (30 m) along the tracks from the grade crossing surface;

(b) the heritage railway right-of-way must be clear of brush, trees and other vegetation for a minimum of 50 feet (15 m) along the road from the grade crossing surface;

(c) sightlines are measured from a point above the road of 1.05 m for drivers of passenger vehicles, vans, pickups, pedestrians, cyclists and persons using assistive devices and 1.8 m for buses and single unit trucks to a point 1.2 m above top of rail.

5 Unrestricted grade crossing

5.1 Unrestricted grade crossing for vehicular or heavy pedestrian traffic must have a grade warning system if

(a) the forecast cross-product is 4000 or more, or

(b) the sightlines or alternative measures specified in Rule 4.1 are not provided, including where trains, engines, railway cars, buildings or other heritage railway equipment,

standing or stored, may obscure driver or pedestrian sightlines of a train approaching the grade crossing.

6 Protective devices

6.1 Protective devices of the flashing light type installed by heritage railways subject to the jurisdiction of the Railway Administrator must comply with the specifications contained in these Rules for protective devices of the flashing light type and must be maintained and tested in accordance with these Rules.

6.2 Unless otherwise ordered by the Railway Administrator, a heritage railway may use protective devices built prior to 1965 to achieve their "period look", but such protective devices must be maintained and tested in accordance with these Rules.

7 Crossing surface

7.1 The crossing surface of a sidewalk, path, trail or any other route identified for regular use by a person using an assistive device must be constructed

(a) with a smooth surface made of wood, metal, concrete, a composite material of rubber fibreglass or any other smooth continuous material,

(b) with an area of sufficient width on each side of each track to allow a person using an assistive device, without hesitation, to approach and cross each track at a right angle,

(c) so that the maximum flangeway width at a crossing or walkway may not be less than 2.5 inches (63.5 mm) and not more than 4.75 inches (120.6 mm), and

(d) so that the height of rail may extend up to 1 inch (25.4 mm) above or below the top of the crossing surface.

Part 2
Protective Device - Flashing Light Type With or Without Pedestrian Gates

8 Installation of protective device

8.1 When the Railway Administrator orders the installation of a protective device of the flashing light type, the heritage railway concerned shall submit the approval as to the location of the protection in relation to the heritage railway, along with 3 copies of a plan showing the layout and containing the following information:

(a) minimum length of operating circuit;

(b) maximum distance from the signal to clearance on the opposite side of the track or tracks;

(c) distance from the centre of signal to centre of travelled roadway to the nearest foot;

(d) distance from the centre of signal to the gauge side of the nearest rail to the nearest foot;

(e) length of gate arm;

(f) speed for which the operating circuits are designed to comply with Rule 10.5.

8.2 The 3 copies of the plan referred to in Rule 8.1 must be sent to the Railway Administrator for approval.

9 Signal of the flashing light type

9.1 Unless otherwise authorized by the Railway Administrator, a signal of the flashing light type must be placed on each side of the tracks and to the right of approaching traffic and each signal must have not less than 4 electric light units.

9.2 Parts that function as background or hood for light signal indications must be non-reflecting black and all other parts must be white or aluminum.

9.3 The signboard that forms part of the apparatus must have the letters marked in black on a background painted white.

9.4 At unrestricted crossings, a sign 14 inches by 22 inches with 1.5 inch letters must be marked in black on a background painted white stating either of the following:

STOP **LOOK BOTH WAYS** **FOR TRAINS**	**OR**	**RAILWAY CROSSING** **STOP – LOOK – LISTEN**

9.5 When more than one track is protected, signs must indicate the number of tracks to be crossed between signals. The signs must be marked the same as the signboard except that numerals must be at least 5.5 inches high and letters at least 4 inches high.

10 Electric lights

10.1 Electric lights must flash alternately at the rate of not less than 35 flashes per minute or more than 65 flashes per minute and each light must burn approximately the same length of time during the entire operating time of the signal.

10.2 Electric light units must conform to the AREMA Communications and Signals Manual Signal Section Specification Part 3.2.35 or its equivalent. The proper roundel within such specification must be used as determined by local conditions.

10.3 Electric light units must be equipped with a lamp having a rating of at least 18 watts and operated within 10% of rated voltage.

10.4 The bell must be mounted parallel to the road and form part of the signal, and shall conform to the AREMA Communications and Signals Manual Signal Section Specification Part 3.2.60.

10.5 Signals must operate for not less than 20 seconds before the crossing is entered by a train.

11 Additional control circuits

11.1 Where train speeds on a main track vary considerably, additional control circuits may be required with timing devices so arranged that a warning time, adequate for the slower trains, will be automatically adjusted.

12 Cut-out controls

12.1 Cut-out controls may be required to minimize unnecessary operation of the signals when trains make regular operating stops or perform switching operations within the operating circuits.

12.2 If cut-out controls are automatically operated, circuits must be designed or train speed restricted so as to ensure the required operating time of signals when the train again proceeds toward the crossing.

13 Testing of device

13.1 The normal functioning of any device shall not be interfered with in testing or otherwise without first taking adequate measures for the safety of the traffic which depends on the normal operation of such devices.

14 Pedestrian gates

14.1 When pedestrian gates are required, they must be installed as adjuncts to signals of the flashing light type and must comply with the following additional requirements for this type of protective device:

(a) a gate must be placed on each side of the track, preferably at right angles and to the right of approaching pedestrian traffic;

(b) when such gate indicates the approach of a train, it shall present to approaching traffic the aspect of an arm equipped with red lights being lowered across the lane or

lanes used by pedestrian traffic or at rest in a horizontal position across such lanes;

(c) each gate arm must be equipped with not less than 3 red lights depending on the length of the gate arm and arranged to shine in both directions along the sidewalk; such lights must operate at all times when the gate is in position to obstruct highway traffic and such lights must be located and operated as follows:

(i) the light nearest the tip shall be not less than 14 inches nor more than 36 inches from the tip of the arm and must burn steadily;

(ii) the other 2 lights, depending on the gate arm length, must be located to suit local conditions and to flash alternately in unison with the lights on the signal;

(d) the gate arms must have alternate diagonal stripes of red and white on both sides, 16 inches wide, and all other parts must be white or aluminum;

(e) the gate arms, when not indicating the approach of a train, shall not interfere with pedestrian traffic;

(f) the gate arms shall operate uniformly, smoothly, and complete all movements without rebound or slap, and must be securely held when in a raised position;

(g) the mechanism must be so designed that if the gate arms, while being raised or lowered, strike or foul any object, they will readily stop and, on removal of the obstruction, the mechanism should assume the position corresponding with the control apparatus;

(h) circuits for operation of the gate must be arranged so that the gate arms start their downward motion not less than 3 seconds after the signal lights start to operate;

(i) the gates must reach full horizontal position before any train on a main track reaches the crossing and remain down until the train has cleared the crossing.

15 AREMA Communications and Signals Manual recommended practice

15.1 Signals, gates, operating mechanisms and control circuits must be maintained in accordance with the AREMA Communications and Signals Manual recommended practice.

16 Locked instrument cases

16.1 The instrument cases must be locked when not being used.

Part 3
Protective Device - Other Than Flashing Light Type With or Without Gates

17 Maintenance and Testing

17.1 All crossing protective devices, other than the flashing light type, with or without gates, must be maintained by the heritage railway to operate as intended and must be tested at least once a day for all crossings protected by bell and danger signs, or by mechanical gates, or by wigwag signals.

Part 4
Design

18 Grade crossing

18.1 The design of a grade crossing and its approaches for pedestrians, non-motorized vehicles and individuals using assistive devices depends upon their abilities and the characteristics of the devices they use.

18.2 The grade crossing clearance distance is the distance between a point in advance of the grade crossing, 5 m or more from the closest rail, to the point 2.4 m beyond the farthest rail. Factors that increase the length of the clearance distance include:

(a) crossing angle greater or less than 90 degrees;

(b) placement of a crossing sign, signal or stop sign.

19 Road level crossing

19.1 If a road level crossing is used by a significant number of pedestrians, the level of protection to be provided on the road should include an assessment of the protection required as a result of the pedestrian usage.

20 Maintenance, Inspection and Testing Maintenance Standards of Heritage Railway Signals

20.1 All crossing protective devices must be maintained by the heritage railway to operate as intended and must be tested at least once a week for all crossings protected by flashing light signals and bells or by flashing light signals, bells and gates.

20.2 The method of tests must indicate whether or not the crossing protective devices are in good working order. If the crossing protective devices operate improperly or fail to operate, notice must be given as soon as possible by the railway employee discovering such improper operation or failure so that advice promptly reaches the person in charge of the operation and repair of such highway crossing protective devices. As soon as possible after the receipt of such notice, a flagman must be placed at such

crossing in order that all users of the crossing may be protected until the crossing protective device concerned has been repaired.

20.3 Heritage railways must ensure that signal circuits and signal devices that affect the safety of train operations are tested and inspected at minimum frequencies specified in their inspection and test instructions. Tests and inspections must be performed by a qualified person.

20.4 A heritage railway operator shall ensure the components of each grade crossing warning system are tested.

21 Plans and records

21.1 Plans required by the *Grade Crossing Regulations*, for maintaining, inspecting and testing a grade crossing warning system, must be legible and up to date.

21.2 The records required by the *Grade Crossing Regulations* of each scheduled maintenance, inspection and test of a grade crossing warning system must be kept for at least one year. Where one year or more lapses between an inspection or test, records of the last 2 inspections or tests must be kept.

21.3 The records of each unscheduled maintenance, inspection or test of a grade crossing warning system, including the cause, must be maintained for a period of at least 2 years from the date of the unscheduled maintenance.

22 Control circuits

22.1 All control circuits that affect the safe operation of a heritage railway grade crossing warning system must operate on the fail-safe principle.

23 Operating characteristics of warning system apparatus

23.1 Operating characteristics of electromagnetic, electronic and electrical apparatus of each heritage railway grade crossing warning system must be maintained in accordance with the limits within which the system is designed to operate.

24 Grounds

24.1 Each circuit that affects the proper functioning of a heritage railway grade crossing warning system must be kept free of any ground or combination of grounds that will permit a current flow of 75% or more of the release value of any relay or electromagnetic device in the circuit.

25 Standby power

25.1 A standby source of power must be provided with sufficient capacity to operate the warning system for a reasonable length of time during a period of primary power interruption.

26 Flashing light units

26.1 Each flashing light unit must be properly positioned and aligned and must be visible to the user approaching the crossing.

26.2 Each flashing light unit must be maintained to prevent dust and moisture from entering the interior of the unit.

27 Shunting sensitivity

27.1 Each heritage railway grade crossing train detection circuit must detect the application of a shunt of 0.06 ohm resistance when the shunt is connected across the track rails of any part of the circuit.

28 Rail joints

28.1 Each non-insulated rail joint located within the limits of a heritage railway grade crossing train detection circuit must be bonded by means other than joint bars and the bonds must be maintained in such condition to ensure electrical conductivity.

29 Insulated rail joints

29.1 Each insulated rail joint used to separate train detection circuits of a heritage railway grade crossing must be maintained to prevent current from flowing between rails separated by the insulation in an amount sufficient to cause a failure of the train detection circuit.

30 Gate arm lights, light cable and mechanism

30.1 Each gate arm light must be maintained in such condition to be properly visible to approaching users. Lights and light wire must be secured to the gate arm.

31 Train detection apparatus

31.1 Train detection apparatus must be maintained to detect a train or rail car in any part of a train detection circuit, in accordance with the design of the warning system.

31.2 The presence of sand, rust, dirt, grease or other foreign matter is known to prevent effective shunting and the heritage railway must take appropriate action to safeguard vehicles and pedestrians.

32 Signs

32.1 Each sign mounted on heritage railway grade crossing signal posts must be maintained in good condition and be visible for the users.

33 Inspections and tests of heritage railways

33.1 The inspections and tests set forth in Rules 34.1 to 44.2 are required at heritage railway grade crossings located on in-service heritage railway tracks and must be made to determine if the

warning system and its component parts are maintained in a condition to perform their intended function.

33.2 If a heritage railway elects not to comply with the requirements because of seasonal operations during a portion of the year, and the heritage railway crossing warning system is also temporarily taken out of service, a full inspection and all required tests must be successfully completed before heritage railway operations over the grade crossing resume.

34 Ground tests

34.1 A test for grounds on each energy bus furnishing power to circuits that affect the safety of a heritage railway crossing warning system operation must be made when the energy bus is placed in service and at least once each month thereafter.

35 Standby power

35.1 Standby power must be tested at least once each month.

36 Flashing light units and lamp voltage

36.1 Each flashing light unit must be inspected when installed and before the opening to the public each year.

36.2 Lamp voltage must be tested when installed and before the opening to the public each year.

36.3 Each flashing light unit must be inspected for proper visibility, dirt and damage to roundels and reflectors at least once a month.

37 Warning system operation

37.1 Each heritage railway crossing warning system must be tested to determine that it functions as intended when it is placed in service. Thereafter, it must be tested at least once each month and whenever modified or disarranged.

37.2 Warning bells or other stationary audible warning devices must be tested when installed to determine that they function as intended. Thereafter, they must be tested at least once each month and whenever modified or disarranged.

38 Warning time

38.1 Each heritage railway crossing warning system must be tested for the prescribed warning time before the opening to the public each year and when the warning system is modified because of a change in train speeds.

39 Relays

39.1 Each relay that affects the proper functioning of a crossing warning system must be tested at least once every 4 years.

40 Timing relays and timing devices

40.1 Each timing relay and timing device must be tested before the opening to the public each year. The timing must be maintained at not less than 90% or more than 110% of the predetermined interval. The predetermined time interval must be shown on the plans or marked on the timing relay or timing device.

41 Insulation resistance tests, wires in trunking and cables

41.1 Insulation resistance tests must be made when wires or cables are installed and at least once every 10 years thereafter.

41.2 Insulation resistance tests must be made between all conductors and ground, between conductors in each multiple conductor cable and between conductors in trunking.

41.3 Subject to Rule 41.4, when insulation resistance of wire or cable is found to be less than 500 000 ohms, until such defective wire or cable is replaced, insulation resistance tests must be made annually.

41.4 A circuit with a conductor having an insulation resistance of less than 200 000 ohms shall not be used.

42 Cut-out circuits

42.1 Each cut-out circuit must be tested before the opening to the public each year to determine that the circuit functions as intended. For the purposes of this rule, a cut-out circuit is any circuit that overrides the operation of automatic warning systems. This includes both switch cut-out circuits and devices which enable personnel to manually override the operation of automatic warning systems.

43 Insulated rail joints, bond wires and track connections

43.1 Insulated rail joints, bond wires and track connections must be inspected before the opening to the public each year.

44 Results of inspections and tests

44.1 Results of inspections and tests made in compliance with this Part must be recorded on forms provided by the heritage railway. Each record must show the name of the heritage railway, place and date, equipment tested, results of tests, repairs, replacements, adjustments made and condition in which the apparatus was left.

44.2 Each record must be signed by the person making the test and must be filed in the office of the heritage railway official having jurisdiction. Records required to be kept must be made available to the railway safety officer.

Schedule 10

Heritage Railway Passenger Handling Safety Rules

1 Scope

1.1 These Rules prescribe the minimum requirements for the safe handling of passengers by heritage railway operators.

1.2 Heritage railway operators of passenger service must comply with the Rules applicable to the service they provide.

2 Definitions

2.1 In these Rules,

(a) "emergency response procedures" means those procedures a heritage railway operator has in effect governing the manner in which the heritage railway operator and its employees respond to emergency situations;

(b) "passenger car" means a railway car used for transportation of passengers, baggage, dining and other services;

(c) "passenger train" means a train consisting of one or more passenger cars that is used for the purpose of transporting passengers;

(d) "person in charge" means an on-train employee trained and qualified by a heritage railway operator to ensure the safety of passengers on board the train and supervise the work of on-board employees, volunteers or contractors.

3 Passenger handling safety plans

3.1 Each heritage railway operator that operates or hosts a passenger or mixed train service must have a written passenger handling safety plan that, as a minimum, encompasses all of the following measures applicable to the type of equipment and operation:

(a) medical;

(b) on-board fire;

(c) derailment or collision;

(d) passenger evacuation procedures;

(e) incident recording and reporting;

(f) passenger safety awareness procedures;

(g) training;

(h) communications;

(i) safety checks;

(j) bomb threat, terrorist threat and other related security measures.

3.2 Each heritage railway operator that operates train service must ensure that passenger service providers comply with these Rules and the operator's safety plan that are applicable to the service being provided.

3.3 Each passenger handling safety plan must incorporate, to the extent practicable, those best practices and procedures published in the *Railway Association of Canada (RAC) Circular #6*.

3.4 Each heritage railway passenger handling safety plan must incorporate, directly or by reference, the railway's emergency response procedures, including periodic exercises.

4 Training

4.1 Each heritage railway operator that operates or hosts passenger train service must ensure that a sufficient number of on-board personnel as defined in the operator's safety plan, including volunteers and on-board personnel employed by a passenger service provider, are, as a minimum, trained

(a) with the passenger handling safety plan,

(b) with the operator's emergency response procedures,

(c) with the safety features of passenger equipment,

(d) with normal and emergency communication procedures,

(e) with the use of on-board emergency tools,

(f) to provide service to passengers with disabilities under normal and emergency situations, and

(g) to supervise or assist in emergency evacuation procedures.

4.2 Each heritage railway operator must have sufficient personnel on-board a train or at designated locations within the heritage railway site who have been trained to administer first aid or CPR in a timely manner so that passengers and crew are not put at risk. Trains operating outside of a heritage railway site must have a sufficient number of qualified personnel who have been trained to administer first aid or CPR on-board the train.

4.3 Each heritage railway operator that operates or hosts a passenger train service must ensure all other appropriate railway personnel and on-board personnel who may be required to assist in a passenger train emergency are trained to be familiar

(a) with the passenger handling safety plan, and

(b) with the operator's emergency response procedures.

5 Passenger safety inspections

5.1 The person in charge must ensure that a safety check has been made prior to departure at intervals otherwise identified in the passenger safety plan to ensure the following:

(a) passenger awareness information is available;

(b) on-board emergency tools are intact and accessible;

(c) first aid and trauma kits are intact and sealed;

(d) emergency signage is visible and legible;

(e) emergency lighting functions as intended;

(f) emergency communications equipment functions as intended;

(g) carts, parcels, luggage and oversized articles are properly stowed and secured;

(h) any known or recorded defects are reviewed by on-train personnel.

5.2 Where a passenger safety check reveals a defect, the person in charge must, in accordance with procedures as established in the safety plan,

(a) have the defect immediately corrected,

(b) permit the train to move to a location where the defect can be corrected and identify any restrictions

(i) to the train movement, or

(ii) to the occupancy of a passenger car,

and

(c) log or notify the rail traffic controller and operations control centre of any such defect being moved and of any restrictions.

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