

Book of Rules  
Version 5.2

This version supersedes all previous versions.

***NORTH AMERICAN  
RAILCAR OPERATORS ASSOCIATION***  
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**INTRODUCTION**

This issue, Version 5.2, supersedes all previous editions. This rule book will be the baseline set of rules for all NARCOA insured excursions. As a condition for attendance at NARCOA insured motorcar excursions, members must demonstrate familiarity with its contents via a written test on the rules.

A certificate attesting that the motorcar operator is knowledgeable about the rules will then be issued to that person. This rule book will be the defining rule book for NARCOA insured excursions with possible modifications by the host railroad, community, state, or federal government regulations.

The NARCOA affiliates may have additional rules or requirements, which must be published.

**SAFETY**

The conditions encountered at an organized motorcar excursion differ from those found in railroad maintenance-of-way service. Certain concerns of this type of work aren't found at motorcar excursions, while other problems are generated by the operation of large numbers of motorcars in close proximity.

These rules have been formulated to take that difference into account.

Motorcar operators are responsible for knowing and obeying these rules, and ensuring that their passengers obey these rules. Obedience to the rules is essential to safety.

Rules cannot be written to cover every possible situation that may arise in connection with operation. Rules are not a substitute for the common sense and good judgement that must be used in the absence of specific instructions. When in doubt, the safest course must be taken.

Safety is the foundation of motorcar enjoyment. The good safety habits of each operator and of his/her passengers ensure the pleasure of all. The carelessness of a single individual can create serious personal injury.

#### THE RAILROADS

Railroads are a serious transportation business, and their personnel may be unfamiliar with organized recreational motorcar events. In these regards, the railroads will accept us only if we can positively demonstrate a history of mature judgment, behavior above reproach, operational competence, unswerving commitment to safety in all of its aspects, and a willingness to be accountable for our actions. In other words, the railroad must consider us an asset instead of a liability.

#### RAILROAD RULES

The railroads on which we operate may impose their own operating rules and/or mechanical standards. Where these rules and standards conflict with those in this rule book, the more restrictive rules in terms of the safety of individuals and the protection of property will prevail in all instances, unless mutually agreed upon otherwise. Additionally a railroad may specifically waive a NARCOA rule or rules in the interest of safety on its track.

The railroad industry operates by rules, understands rules, and expects rules to govern all railroad operations. Violation of host railroad safety rules may result in loss of riding and/or membership privileges.

#### RULES VIOLATIONS

It is the duty of all operators to report rules violations to the Excursion Coordinator as soon as possible. If violations are dangerous, the excursion will be halted until the violation ceases.

***Violation of NARCOA or NARCOA Affiliate safety rules may result in loss of riding and/or membership privileges***

## **I. MOTORCAR MECHANICAL STANDARDS**

1. **GENERAL.** Individual standards may be specifically waived or additional standards may be required in any given excursion.

The Excursion Coordinator is the final authority and may accept or reject any motorcar for use at that excursion. Each operator has the responsibility for the safe mechanical and operating condition of his or her motorcar.

2. **BRAKES.** Brakes shall stop all four wheels acting on the wheel surfaces or on disks/drums on the axles. An exception is manufactured cars not originally equipped with four-wheel brakes. All brakes shall operate simultaneously from one lever or pedal. Application and release of brakes must require one simple direct motion of the operator. The brake lever must hold the car in position and not be beyond one-half of its available travel.

Brake end arms shall not be in danger of going over center with full application. Each car shall be equipped with a device that is capable of keeping the brakes applied when the car is unattended. Electric or boosted brakes are not allowed unless they are original equipment.

3. **GLAZING.** Laminated safety glass, tempered safety glass, polycarbonate (e.g.: Lexan) or acrylic (e.g.: Plexiglass) is required for all windows. Laminated safety glass is recommended for windshields. Window surfaces that are scratched to the point that vision is impaired are not acceptable. Severely cracked or shattered glass is not permitted.

4. **FLOORBOARDS.** Adequate floorboards for operator and passengers shall be conveniently located and securely fastened to the car.

5. **ROTATING PARTS.** Exposed moving engine or drive line parts must have proper guards to prevent injury to riders or bystanders.

6. **REVERSE.** All cars must be capable of operating in a reverse direction. Exceptions are cars that can be easily turned in place.

7. **WHEELS.** Worn running surfaces on detachable plate wheels (pressed wheels) are not to be repaired by welding. Wheel running surface thickness on plate wheels shall not be less than 1/8 inch for light and medium weight cars, and 5/32 inch for heavy gang cars. Wheels must be free from cracks. Only manufactured wheels are allowed. Exception: Wheels approved by the NARCOA Board of Directors.

8. **INSULATION.** Wheels on all excursion equipment must be electrically insulated such that track circuits are not activated.

9. **TOW HITCHES.** All motorcars must be equipped with horizontal tow hitches, with a 3/4 inch to 1 inch hole, mounted on the front and rear of the car 6 inches to 16 inches above the railhead. The hitch must be constructed of material at least as thick as the member that it is attached to. Eye bolts used as tow hitches must be of 1/2 inch stock or larger, and must be welded closed or cast. Hitches must be mounted on the center-line of the car.

10. **TOW BARS & PINS.** A metal tow bar strong enough for pushing or towing must be carried on the car. It must be at least 20 inches long. The ends of the tow bar shall overlap the top and bottom of the hitch. Tow pins must be between 3/4 inch and one inch and must have a retainer clip to prevent them from falling out. Bolts and nuts are not acceptable unless drilled for and used with a retainer clip. It is the responsibility of each operator to make certain that the length of the tow bar is sufficient to clear any structural overhang or attachments on the end of the car that might otherwise prevent safe coupling to another car.

11. **FUEL TANKS.** AAR standards require that all exposed gasoline tanks be painted red. Auxiliary containers must be approved by a recognized testing agency for the purpose of storing and transporting fuel. Auxiliary fuel containers must be secured to the car. Protection against puncture for the main and auxiliary tanks is highly recommended.

12. **LIGHTS.** All motorcars are required to be equipped with an operable white headlight and an operable red taillight. Cars without original lighting equipment may use portable battery operated lights as a substitute.

13. **STOPLIGHTS.** All motorcars must be equipped with one or more red stoplights mounted on the rear of the car, which are automatically illuminated upon brake application. Stoplights must be bright enough to be easily visible in daylight at 300 feet. Stoplights may be integral with the taillights. Stoplights may flash with brake application.

14. **FLAGS.** Two bright red or orange flags, 16 inches by 16 inches or larger, must be carried on each car for use in signaling other motorcars and flagging crossings.

15. **TRAILER CARS.** Trailer cars are discouraged, and may be prohibited at any individual event unless specifically approved by the Excursion Coordinator. Motorcars towing trailers must have their taillight(s) and brake light(s) visible or the trailer must be equipped with operable taillight(s) and brake light(s) activated by the towing motorcar. If used for carrying passengers the trailer must have an operable four-wheel brake system. End sill railings securely fastened to the trailer and seats securely fastened to the trailer for all passengers are required.

16. **AUDIBLE WARNING DEVICE.** Each motorcar must be equipped with an audible warning device. Excessive or unnecessary use of loud horns should be avoided. The use of horns, except as an emergency warning, should be avoided when approaching grade crossings as motor cars are required to yield to approaching highway traffic and the use of horns confuses motorists.

17. **HANDHOLDS.** One or more safe and suitable handholds conveniently located shall be provided. Each handhold shall be securely fastened to the motorcar.

18. **ADDITIONAL SAFETY EQUIPMENT.**

A first aid kit, a fully charged ABC fire extinguisher with a minimum two pound capacity, and an operable flashlight or lantern are required to be carried on each motor car. Properly installed seat belts are recommended.

19. **TURNTABLES.** Hydraulic turntables, including OEM Fairmont turntables, must be equipped with a positive locking mechanism that will prevent the table from dropping inadvertently.

All turntable installations, including electrically operated turntables with positive gear engagement, must be equipped with an audible warning device that notifies the operator if the turntable is not fully retracted. The turntable, when fully retracted, must be a minimum of two and one-half inches (2.5") above the railhead when the motorcar is sitting on the track."

20. **MISCELLANEOUS.** Cracked or broken frame members, broken or rotten floor boards, body panels not fastened securely, loose axles or axle bearings, or similar defects which affect safe operation may be cause for exclusion from NARCOA excursion participation.

## **II. MOTORCAR OPERATING RULES**

**INTRODUCTION.** Most of the safety issues in recreational motorcar excursions may be likened to that encountered in a line of automobiles following one another on a one-lane road without shoulders. All should recognize that this is not standard railroad practice where motorcars usually operate alone.

Motorcar excursions may be held on little used or irregular track. Brush may obscure clear vision of the track and right-of-way. Rail joints may be uneven, rail segments may be missing, track gauge may be variable, turnouts (switches) may be unusable, and grade crossings may be paved over or covered with gravel. Infrequent use of track makes the right-of-way a haven for animals of all types. Traffic or pedestrians at highway grade crossings (or anywhere in between) may not expect motorcars or any other railroad traffic.

Motorcar safety hazards commonly include the following:

- a. Operator inattention.
- b. Insufficient signaling.
- c. Excessive speed for conditions.
- d. Improper yielding to automobile traffic.
- e. Following too closely.
- f. Collisions with animals.
- g. Improper seating of passengers.

1. **HOST RAILROAD.** The operation of a railroad motorcar upon a cooperating railroad's right-of-way requires obedience to special instructions by the railroad and to NARCOA rules. The host railroad rules will supersede any NARCOA rule or regulation with which there is a conflict.

2. **RULE BOOK.** All operators at a NARCOA insured excursion must carry the current NARCOA rule book, or copy thereof, and the applicable affiliate additions.

3. **ALCOHOL AND DRUGS.** NARCOA excursion participants are prohibited from:

- (1) Use of alcohol, illegal drugs, prescription medications, OTC medications or any other substance that may adversely affect safe performance while participating in a NARCOA excursion;
- (2) Possession of alcohol or illegal drugs in open or unopened containers aboard any motorcar or on railroad property.
- (3) Use of alcohol or illegal drugs while on or off railroad property during the hours of any NARCOA excursion.

NARCOA officers, NARCOA affiliate officers, excursion officials and officials of the host railroad retain the right to inspect motorcars and personal effects to enforce this rule.

Excursion participants who are found to be in possession of, or under the influence of, alcohol or drugs during a NARCOA excursion will be requested to immediately leave the excursion and railroad property. Those failing to do so will be in violation of trespassing laws. Registration fees will be forfeited. Violations will be referred to the Judicial Committee.

4. **WEAPONS.** Excursion participants are prohibited from possessing firearms or other deadly weapons, including knives longer than 3 inches. Persons may be authorized by officials of the railroad to have the above in the performance of their duties. (Normal kitchen / cooking / picnic implements are exempt.) Violations will be referred to the Judicial Committee.

5. **GRADE CROSSINGS.** Motorcars do not have the right-of-way at grade crossings. Motorcars must be prepared to stop short of all grade crossings and proceed only when safe to do so. Be prepared to stop for vehicles and pedestrians that may run around crossing gates or flaggers. Check flangeways for obstructions and make sure that you have room on the other side of the crossing before proceeding. Automatic grade crossing signals will not ordinarily be activated. When they are activated, however, the protection may be limited because waiting traffic expecting trains may not see motorcars and may ignore warning signals. No motorcar may enter a grade crossing until it is safe to do so. Horns shall not be used as a substitute for the crossing rules above.

6. **MATERIALS.** Loose materials or tools loaded on motorcars shall be properly placed and secured to prevent falling off while the motorcar is in motion.

7. **RIDING POSITION.** No person shall ride in a standing position or with legs or arms dangling from a motorcar or trailer. Arms and legs must not be placed between towed cars. Do not get on or off a moving car.

8. **SPEED.** Motorcars shall be moved slowly over frogs, switches, around sharp curves, and when running through interlocking plants. Cars shall be moved very slowly when operating through spring frogs when passing over a diverging route. Cars should also be moved slowly over self-guarded frogs. Go slow and use extra caution when approaching people or animals along the right-of-way. Motorcars shall not, at any time, be operated faster than a speed that is reasonable and prudent due to existing track conditions. Never pass between a station and a train discharging or receiving passengers.

9. SWITCHES. Generally switches must not be thrown unless so authorized by the railroad. Before making movements in either direction over switches, make sure that the switch points are firmly closed against the rail for the route selected and that the switch is latched or secured by placing the lock or hook in the hasp. After passing through the switch, it should be returned to its original position with the locking device in place. Normal position for a main track switch is for movement on the main track, and the switch must be left lined and locked in that position.

10. REFUELING. Smoking, having open flame, or running the engine while fueling motorcars is prohibited.

11. BRAKING. Sudden application of the brake shall not be made except in an emergency. Warning of such application should be given to riders and following cars.

12. STOPPING. An automatic stoplight is the primary means of signaling following cars of a stop. In addition, a red or orange flag should be displayed as soon as possible. If it is necessary to stop on a curve or other spot with restricted visibility, a flagger must be sent back immediately to warn following motorcars. During hours of darkness, flaggers must use a portable light to warn following motorcars. The operator must demonstrate the use of the flag to all passengers and indicate that they are to use it in case of emergency.

13. TORPEDOES AND FUSEES. The use of torpedoes at NARCOA insured excursions is prohibited. Fusees must not be placed where they may cause a fire.

14. OVERLOADING. Motorcars must not be overloaded with passengers and/or equipment causing unsafe operation. Passengers must not obstruct the operator's vision.

15. FOLLOWING. The operator must be constantly aware of the actions or potential actions of the operator of the car ahead. Allow a 10 to 12 second spacing between your car and the car ahead. This may be increased at higher speeds and reduced at very slow speeds. Particular caution must be exercised when operating on wet or greased rail.

16. INDEPENDENT OPERATION. The Excursion Coordinator will define the plan for the excursion.

Operation outside of the organized group without the knowledge and permission of the Excursion Coordinator or the host railroad is prohibited.

All motorcar movements are governed by the Excursion Coordinator and the host railroad. No NARCOA insured excursion shall be held without railroad escort or proper written track authority. No NARCOA member may operate on any railroad without railroad escort or proper written track authority.

17. **RESTRICTED SPEED.** Motorcar operators must operate their cars at a speed that allows stopping within half the range of vision short of train, engine, railroad car, men or equipment fouling the track, stop signal, derail, or switch not properly lined. All operators should operate at "restricted speed" at any time that their range of vision is reduced by any object.

18. **BRIDGES.** Dismounting of motorcars while on bridges is prohibited.

Exception: bridges with walkways and handrails.

19. **REST/HOURS OF SERVICE.** All operators are encouraged to get adequate rest before a day of motorcar operation. Excursions should not be scheduled to require more than 12 hours of operation per day.

### **III. PERSONNEL RULES**

**INTRODUCTION.** The appearance and conduct of motorcar excursion attendees is a major factor in how we are viewed by railroad personnel. The more professional we are, the more likely we are to be invited back.

1. **SHOES.** It is recommended that all persons attending a NARCOA insured excursion wear closed-toe, ankle-height boots with a hard sole. Sneakers, tennis shoes, and open toed footwear are not acceptable.

2. **TRASH.** Trash, garbage, and other refuse items must not be thrown on railroad property, in streams, or on private property along the right-of-way. Discard these items in proper receptacles.

3. **TRACK.** Walking, stepping, standing, or sitting on rails or switches is prohibited. Step over rails, not on them.

Expect train or motorcar movement at any time, on any track, without notice.

Avoid stepping on or near switch points. The points of a switch may move at any time without warning.

4. **PROPERTY.** Respect railroad property as if it were your own. Do not remove anything from railroad property that you didn't bring with you.

5. **GRADE CROSSING FLAGGERS.** Flaggers should always face the highway traffic and watch for vehicles that may not stop. Hold flag up and away from body. Don't make motions to motorcars that highway traffic could misunderstand. Flaggers must only signal highway traffic to stop. Flaggers must never signal highway traffic to go. (To do so assumes liability.) Highway traffic and pedestrians have the right of way at all grade crossings. Flagging of grade crossings during periods of poor visibility, storms, or hours of darkness must be done with fuseses, flashlights, or lanterns.

6. **LOCOMOTIVES AND TRAINS.** Excursion participants are to keep well away from operating railroad trains. Be constantly aware that engineers have restricted close-in vision, and that they may be unaware of people and motorcars in close proximity to their train. Do not stand between your motorcar and a train that is passing on an adjacent track that is within 25 feet of your motorcar.

7. **CHILDREN.** No children under the age of 5 years are allowed to participate at a NARCOA insured excursion.

8. **SMOKING.** All guests on railroad property are ask to use good judgment in smoking and shall not smoke where smoking is prohibited. Smoking may be prohibited entirely for specific excursions.

#### **IV. RULES FOR EXCURSION COORDINATORS.**

1. **GENERAL.** The Excursion Coordinator has the final say in all instances. He or she may call upon any attending NARCOA Directors and any Directors of the Affiliate for advice.

2. **BREAKDOWNS.** Operators will be notified of the breakdown rule in effect at each excursion.

3. **INSPECTIONS.** Excursion Coordinators, or their designee, must verify that all equipment on any excursion satisfies the NARCOA equipment standards, and any special standards that are in effect at the time. Inspectors should notify the motorcar operator of any observations of equipment that is borderline on rules compliance so that the equipment can be repaired or corrected, as necessary.

4. **OPERATOR CERTIFICATION/INSURANCE.** Excursion Coordinators, or their designee, must verify that all operators have in their possession a current NARCOA approved operators certificate and that they have valid NARCOA insurance.

5. **HY-RAILS.** Excursion Coordinators must place autos or trucks with hy-rail gear at the appropriate place in the group with consideration as to the purpose of the vehicles. Refer to the Operations Handbook for requirements for hy-rail vehicles.

6. **EXEMPTIONS.** Excursion Coordinators may make certain exemptions for equipment not classified as true motorcars, such as handcars, velocipedes, and steam cars, or for antique equipment manufactured prior to January 1, 1945."

7. **STEAM POWERED CARS.** Steam powered cars are allowed on NARCOA excursions only when approved ahead of time by the Excursion Coordinator and the host railroad.

Refer to the Operations Manual for requirements for steam powered cars.

8. **ACCIDENT AND RULE BOOK VIOLATION REPORTING.** The Excursion Coordinator must report all accidents and all rule book violations (even when no accident has occurred) in accordance with the procedures set forth in the Operations Manual.

9. **ADDITIONAL RULES OR EQUIPMENT.**

In cases where additional rules or equipment are mandated by the railroad, the Excursion Coordinator, the NARCOA affiliate, or any governmental body, the requirement for same shall be announced in the meet notice and compliance shall be judged at the Safety Inspection.

10. **SECURING CARS.** On multi-day excursions where motorcars are left on the track, at least the front and rear cars must be secured to prevent unauthorized use.

## **V. DEFINITIONS.**

1. **INTRODUCTION.** This section is intended to increase the knowledge of operators and flaggers so that everyone knows the proper meaning of signals, and to define several hazards to motorcars that inexperienced operators may not be familiar with.

2. **HAND SIGNALS.** Operators and designated flaggers must demonstrate a working knowledge of standard railroad hand or flag signals for the following: Stop, Forward, and Back.

**a.** A hand, flag, or lantern waved horizontally means Stop. Any object waved violently by anyone on or near the track is a signal to stop.

**b.** A hand, flag, or lantern waved vertically means go Forward.

**c.** A hand, flag, or lantern waved in a circle means to Back.

3. **WHISTLE/HORN SIGNALS.** Two long whistles is the standard railroad indication to proceed forward. Three long whistles is the standard railroad indication to back up.

The Excursion Coordinator may designate a specific whistle signal at the Safety Meeting that will be used as a warning for everyone to return to their cars and prepare for departure. Signals are to be originated by the Excursion Coordinator or their designee.

4. **FLANGE LUBRICATORS.** These are devices installed on railroads where there is a lot of curvature. The purpose is to lubricate the rails with grease or oil, which makes it very slippery for motorcars. The lubrication drastically reduces traction for braking, especially when rain is present. Operators should allow extra spacing in the proximity of flange lubricators to allow for increased braking distance.

6. **SPRING FROGS.** These frogs have a spring operated flangeway on the diverging route and present a special hazard to motor cars due to the fact that motorcars are typically not heavy enough for the flangeway to open for the passage of the motorcar. The wheels of the motorcar may ride up and over the frog. Motorcars must be moved very slowly over a spring frog in order to reduce the likelihood of a derailment. It is recommended that motorcars be walked over a spring frog to ensure safe passage.

7. **SELF-GUARDING FROGS.** These frogs present a hazard to motorcars because there are no guardrails opposite them. Motorcars have wheels too narrow to use the guidance provided by the raised edges on the self-guarding frog.

While they are seldom used on main lines, we often operate through yards and sidings where they are common. The greatest hazard is encountered on the diverging route from the straight track to the siding and motorcars must be moved slowly across the self-guarding frog. It is recommended that motorcars be walked over a self-guarding frog on the diverging route to ensure safe passage.

## Code of Conduct

### **NARCOA members are expected to:**

1. Act as a guest while on railroad property. A guest is prompt, courteous, and careful while on others property.
2. Foster and encourage a high standard of operation and behavior while on railroad property and while performing duties pertaining to NARCOA's operations.
3. Observe the NARCOA rulebook.
4. Follow the instructions of the meet coordinator, his assistants or of railroad employees without complaint or undo comment.
5. Be considerate of other members, in particular by:
  - Treating other members with respect at all times.
  - Do not lie or pass on unsubstantiated rumors about other members.
  - Being ready to lend assistance when and where needed
  - Ensuring that you, your passengers and equipment are ready so others are not delayed because you and yours are not prepared.
6. By example, promote exemplary operating standards by:
  - Operating your car carefully and safely at all times.
  - Communicating clearly your operating intentions to other operators
  - Careful radio use. Many others may be listening.
  - Do not use any radio frequency unless specifically authorized.
  - Do not operate your motorcar without proper permission.
  - Respecting your fellow operator. Potential new members or other railroad officials may be watching. Your actions (or in-actions) may open or close railroad doors for NARCOA operations.
  - Assisting with towing or other 'extra' duties as needed to allow for a successful motorcar meet.
7. Protect the future of the hobby by:
  - Being active on a regular basis with your local speeder group.
  - Giving encouragement to newcomers
  - Supporting the goals of NARCOA

**SPEED CHART**

<b>Time per Mile</b>	<b>MILES PER HOUR</b>	<b>Time per Mile</b>	<b>MILES PER HOUR</b>	<b>Time per Mile</b>	<b>MILES PER HOUR</b>
1.16	47.37	1.53	31.86	2.30	24.00
1.17	46.75	1.54	31.58	2.31	23.84
1.18	46.15	1.55	31.30	2.32	23.68
1.19	45.57	1.56	31.03	2.33	23.53
1.20	45.00	1.57	30.77	2.34	23.28
1.21	44.44	1.58	30.51	2.35	23.23
1.22	43.90	1.59	30.25	2.36	23.08
1.23	43.37	2.00	30.00	2.37	22.93
1.24	42.86	2.01	29.75	2.38	22.78
1.25	42.35	2.02	29.51	2.39	22.64
1.26	41.86	2.03	29.27	2.40	22.50
1.27	41.38	2.04	29.03	2.41	22.36
1.28	40.91	2.05	28.80	2.42	22.22
1.29	40.45	2.06	28.57	2.43	22.09
1.30	40.00	2.07	28.35	2.44	21.95
1.31	39.56	2.08	28.13	2.45	21.82
1.32	39.13	2.09	27.91	2.46	21.69
1.33	38.71	2.10	27.69	2.47	21.56
1.34	38.30	2.11	27.48	2.48	21.43
1.35	37.89	2.12	27.27	2.49	21.30
1.36	37.50	2.13	27.07	2.50	21.18
1.37	37.11	2.14	26.87	2.51	21.05
1.38	36.73	2.15	26.67	2.52	20.93
1.39	36.36	2.16	26.47	2.52	20.81
1.40	36.00	2.17	26.28	2.54	20.69
1.41	35.64	2.18	26.09	2.55	20.57
1.42	35.29	2.19	25.90	2.56	20.45
1.43	34.95	2.20	25.71	2.57	20.34
1.44	34.62	2.21	25.53	2.58	20.22
1.45	34.29	2.22	25.35	2.59	20.11
1.46	33.96	2.23	25.17	3.00	20.00
1.47	33.64	2.24	25.00	3.15	18.46
1.48	33.33	2.25	24.83	3.30	17.14
1.49	33.03	2.26	24.66	3.45	16.00
1.50	32.73	2.27	24.49	4.00	15.00
1.51	32.43	2.28	24.32	5.00	12.00
1.52	32.14	2.29	24.16	6.00	10.00