

APPENDIX A TO PART 235—SCHEDULE OF CIVIL PENALTIES<sup>1</sup>

Section	Violation	Willful violation
235.5 Changes requiring filing of application	\$5,000	\$7,500

[53 FR 52936, Dec. 29, 1988, as amended at 69 FR 62818, Oct. 28, 2004]

**PART 236—RULES, STANDARDS, AND INSTRUCTIONS GOVERNING THE INSTALLATION, INSPECTION, MAINTENANCE, AND REPAIR OF SIGNAL AND TRAIN CONTROL SYSTEMS, DEVICES, AND APPLIANCES**

Sec.  
236.0 Applicability, minimum requirements, and penalties.

**Subpart A—Rules and Instructions: All Systems**

GENERAL

- 236.1 Plans, where kept.
- 236.2 Grounds.
- 236.3 Locking of signal apparatus housings.
- 236.4 Interference with normal functioning of device.
- 236.5 Design of control circuits on closed circuit principle.
- 236.6 Hand-operated switch equipped with switch circuit controller.
- 236.7 Circuit controller operated by switch-and-lock movement.
- 236.8 Operating characteristics of electromagnetic, electronic, or electrical apparatus.
- 236.9 Selection of circuits through indicating or annunciating instruments.
- 236.10 Electric locks, force drop type; where required.
- 236.11 Adjustment, repair, or replacement of component.
- 236.12 Spring switch signal protection; where required.
- 236.13 Spring switch; selection of signal control circuits through circuit controller.
- 236.14 Spring switch signal protection; requirements.
- 236.15 Timetable instructions.
- 236.16 Electric lock, main track releasing circuit.
- 236.17 Pipe for operating connections, requirements.
- 236.18 Software management control plan.

ROADWAY SIGNALS AND CAB SIGNALS

- 236.21 Location of roadway signals.
- 236.22 Semaphore signal arm; clearance to other objects.
- 236.23 Aspects and indications.
- 236.24 Spacing of roadway signals.
- 236.25 [Reserved]
- 236.26 Buffering device, maintenance.

TRACK CIRCUITS

- 236.51 Track circuit requirements.
- 236.52 Relayed cut-section.
- 236.53 Track circuit feed at grade crossing.
- 236.54 Minimum length of track circuit.
- 236.55 Dead section; maximum length.
- 236.56 Shunting sensitivity.
- 236.57 Shunt and fouling wires.
- 236.58 Turnout, fouling section.
- 236.59 Insulated rail joints.
- 236.60 Switch shunting circuit; use restricted.

WIRES AND CABLES

- 236.71 Signal wires on pole line and aerial cable.
- 236.72 [Reserved]
- 236.73 Open-wire transmission line; clearance to other circuits.
- 236.74 Protection of insulated wire; splice in underground wire.
- 236.75 [Reserved]
- 236.76 Tagging of wires and interference of wires or tags with signal apparatus.

INSPECTIONS AND TESTS; ALL SYSTEMS

- 236.101 Purpose of inspection and tests; removal from service of relay or device failing to meet test requirements.
- 236.102 Semaphore or searchlight signal mechanism.
- 236.103 Switch circuit controller or point detector.
- 236.104 Shunt fouling circuit.
- 236.105 Electric lock.
- 236.106 Relays.
- 236.107 Ground tests.
- 236.108 Insulation resistance tests, wires in trunking and cables.
- 236.109 Time releases, timing relays and timing devices.
- 236.110 Results of tests.

<sup>1</sup>A penalty may be assessed against an individual only for a willful violation. The Administrator reserves the right to assess a

penalty of up to \$27,000 for any violation where circumstances warrant. See 49 CFR part 209, appendix A.

**Subpart B—Automatic Block Signal Systems**

## STANDARDS

- 236.201 Track-circuit control of signals.
- 236.202 Signal governing movements over hand-operated switch.
- 236.203 Hand operated crossover between main tracks; protection.
- 236.204 Track signaled for movements in both directions, requirements.
- 236.205 Signal control circuits; requirements.
- 236.206 Battery or power supply with respect to relay; location.
- 236.207 Electric lock on hand-operated switch; control.

**Subpart C—Interlocking**

## STANDARDS

- 236.301 Where signals shall be provided.
- 236.302 Track circuits and route locking.
- 236.303 Control circuits for signals, selection through circuit controller operated by switch points or by switch locking mechanism.
- 236.304 Mechanical locking or same protection effected by circuits.
- 236.305 Approach or time locking.
- 236.306 Facing point lock or switch-and-lock movement.
- 236.307 Indication locking.
- 236.308 Mechanical or electric locking or electric circuits; requisites.
- 236.309 Loss of shunt protection; where required.
- 236.310 Signal governing approach to home signal.
- 236.311 Signal control circuits, selection through track relays or devices functioning as track relays and through signal mechanism contacts and time releases at automatic interlocking.
- 236.312 Movable bridge, interlocking of signal appliances with bridge devices.
- 236.313 [Reserved]
- 236.314 Electric lock for hand-operated switch or derail.

## RULES AND INSTRUCTIONS

- 236.326 Mechanical locking removed or disarranged; requirement for permitting train movements through interlocking.
- 236.327 Switch, movable-point frog or split-point derail.
- 236.328 Plunger of facing-point lock.
- 236.329 Bolt lock.
- 236.330 Locking dog of switch-and-lock movement.
- 236.331–236.333 [Reserved]
- 236.334 Point detector.
- 236.335 Dogs, stops and trunnions of mechanical locking.
- 236.336 Locking bed.

- 236.337 Locking faces of mechanical locking; fit.
- 236.338 Mechanical locking required in accordance with locking sheet and dog chart.
- 236.339 Mechanical locking; maintenance requirements.
- 236.340 Electromechanical interlocking machine; locking between electrical and mechanical levers.
- 236.341 Latch shoes, rocker links, and quadrants.
- 236.342 Switch circuit controller.

## INSPECTION AND TESTS

- 236.376 Mechanical locking.
- 236.377 Approach locking.
- 236.378 Time locking.
- 236.379 Route locking.
- 236.380 Indication locking.
- 236.381 Traffic locking.
- 236.382 Switch obstruction test.
- 236.383 Valve locks, valves, and valve magnets.
- 236.384 Cross protection.
- 236.385 [Reserved]
- 236.386 Restoring feature on power switches.
- 236.387 Movable bridge locking.

**Subpart D—Traffic Control Systems**

## STANDARDS

- 236.401 Automatic block signal system and interlocking standards applicable to traffic control systems.
- 236.402 Signals controlled by track circuits and control operator.
- 236.403 Signals at controlled point.
- 236.404 Signals at adjacent control points.
- 236.405 Track signaled for movements in both directions, change of direction of traffic.
- 236.406 [Reserved]
- 236.407 Approach or time locking; where required.
- 236.408 Route locking.
- 236.409 [Reserved]
- 236.410 Locking, hand-operated switch; requirements.

## RULES AND INSTRUCTIONS

- 236.426 Interlocking rules and instructions applicable to traffic control systems.

## INSPECTION AND TESTS

- 236.476 Interlocking inspections and tests applicable to traffic control systems.

**Subpart E—Automatic Train Stop, Train Control and Cab Signal Systems**

## STANDARDS

- 236.501 Forestalling device and speed control.

**Pt. 236**

- 236.502 Automatic brake application, initiation by restrictive block conditions stopping distance in advance.
- 236.503 Automatic brake application; initiation when predetermined rate of speed exceeded.
- 236.504 Operation interconnected with automatic block-signal system.
- 236.505 Proper operative relation between parts along roadway and parts on locomotive.
- 236.506 Release of brakes after automatic application.
- 236.507 Brake application; full service.
- 236.508 Interference with application of brakes by means of brake valve.
- 236.509 Two or more locomotives coupled.
- 236.510 [Reserved]
- 236.511 Cab signals controlled in accordance with block conditions stopping distance in advance.
- 236.512 Cab signal indication when locomotive enters block where restrictive conditions obtain.
- 236.513 Audible indicator.
- 236.514 Interconnection of cab signal system with roadway signal system.
- 236.515 Visibility of cab signals.
- 236.516 Power supply.

**RULES AND INSTRUCTIONS; ROADWAY**

- 236.526 Roadway element not functioning properly.
- 236.527 Roadway element insulation resistance.
- 236.528 Restrictive condition resulting from open hand-operated switch; requirement.
- 236.529 Roadway element inductor; height and distance from rail.
- 236.530 [Reserved]
- 236.531 Trip arm; height and distance from rail.
- 236.532 Strap iron inductor; use restricted.
- 236.533 [Reserved]
- 236.534 Entrance to equipped territory; requirements.

**RULES AND INSTRUCTIONS; LOCOMOTIVES**

- 236.551 Power supply voltage; requirement.
- 236.552 Insulation resistance; requirement.
- 236.553 Seal, where required.
- 236.554 Rate of pressure reduction; equalizing reservoir or brake pipe.
- 236.555 Repaired or rewound receiver coil.
- 236.556 Adjustment of relay.
- 236.557 Receiver; location with respect to rail.
- 236.558-236.559 [Reserved]
- 236.560 Contact element, mechanical trip type; location with respect to rail.
- 236.561 [Reserved]
- 236.562 Minimum rail current required.
- 236.563 Delay time.
- 236.564 Acknowledging time.
- 236.565 Provision made for preventing operation of pneumatic break-applying appa-

**49 CFR Ch. II (10-1-05 Edition)**

- ratus by double-heading cock; requirement.
- 236.566 Locomotive of each train operating in train stop, train control or cab signal territory; equipped.
- 236.567 Restrictions imposed when device fails and/or is cut out en route.
- 236.568 Difference between speeds authorized by roadway signal and cab signal; action required.

**INSPECTION AND TESTS; ROADWAY**

- 236.576 Roadway element.
- 236.577 Test, acknowledgement, and cut-in circuits.

**INSPECTION AND TESTS; LOCOMOTIVE**

- 236.586 Daily or after trip test.
- 236.587 Departure test.
- 236.588 Periodic test.
- 236.589 Relays.
- 236.590 Pneumatic apparatus.

**Subpart F—Dragging Equipment and Slide Detectors and Other Similar Protective Devices**

**STANDARDS**

- 236.601 Signals controlled by devices; location.

**Subpart G—Definitions**

- 236.700 Definitions.
- 236.701 Application, brake; full service.
- 236.702 Arm, semaphore.
- 236.703 Aspect.
- 236.704 [Reserved]
- 236.705 Bar, locking.
- 236.706 Bed, locking.
- 236.707 Blade, semaphore.
- 236.708 Block.
- 236.709 Block, absolute.
- 236.710 Block, latch.
- 236.711 Bond, rail joint.
- 236.712 Brake pipe.
- 236.713 Bridge, movable.
- 236.714 Cab.
- 236.715-236.716 [Reserved]
- 236.717 Characteristics, operating.
- 236.718 Chart, dog.
- 236.719 Circuit, acknowledgment.
- 236.720 Circuit, common return.
- 236.721 Circuit, control.
- 236.722 Circuit, cut-in.
- 236.723 Circuit, double wire; line.
- 236.724 Circuit, shunt fouling.
- 236.725 Circuit, switch shunting.
- 236.726 Circuit, track.
- 236.727 Circuit, track; coded.
- 236.728 Circuit, trap.
- 236.729 Cock, double heading.
- 236.730 Coil, receiver.
- 236.731 Controller, circuit.
- 236.732 Controller, circuit; switch.
- 236.733 Current, foreign.

- 236.734 Current of traffic.  
 236.735 Current, leakage.  
 236.736 Cut-section.  
 236.737 Cut-section, relayed.  
 236.738 Detector, point.  
 236.739 Device, acknowledging.  
 236.740 Device, reset.  
 236.741 Distance, stopping.  
 236.742 Dog, locking.  
 236.743 Dog, swing.  
 236.744 Element, roadway.  
 236.745 Face, locking.  
 236.746 Feature, restoring.  
 236.747 Forestall.  
 236.748 [Reserved]  
 236.749 Indication.  
 236.750 Interlocking, automatic.  
 236.751 Interlocking, manual.  
 236.752 Joint, rail, insulated.  
 236.753 Limits, interlocking.  
 236.754 Line, open wire.  
 236.755 Link, rocker.  
 236.756 Lock, bolt.  
 236.757 Lock, electric.  
 236.758 Lock, electric, forced drop.  
 236.759 Lock, facing point.  
 236.760 Locking, approach.  
 236.761 Locking, electric.  
 236.762 Locking, indication.  
 236.763 Locking, latch operated.  
 236.764 Locking, lever operated.  
 236.765 Locking, mechanical.  
 236.766 Locking, movable bridge.  
 236.767 Locking, route.  
 236.768 Locking, time.  
 236.769 Locking, traffic.  
 236.770 Locomotive.  
 236.771 Machine, control.  
 236.772 Machine, interlocking.  
 236.773 Movements, conflicting.  
 236.774 Movement, facing.  
 236.775 Movement, switch-and-lock.  
 236.776 Movement, trailing.  
 236.777 Operator, control.  
 236.778 Piece, driving.  
 236.779 Plate, top.  
 236.780 Plunger, facing point lock.  
 236.781 [Reserved]  
 236.782 Point, controlled.  
 236.783 Point, stop-indication.  
 236.784 Position, deenergized.  
 236.785 Position, false restrictive.  
 236.786 Principle, closed circuit.  
 236.787 Protection, cross.  
 236.787a Railroad.  
 236.788 Receiver.  
 236.789 Relay, timing.  
 236.790 Release, time.  
 236.791 Release, value.  
 236.792 Reservoir, equalizing.  
 236.793 Rod, lock.  
 236.794 Rod, up-and-down.  
 236.795 Route.  
 236.796 Routes, conflicting.  
 236.797 Route, interlocked.  
 236.798 Section, dead.  
 236.799 Section, fouling.  
 236.800 Sheet, locking.  
 236.801 Shoe, latch.  
 236.802 Shunt.  
 236.802a Siding.  
 236.803 Signal, approach.  
 236.804 Signal, block.  
 236.805 Signal, cab.  
 236.806 Signal, home.  
 236.807 Signal, interlocking.  
 236.808 Signals, opposing.  
 236.809 Signal, slotted mechanical.  
 236.810 Spectacle, semaphore arm.  
 236.811 Speed, medium.  
 236.812 Speed, restricted.  
 236.813 Speed, slow.  
 236.813a State, most restrictive.  
 236.814 Station, control.  
 236.815 Stop.  
 236.816 Superiority of trains.  
 236.817 Switch, electro-pneumatic.  
 236.818 Switch, facing point.  
 236.819 Switch, hand operated.  
 236.820 Switch, interlocked.  
 236.820a Switch, power-operated.  
 236.821 Switch, sectionalizing.  
 236.822 Switch, spring.  
 236.823 Switch, trailing point.  
 236.824 System, automatic block signal.  
 236.825 System, automatic train control.  
 236.826 System, automatic train stop.  
 236.827 System, block signal.  
 236.828 System, traffic control.  
 236.829 Terminal, initial.  
 236.830 Time, acknowledging.  
 236.831 Time, delay.  
 236.831a Track, main.  
 236.832 Train.  
 236.833 Train, opposing.  
 236.834 Trip.  
 236.835 Trunking.  
 236.836 Trunnion.  
 236.837 Valve, electro-pneumatic.  
 236.838 Wire, shunt.
- Subpart H—Standards for Processor-Based  
Signal and Train Control Systems**
- 236.901 Purpose and scope.  
 236.903 Definitions.  
 236.905 Railroad Safety Program Plan (RSPP).  
 236.907 Product Safety Plan (PSP).  
 236.909 Minimum performance standard.  
 236.911 Exclusions.  
 236.913 Filing and approval of PSPs.  
 236.915 Implementation and operation.  
 236.917 Retention of records.  
 236.919 Operations and Maintenance Manual.  
 236.921 Training and qualification program, general.  
 236.923 Task analysis and basic requirements.  
 236.925 Training specific to control office personnel.  
 236.927 Training specific to locomotive engineers and other operating personnel.

## § 236.0

## 49 CFR Ch. II (10–1–05 Edition)

236.929 Training specific to roadway workers.

APPENDIX A TO PART 236—CIVIL PENALTIES  
APPENDIX B TO PART 236—APPENDIX B TO  
PART 236—RISK ASSESSMENT CRITERIA  
APPENDIX C TO PART 236—SAFETY ASSURANCE  
CRITERIA AND PROCESSES  
APPENDIX D TO PART 236—INDEPENDENT RE-  
VIEW OF VERIFICATION AND VALIDATION  
APPENDIX E TO PART 236—HUMAN-MACHINE  
INTERFACE (HMI) DESIGN

AUTHORITY: 49 U.S.C. 20103, 20107, 20501–  
20505; 28 U.S.C. 2461, note; and 49 CFR 1.49.

SOURCE: 33 FR 19684, Dec. 25, 1968, unless  
otherwise noted.

### § 236.0 Applicability, minimum re- quirements, and penalties.

(a) Except as provided in paragraph  
(b) of this section, this part applies to  
all railroads.

(b) This part does not apply to—

(1) A railroad that operates only on  
track inside an installation that is not  
part of the general railroad system of  
transportation; or

(2) Rapid transit operations in an  
urban area that are not connected to  
the general railroad system of trans-  
portation.

(c) Where a passenger train is oper-  
ated at a speed of 60 or more miles per  
hour, or a freight train is operated at a  
speed of 50 or more miles per hour, a  
block signal system complying with  
the provisions of this part shall be in-  
stalled or a manual block system shall  
be placed permanently in effect which  
shall conform to the following condi-  
tions:

(1) A passenger train shall not be ad-  
mitted to a block occupied by another  
train except under flag protection;

(2) No train shall be admitted to a  
block occupied by a passenger train ex-  
cept under flag protection;

(3) No train shall be admitted to a  
block occupied by an opposing train ex-  
cept under flag protection; and

(4) A freight train, including a work  
train, may be authorized to follow a  
freight train, including a work train,  
into a block but the following train  
must proceed prepared to stop within  
one-half the range of vision but not ex-  
ceeding 20 miles per hour.

(d) Where any train is operated at a  
speed of 80 or more miles per hour, an  
automatic cab signal, automatic train  
stop or automatic train control system

complying with the provisions of this  
part shall be installed.

(e) Nothing in this section authorizes  
the discontinuance of a block signal  
system, interlocking, traffic control  
system, automatic train stop, train  
control, or cab signal system without  
approval of the Federal Railroad Ad-  
ministration.

(f) Any person (an entity of any type  
covered under 1 U.S.C. 1, including but  
not limited to the following: a railroad;  
a manager, supervisor, official, or  
other employee or agent of a railroad;  
any owner, manufacturer, lessor, or  
lessee of railroad equipment, track, or  
facilities; any independent contractor  
providing goods or services to a rail-  
road; and any employee of such owner,  
manufacturer, lessor, lessee, or inde-  
pendent contractor) who violates any  
requirement of this part or causes the  
violation of any such requirement is  
subject to a civil penalty of at least  
\$550 and not more than \$11,000 per vi-  
olation, except that: Penalties may be  
assessed against individuals only for  
willful violations, and, where a grossly  
negligent violation or a pattern of re-  
peated violations has created an immi-  
nent hazard of death or injury to per-  
sons, or has caused death or injury, a  
penalty not to exceed \$27,000 per viola-  
tion may be assessed. Each day a viola-  
tion continues shall constitute a sepa-  
rate offense. See appendix A to this  
part for a statement of agency civil  
penalty policy.

(g) A person may also be subject to  
criminal penalties for knowingly and  
wilfully making a false entry in a  
record or report required to be made  
under this part, filing a false record or  
report, or violating any of the provi-  
sions of 49 U.S.C. 21311.

(h) The requirements of subpart H of  
this part apply to safety-critical pro-  
cessor-based signal and train control  
systems, including subsystems and  
components thereof, developed under  
the terms and conditions of that sub-  
part.

[49 FR 3382, Jan. 26, 1984, as amended at 53  
FR 52936, Dec. 29, 1988; 63 FR 11624, Mar. 10,  
1998; 69 FR 30595, May 28, 2004; 70 FR 11095,  
Mar. 7, 2005]