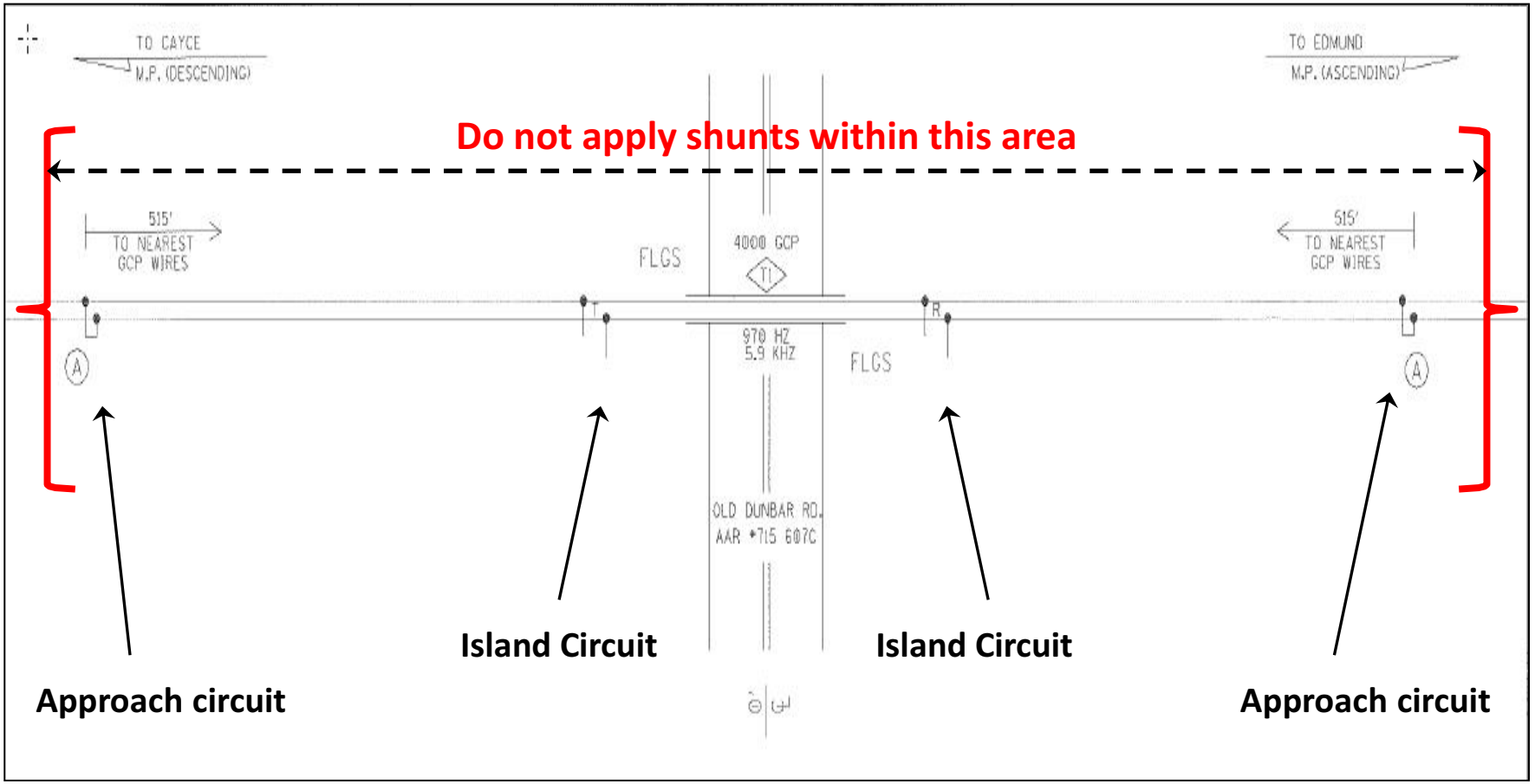
Procedures For Setting Signals To Conduct Efficiency Tests Using Shunts

49 CFR 217.9 Efficiency Testing Officer Training
Training Code # 10865

Shunting Near Highway Grade Crossings



<u>Island circuits</u> are located approximately 75 feet from the edge of the crossing.
<u>Approach circuits</u> are located in advance of the crossing at a distance determined by the track speed and warning time. The C&S Dept. uses a warning time table to determine that distance.

<u>Do not apply shunts to the rail within the approach circuit to highway grade crossings.</u>

Approach Circuit Lengths

Timetable Speed	Typical Approach Circuit Length from Crossing Edge
10 MPH	*520 FT*
30 MPH	*1540 FT*
50 MPH	*2570 FT*
79 MPH	*4060 FT*

A shunt applied between the approach circuit and the island circuit affects the capability of the automatic warning devices to properly detect train movement approaching the highway grade crossing. Consequently, the proper warning to the public/motorist at highway grade crossings is not provided.

Do not apply shunts to the rail within the approach circuit to highway grade crossings.

Highway grade crossing approach circuit

Highway grade crossing island circuits

Procedures for Using Shunts to Conduct Signal and STOP Obstruction Banner tests

Preliminary Steps:

•Have proper equipment.

- •Minimum of 2 approved signal shunts (SAFETRAN 021500-5X Track #670793704 Circuit sure grip "C" clamp base 0).
- •*Meet with your C&S Maintainer/Supervisor to check the effectiveness of your shunt cables.*
- •Radar Gun (fully charged battery or power supply & tuning fork for calibration test).
- •Three memory cards and three tapes for event recorder download.
- •Radio equipped to communicate with trains operating on the territory.
- •STOP Obstruction Banner in good order.

•Determine the rules in effect for the location where you will be testing.

•Determine the location within the signaled territory where you will be conducting the test and positively determine that highway grade crossing automatic warning devices will not be affected.

•DO NOT SHUNT THE RAIL WITHIN THE APPROACH CIRCUITS OF A HIGHWAY GRADE CROSSING WITH AUTOMATIC WARNING DEVICES.

•Confer with the Chief Dispatcher and /or Train Dispatcher for the territory.

•Identify the train or trains to be tested.

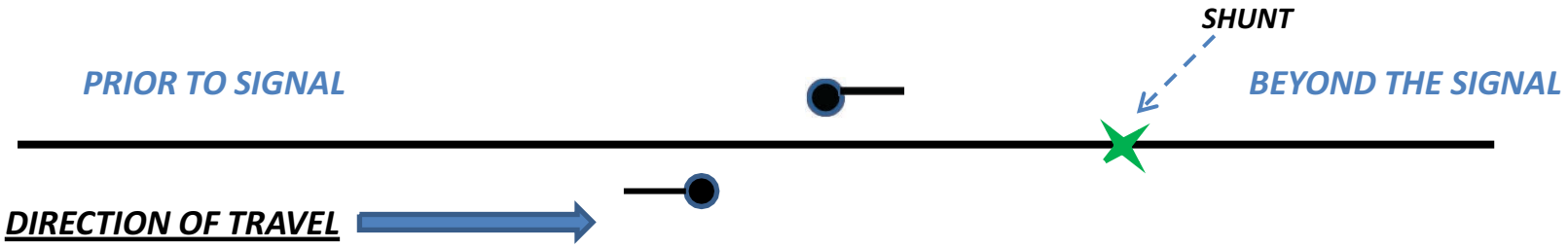
Shunt cables

Shunt applied firmly to the rail

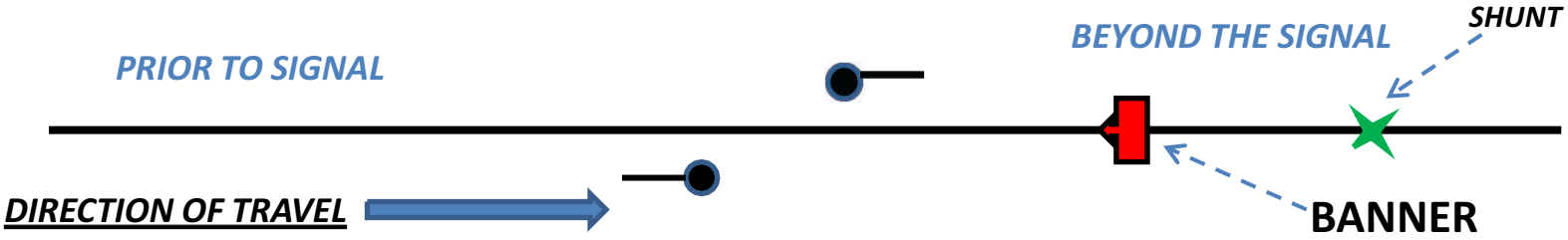
Procedures for Using Shunts to Conduct Signal and STOP Obstruction Banner tests

Conducting the test at an interlocking or CP

•Confer with the train dispatcher/operator and ask that the interlocking signal be set to display STOP and held in STOP for the train to be tested.
•AFTER the interlocking signal has displayed a STOP signal, apply a shunt to the track "BEYOND" the interlocking signal. (Outside interlocking limits).



•Communicate with dispatcher or operator and confirm that a TOL was established. If a TOL was not established check the shunt to make sure there is good contact with both rails.
•Place the STOP Obstruction Banner on the track. In cab signal territory the shunt must be attached a sufficient distance from the interlocking to allow the STOP Obstruction Banner to be placed between the interlocking signal and the shunt



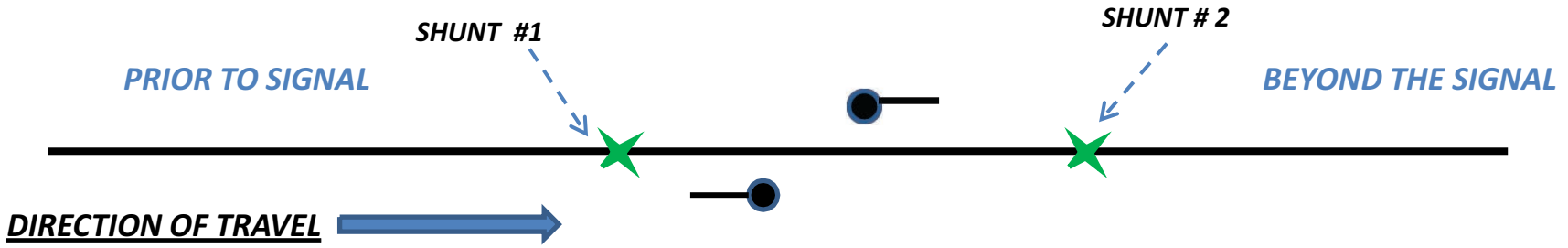
Procedures for Using Shunts to Conduct Signal and STOP Obstruction Banner tests

Conducting the test at other than an interlocking or control point:

•Confer with the Train Dispatcher/Operator and insure that no train or equipment is in the block or approaching from the last interlocking or control point. In multiple track territory and in Rule 261 territory make sure you have a thorough understanding with the Train Dispatcher/Operator as to which train, track and direction the test will be conducted.

•The use of two shunts is required for this test. Apply **shunt #1** to the rail "PRIOR TO" the automatic signal you wish to set to its most restrictive aspect. If the signals are approach lit, the signal will light up. The aspect displayed will depend on route and occupancy of the route.

•Apply **shunt # 2** to the rail "BEYOND" the signal you are setting at its most restrictive aspect . This will cause the signal to display its most restrictive aspect.



•Remove **shunt #1**. In Rule 261 territory, this is the most important step to insure that all the signals between the opposing interlockings are not affected. Except in cab signal territory the banner can be placed anywhere in the block "BEYOND" the signal you set to its most restrictive aspect. In cab signal territory with fixed automatic wayside signals, the banner must be placed between **shunt #2** and the signal set to its most restrictive aspect. This is because of when the lead locomotive has passed over the shunt the locomotive cab signal can receive more favorable code and display a more favorable aspect.

Procedures for Using Shunts to Conduct Signal and STOP Obstruction Banner tests

Conducting the test in Cab Signal Territory without *fixed* automatic wayside signals:

- Apply **shunt #1** to *the rail "PRIOR" to* the S.I.P. or cut section for the two blocks where you wish to conduct the test.
- Apply **shunt #2** to the rail "BEYOND" the S.I.P. a sufficient distance from the S.I.P. to allow the placing of the STOP Obstruction Banner between the shunt and the S.I.P.
- Remove **shunt #1** and contact the Train Dispatcher to insure that there is a TOL indication for the block where **shunt #2** is applied.