

Signal / Communication Jumper Policy

Prepared for:

South Florida Regional Transportation Authority
(SFRTA) Tri-Rail

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Revision Date	Revision Number	Description of Revision	Person Issuing Amendment/Change(s)

1. SCOPE

- 1.1 Purpose: This regulation provides special instructions when temporarily disabling or testing **in-service** crossing warning devices or wayside signal systems.

The instructions in this document shall be understood and adhered to when applying jumpers to disable signal or highway grade crossing warning systems.

- 1.2 Definitions: This document refers to the term “**Jumper**” as any jumper, shunt, or disarrangement of wires **that alters the normal operation of the equipment.**

NOTE: Temporary track wires do not alter the normal operation of the equipment but will still be denoted on a jumper log per instructions in SFRTA SR&I Track Circuits section 2.216.

This document refers to the term “**Control Station**” as the place from which instructions governing train movements is issued. The person issuing these instructions can be a train dispatcher, train master, yard master, etc.

This document refers to “**Positive Protection**” as a method to prevent trains from accessing a section of track or providing a message for the train to provide its own protection. These methods are described in section 3.2.1.

- 1.3 Summary:
1. **Job brief with control station to establish or verify proper protection.**
 2. **Job brief with manager on method of disabling device and establish a "Jumper Log".**
 3. **Disable crossing or wayside equipment.**
 4. **Perform operational checks to verify that only intended equipment is disabled**
 5. **Complete “Jumper Log Information Record”.**
 6. **Perform necessary work**

7. **Restore equipment and perform all required operational checks.**
8. **Cancel protection provided by control station.**
9. **Contact Manager to close Jumper Log.**

Note: If the employee does not maintain contact between his/her hand and the jumper, a jumper log MUST be immediately established.

- 1.4 Location: All applicable SFRTA locations.
- 1.5 Material: Signal Maintainer Jumper Kit
Signal Inspector Jumper Kit
TSC Work Jumper Kit
Hardwire Shunt
Red Tag
VTMI Jumper Information Record
TSC Field Jumper Application Record (page 7 of 8)
Hardwire Shunt Base of Rail
Hardwire Shunt Head of Rail
Multi Shunt
Safetran Dummy Load 50-3150 ‘
Safetran Dummy Load 100-6300’
- 1.6 Special Tools: None
- 1.7 References: SFRTA Signal System Reference Manual, SFRTA SR&I Section 1.300 to 1.309 Adjustments, Repairs & Changes. SFRTA MWI 1704-04, SFRTA Safety Policy, SFRTA Signal Regulations and Instructions. SFRTA SI 00001, SFRTA Safety Requirements.

2. METHODS OF DISABLING EQUIPMENT

- 2.1 Hardwire Track Shunts can be applied as a shunt at crossing warning systems where motion sensor, predictor or time out circuits exist.

Note: A/C mini shunt or any type of multi or selectable type shunts may NOT be used as a hardwire shunt.

- 2.1.1 In a situation where operating rule for authority in signaled territory only, hardwire track shunts may be used to prevent false activation of a crossing after a thorough job briefing with the EIC holding the operating rule authority and the control station. It must be determined that the shunt will not affect the operation of any adjacent crossings outside the limits of the operating rule. If the assigned signal employee must leave the crossing location, **a jumper log must be obtained from the Signal Manager for the hard wire track shunt and positive protection obtained from the control station or the MW people must install their shunt and obtain a “Shunt Log” from the designated employee per MWI 1704-05.**
- 2.1.2 In the case of a broken rail a hardwire track shunt may be applied across both rails to prevent activation of a crossing only after the conditions of section 3.2 (Positive Protection) are met for any crossings that overlap the location of the broken rail. A jumper log must be created with the Signal Manager for shunts applied.
- 2.1.3 Positive Protection is required when hardwire track shunt is applied **across** the track in non-signaled territory. (refer to section 3.2.1)
- 2.1.4 Hardwire Track Shunt used as a Jumper around a broken rail for highway grade crossings. (Note: It is not permissible to apply a jumper around a broken rail in signaled territory until signal track circuits are identified and de-energized.).
- 2.1.5 Coordination is required by the Signal Manager with the Roadmaster when jumpers are applied at crossings at grade (diamonds).
- 2.2 Jumpers and Simulated Track Loads (Dummy Loads)
- 2.2.1 Only approved jumpers or dummy loads (simulated track inductor) shall be used.
- Caution:**
- (1) **Do not use jumpers on circuits greater than 440V AC.**
- (2) **Do not use jumpers on circuits greater than 15 amps.**
- 2.2.1.1 Jumpers shall be maintained in good condition. Discard the jumper or lock tag if found to be in poor condition.
- 2.2.2 Make sure that all connections are tight and will not make inadvertent contact with other terminals or a ground source.

- 2.2.3 A red tag must be applied to the door lock of the enclosure where jumpers are applied.
- 2.2.4 Jumper Information Record must be placed in enclosure. A copy is to be provided to the Signal EIC if one has been designated.
- 2.2.5 Movement of existing circuit wires to temporarily bridge contacts of relays or other controlling devices is not permissible. Approved jumpers must be used as detailed in 2.2.

3. DISABLING EQUIPMENT

- 3.1 **General** - In case of changes, repairs or adjustments, relays must not be tilted or inverted to close contacts. The use of jumpers to bridge contacts of relays or other controlling devices without receiving permission from a Signal Manager (or designee) and without taking proper measures to ensure safe operation of trains is prohibited. When it becomes necessary to use jumpers, the designated employee will:
 - 3.1.1 Immediately advise Control Station of the function which is out of service, the effect on train operations, and ensure safeguards are in place that protect the movement of trains and the public.
 - 3.1.2 Obtain permission from Signal Manager (or designee) to disable equipment.
 - 3.1.3 Disable equipment per job briefing with manager.
 - 3.1.4 Fill out Jumper Information Record (Figure 2 pg. 8)
 - 3.1.5 If multiple employees are disabling equipment, establish an EIC. The EIC will be responsible for tracking jumpers on Jumper Application Record (for multiple entries). (Figure 1 Pg. 7)
 - 3.1.6 Contact the designated employee and secure a jumper log.
 - 3.1.6.1 Equipment involved (e.g. name of crossing, DOT number, and signal or switch nomenclature).
 - 3.1.6.2 Alternate method of protection established with control location
 - 3.1.6.3 Exact location of jumper (e.g. contact 1H of relay XPR to B12 buss).
 - 3.1.6.4 Name and ID of designated employee applying jumper and name of Manager (or designee) authorizing jumper.
 - 3.1.6.5 Date and time jumper is applied and expected removal time.

3.1.7 Perform required work.

3.2 Crossing Warning Systems Additional Instructions-

3.2.1 Jumpers may only be applied at grade crossing warning device locations if one of the following conditions are met which provide **positive protection** for the crossing:

3.2.1.1 In dispatcher controlled territory, request and confirm that the dispatcher has provided blocking protection or issued Dispatcher message. (Stop and Flag)

3.2.1.1.1 For planned work, a faxed request of affected crossings requiring protection must be sent at least 14 hours prior to planned work and confirmed by phone with the Chief Dispatcher.

3.2.1.2 During in-service testing of a signal system or highway grade crossings within an operating rule authority issued to a Signal Department EIC, the EIC must maintain a list of crossings that are protected by jumpers. If a train must be run, the EIC must know that all jumpers have been removed and all crossings are functional prior to giving the train permission through the operating rule limits.

3.2.1.3 In non-dispatcher controlled territory (non-controlled track), authority must be obtained from the Hialeah Yardmaster who will notify the trains to protect the movement over the crossings.

3.2.1.4 Track is out of service with the control station or made inaccessible.

3.2.2 When conditions and equipment permit, the island circuit should remain active when applying jumpers to a grade crossing circuit. Perform tests to verify the island is active.

3.2.3 In multiple track territory, ensure that applied jumpers do not unintentionally interfere with operation of adjacent tracks by testing to ensure that the approaches and island circuits are functioning normally on those tracks.

4. RESTORING EQUIPMENT WHEN WORK IS COMPLETE

- 4.1 **An operational test is required to ensure the proper operation of the grade crossing warning device or wayside signal system prior to returning the device or system to service.**
- 4.2 If it has not been reported to the Signal Manager that the jumper has been removed prior to the expiration of the jumper log or end of the shift of the employee applying the jumper, that employee will contact the Signal Manager and update or extend the jumper log with the following information:
 - 4.2.1.1 Reason for jumper(s) to remain applied
 - 4.2.1.2 Employee in Charge of jumper removal
 - 4.2.1.3 Expected removal time
- 4.3 If the signal employee fails to clear with the Signal Manager within the expected time, the Signal Manager must attempt to notify the EIC.
- 4.4 When jumpers are removed and normal operation has been verified, the signal employee will contact the Control Station and release protection.
- 4.5 Next, the Signal Manager will be notified advising that the jumpers are removed and the system is restored to normal and the jumper log will be closed out.
 - 4.5.1 The jumper log information record will be maintained with job briefing form for 7 calendar days.

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JUMPER INFORMATION RECORD
LEAVE AT JUMPER SITE

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DATE _____ TAG NO. _____

CROSSING NAME _____ MILE POST _____

ASSIGNED EMPLOYEE _____ EMPLOYEE IN CHARGE _____

TIME APPLIED _____ TIME REMOVED _____

MODIFICATIONS TO SIGNAL OR GRADE CROSSING WARNING SYSTEM - _____

ALTERNATE METHOD OF PROTECTION-_____

Figure 2.