


Inspection and Maintenance of Switches and Derails

### Inspection & Maintenance of Manual Switches and Derails



))) SIGNALS TRAINING CONSORTIUM

---

---

---

---

---

---

---

---

Inspection and Maintenance of Switches and Derails

### Riders Depend on Us



What do you know about this switch?

))) SIGNALS TRAINING CONSORTIUM

2

---

---

---

---

---

---

---

---

Inspection and Maintenance of Switches and Derails

### Outline

- Inspect and maintain manual switches
- Inspect and maintain electric locks
- Inspect and maintain circuit controllers on manual switches

))) SIGNALS TRAINING CONSORTIUM

3

---

---

---

---

---

---

---

---


Inspection and Maintenance of Switches and Derails

## General Inspection & Maintenance

### Sensory Inspection

- Ensure switch is clean
- Inspect hardware:

*From the previous module: what hardware should always be inspected?*



SIGNALS TRAINING CONSORTIUM 10

---

---

---

---

---





---

---

---

Inspection and Maintenance of Switches and Derails

## General Inspection & Maintenance

Sense	Example Problems
 <b>Sight</b>	Debris, dirt, clutter, untamped ballast, rotting, instabilities, rust, worn insulation, lubricant outside the gearbox, proper drainage, hairline damage or distortion to case, cover and/or other structural components, breaks/weak points or any other signs of physical damage.
 <b>Smell</b>	Burning (only if installed with snow melters).
 <b>Touch</b>	loose points, hardware, etc, <b>switch is especially hard to throw*</b> .
 <b>Hear</b>	Grinding, switch bogged down, clanging sound, loose or broken parts.

\*specific to manual switches and derails

SIGNALS TRAINING CONSORTIUM 11

---

---

---

---

---

---

---

---

Inspection and Maintenance of Switches and Derails

## Lubrication

Switch Plate Lubricant	Oil	Grease
	Locking Plunger* Latch Bar Actuator* Emergency Release on Electric Lock*	High target staff bearing, if equipped* Escapement Crank*

\*specific to manual switches and derails

SIGNALS TRAINING CONSORTIUM 12

---

---

---

---

---

---

---

---

Inspection and Maintenance of Switches and Derails

### Electric Switch Locks

#### Inspection and Maintenance

Electrical Locking on a Manual Switch on a Low Profile Electric Lock



ALCOHOL BOTTLE  
MECHANICALLY OPERATED CONTACTS  
ELECTRICALLY OPERATED CONTACTS  
ELECTRICAL ARMATURE  
WINDOW

SIGNALS TRAINING CONSORTIUM 25

---

---

---

---

---

---

---

---

Inspection and Maintenance of Switches and Derails

### Electric Switch Locks

#### Inspection and Maintenance



CIRCUIT CONTROLLER  
CONTROL PANEL

Alstom 9B Electric Lock High Stand in Context in a Lab Setting

SIGNALS TRAINING CONSORTIUM 26

---

---

---

---

---

---

---

---

Inspection and Maintenance of Switches and Derails

### Electric Switch Locks

#### Inspection and Maintenance

Alstom 9B Electric Lock High Stand Control Panel



EMERGENCY RELEASE  
WINDOW  
LEVER

SIGNALS TRAINING CONSORTIUM 27

---

---

---

---

---

---

---

---