

## COMMITTEE G: Education & Training Communication & Signal Division, AAR

### A-7 Derail

Approved January 1974

**Definition:** A device designed to cause rolling equipment to leave the rails.

**Symbol:**

Shoe or Block



Split Point



**Description:** Derails are either right-handed or left-handed, depending on the direction in which it is desired to cause the rolling equipment to leave the track. Looking in the direction of movement of a car or engine to be derailed, a right-hand derail is installed on the right-hand running rail and derails to the right. A left-hand derail is installed on the left-hand running rail and derails to the left.

The siding or lift derail has a shoe or block approximately 30 inches long that rests on top of the rail when in the derailing position. When it is operated, the shoe or block lifts off the rail approximately one inch and slides sideways onto a cradle. Figure 1 shows a right-hand derail of this type in the derailing position.

Another type of derail is the split-point, which uses only one point of a switch. The point is installed in either running rail depending on the direction in which it is desired to derail the equipment. Figure 2 shows a right-hand derail of this type in the derailing position.

**Purpose and Application:** Derails are used wherever a track needs to be protected from unauthorized movements of cars or engines. Around shop areas they are used to protect workers from cars or engines accidentally rolling into work areas. In signal territory, derails are usually connected to a switch circuit controller.

**General Information:** To adjust the contacts in a switch circuit controller used with a shoe or block derail, raise the shoe or block  $\frac{3}{4}$  in. above rail by means of operating lever and adjust contacts to operate circuits as required. Switch circuit controller contacts on a main line split-point derail should be adjusted to operate circuit as required with the switch point open  $\frac{1}{4}$  in. or more. In sidings, spur tracks and locations other than the main line where switch circuit controllers are used

with split-point derails, adjustment is made with the switch point open  $\frac{3}{8}$  in. or more.

It is most important that you become familiar with your company's instructions and requirements.

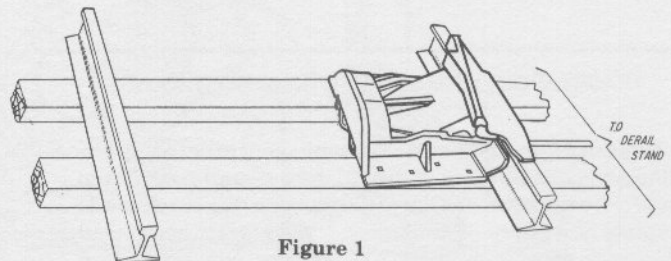


Figure 1

**Detailed Operation:** Derails may be operated by hand by means of a switch stand at the derail, or by a pipe connection to the main line switch stand or to a lever in a nearby control tower. Power switch machines may be used to operate derails either directly or by pipe connection.

The sliding or lift derail as shown in Figure 1 has a shoe or block approximately 30 in. long that rests on top of the rail when in the derailing position. The lead wheel of a car or engine rolls upon the shoe or block and as it continues to roll, the wheel is forced over the rail by a flange on the shoe. At the same time the wheel on the opposite end of the axle is pulled off its running rail, causing both wheels to drop onto the cross-ties.

With the split-point derail, Figure 2, the point is installed in either running rail, depending on the direction in which it is desired to derail cars or engines. When the point is open or in a derailing position, the car or engine wheel rolls through the open point until the wide gauge allows the wheels to drop onto the cross-ties. Sometimes two points are used the same as a regular switch. Cars or engines can then roll clear of the main running track before dropping off the rails.

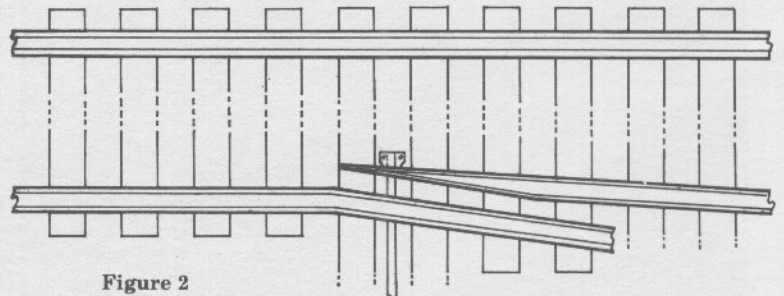


Figure 2