

BLUE LINE

FRA Constant Warning – Compatibility with Light Rail Transit

July 1, 2010



Design / Build Project
ROWLETT

Dexham At-Grade Crossing



Quiet Zone Criteria

- Quiet Zone requirements established by Federal Railroad Administration (FRA)
- All of these minimum requirements must be met
 - Signal Lights at Railroad Crossing
 - Gate Arms at Railroad Crossing
 - Power-Out Indicators
 - Constant Warning

Light Rail System

- Cannot satisfy Constant Warning requirement due to the electrification system needed to power the Light Rail Vehicles
- Technical explanation provided in the following slides

Constant Warning Time Track Circuits

Constant Warning Time (CWT) equipment:

- Sense a train in the approach section
- Measure its speed and distance from the crossing
- Activate the warning equipment to provide the selected minimum warning time



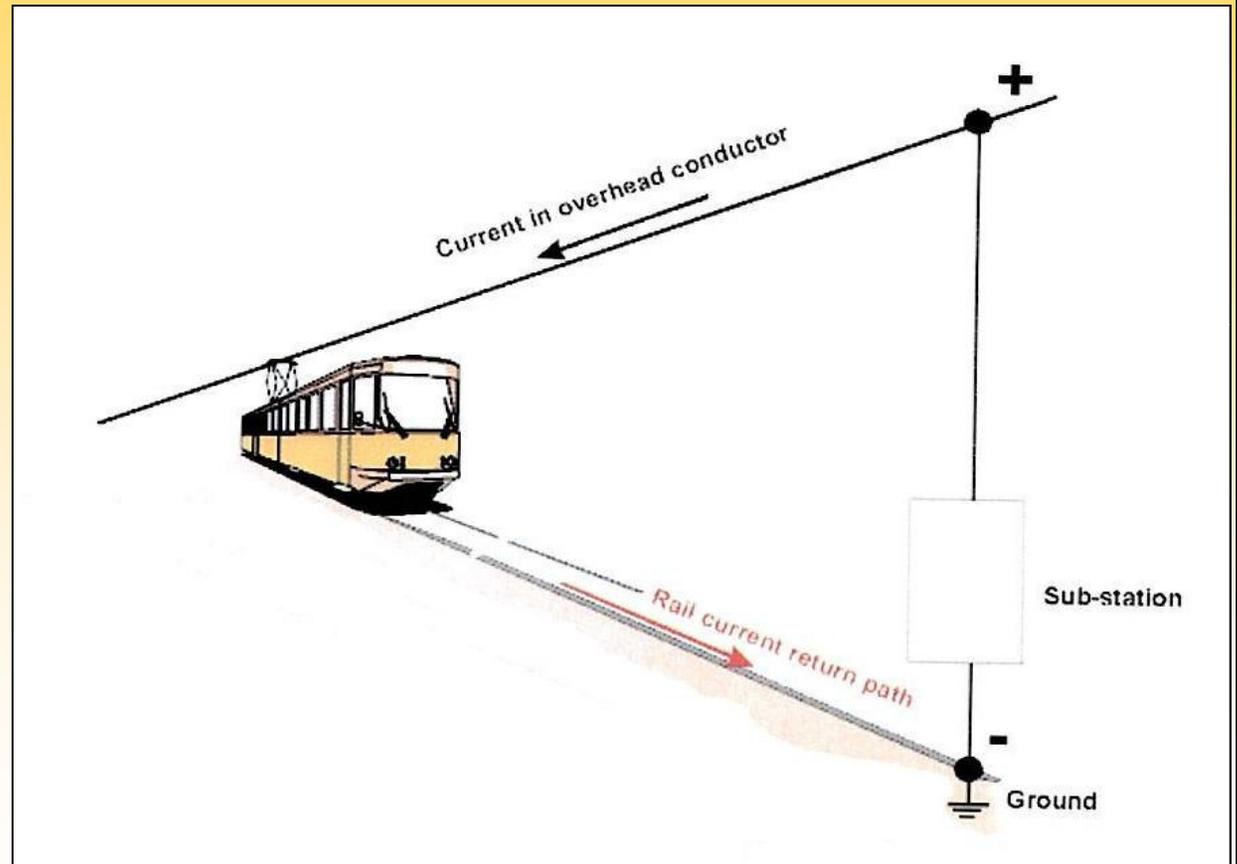
Constant Warning – Rail Polarity

- Constant Warning requires a negative rail and a positive rail.
 - DART rails are both negative creating a short circuit to the CWT device.
 - CWT will not function due to the negative return of the railroad tracks.

Light Rail Traction Power System

Catenary System (845 Volts DC)

- Overhead Wires (Positive)
- Railroad Tracks (Negative Return)



Overhead Catenary Wires (Positive)



LRT Railroad Tracks (Negative Return)

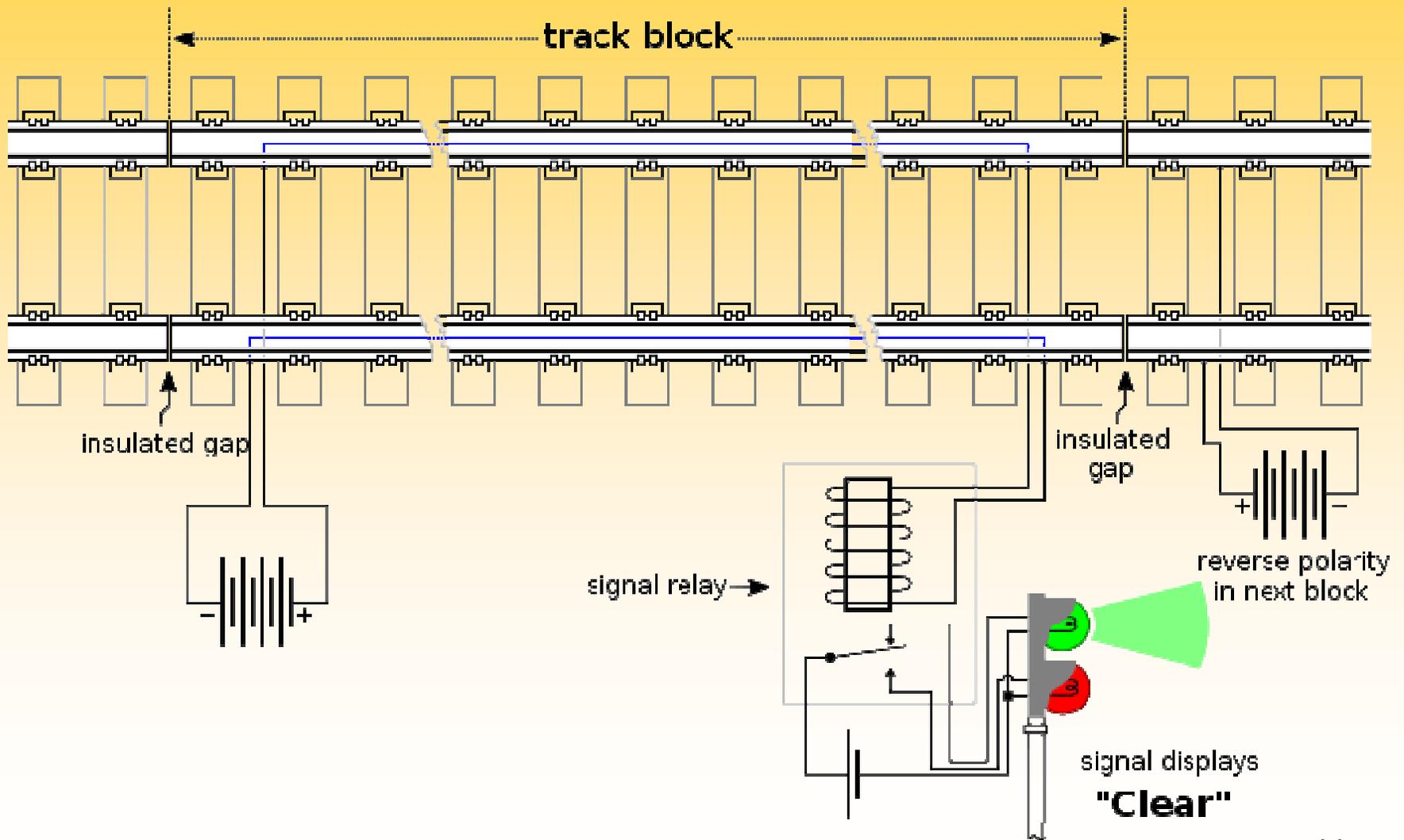


Freight Railroad Track Circuits

Use of Positive & Negative Rails
for Train Detection

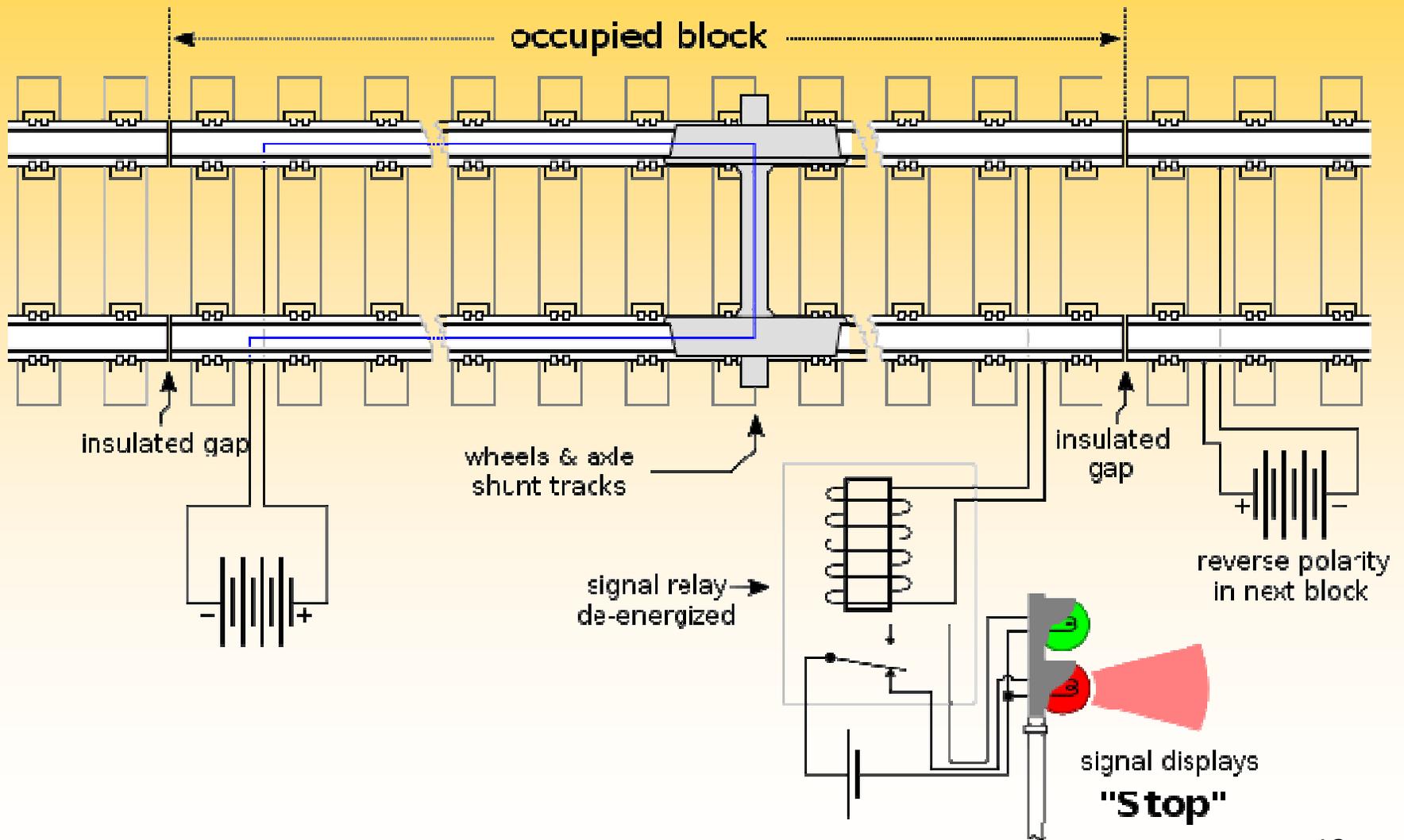
Railroad-Highway Grade Crossing

AC-DC Track Circuit



Railroad-Highway Grade Crossing

AC-DC Track Circuit



The logo features the word "DART" in a bold, dark blue, sans-serif font. The text is centered within a white, stylized arrow shape that points to the right. The arrow is composed of two overlapping trapezoidal shapes, creating a sense of depth and movement. The entire graphic is set against a solid yellow background.

DART

