



**Massachusetts Bay
Transportation Authority**

DGM Remarks

Fiscal & Management Control Board

April 2, 2018






Blue Line Signal Study



Blue Line Signals Operations

Blue Line vehicles are fully controlled by operators in terms of transit operations and customer interactions (opening/closing doors, announcements, etc.).

The Blue Line Signal System provides traffic and safety information to operators similar to the Green Line or typical automobile signals

-  Red – The signal system has detected an issue ahead of the operator that requires attention before transit can resume (train can be occupying adjacent 'block')
-  Yellow – Proceed with caution as traffic may be ahead; Typically seen when a train is at the minimal safe distance away from another train
-  Green – Proceed as normal

A safety mechanism, called a Mechanical Trip Stop, is installed to assure adherence to **Red** signals. When a train approaches a **Red** signal, the trip stop is activated and in an upright position. Upon receiving a **Green** signal, the trip stop electromechanical system lowers the trip allowing the vehicle to pass.



Blue Line Signals Current State

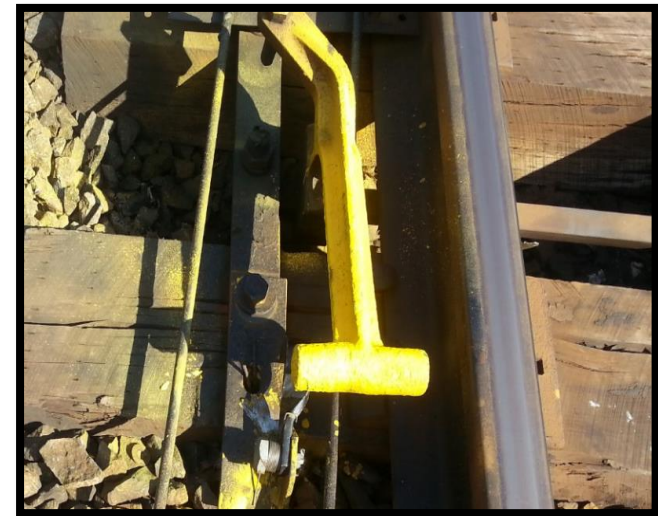
Mechanical Trip Stop is a technology invented in the early 1900s and is still used for signal adherence

- Purpose: Serves as an **emergency braking** mechanism
- Operation: Mechanical pin hangs from the train and a “T” shaped stop is fixated to the ground. When a violation occurs, the pin hits the stop and the trains emergency brake system is applied.
- Requires constant equipment replacement and repairs
 - › **150** of mechanical trip stops across entire Blue Line network
 - › **4,680** mechanical actuations a month per trip stop
 - › Averages **3** maintenance calls a week

Due to the age of the equipment maintaining the system is expected to become more difficult.



Installed Mechanical Trip Stop



Top View of “T” Stop



Study Goals

- Assess current signal infrastructure and identify potential areas for short term improvements
- Identify and evaluate new signal technologies such as communication based or digital fixed blocked systems.
- Provide initial cost estimates for system alternatives
- Develop preliminary scope of work for identified signals program





Status and Timeline

| Action | Date |
|--------------------|------------------|
| Development of RFP | Completed |
| Advertisement | Early April 2018 |
| Selection | Late Summer 2018 |
| Notice To Proceed | Fall 2018 |
| Completion | Fall 2019 |



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