

# Line Block Animations

## Generic Line Block



# Line Block Animations

- Initialization
- Normal Operation
- Running through Stop
- Abnormal behaviour
- Hostile train
- Entry route first
- Signal monitoring
- Trailing monitoring
- Entering line without route
- Entering Line without Route – Against Line Block
- Train enters against the Line Block direction
- Communication Fail
- Direction Locked
- Line Point: Reverse entry
- Line Point: Exiting
- Line Point: Out of control

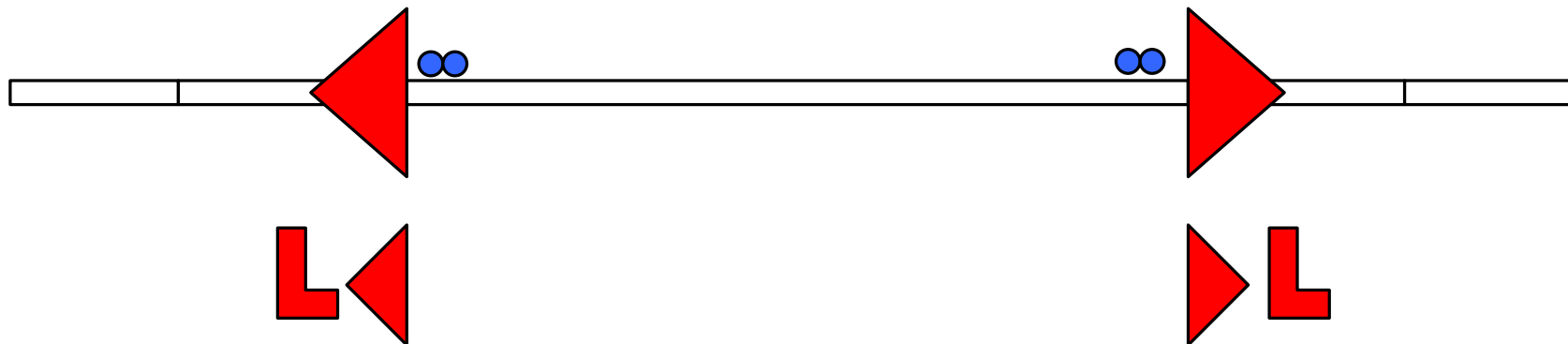


# Line Block

## System Initialization

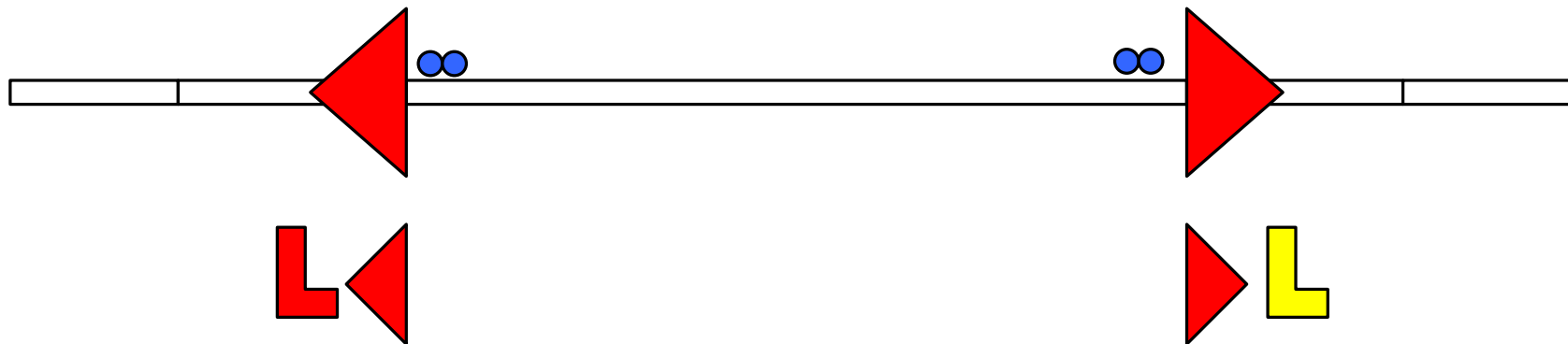


- Line Block after system startup
- Direction is not set



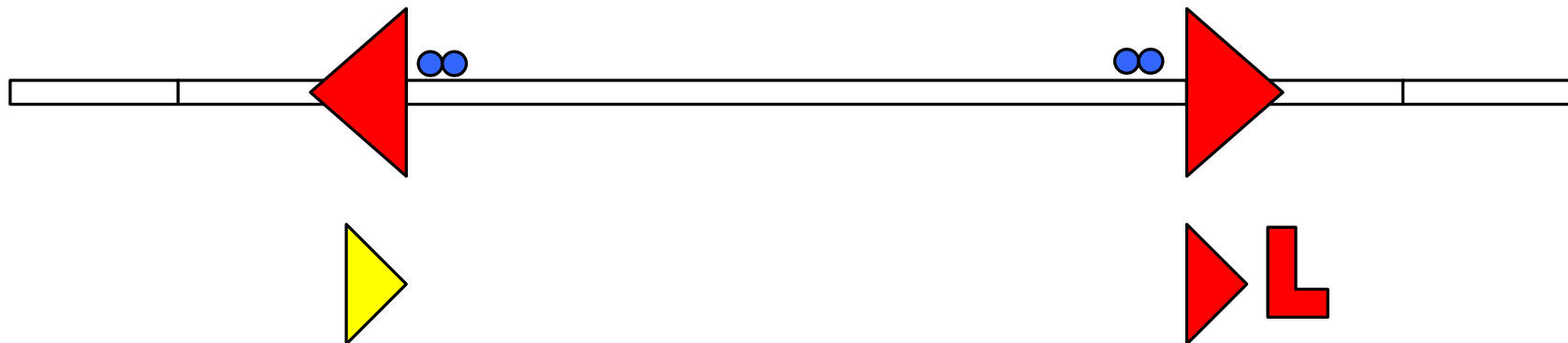
[Next](#)

- Line Block after system startup
- First “LHP” issued to set the direction



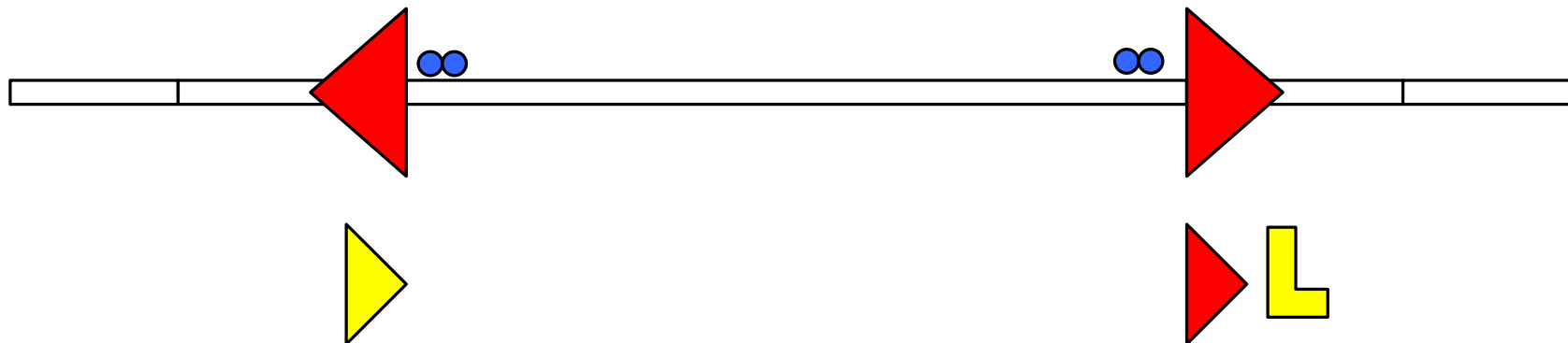
[Next](#)

- Line Block after system startup
- Direction established



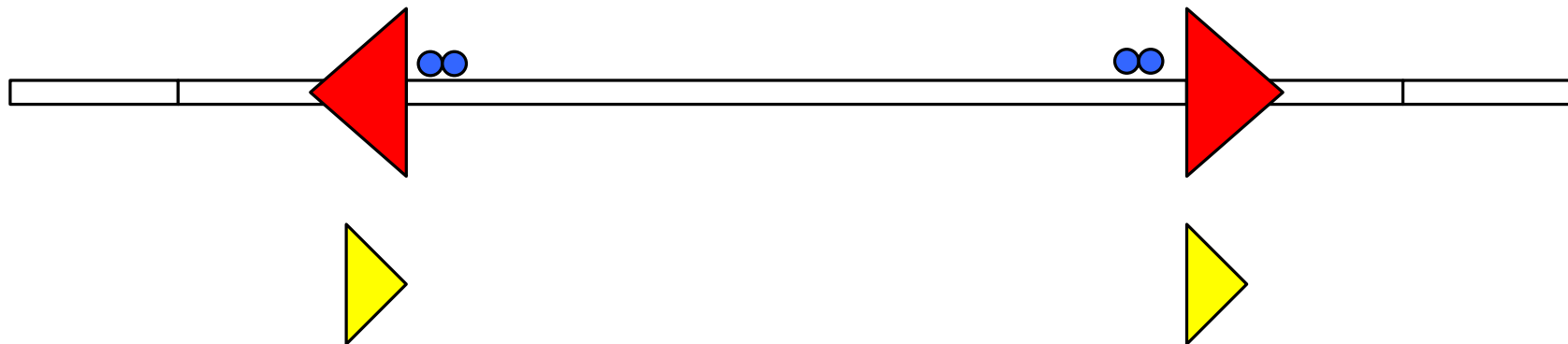
[Next](#)

- Line Block after system startup
- Second “LHP” issued to clear the Line Block



[Next](#)

- Line Block Clear



[Return](#)

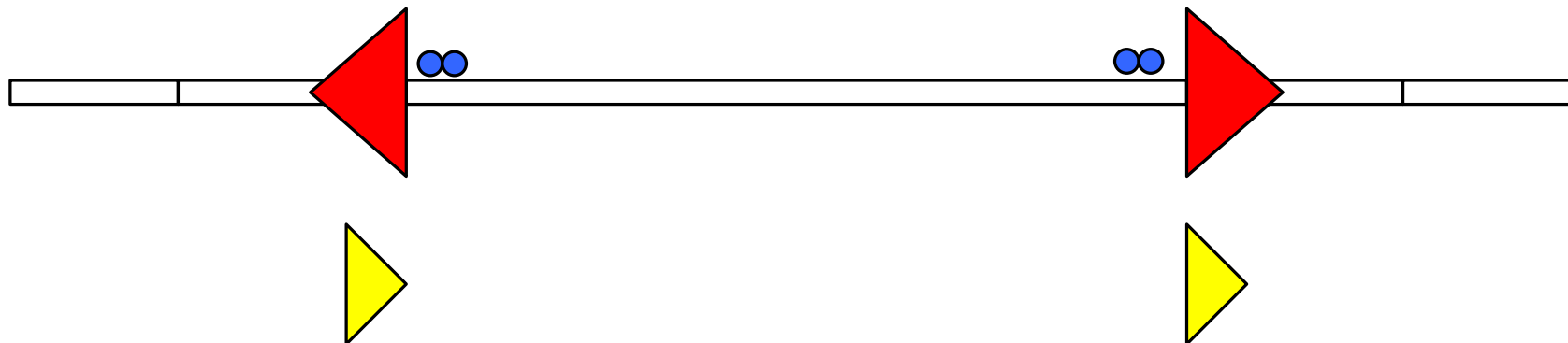


# Line Block

## Normal Operation

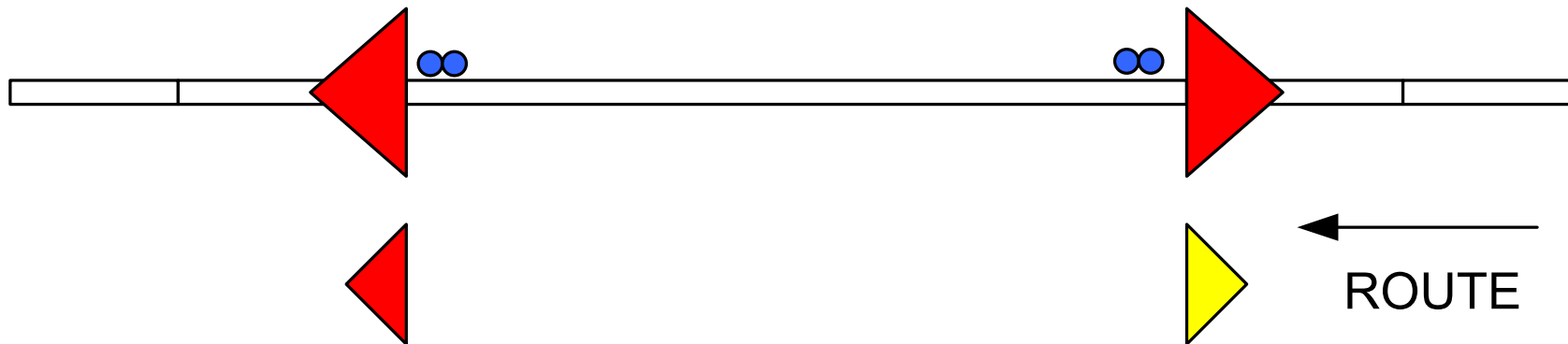


- Line Block Free



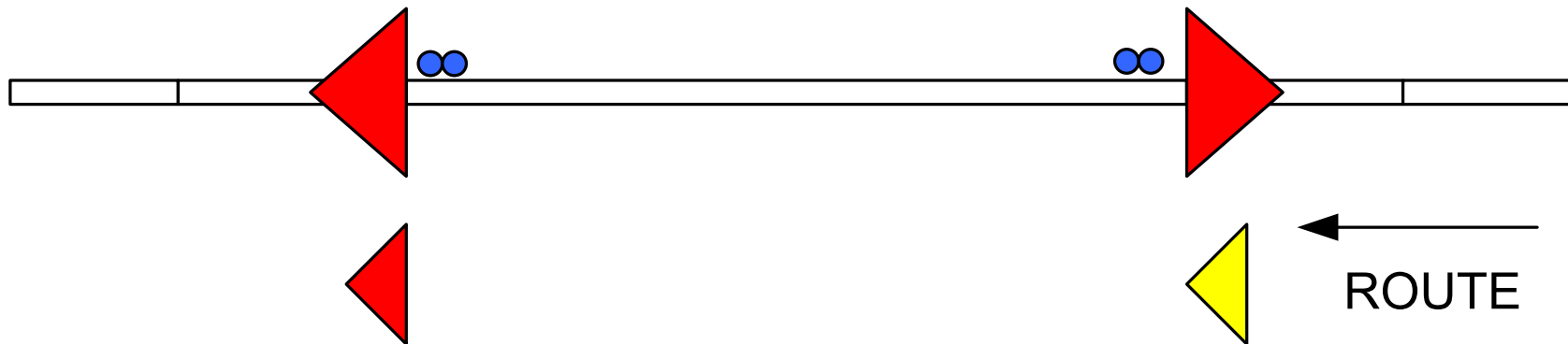
[Next](#)

- Direction change initiated due to Exit Route



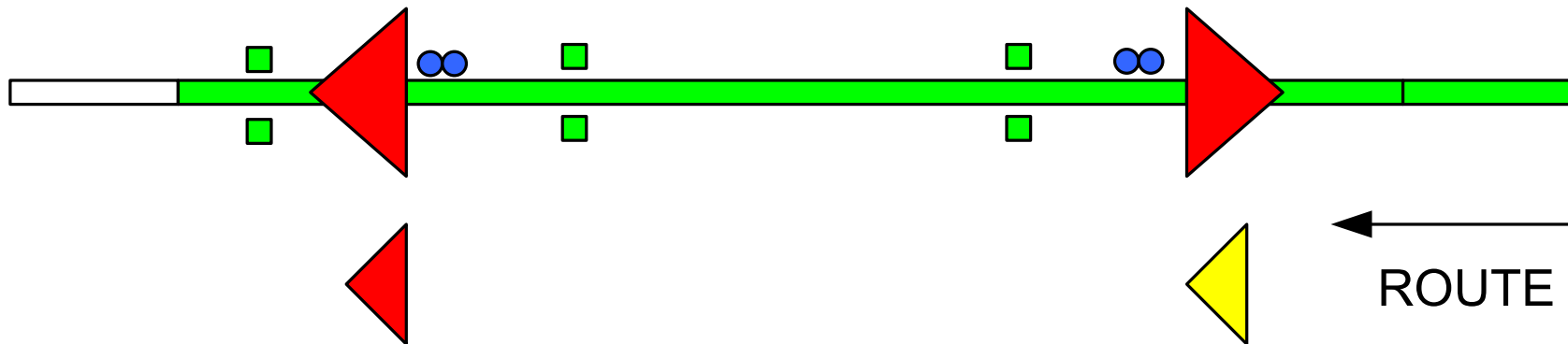
[Next](#)

- Direction change initiated due to Exit Route setting



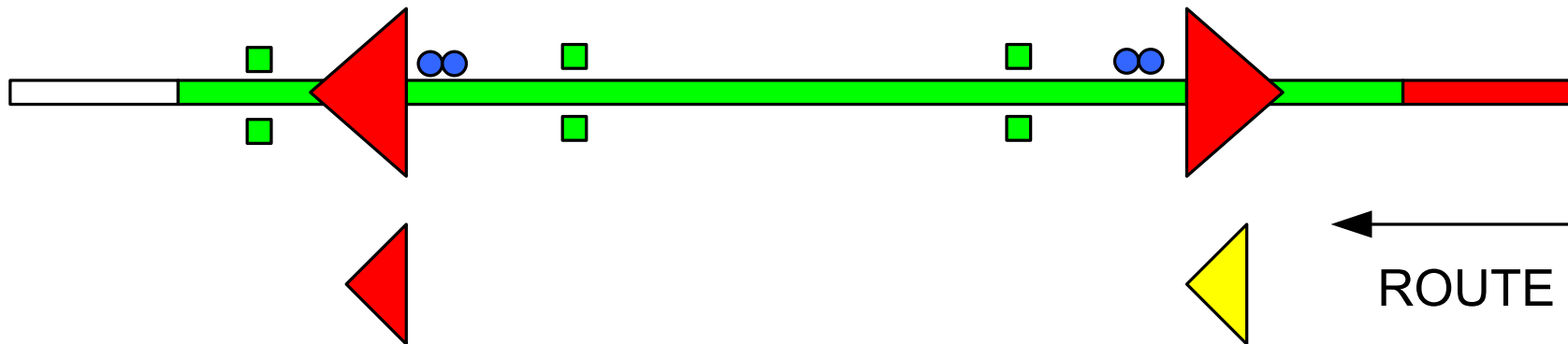
[Next](#)

- Line Block is locked for the Exit Route
- Note: Overlap indication

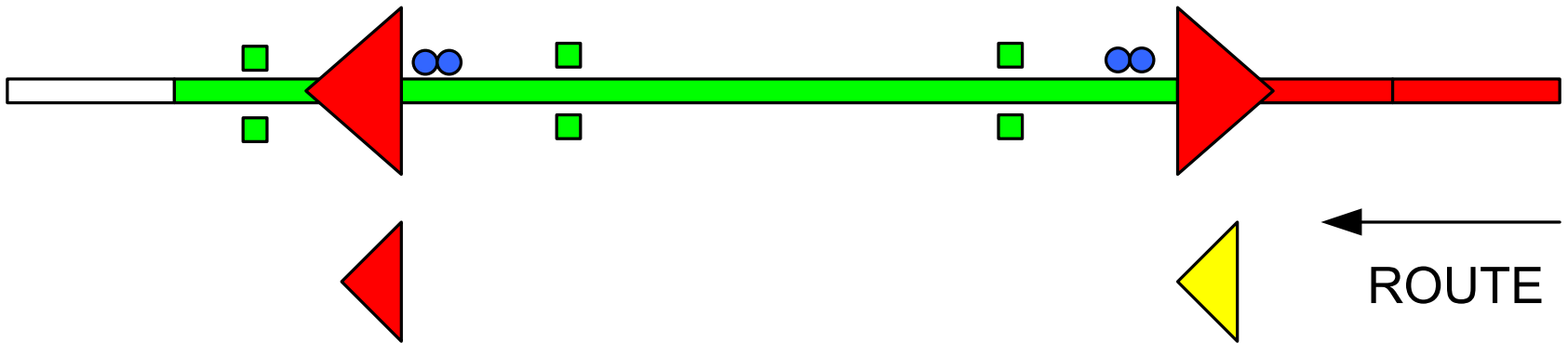


[Next](#)

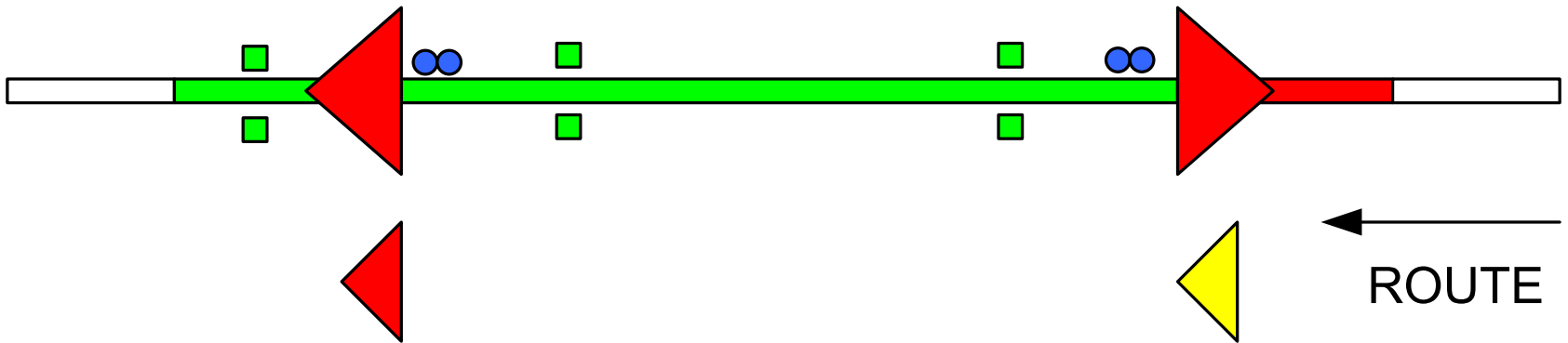
- Train moving towards the line



[Next](#)

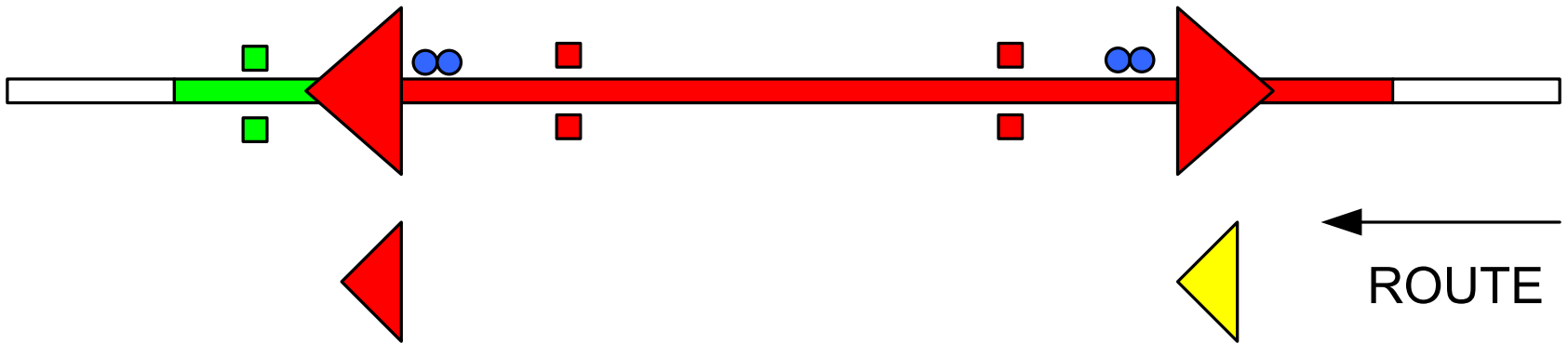


[Next](#)



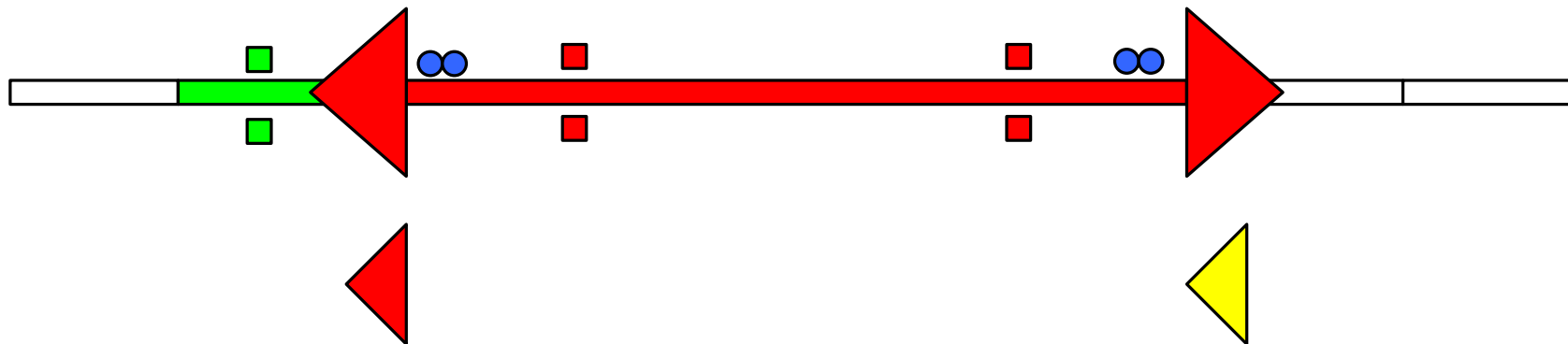
[Next](#)



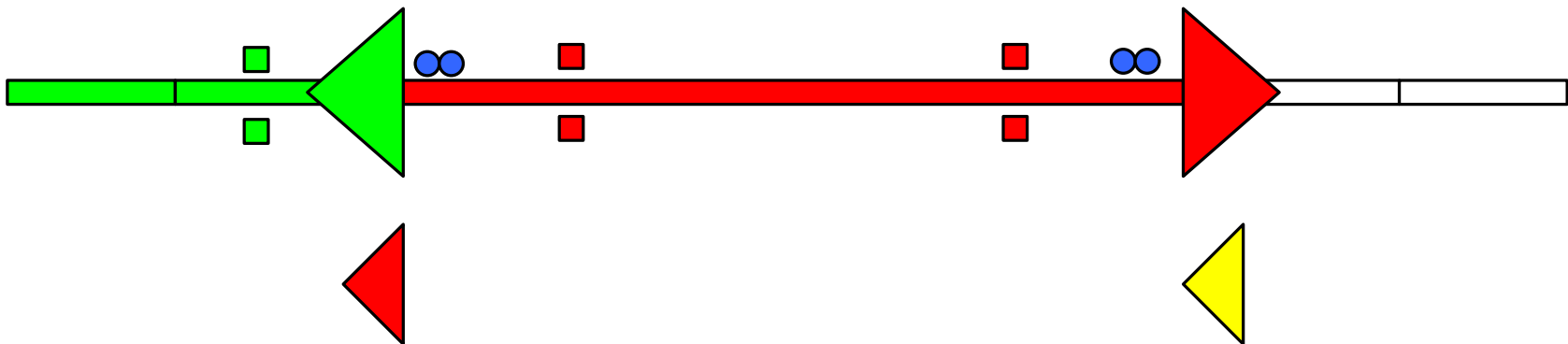


[Next](#)

- Route is released
- Line Block locks the direction

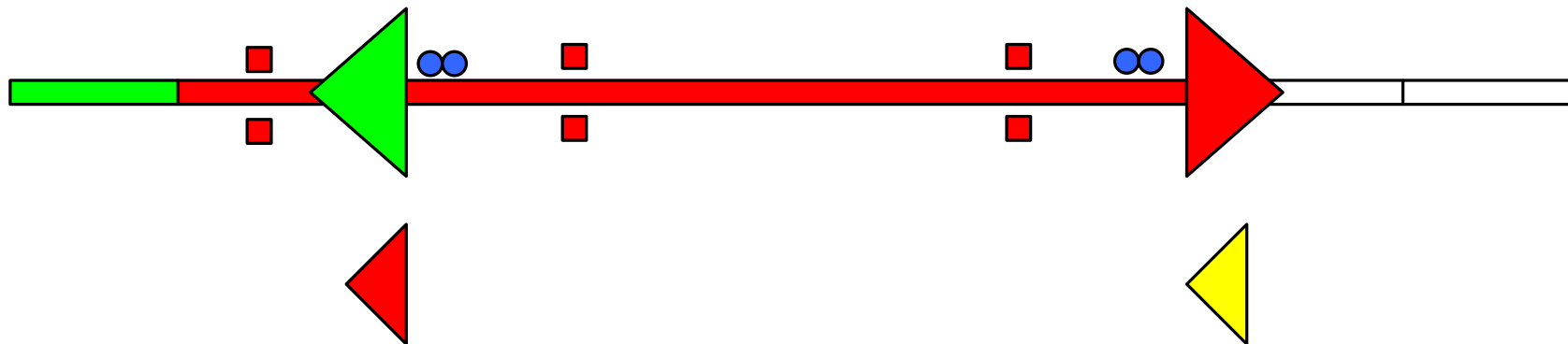


- Entry route is set and aspect is set to PROCEED



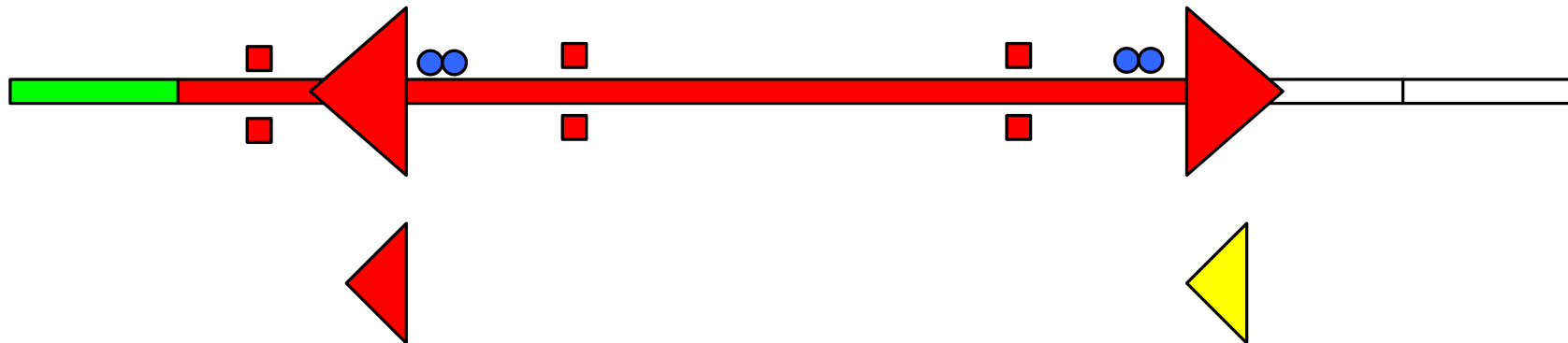
[Next](#)

- Train moves to the station

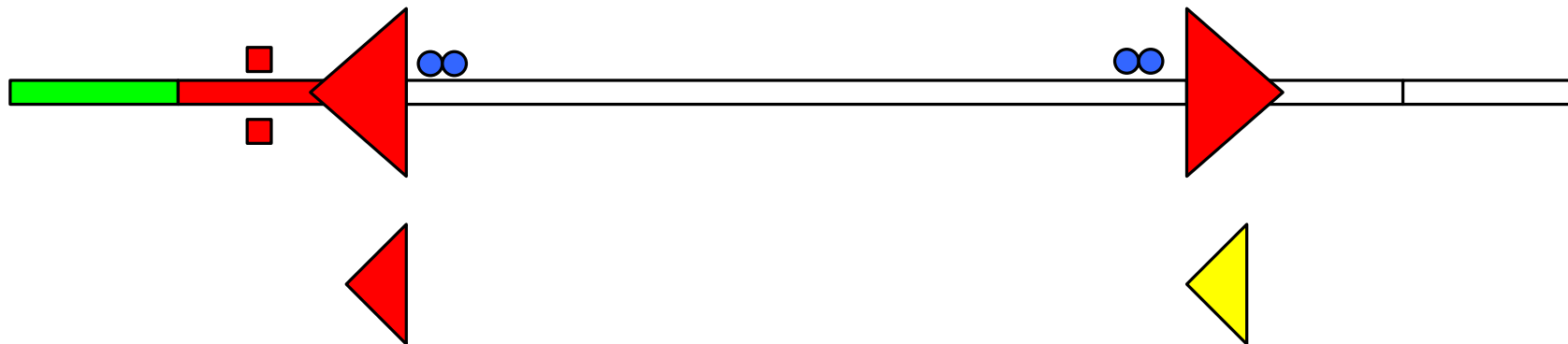


[Next](#)

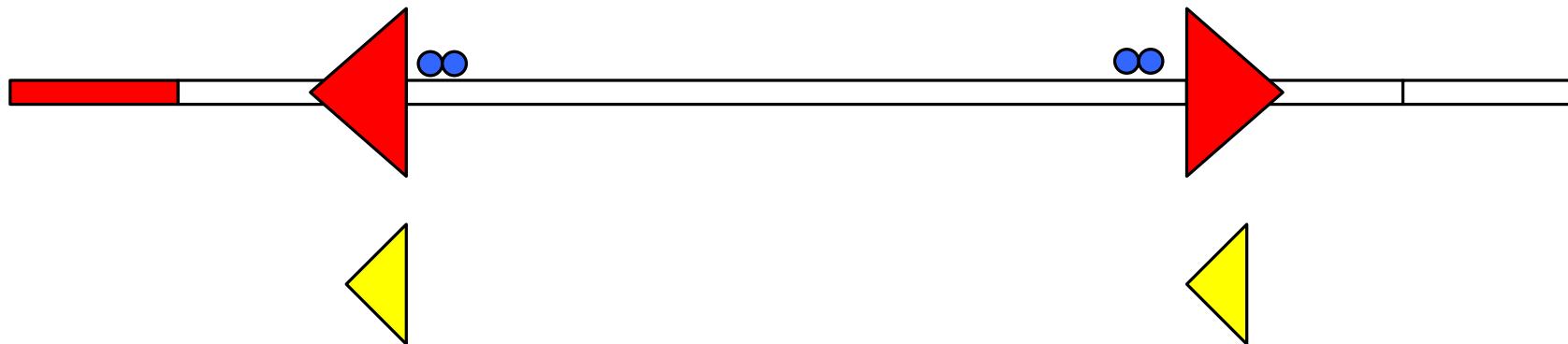
- Entry signal is set to STOP



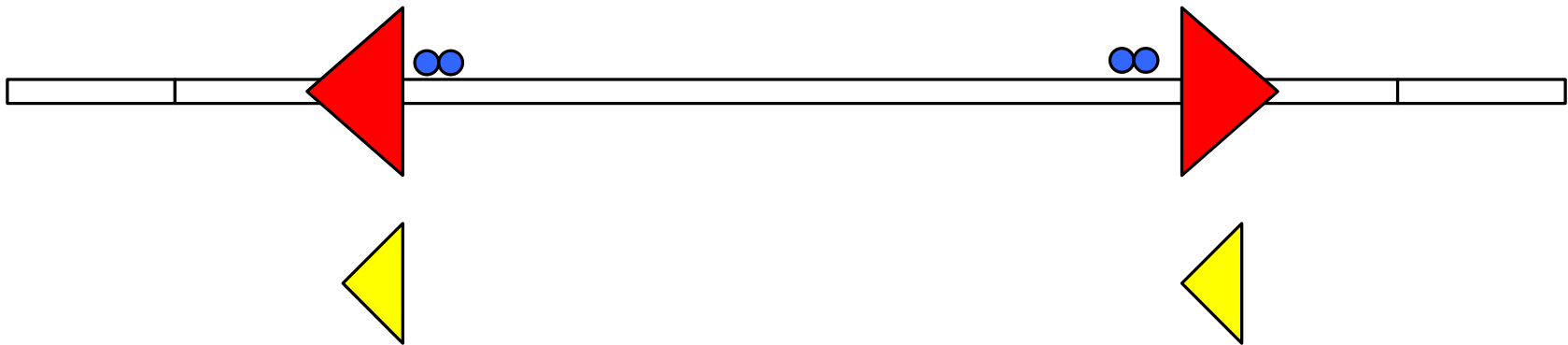
- Line section becomes vacant
- Line Block locking is released
- Overlap holds the Line Block



- Line Block is cleared



[Next](#)



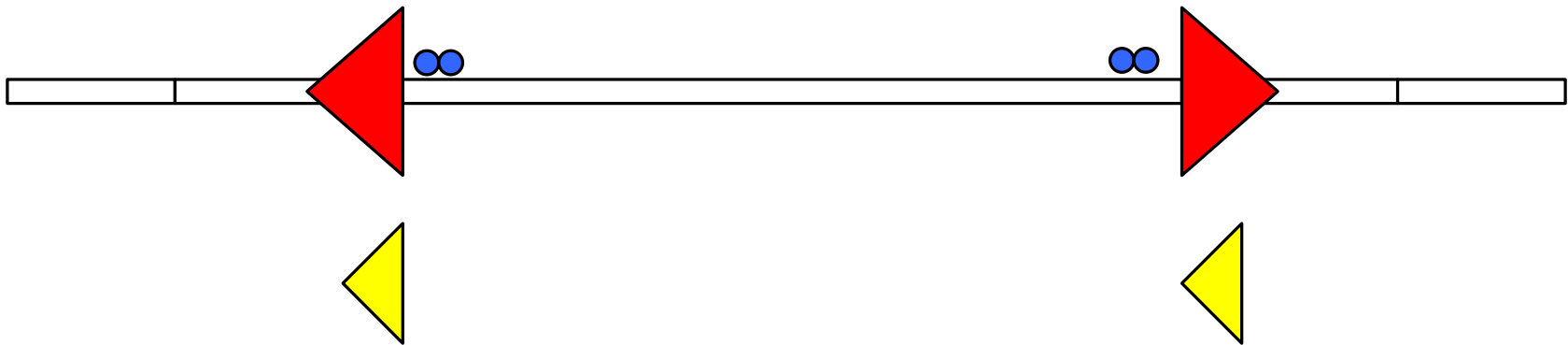
Return



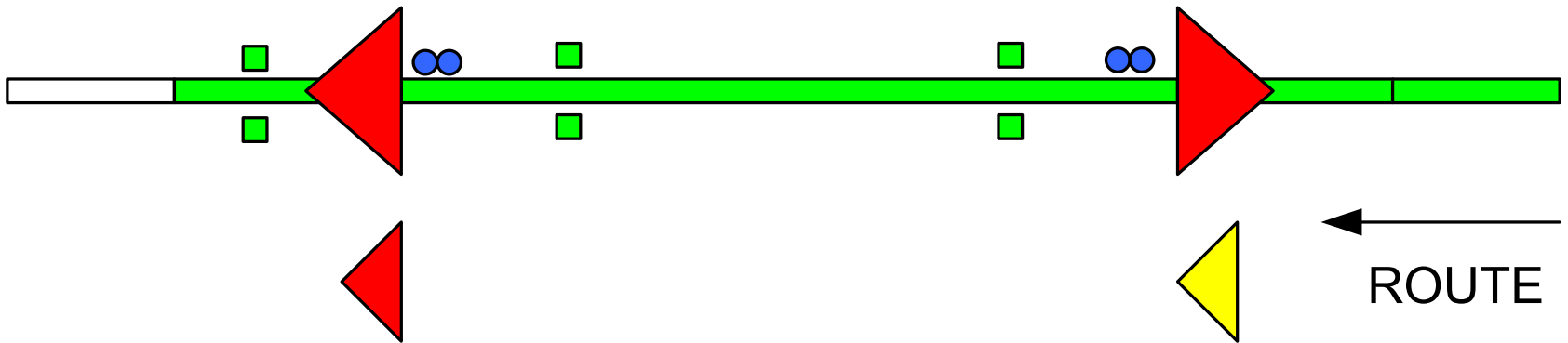
# Line Block

Running through STOP Signal

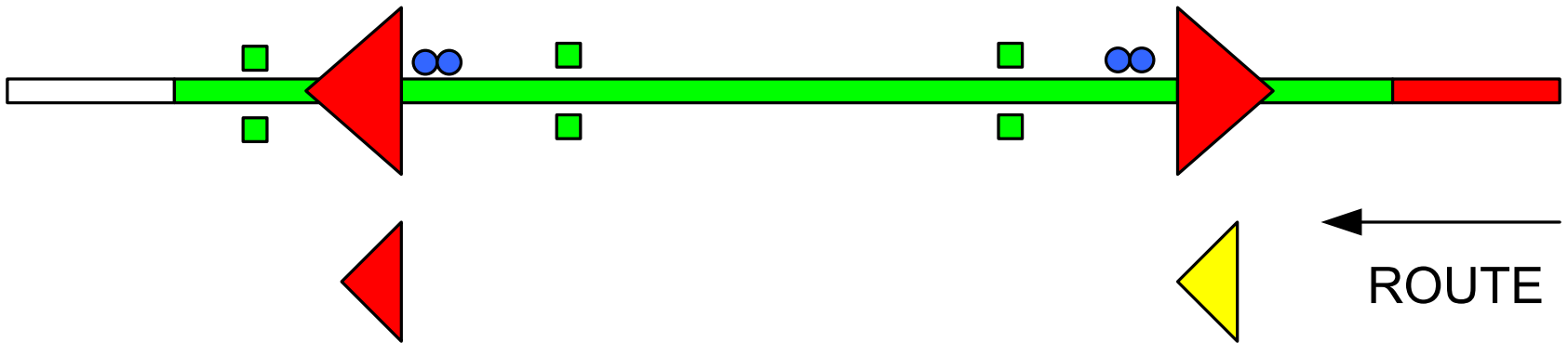




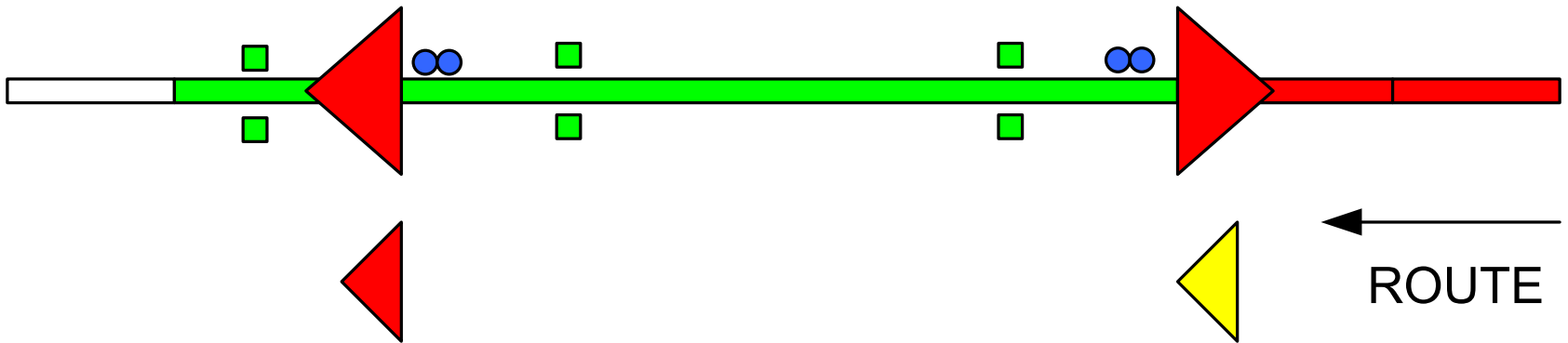
[Next](#)



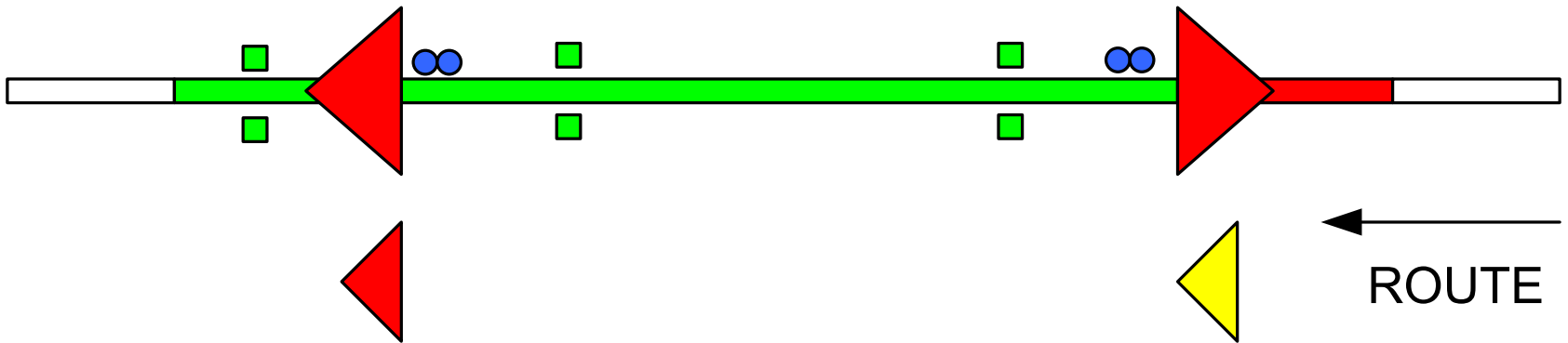
Next



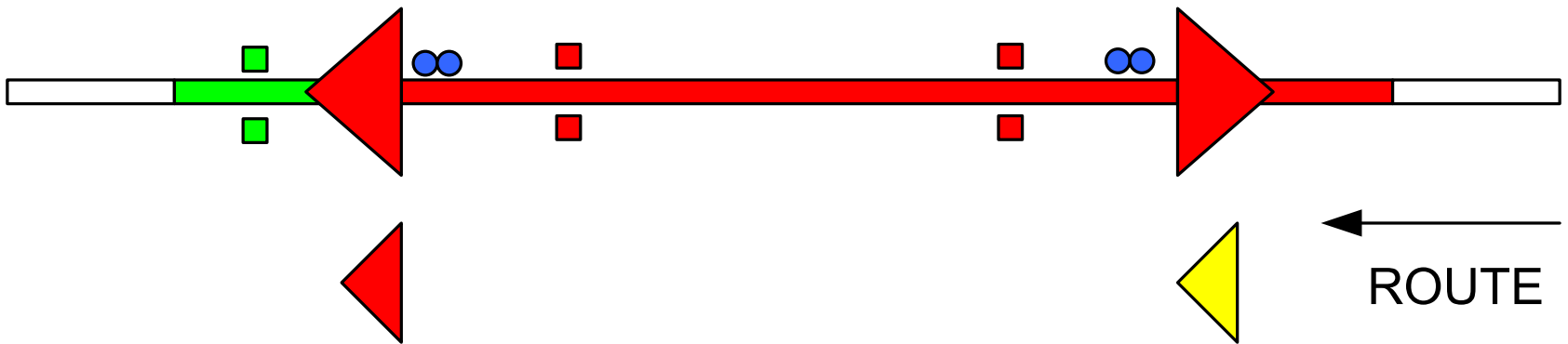
Next



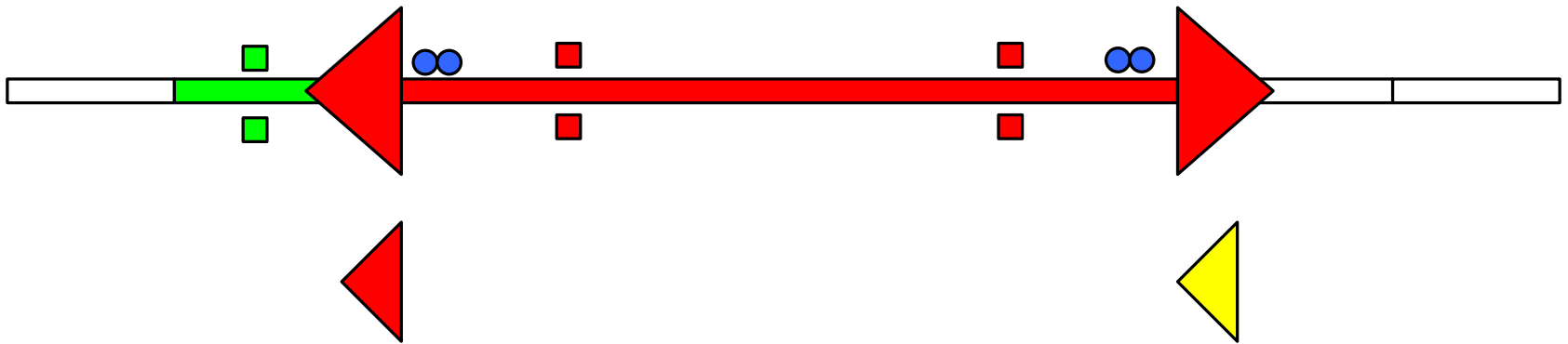
[Next](#)



[Next](#)



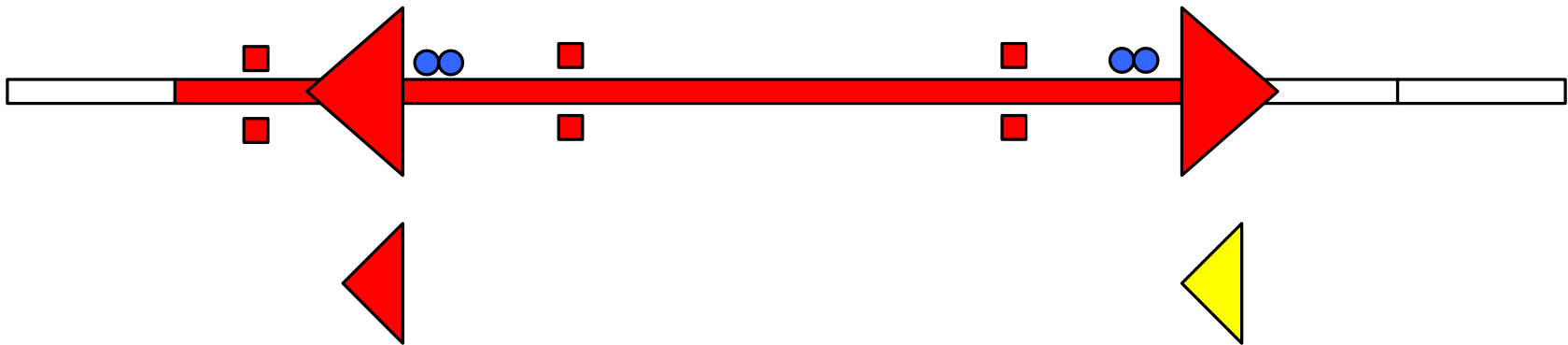
[Next](#)



[Next](#)

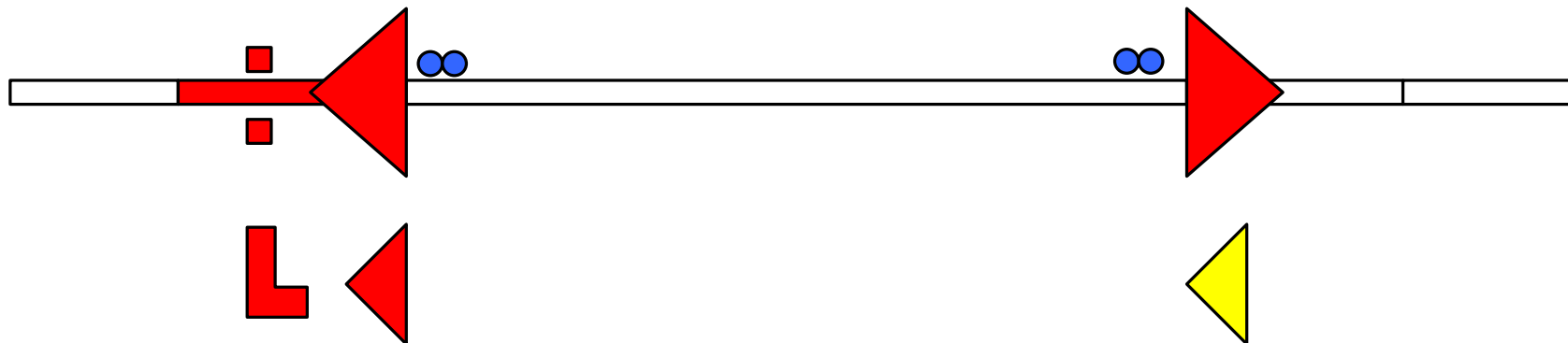


- Passing the Entry Signal against STOP aspect is detected

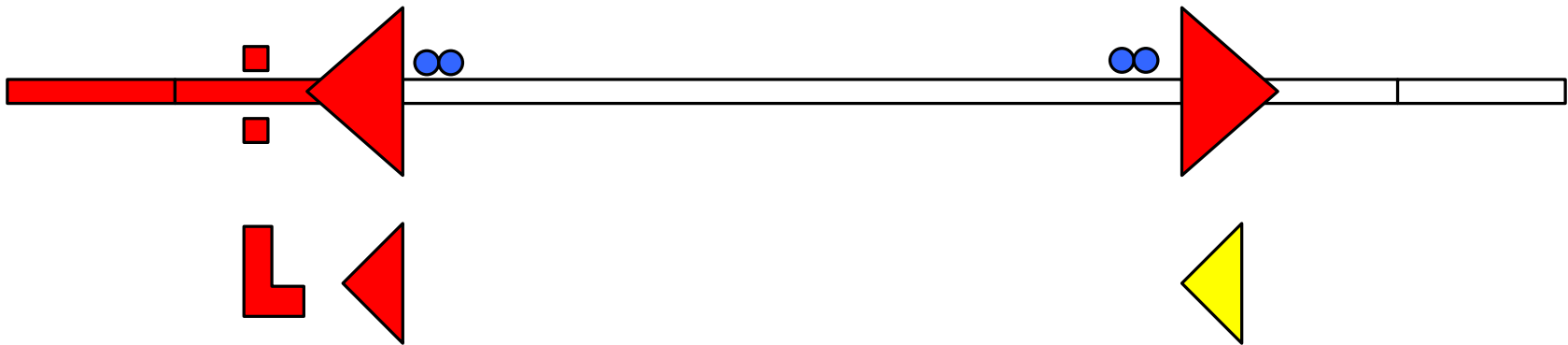


[Next](#)

- Abnormal line behaviour is indicated



[Next](#)

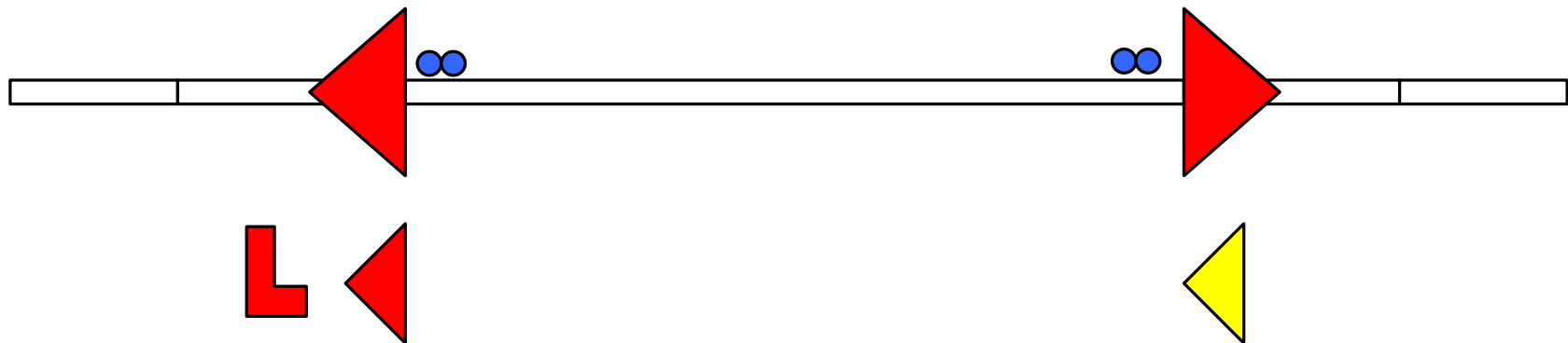


[Next](#)

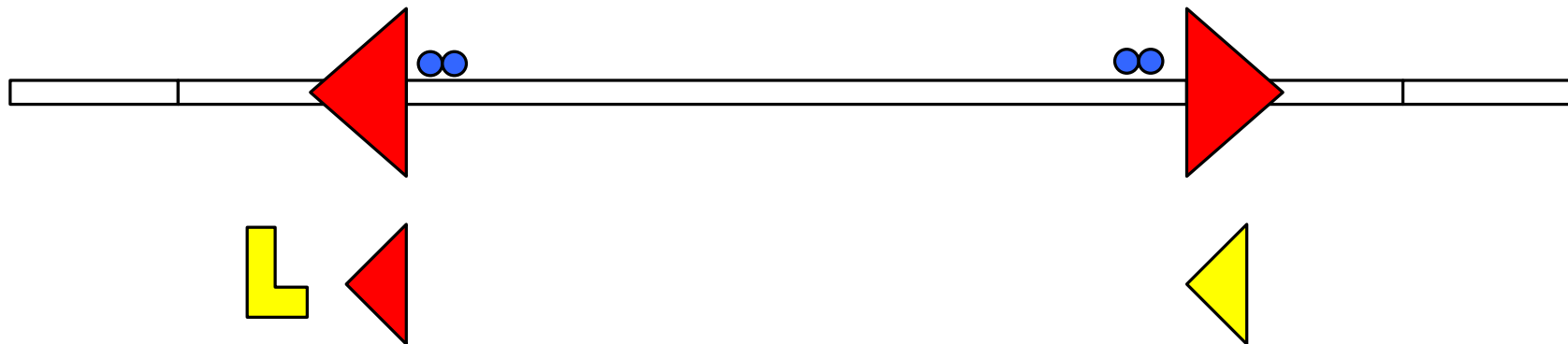


[Next](#)

- The Line Block will not become clear until an administrative command “LHP” is issued

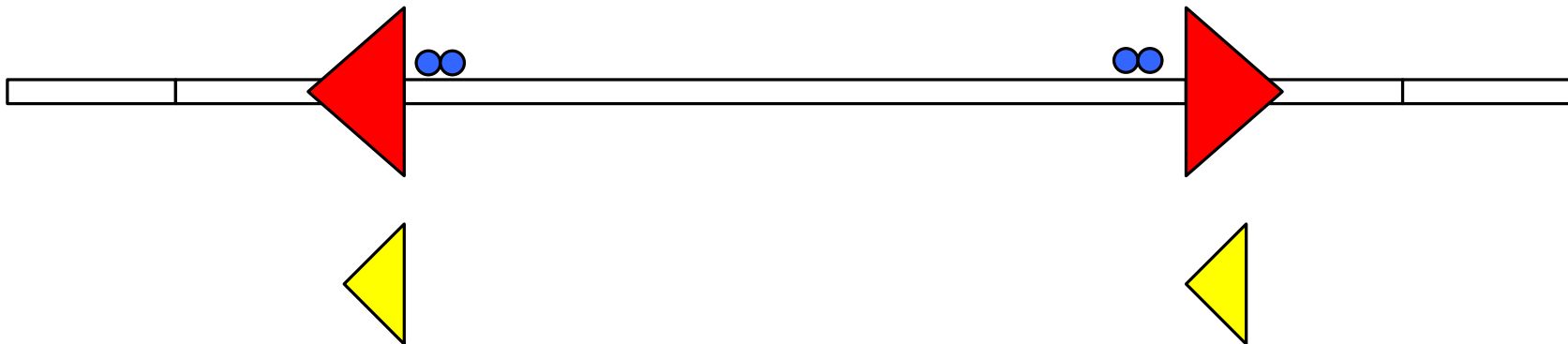


- The “LHP” command has been issued.



[Next](#)

- Line Block is Clear.



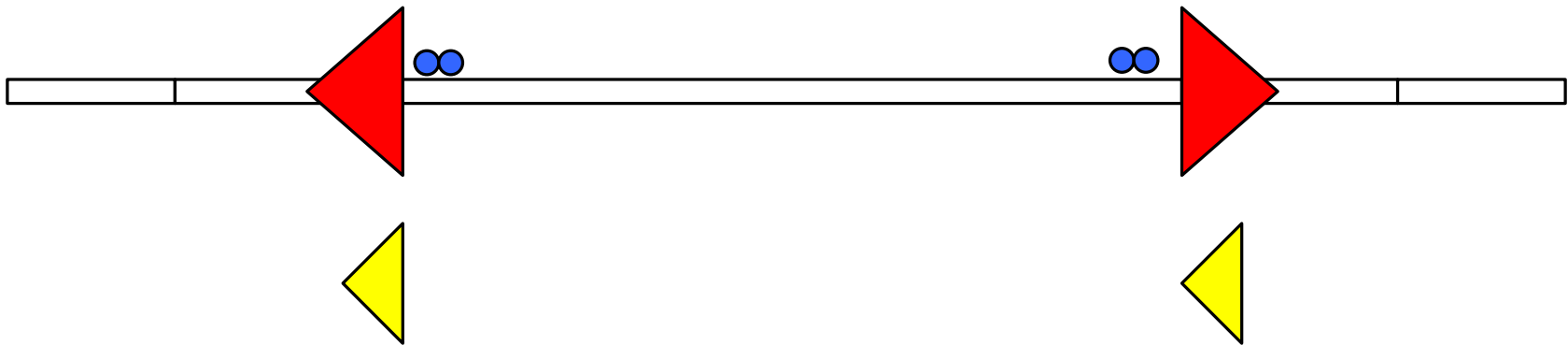
Return

# Line Block

Detecting abnormal Line behaviour

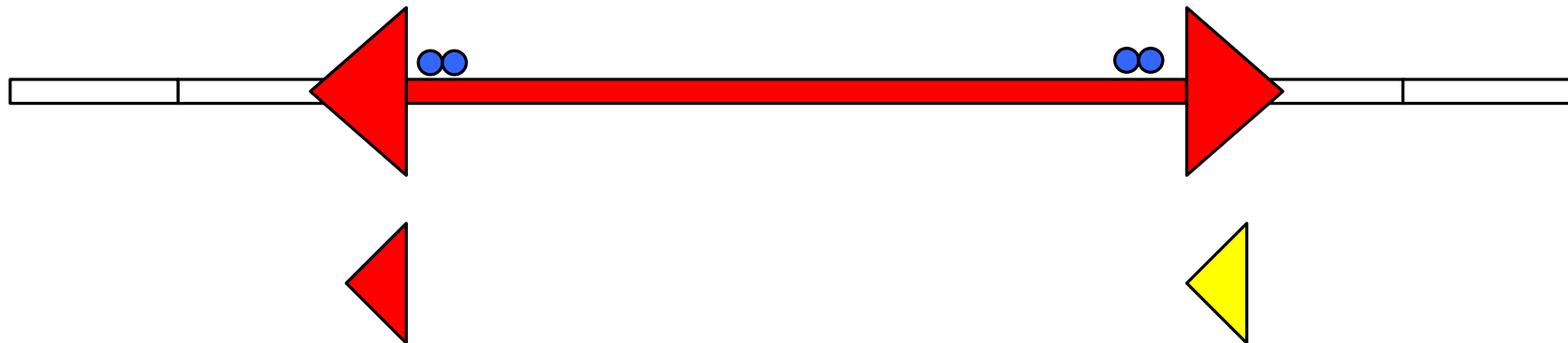






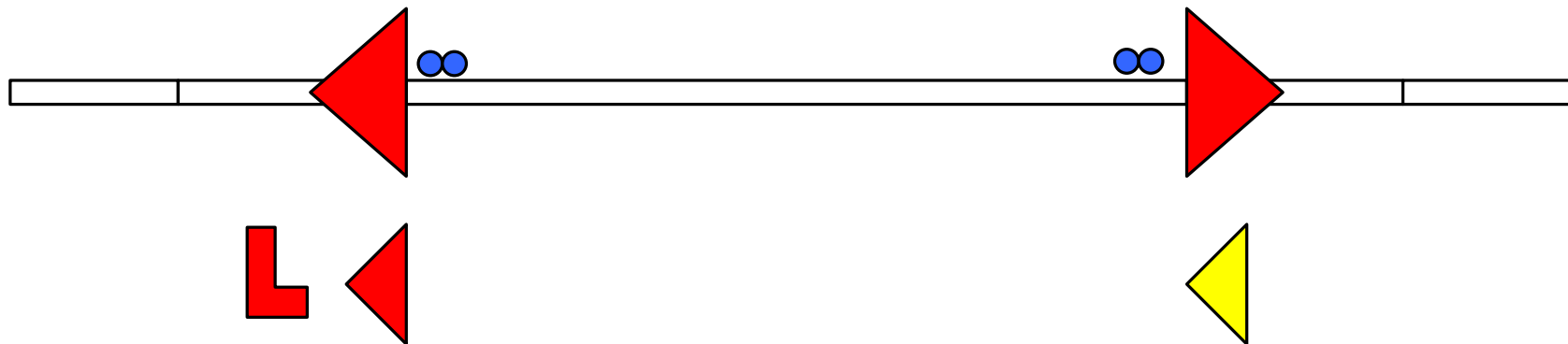
[Next](#)

- Line Section becomes occupied

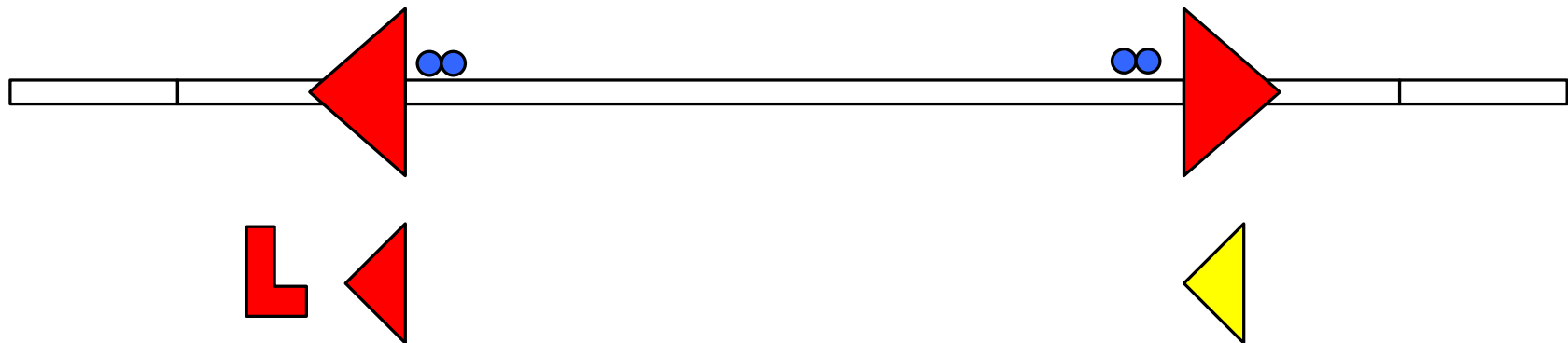


[Next](#)

- The Line Block becomes vacant without detected train movement exiting from the line
- Line becomes Emergency Blocked

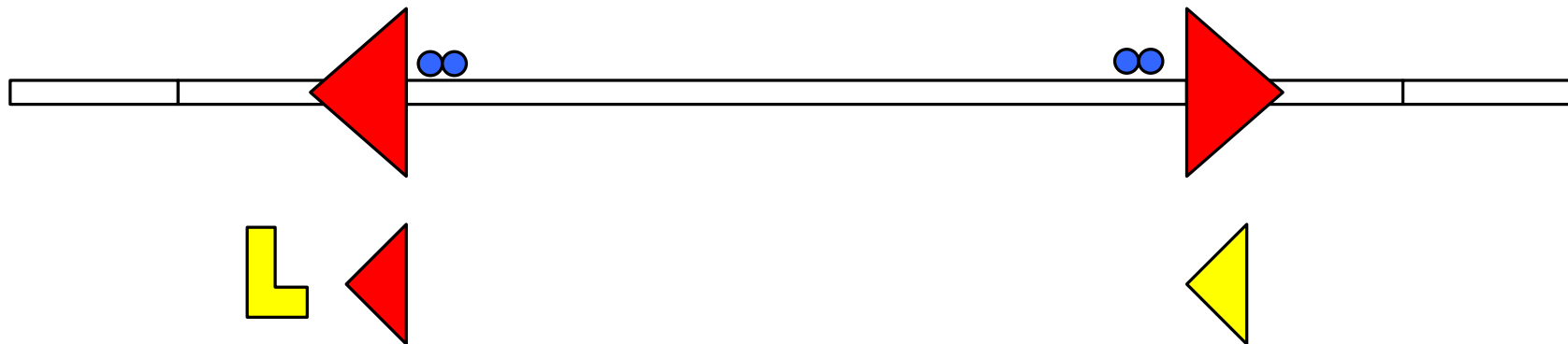


- The Line Block will not become clear until an administrative command “LHP” is issued



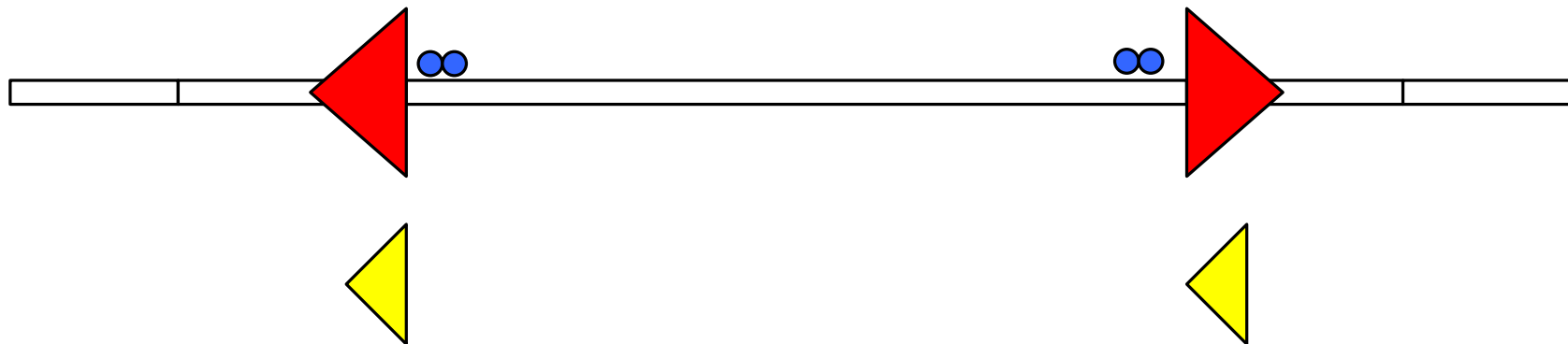
[Next](#)

- The “LHP” command has been issued.



[Next](#)

- Line Block is Clear.

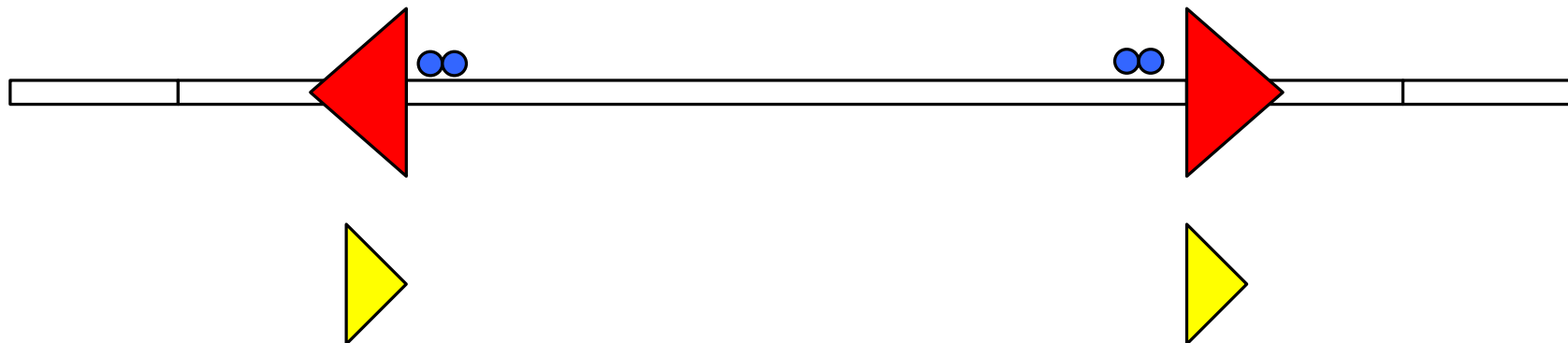


# Line Block

Detecting hostile train movement



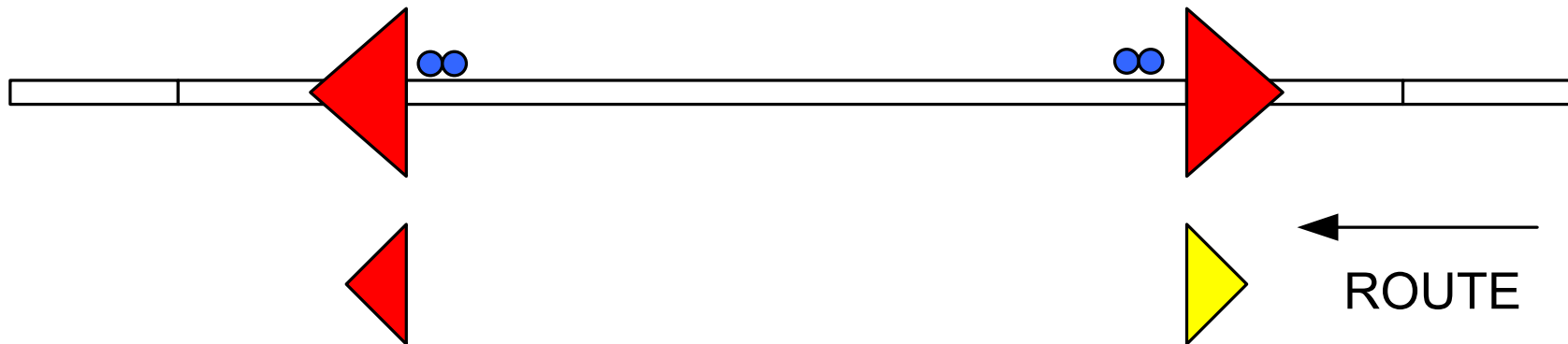
- Line Block Free



[Next](#)

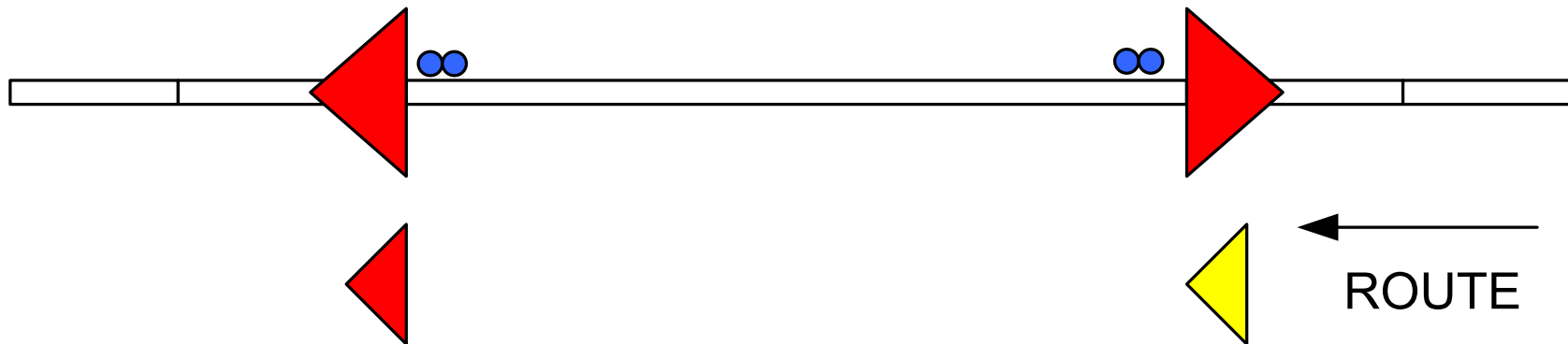


- Direction change initiated due to Exit Route



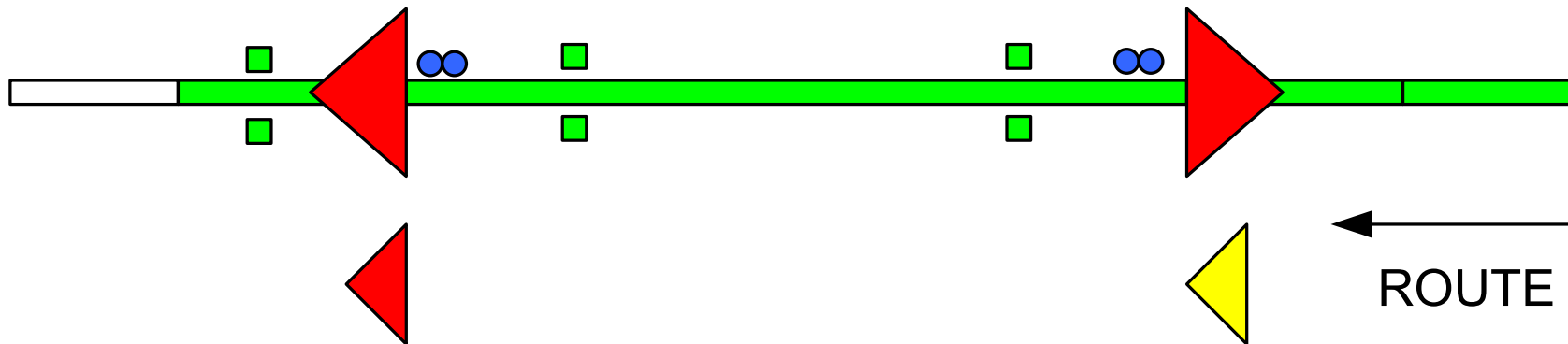
Next

- Direction change initiated due to Exit Route setting



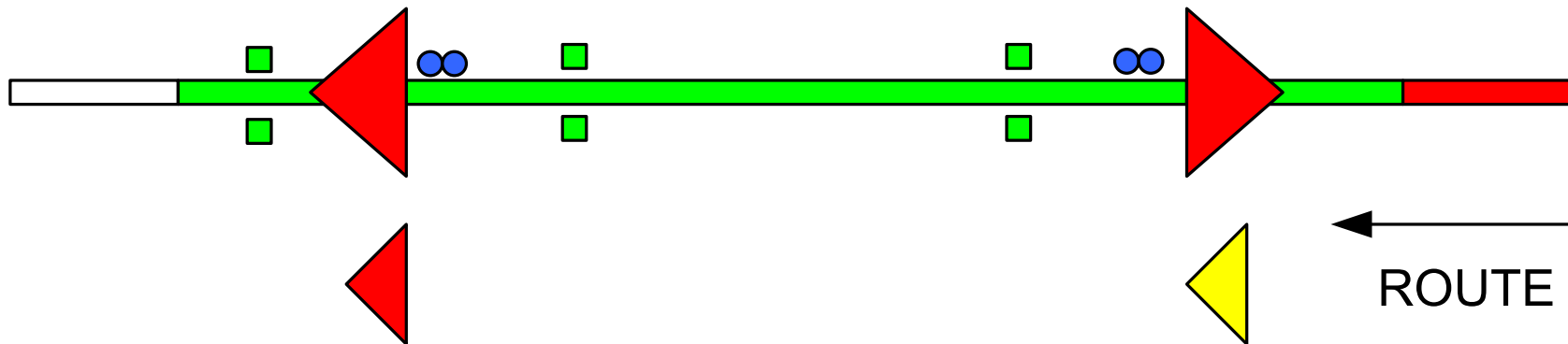
[Next](#)

- Line Block is locked for the Exit Route

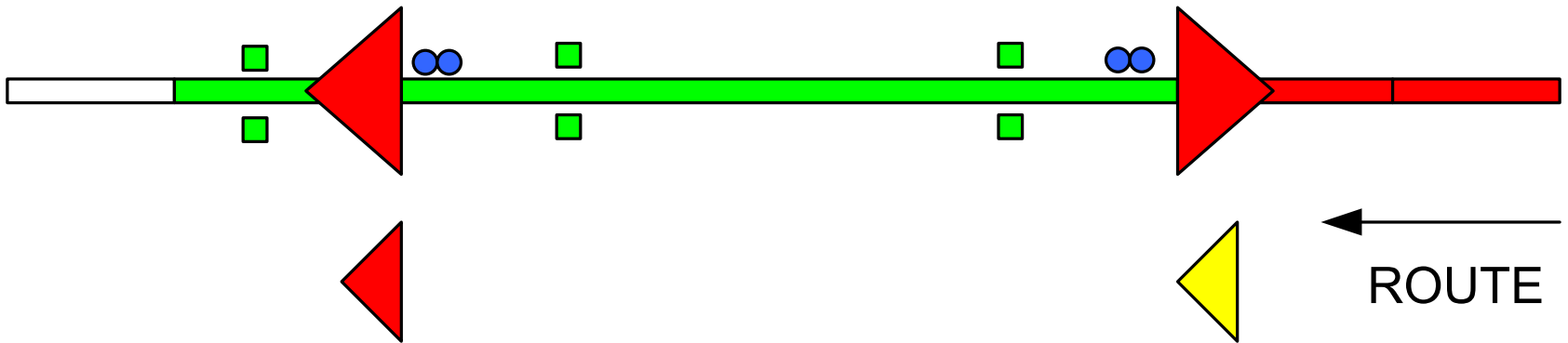


[Next](#)

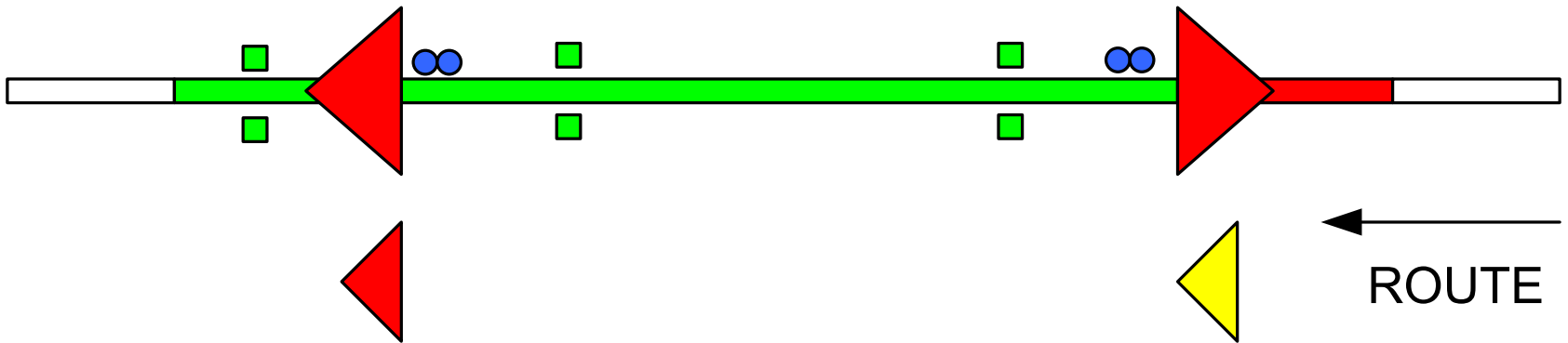
- Train moving towards the line



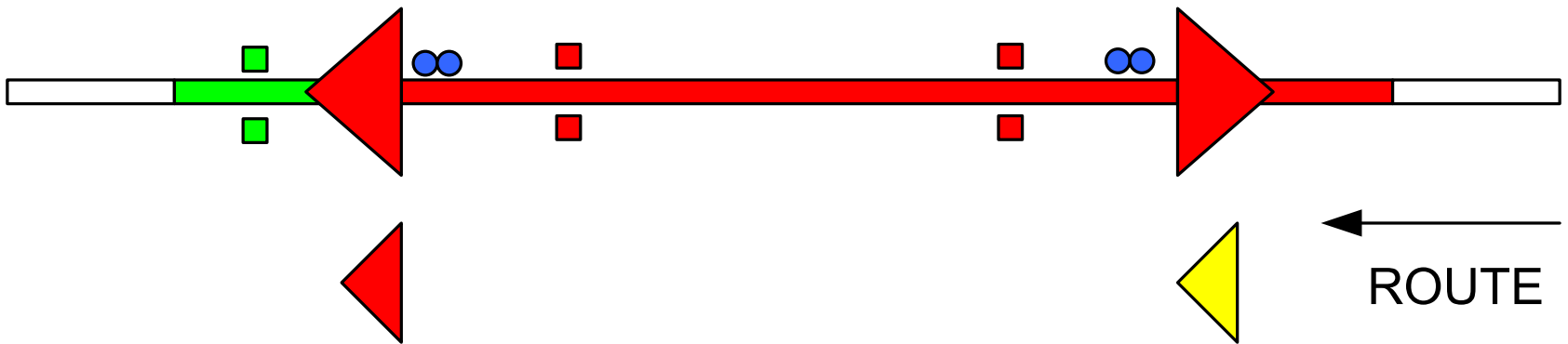
[Next](#)



[Next](#)

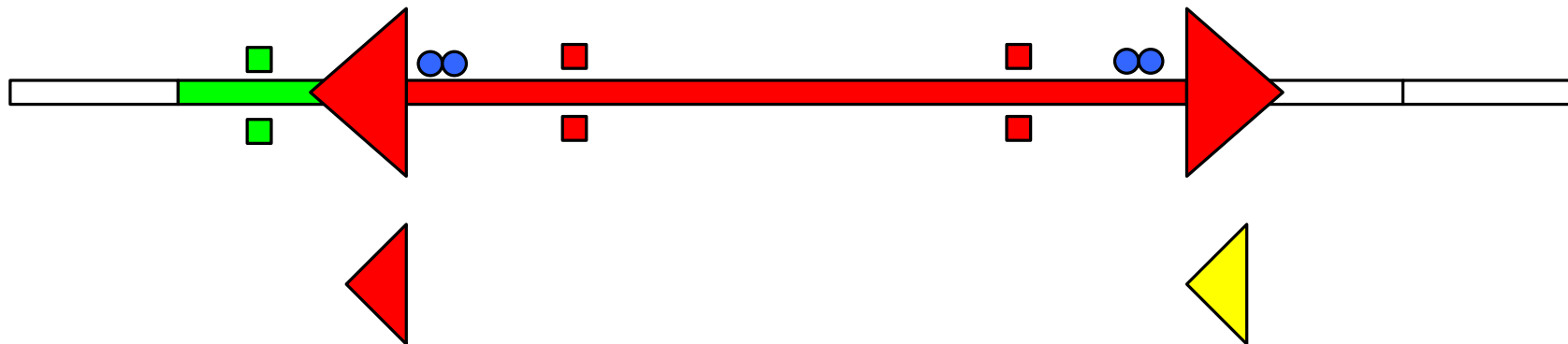


[Next](#)



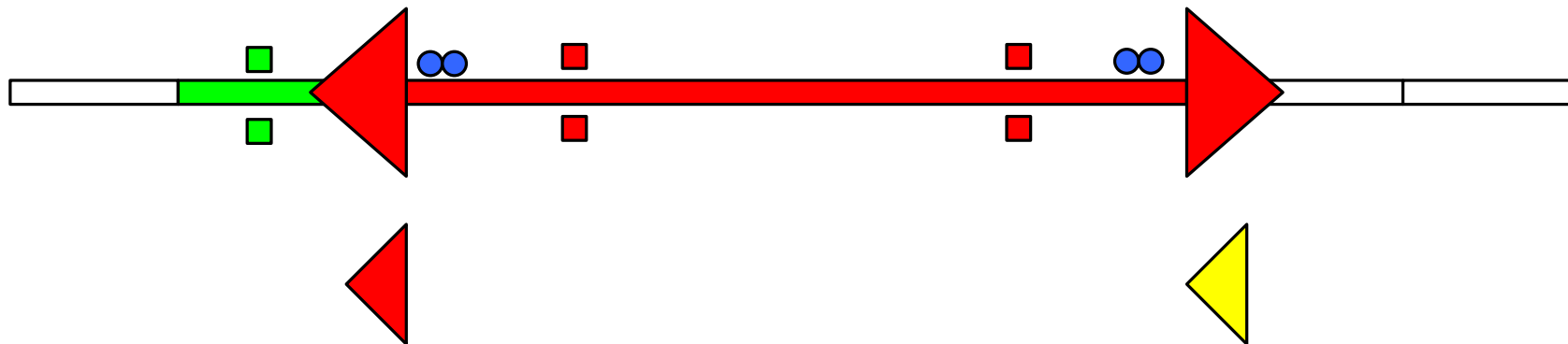
[Next](#)

- Route is released
- Line Block locks the direction

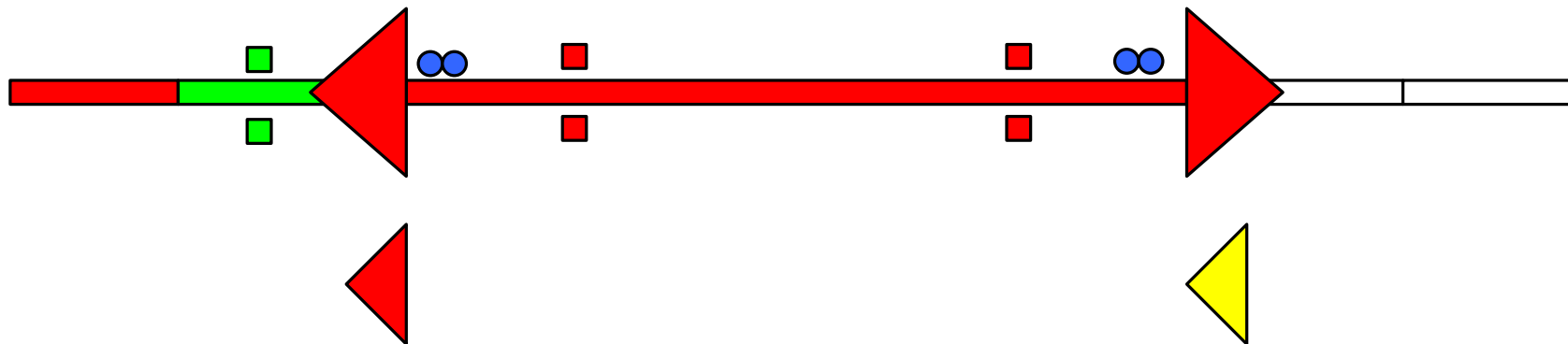




- Movement against the Locked Block

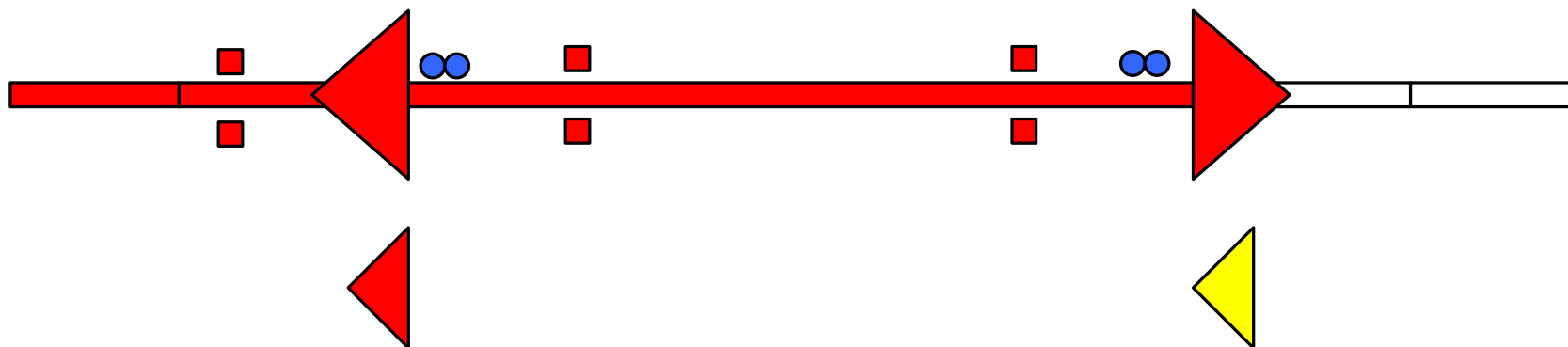


- Movement against the Locked Block



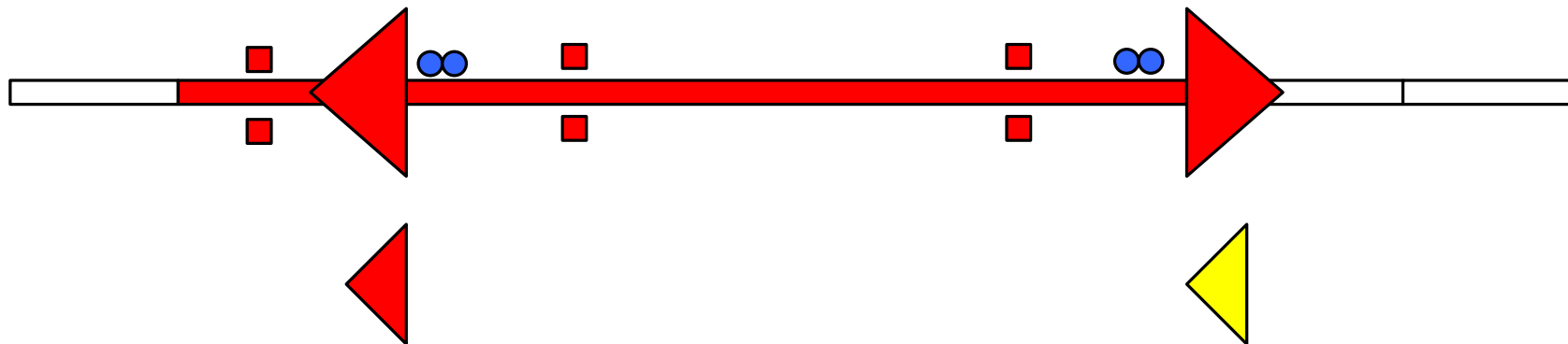
[Next](#)

- Movement against the Locked Block



[Next](#)

- Movement against the Locked Block



- Movement against the Locked Block is detected
  - By following the track sections after the entry signal
  - And /or by reading train event and direction from the axle counter



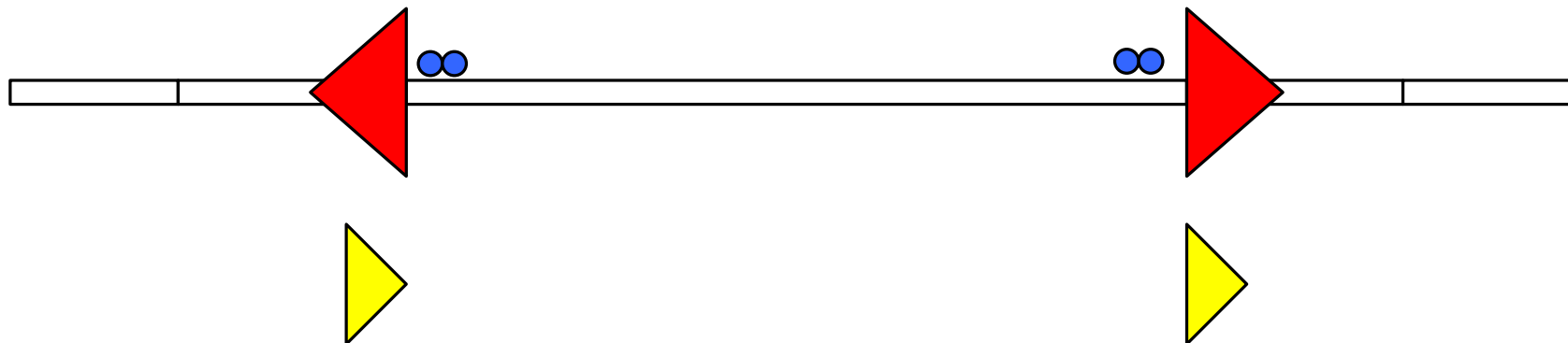
[Return](#)

# Line Block

Entry Route first

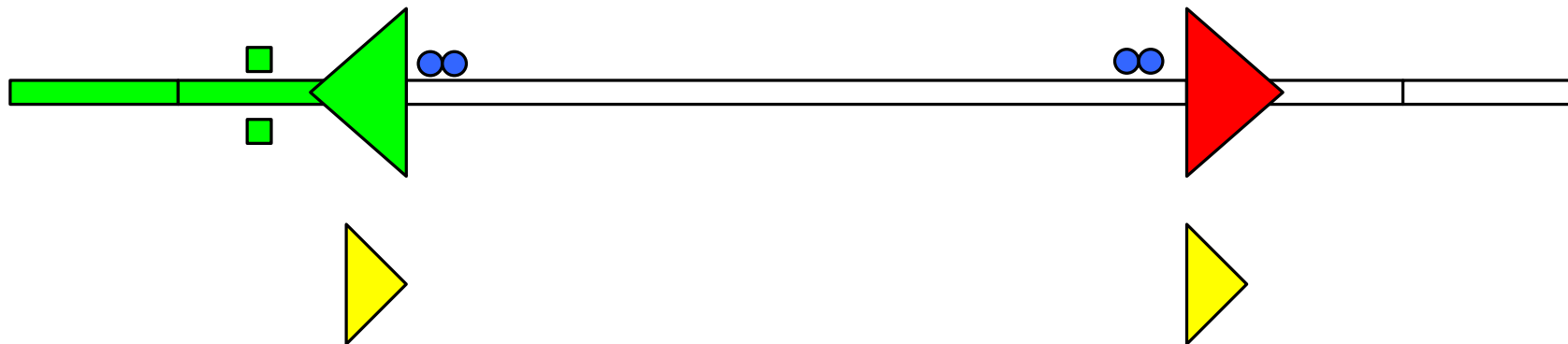


- Line Block Free



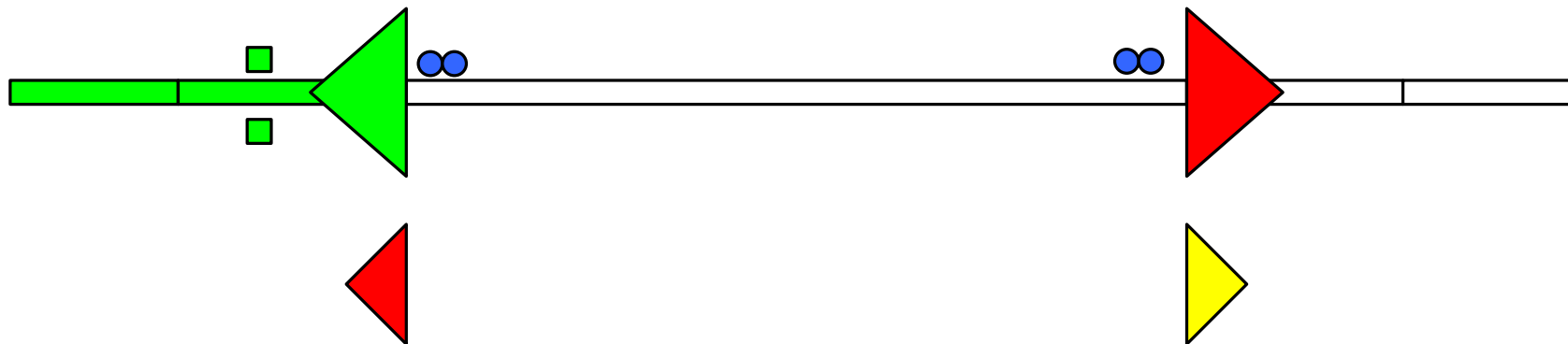
[Next](#)

- Entry Route set
- Direction may still be turned



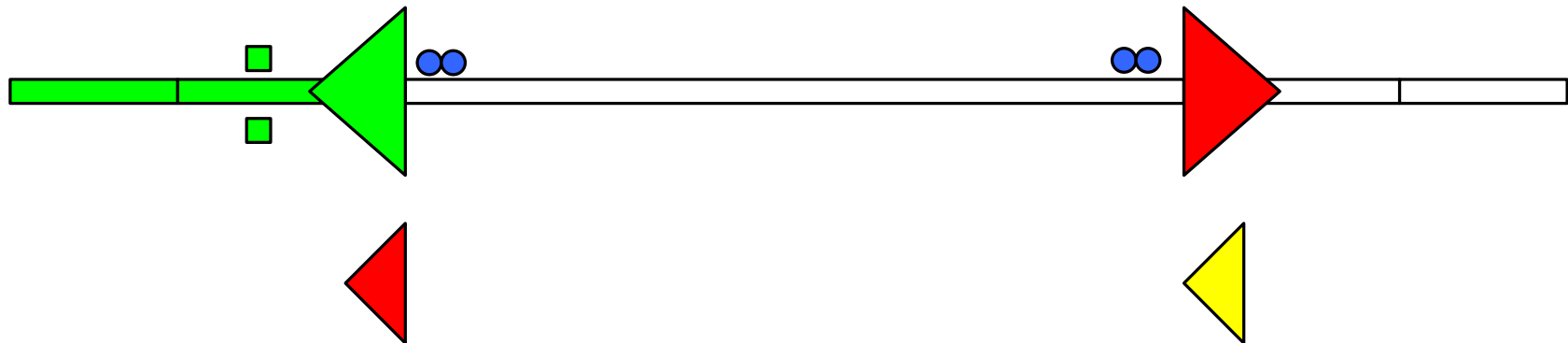


- Direction may be turned
- Command issued



[Next](#)

- Line Block direction may not be turned anymore



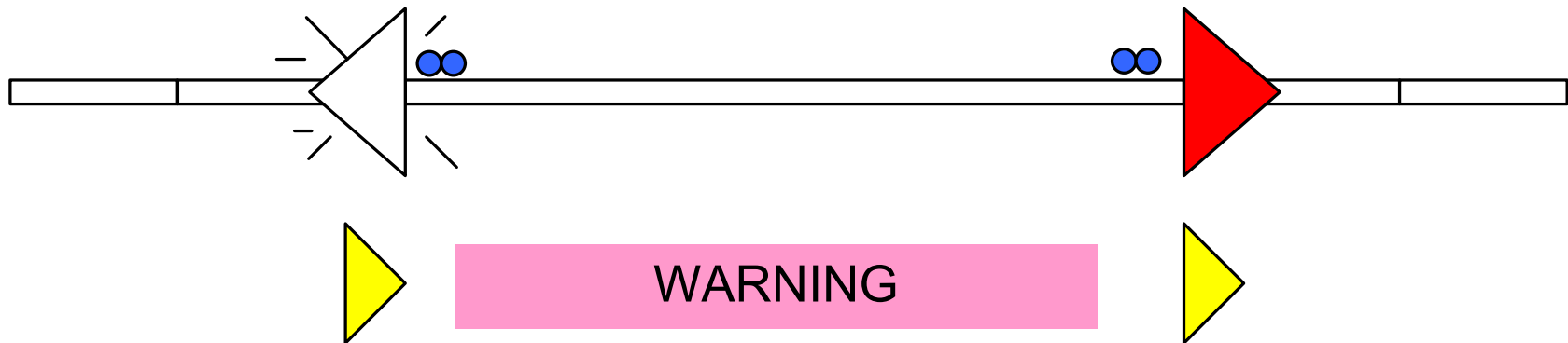
[Return](#)

# Line Block

## Destination signal monitoring



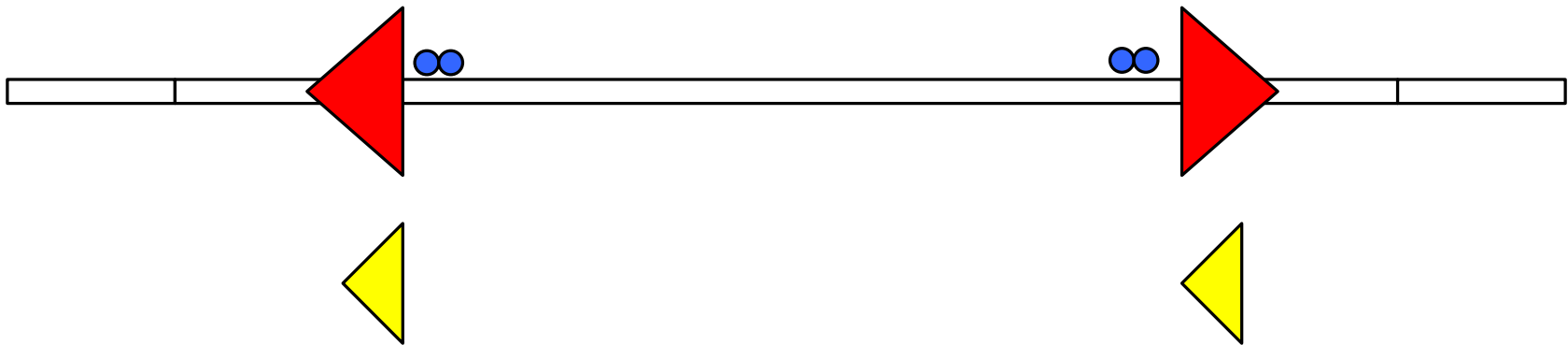
- Entry (destination) signal malfunction
- Direction may still be turned.
- In direction right-to-left route prevents PROCEED aspect



# Line Block

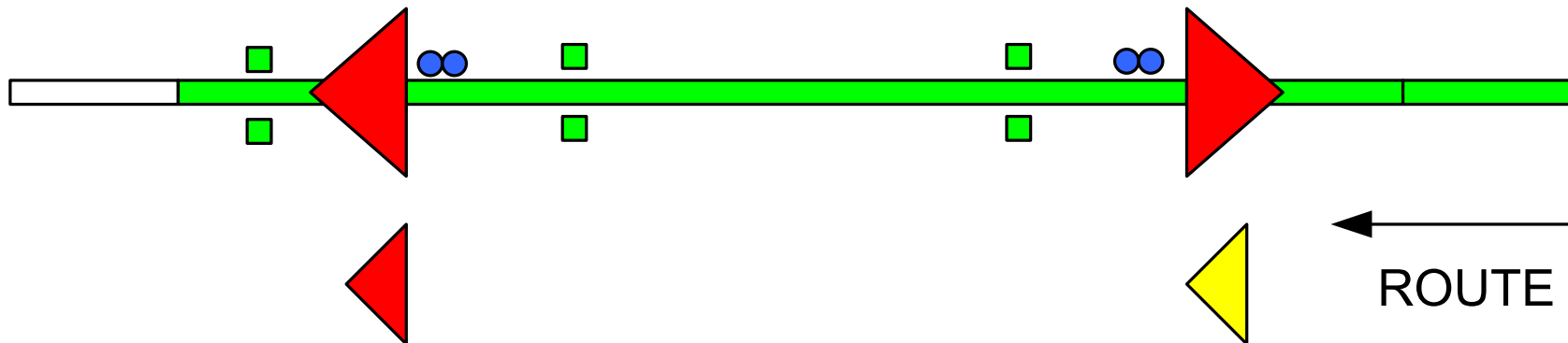
## Trailing movement monitoring





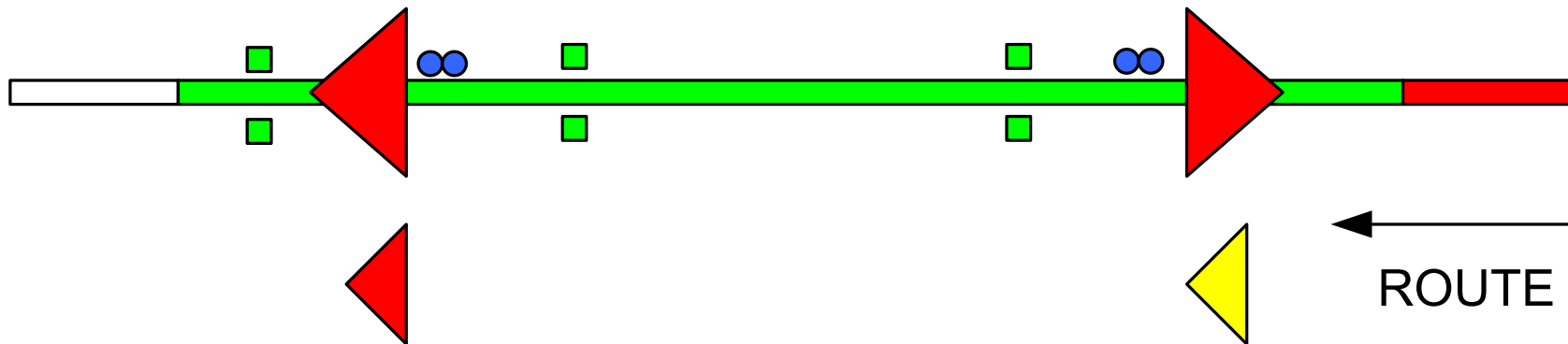
[Next](#)

- Train enters the Line



[Next](#)

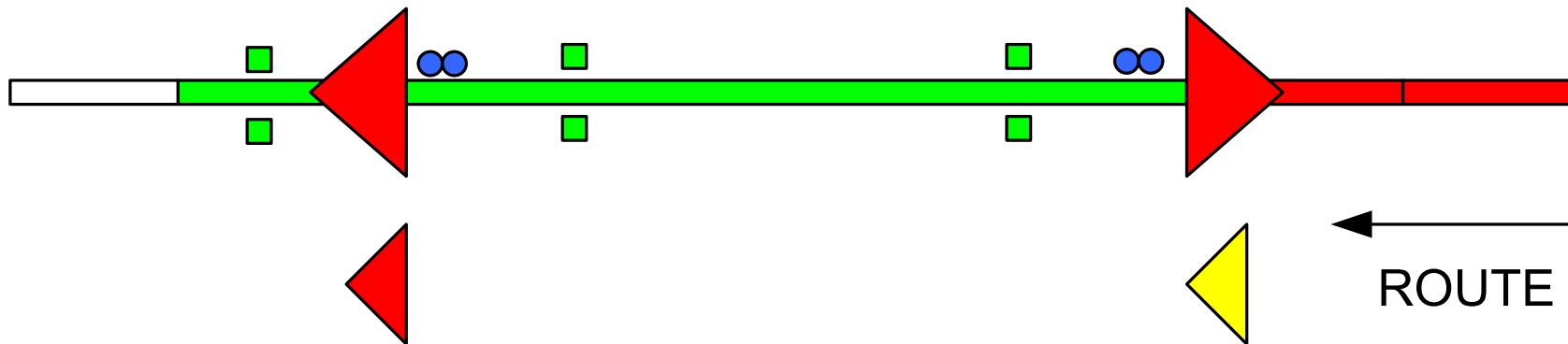
- Train enters the Line



[Next](#)

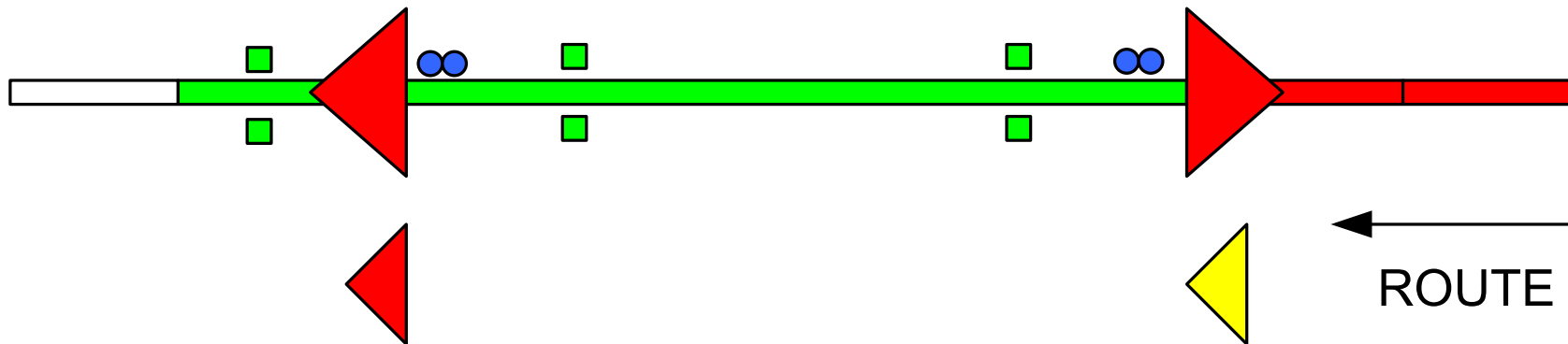


- Train enters the Line



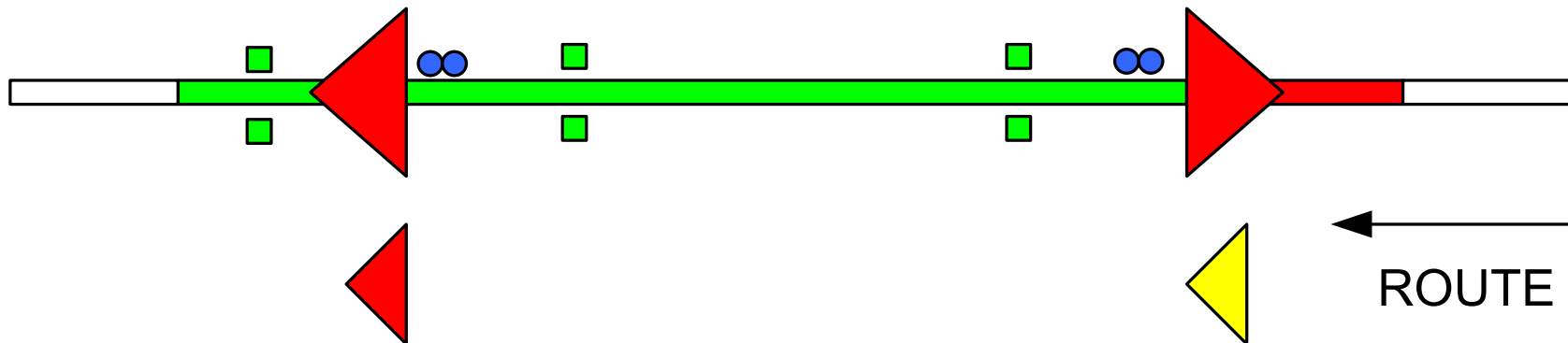
[Next](#)

- Train enters the Line



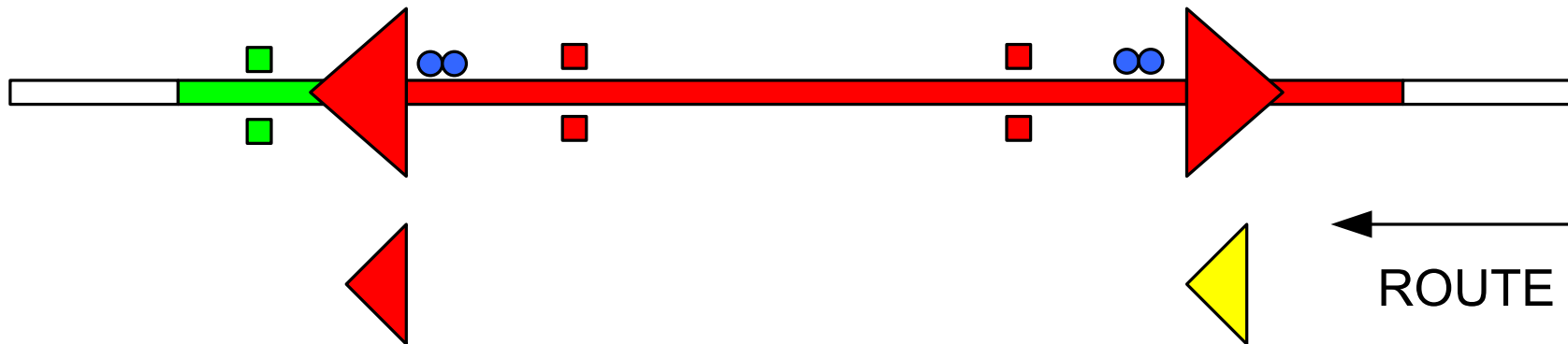
[Next](#)

- Train enters the Line

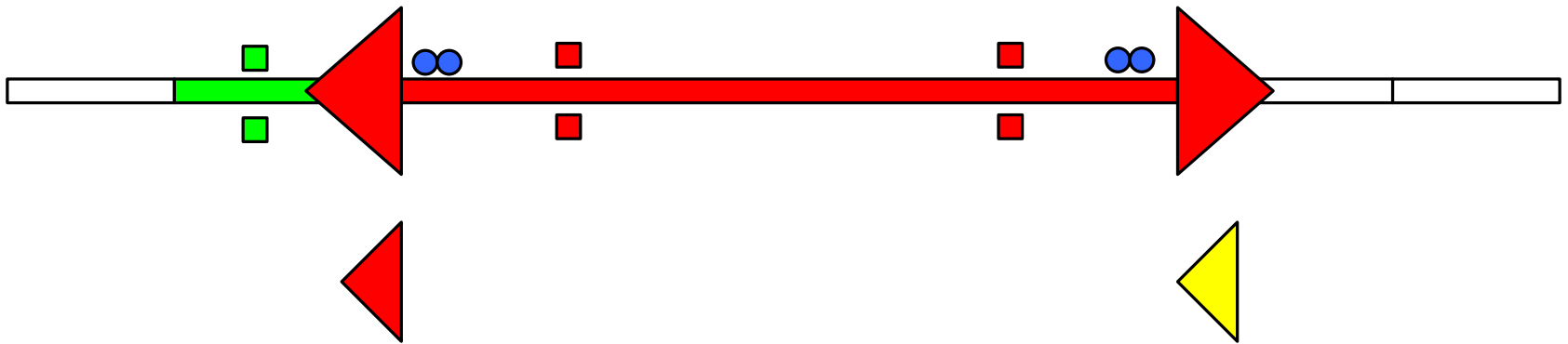


[Next](#)

- Train enters the Line

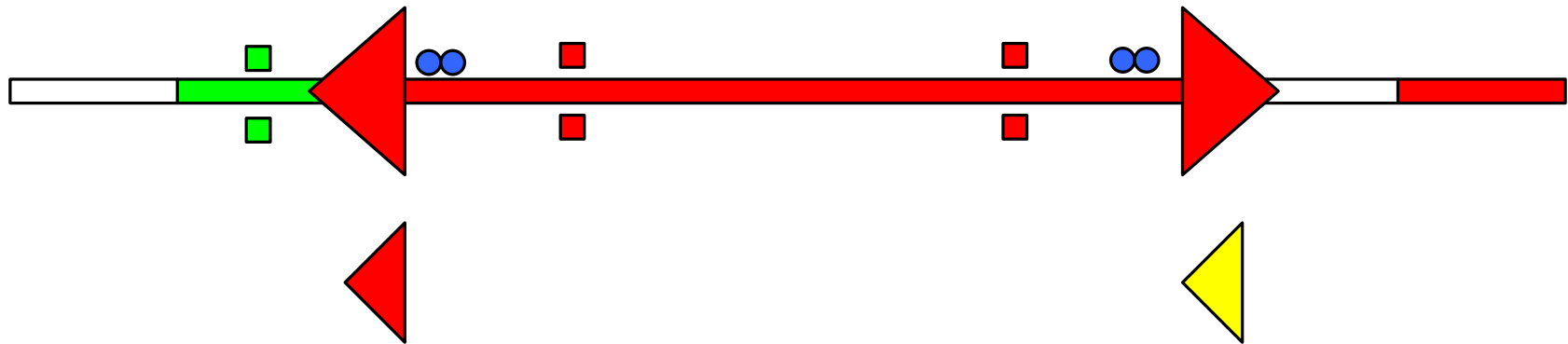


[Next](#)



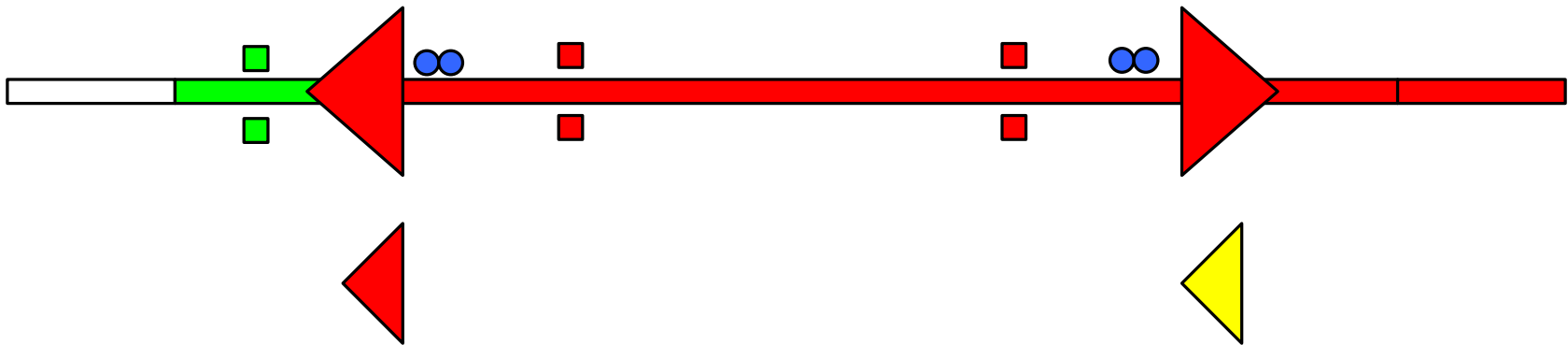
[Next](#)

- Second unit is trailing



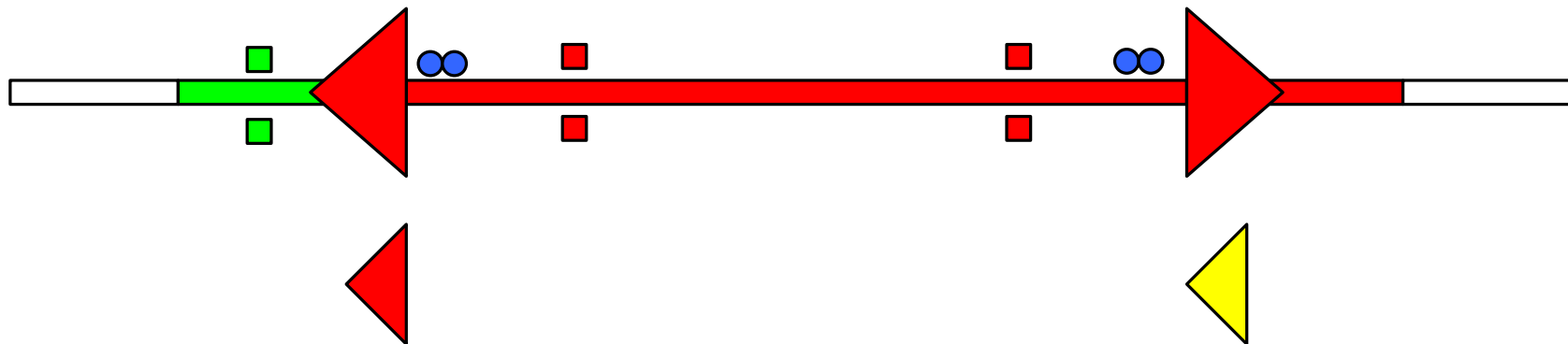
[Next](#)

- Second unit is trailing



[Next](#)

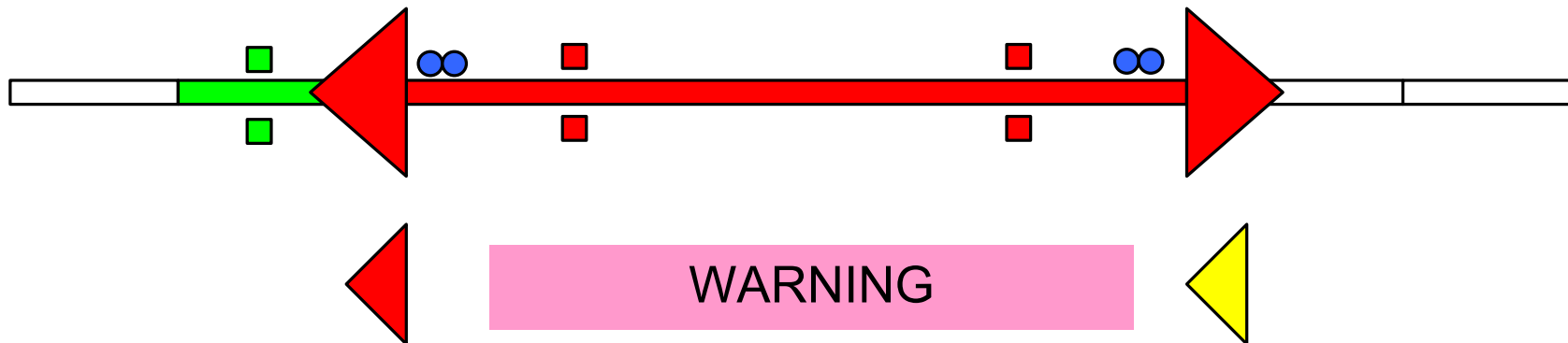
- Second unit is trailing



[Next](#)



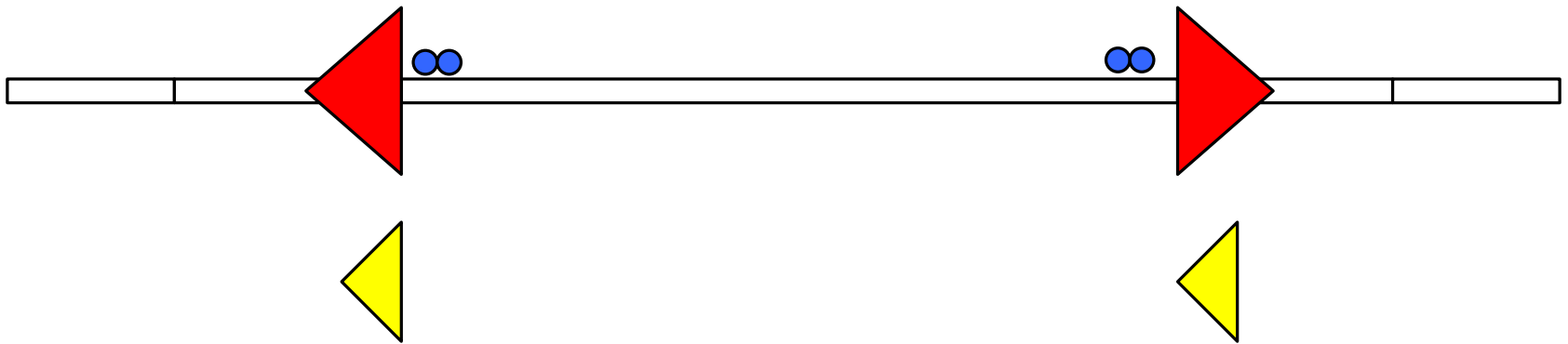
- Second unit enters the line
- A warning is launched



# Line Block

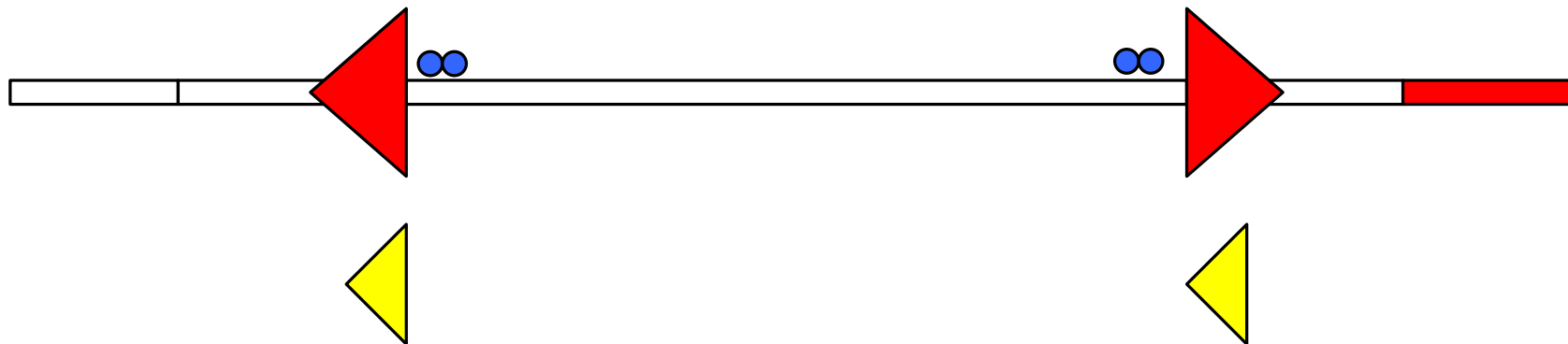
Train entering Line without set Route





[Next](#)

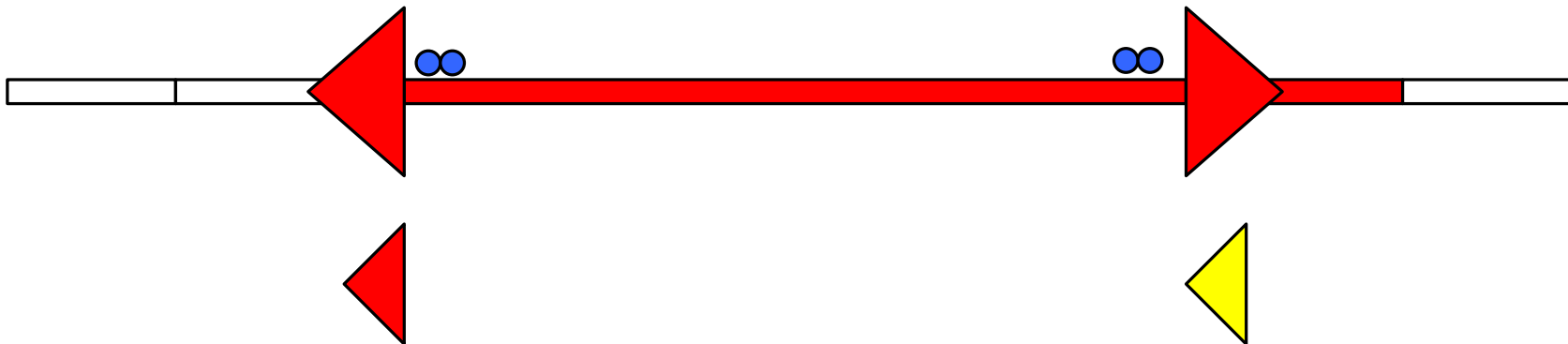
- Train moving towards the Line



- Train moving towards the Line
- Note: Changing direction is not possible anymore

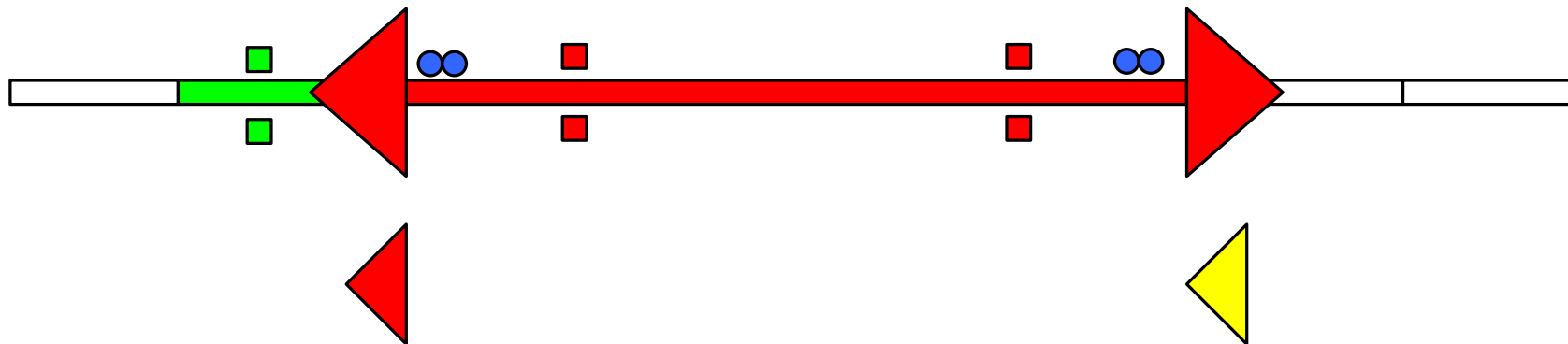


- Train moving towards the Line



[Next](#)

- Line Block becomes locked
- Train continues without Exit route



Return

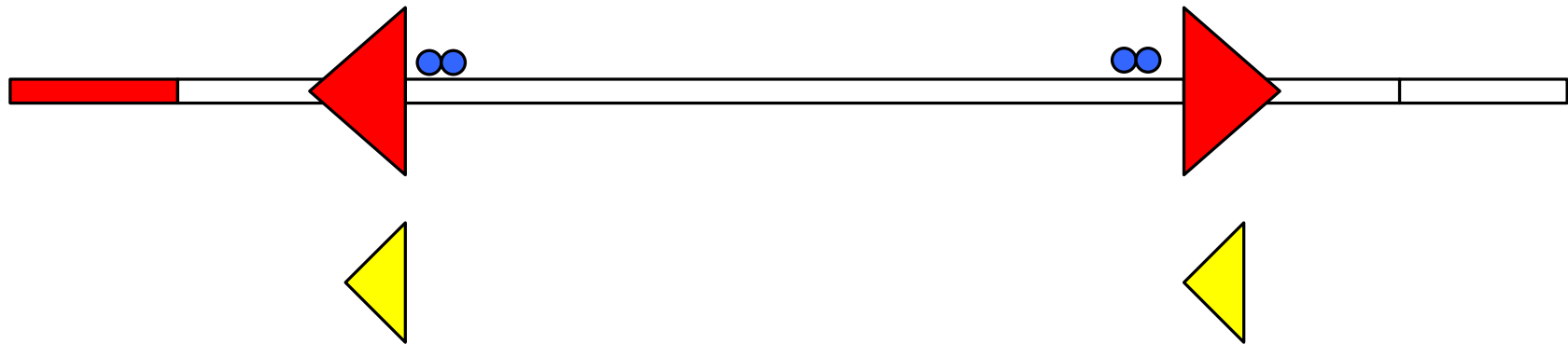
# Line Block

Train entering Line without set Route  
– Against Line Block direction



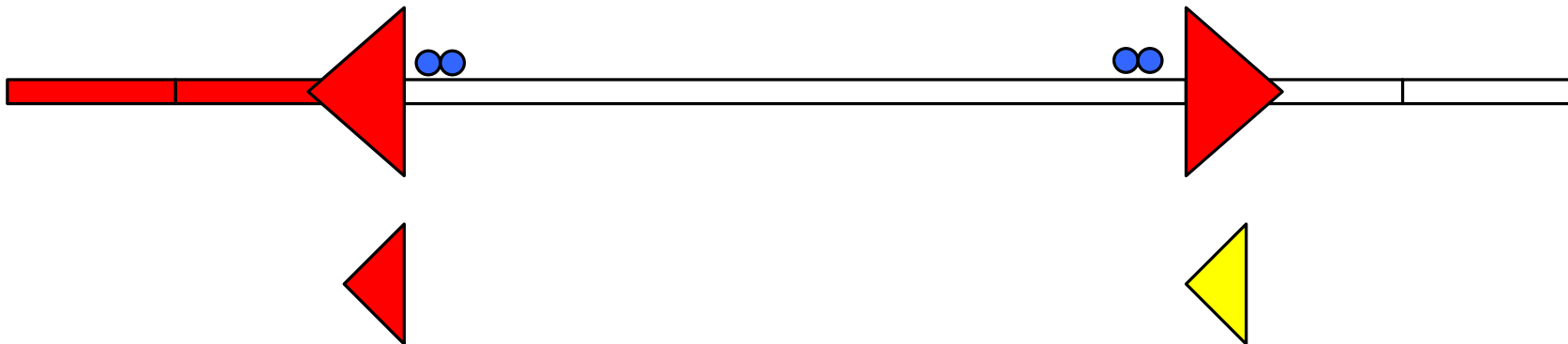


- Train closing against the Line Block direction



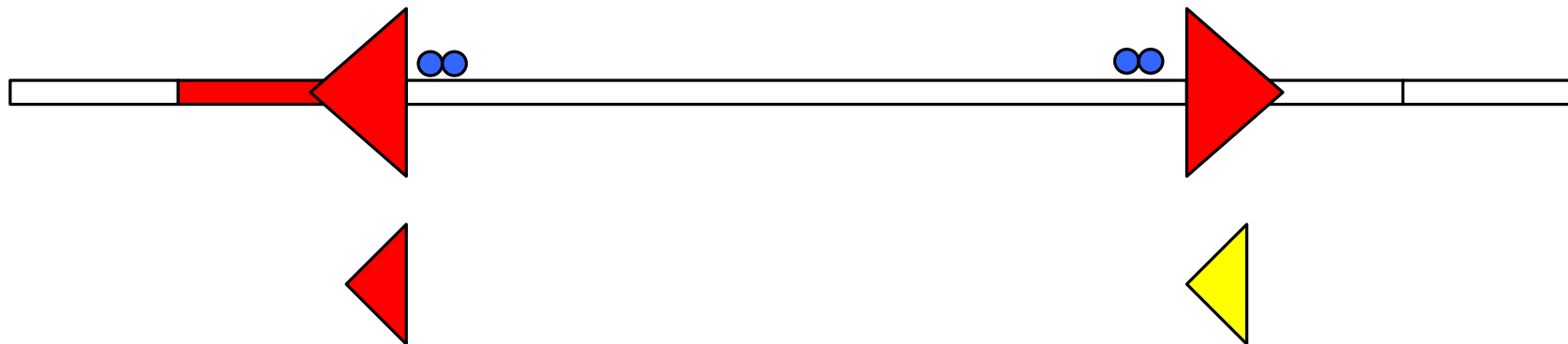
[Next](#)

- Train closing against the Line Block direction
- Note: Direction change is prohibited



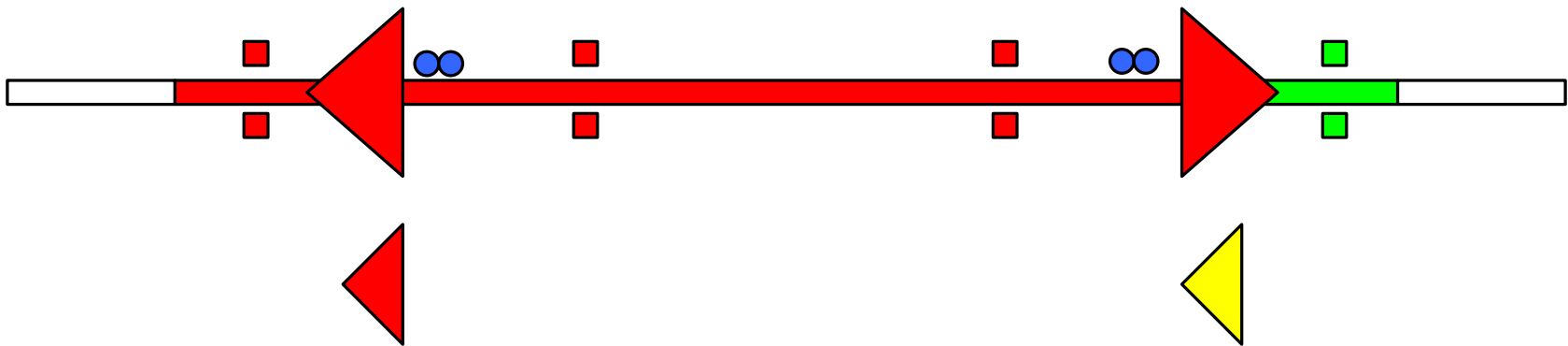
[Next](#)

- Train closing against the Line Block direction



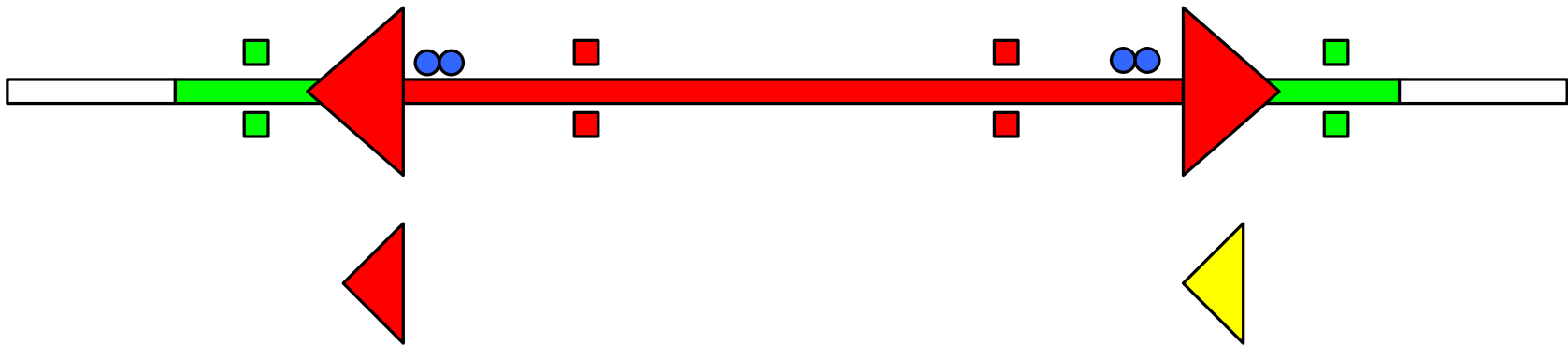
[Next](#)

- Train closing against the Line Block direction



[Next](#)

- Train has entered the line against the Line Block direction



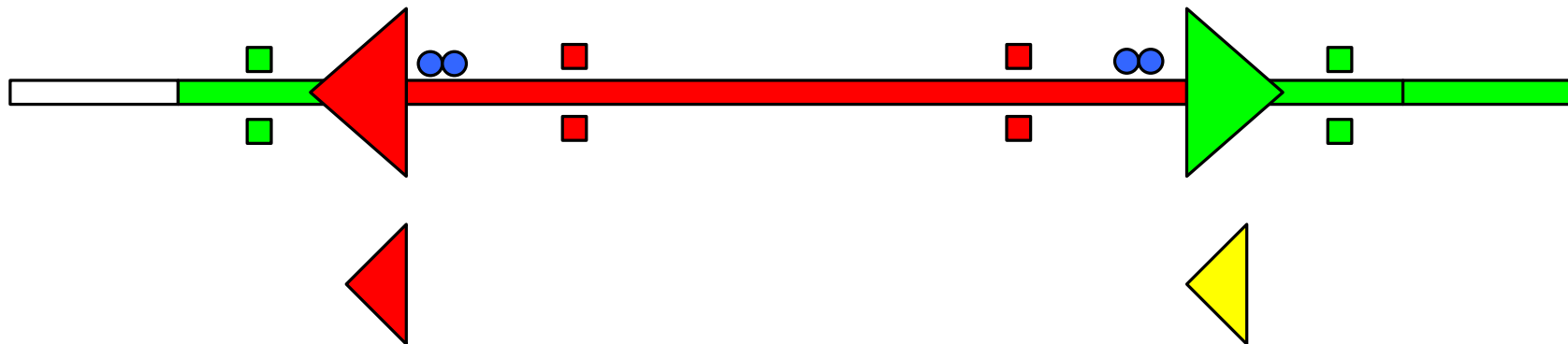
Return

# Line Block

Train enters against the Line Block  
direction

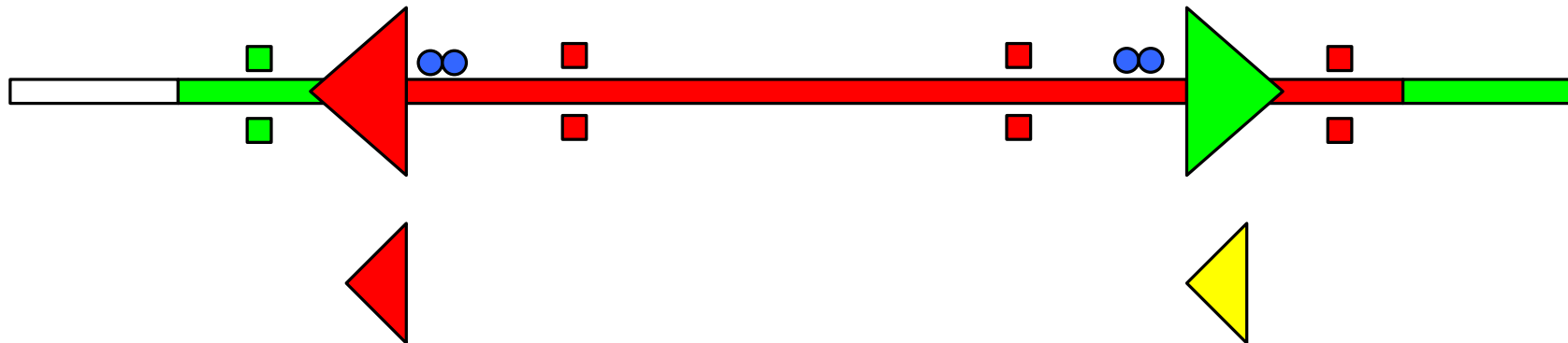


- Entry signal set against the Line Block



[Next](#)

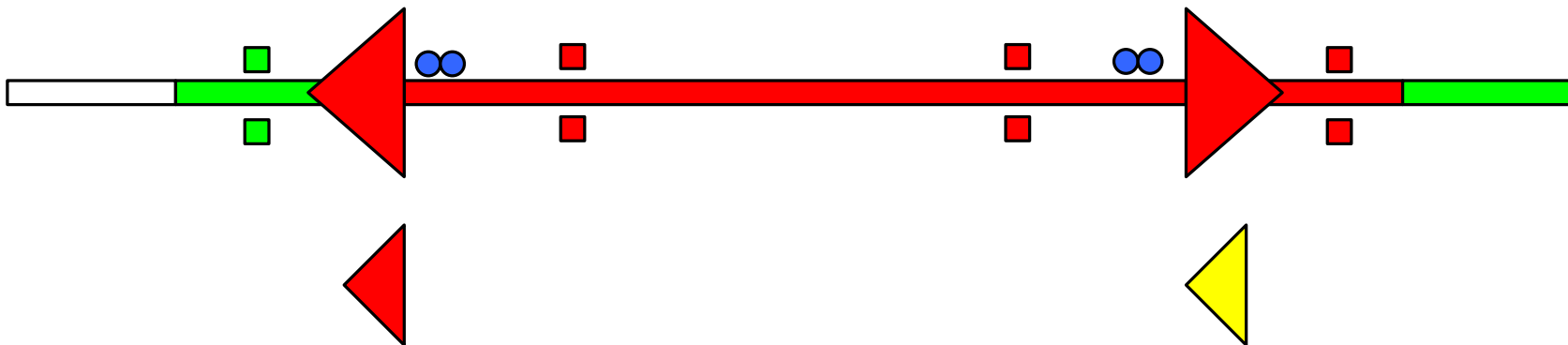
- Train enters the station



[Next](#)

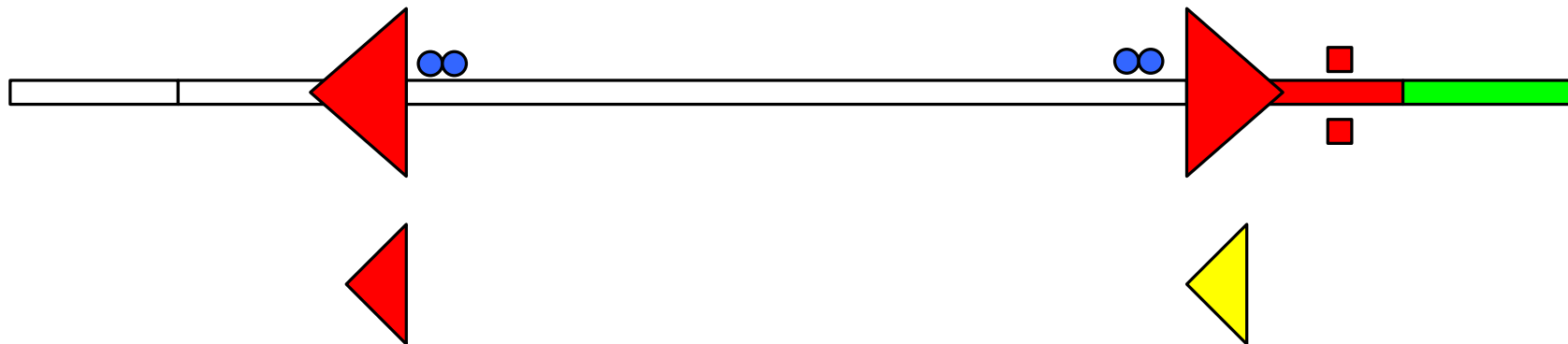


- Train enters the station



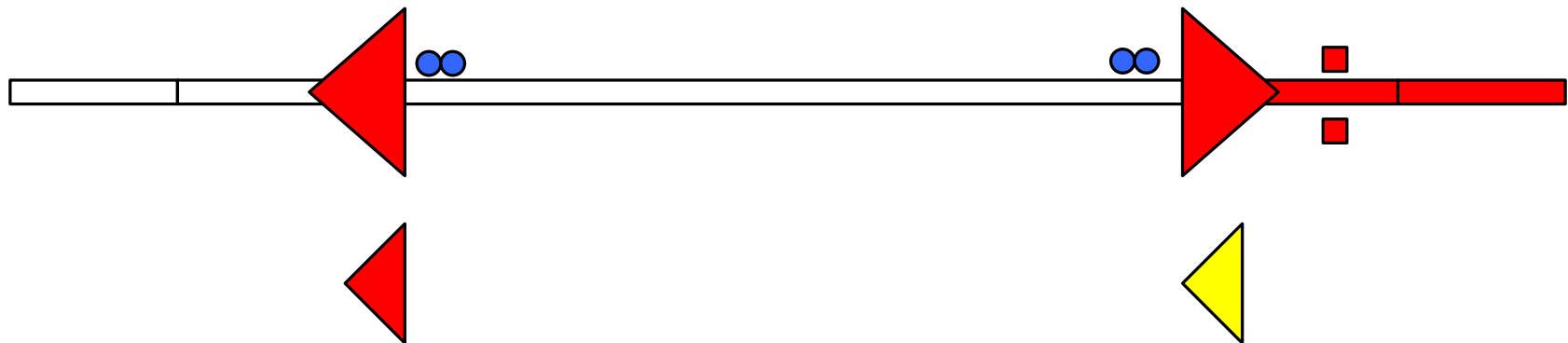
[Next](#)

- Train enters the station



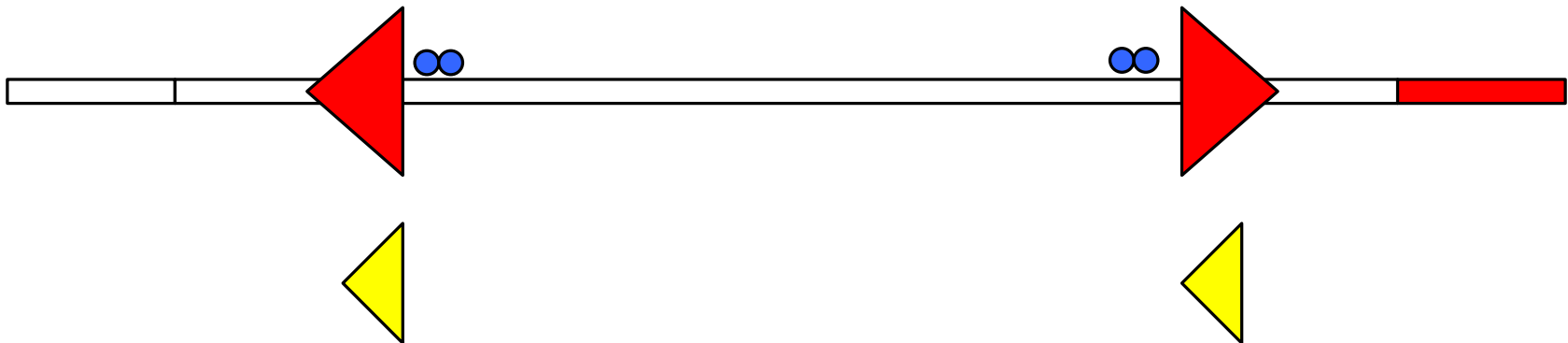
[Next](#)

- Train enters the station



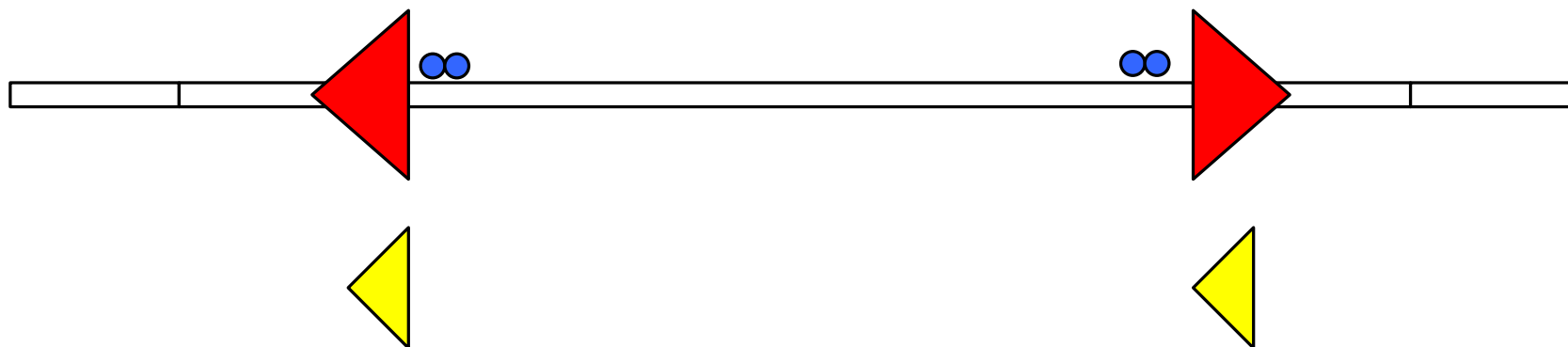
[Next](#)

- Train enters the station



[Next](#)

- Done



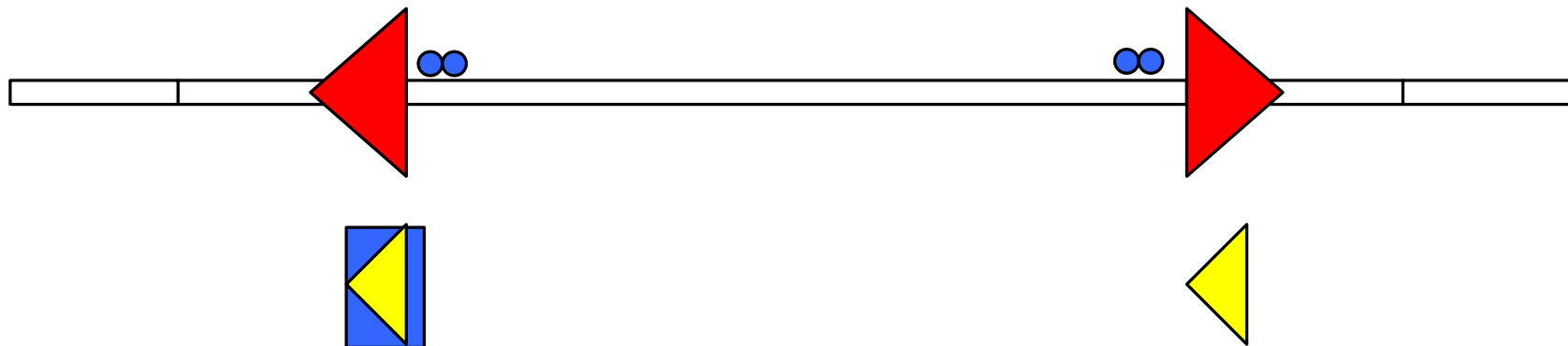
[Return](#)

# Line Block

Direction Locked



- Direction lock is indicated at the end of the line.



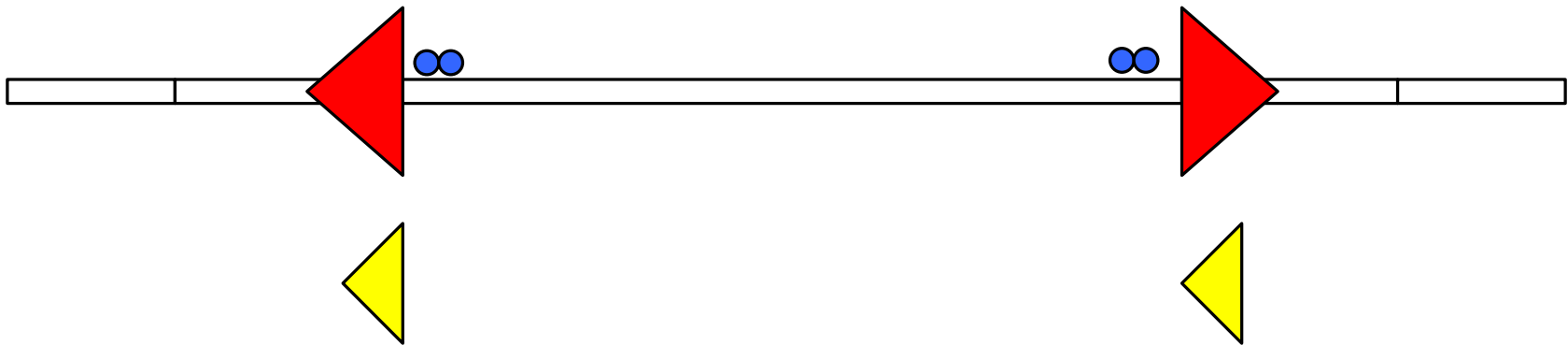
[Return](#)

# Line Block

Detected Communication Fail

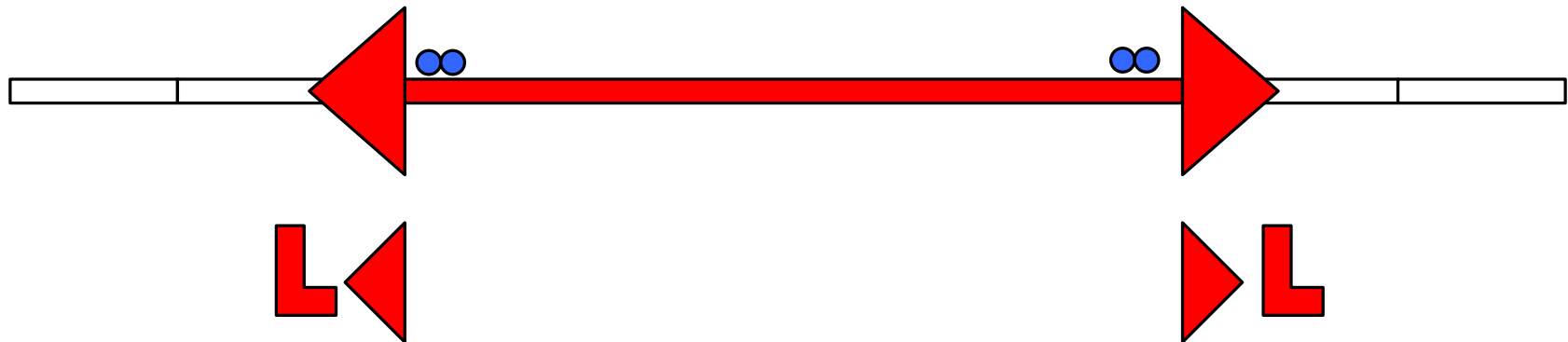






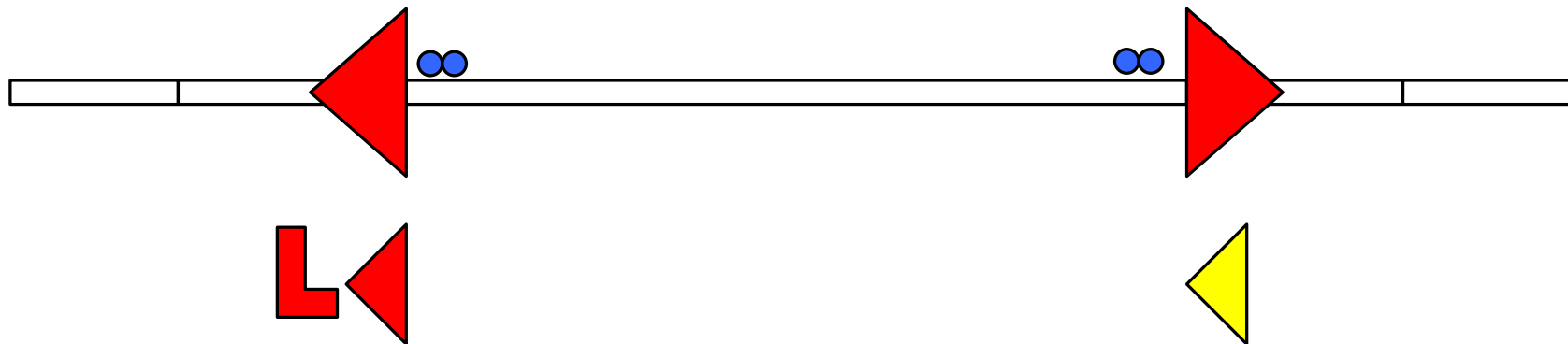
[Next](#)

- Communication fail normally affects also to the Line vacancy

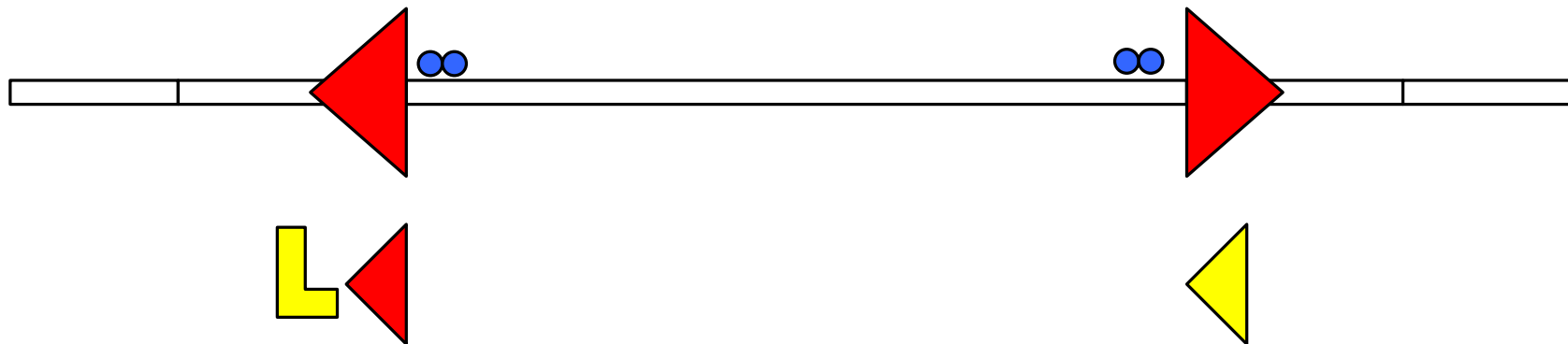


[Next](#)

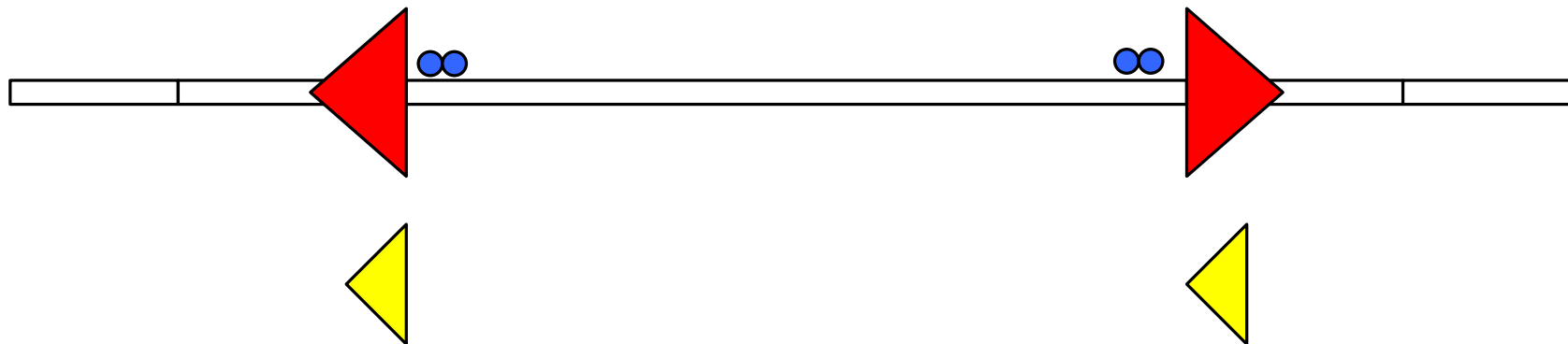
- Communication link recovered
- Direction recovered
- Line section vacancy recovered
- Emergency release “LHP” needed



- Emergency release “LHP” issued



- Line Block clear

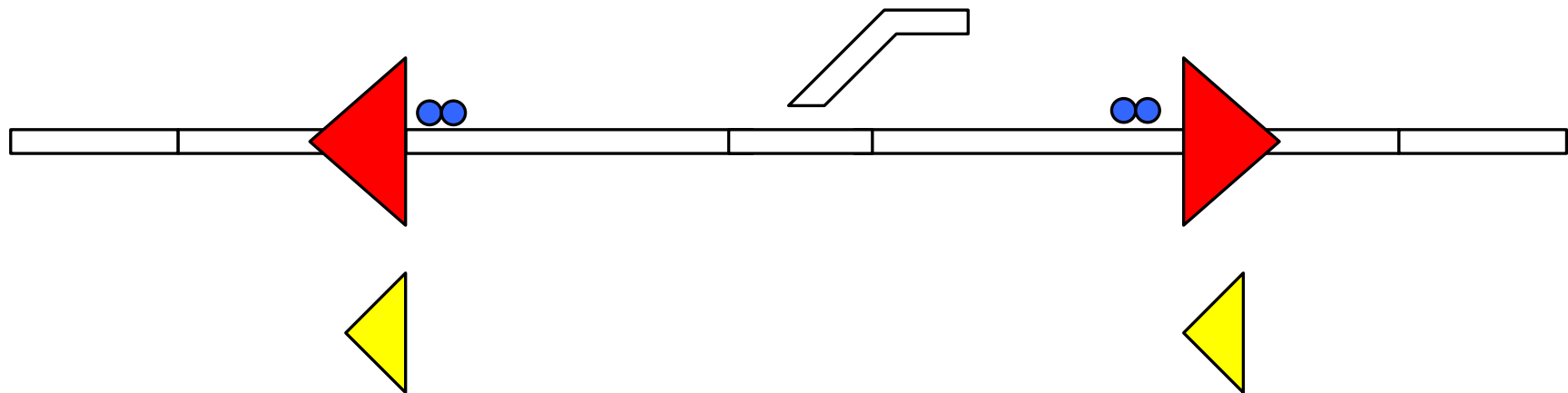


# Line Block

Line Point Monitoring  
Reverse entry

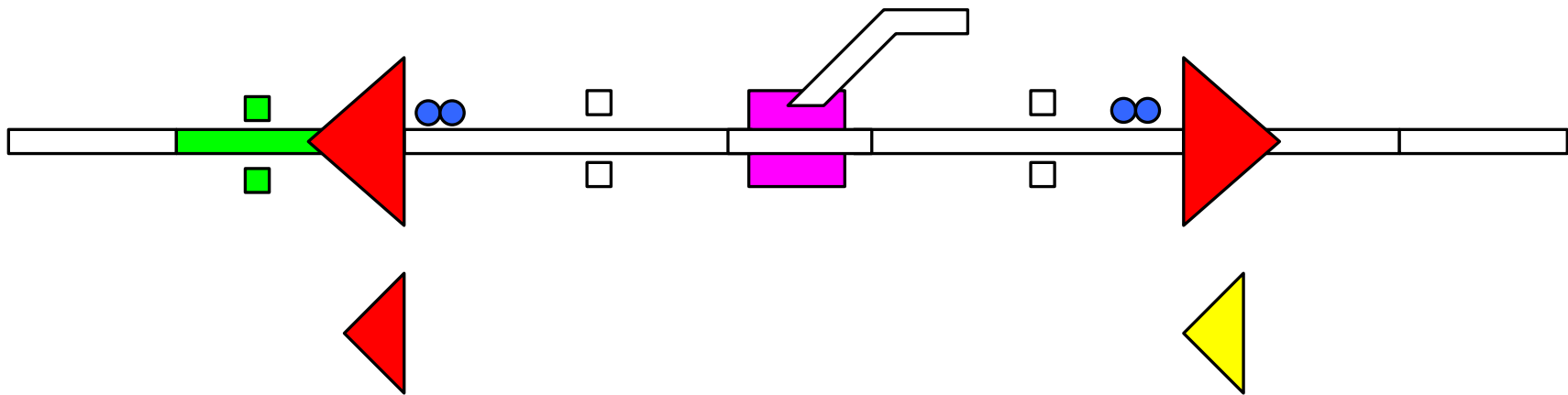


- Line Point affects the Line Block



[Next](#)

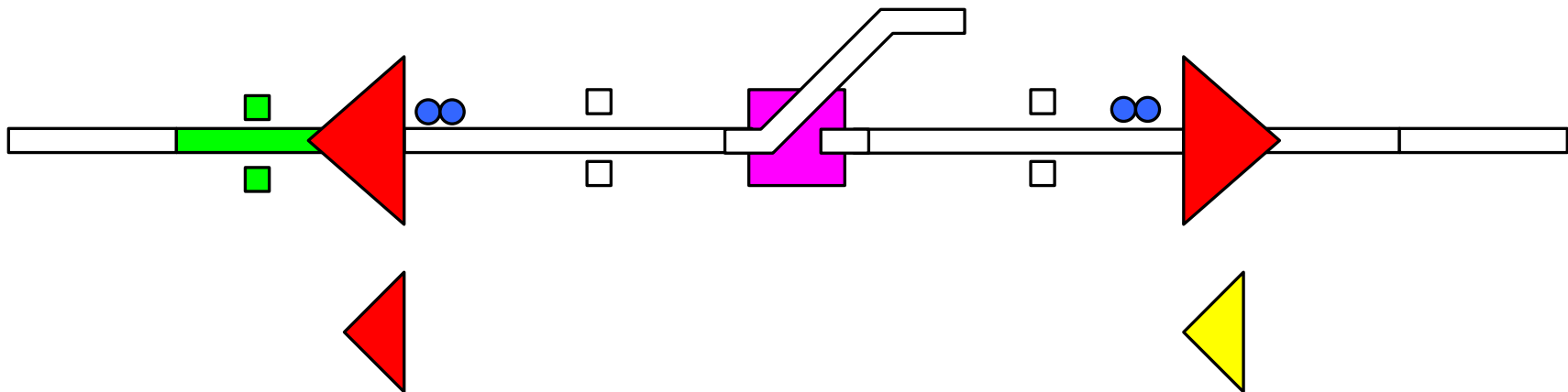
- Line Point affects the Line Block
- Local Permission prevents
  - Train routes to the line
  - Changing direction by any means



[Next](#)

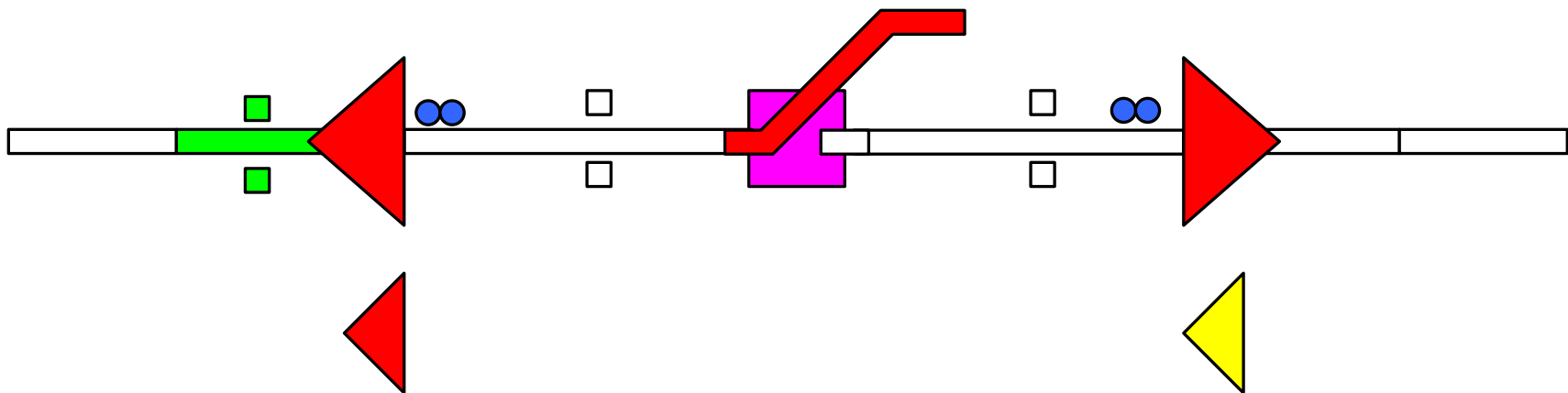


- Local Permission; Line Point turned



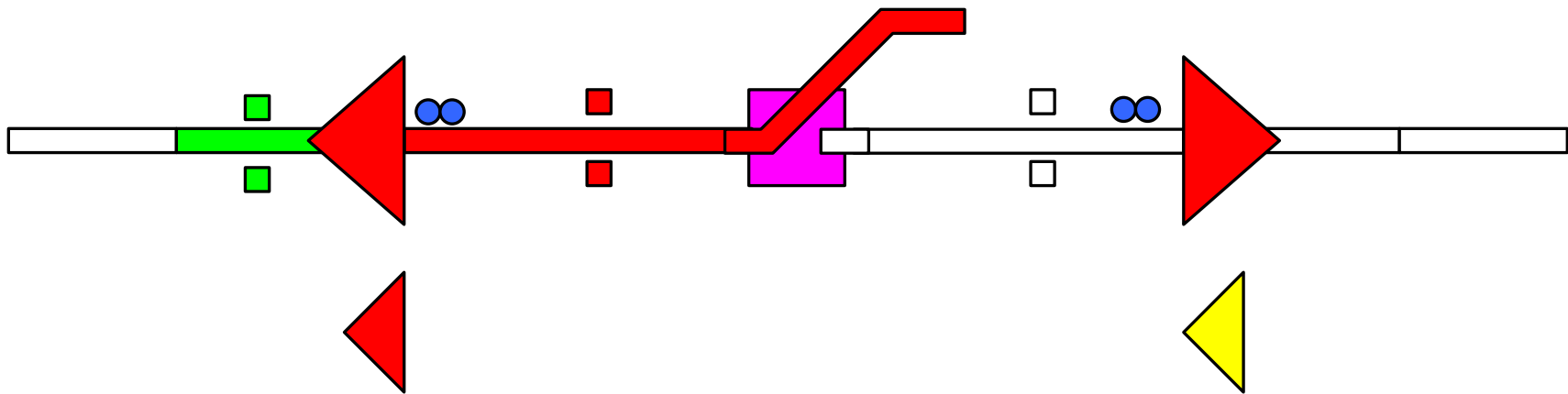
[Next](#)

- Local Permission;
- Train coming to the line



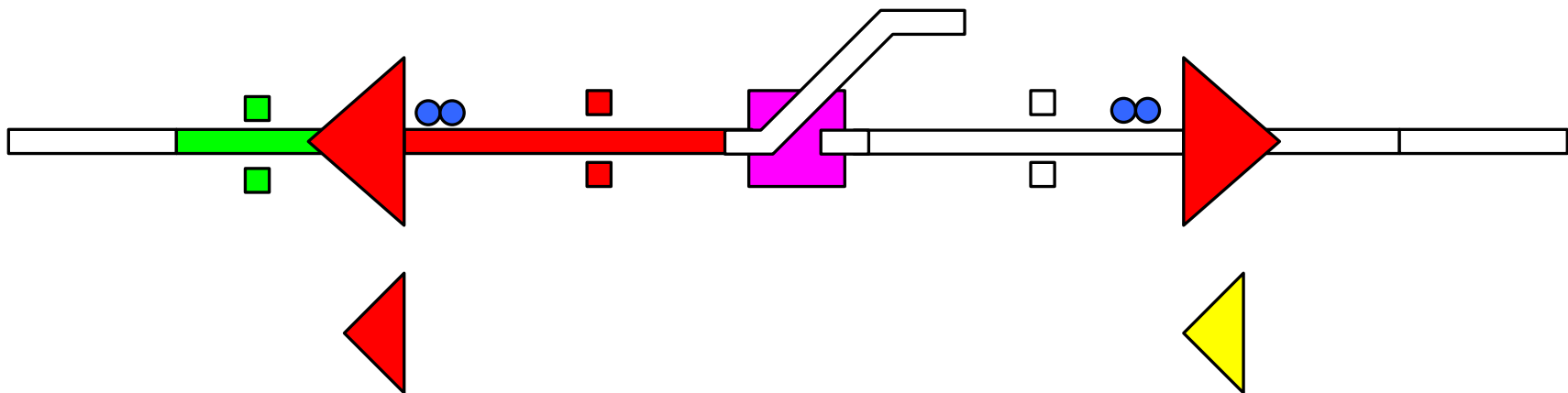
[Next](#)

- Local Permission;
- Train coming to the line



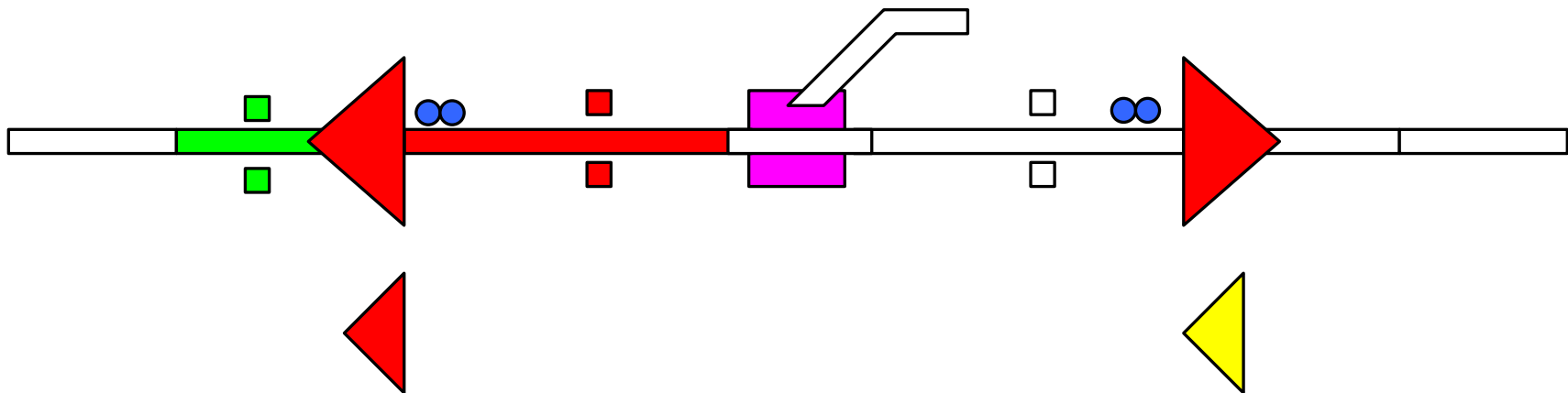
[Next](#)

- Local Permission;
- Train coming to the line



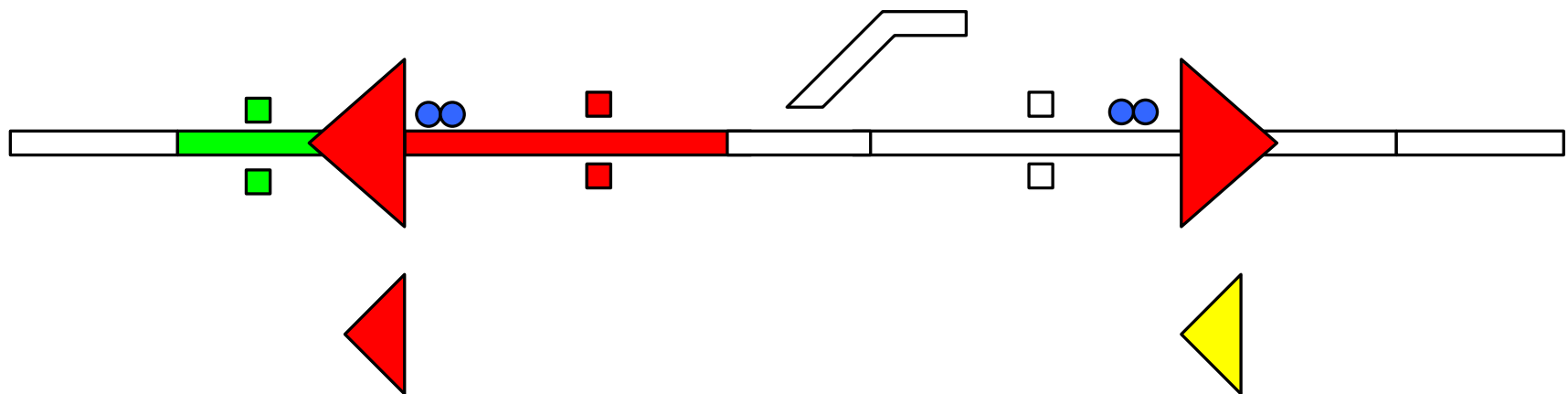
[Next](#)

- Line Points turned to normal position



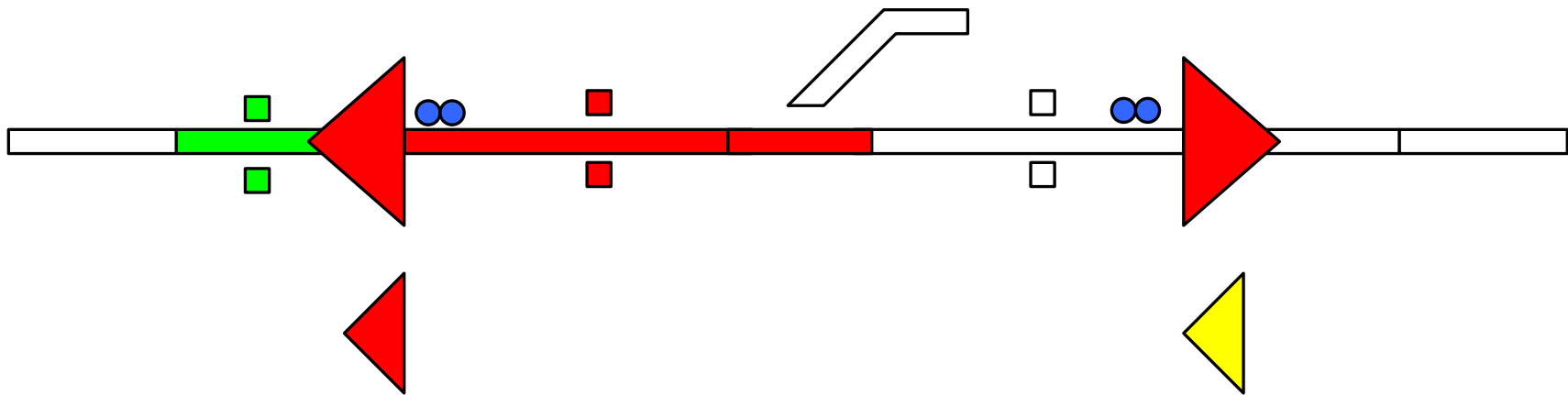
[Next](#)

- Local Permission cancelled



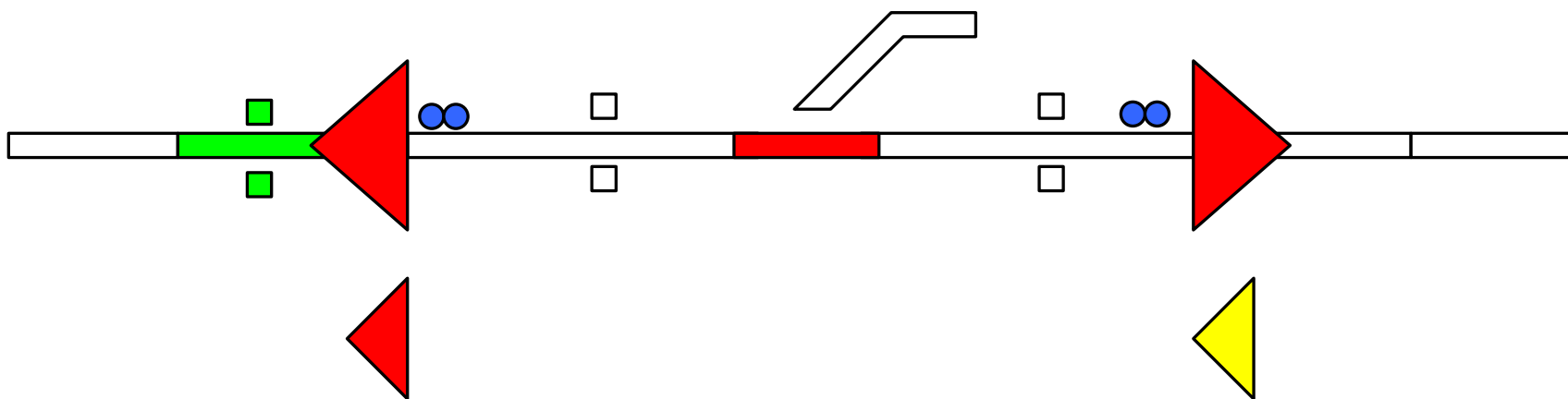
[Next](#)

- Train reversing against the Line direction



[Next](#)

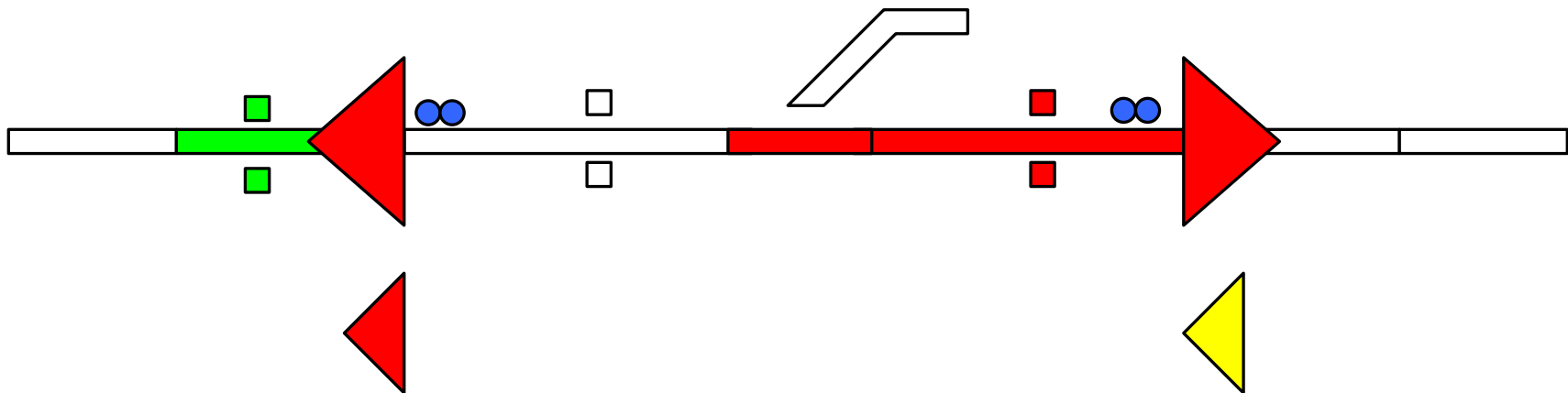
- Train reversing against the Line direction



[Next](#)

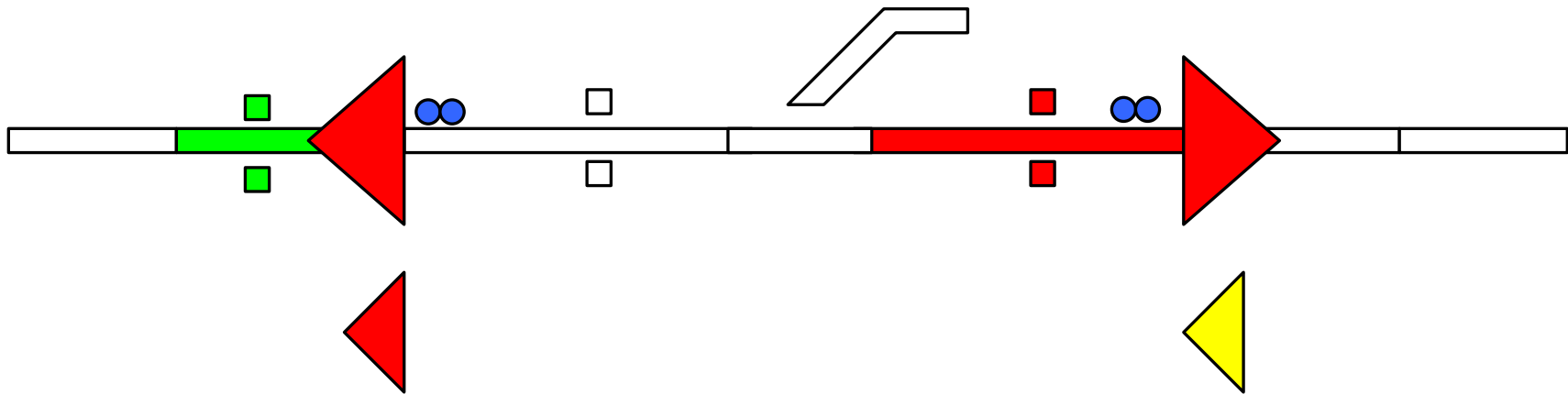


- Train reversing against the Line direction



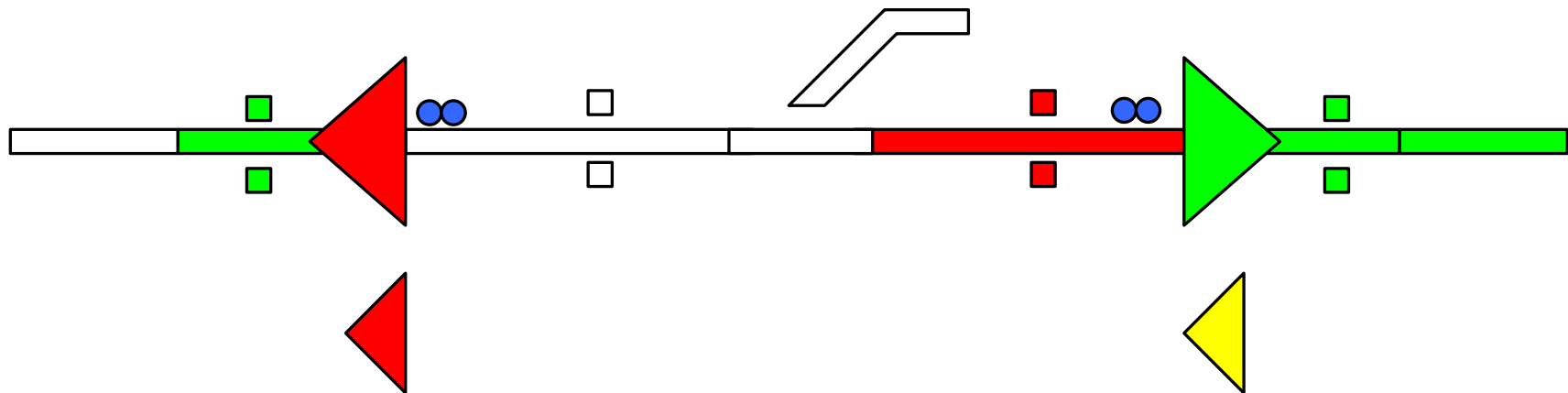
[Next](#)

- Train reversing against the Line direction



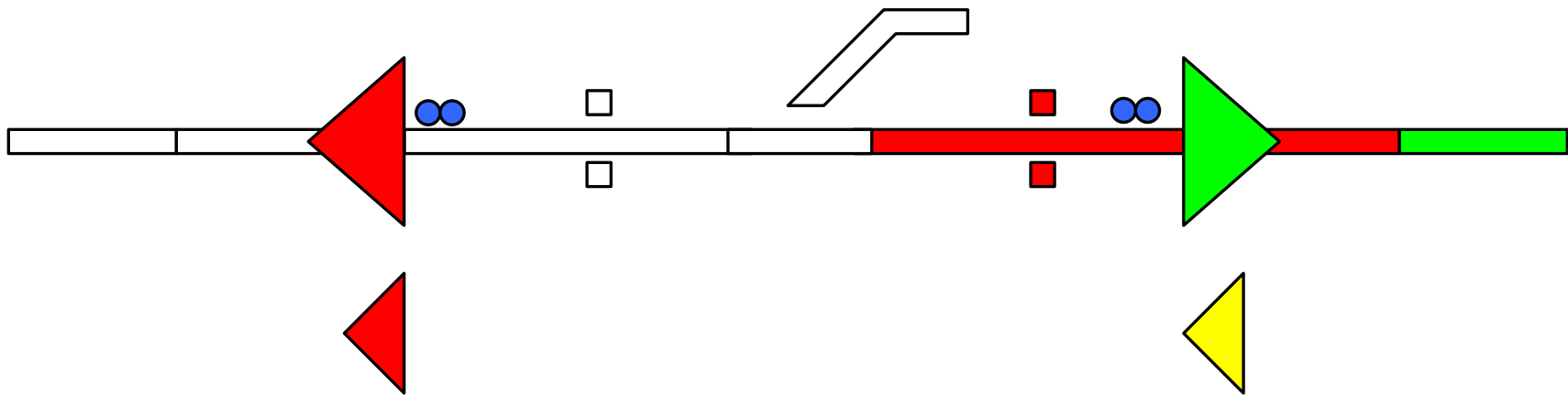
[Next](#)

- Entry route set



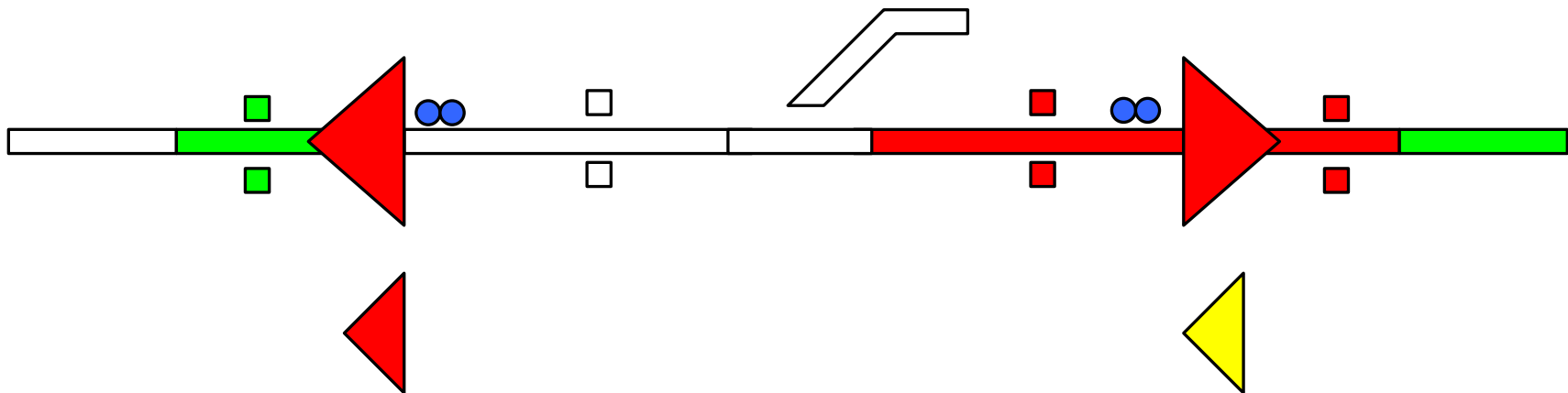
[Next](#)

- Train enters the station



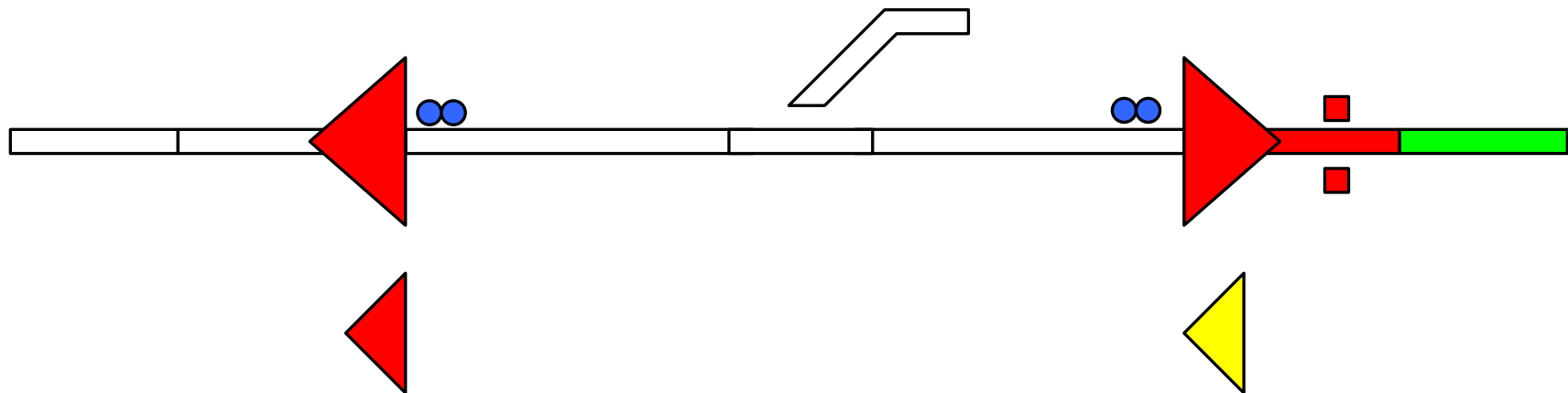
[Next](#)

- Train enters the station



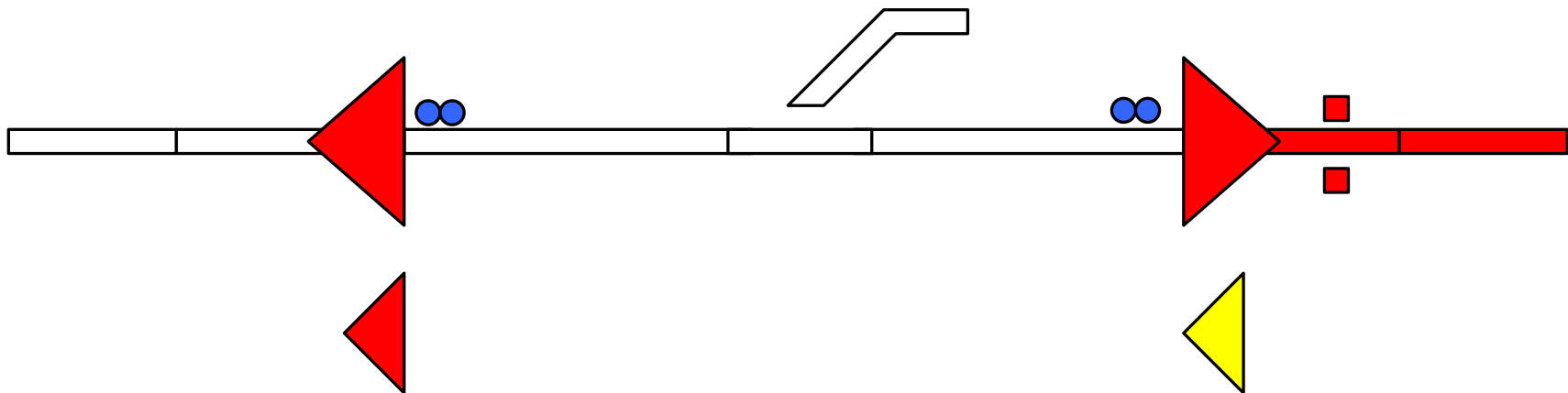
[Next](#)

- Train enters the station



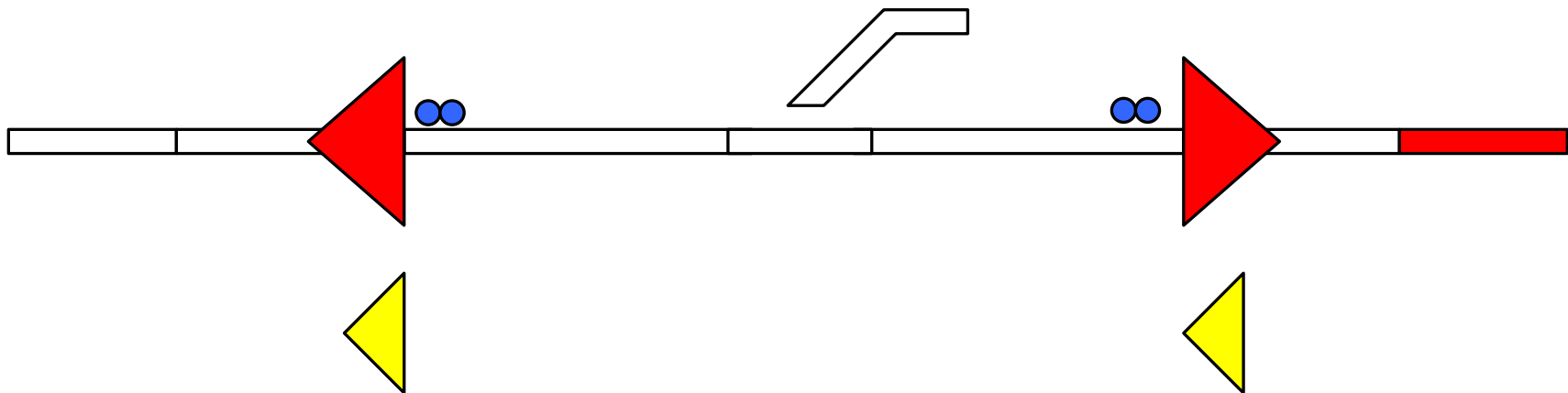
[Next](#)

- Train enters the station



[Next](#)

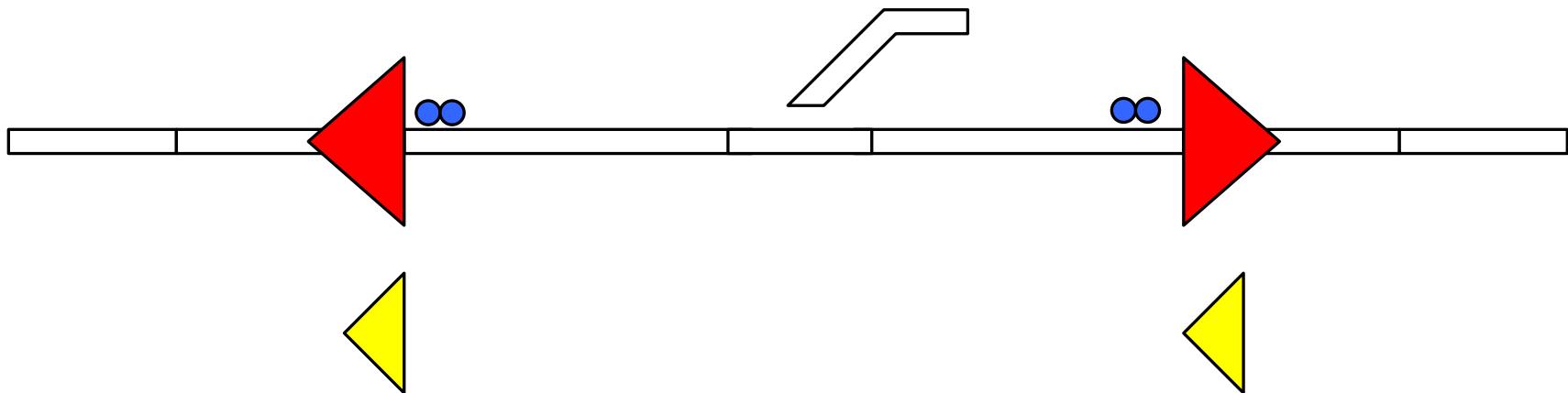
- Train enters the station



[Next](#)



- Train enters the station



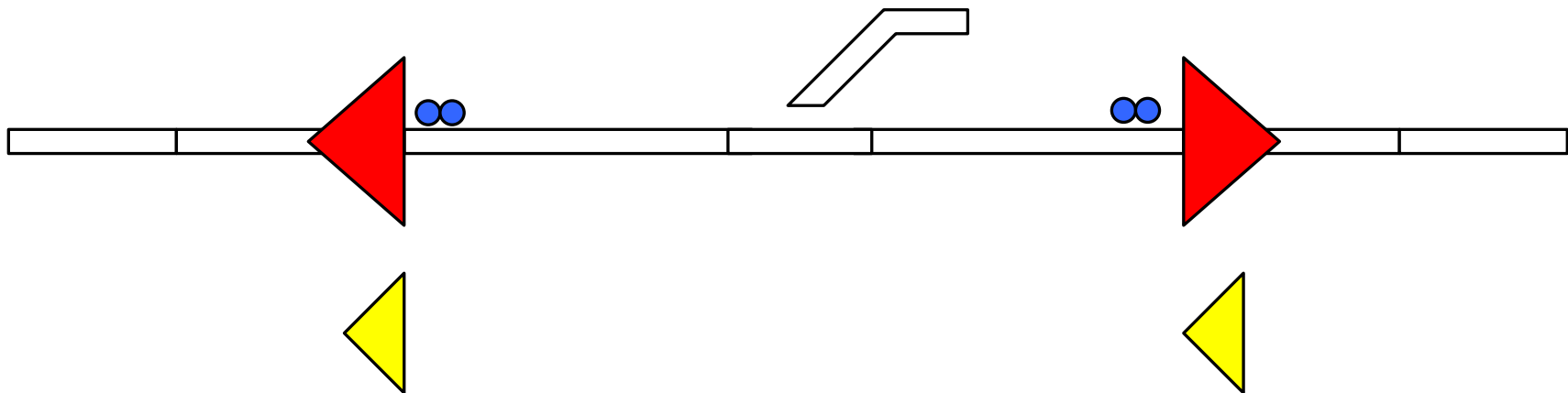
Return

# Line Block

## Line Point Monitoring Exiting through the Line Point

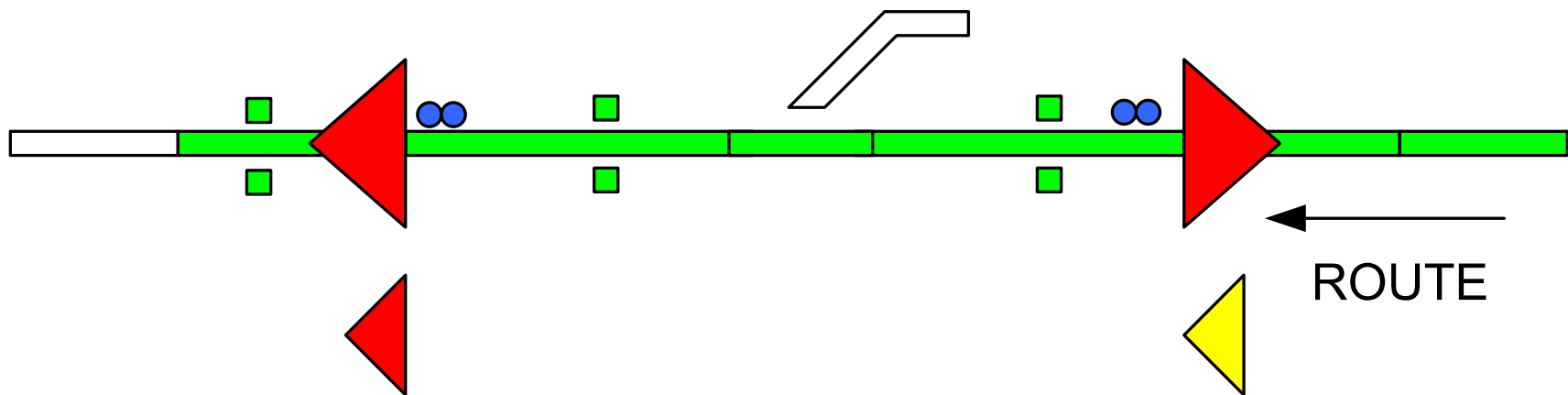


- Setting the exit route



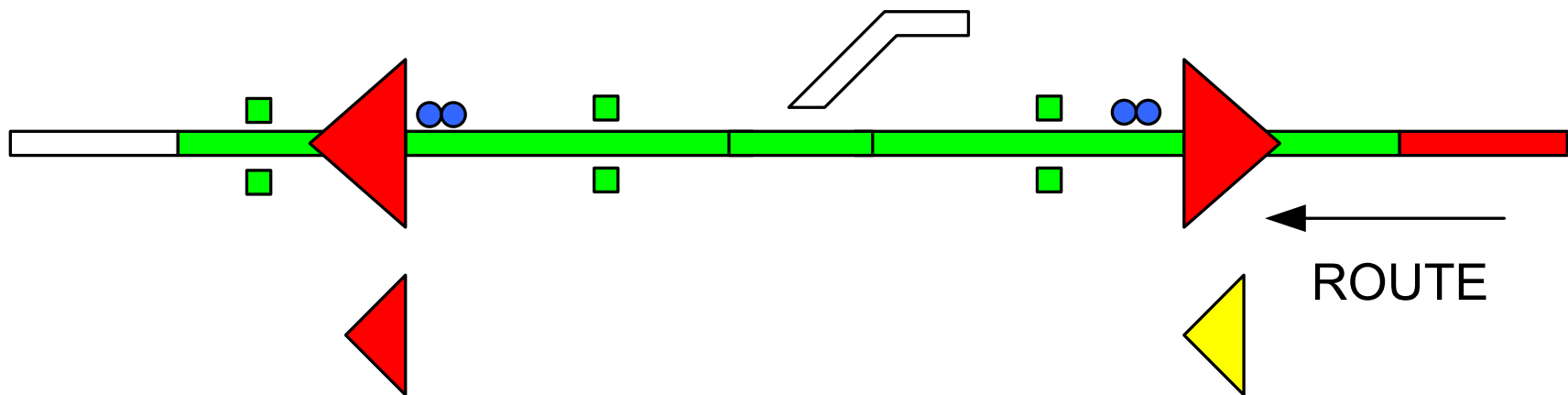
[Next](#)

- Setting the exit route



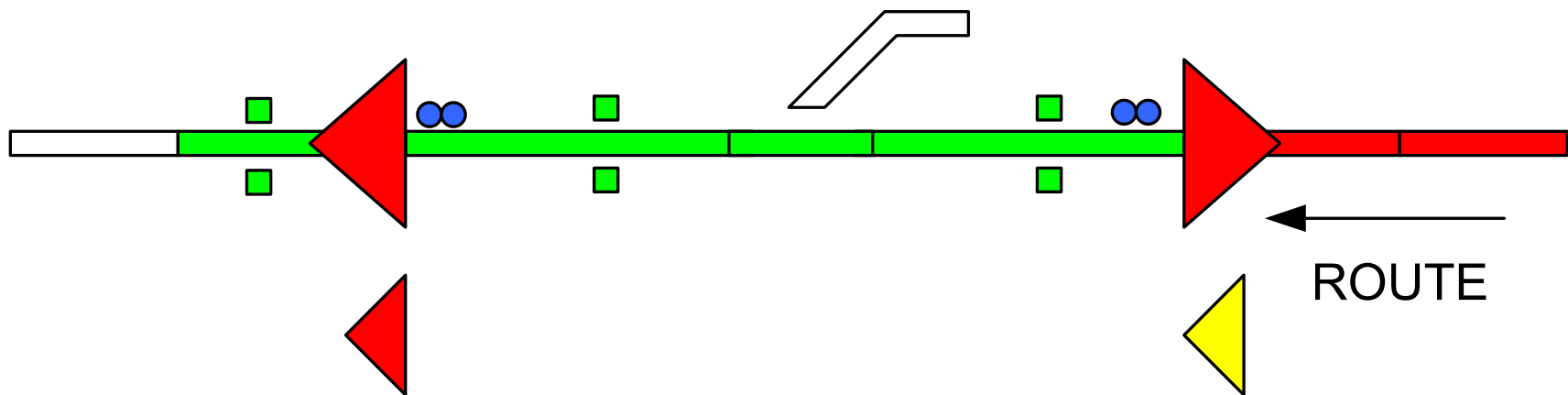
[Next](#)

- Train enters the line



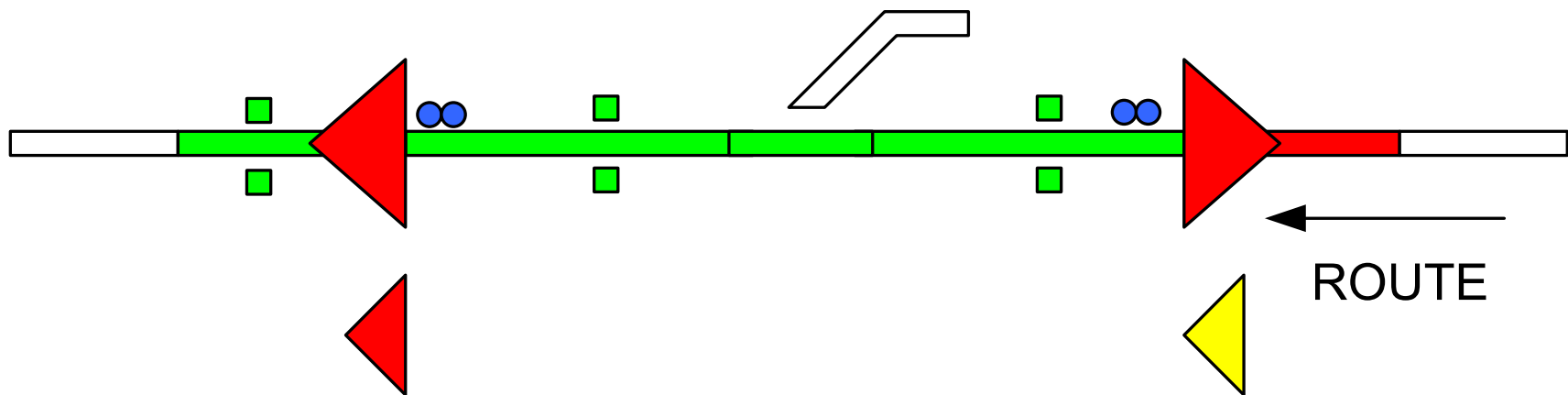
[Next](#)

- Train enters the line



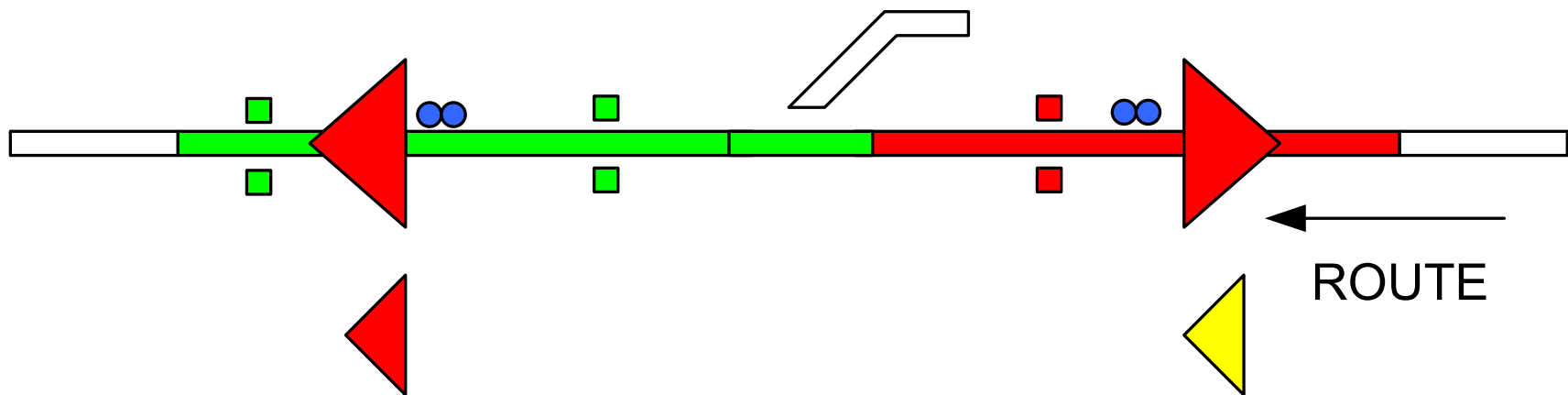
[Next](#)

- Train enters the line



[Next](#)

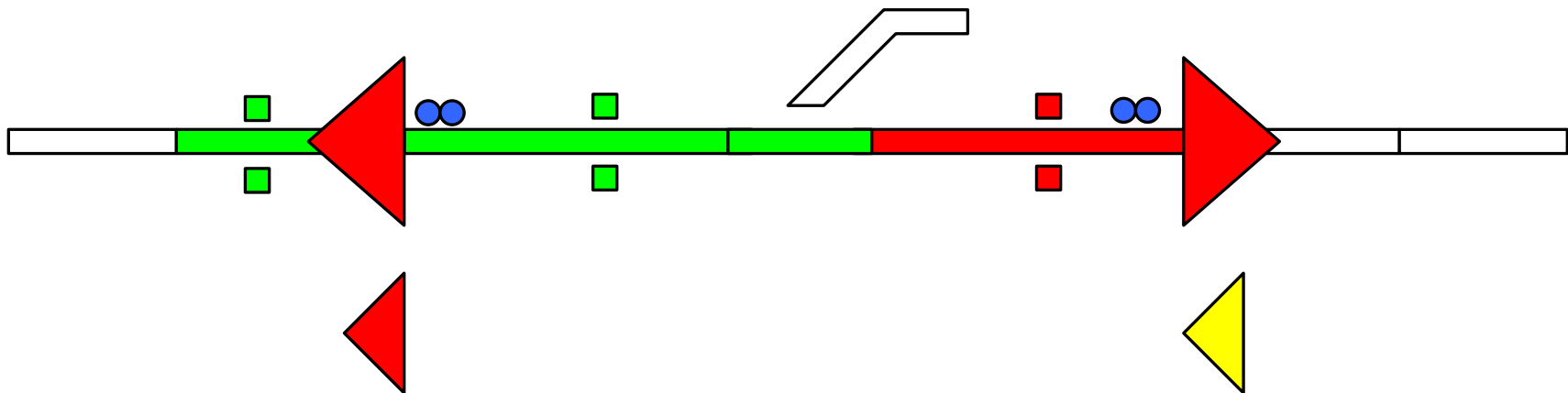
- Train enters the line



[Next](#)

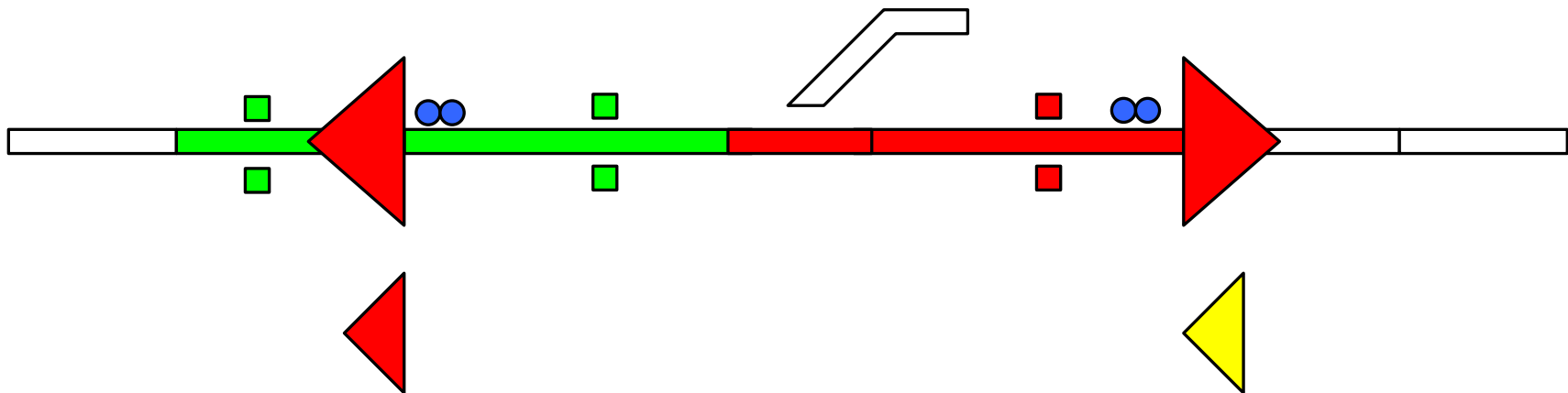


- Train enters the line



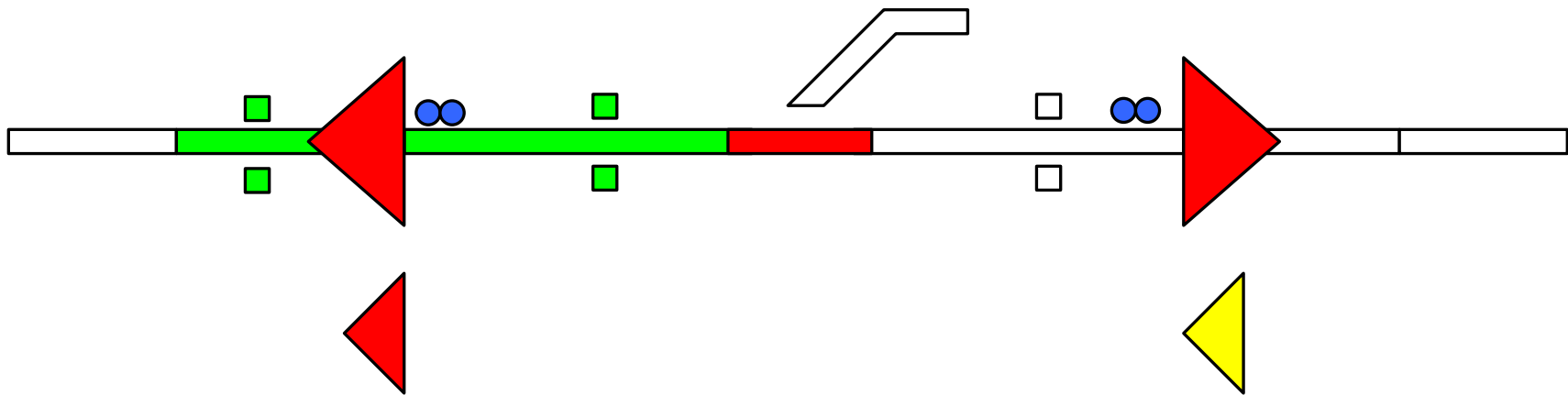
[Next](#)

- Train enters the Line Points



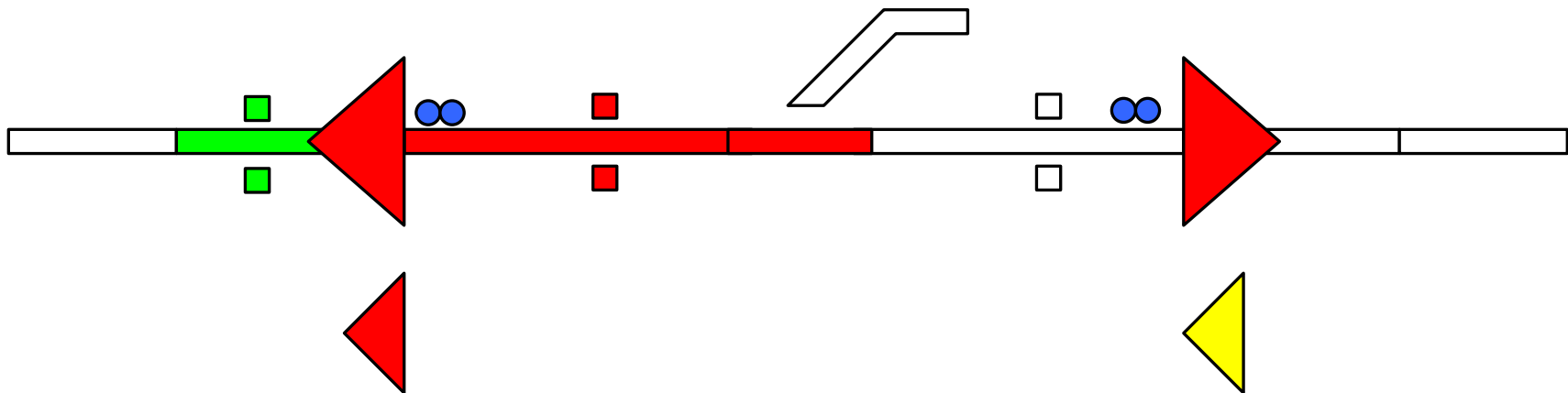
[Next](#)

- Train enters the Line Points



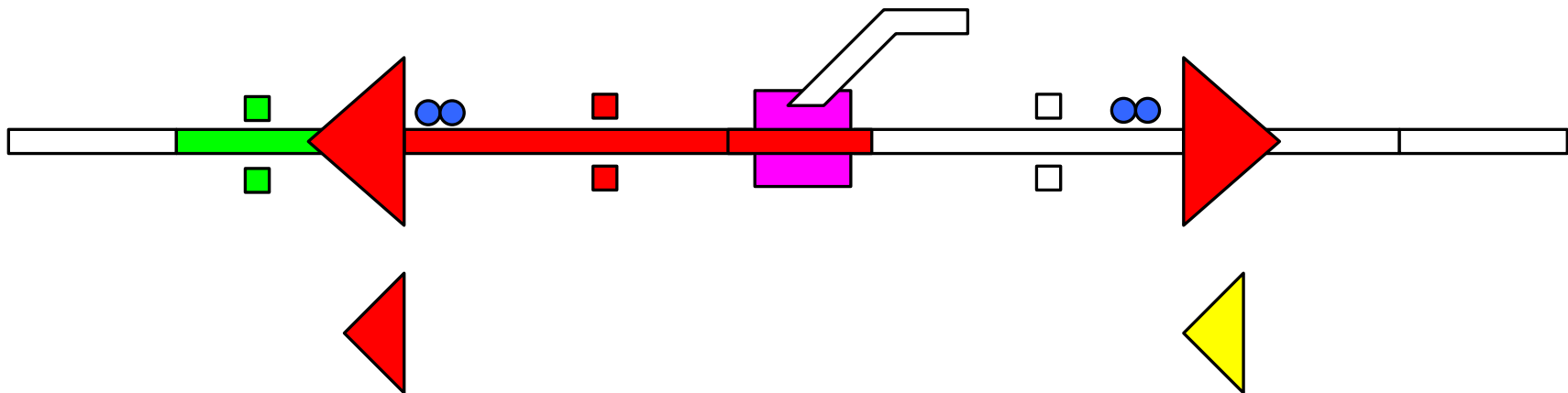
[Next](#)

- Train enters the Line Points



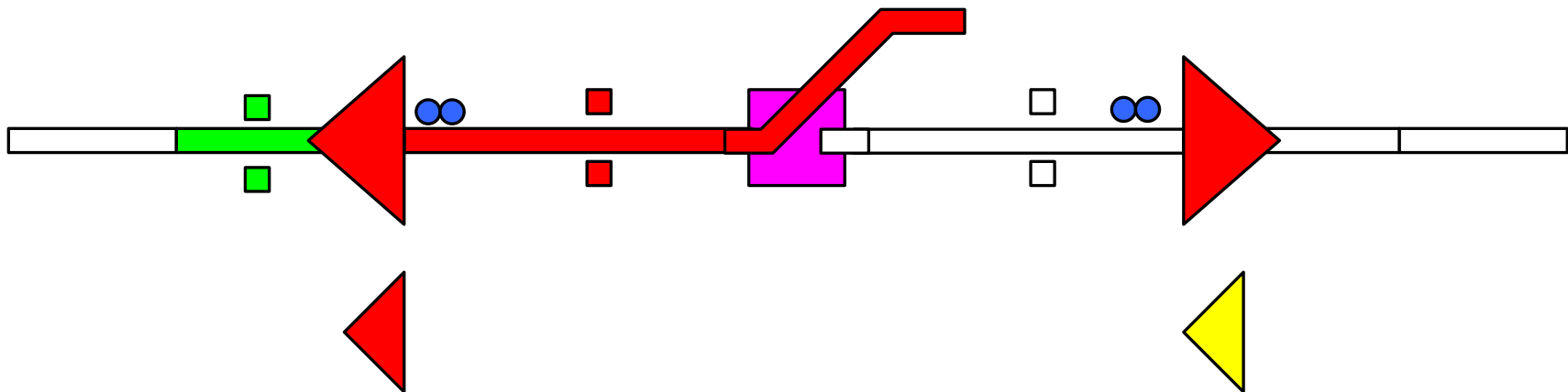
Next

- Train enters the Line Points
- Local Permission may be set when the Line Points is occupied.



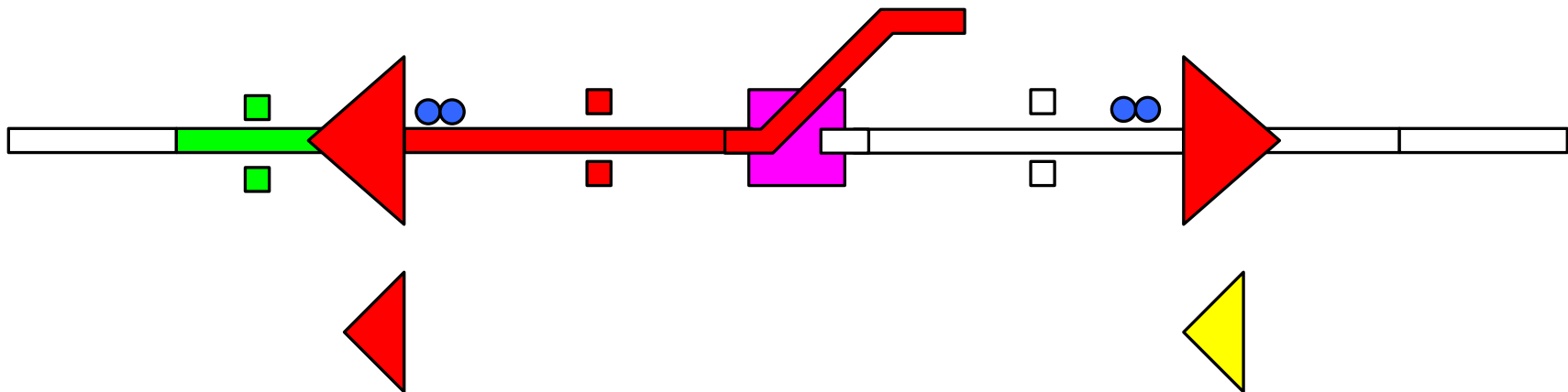
[Next](#)

- Line Points is turned.



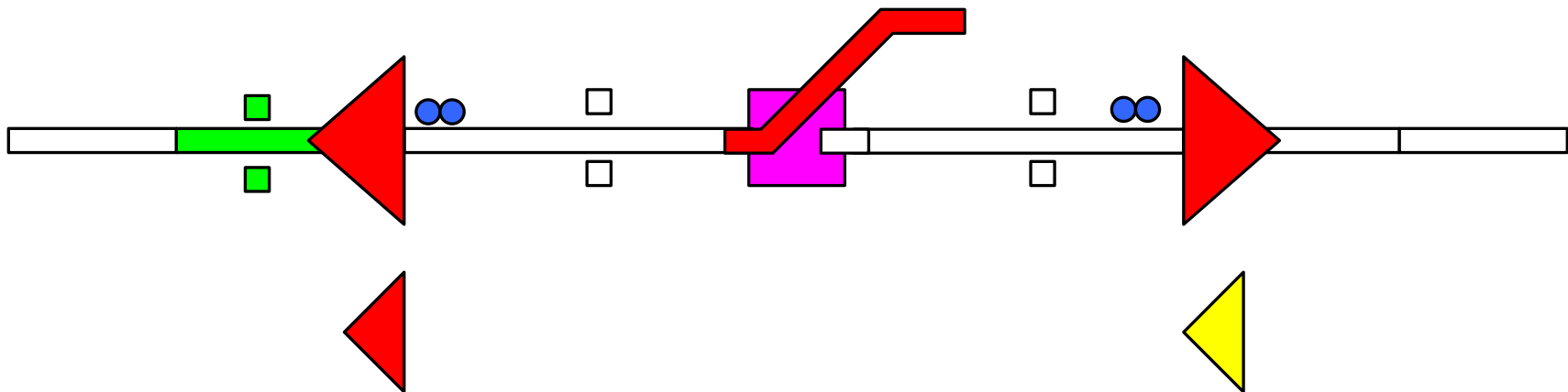
[Next](#)

- Train exits the line



[Next](#)

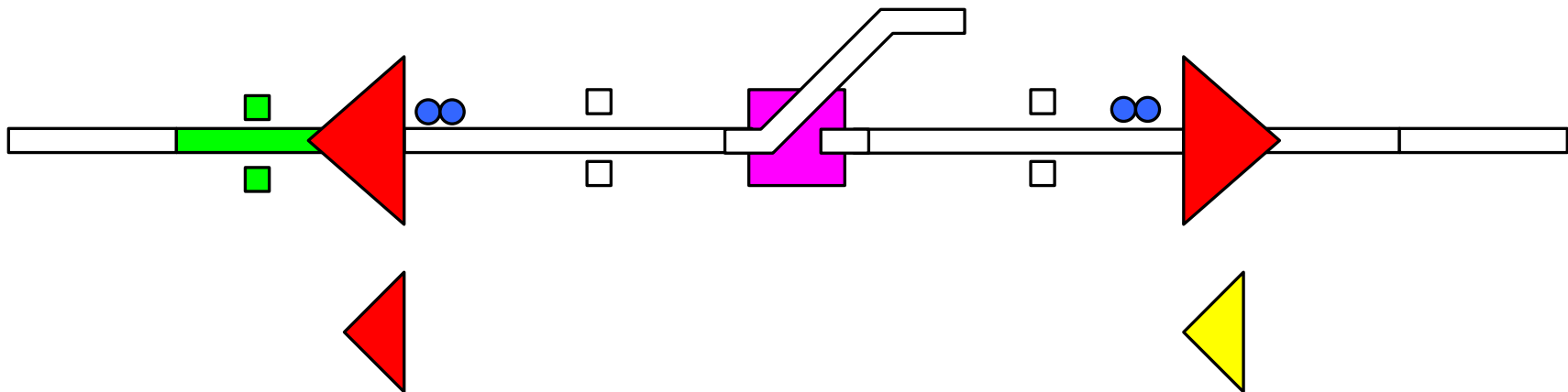
- Train exits the line



[Next](#)

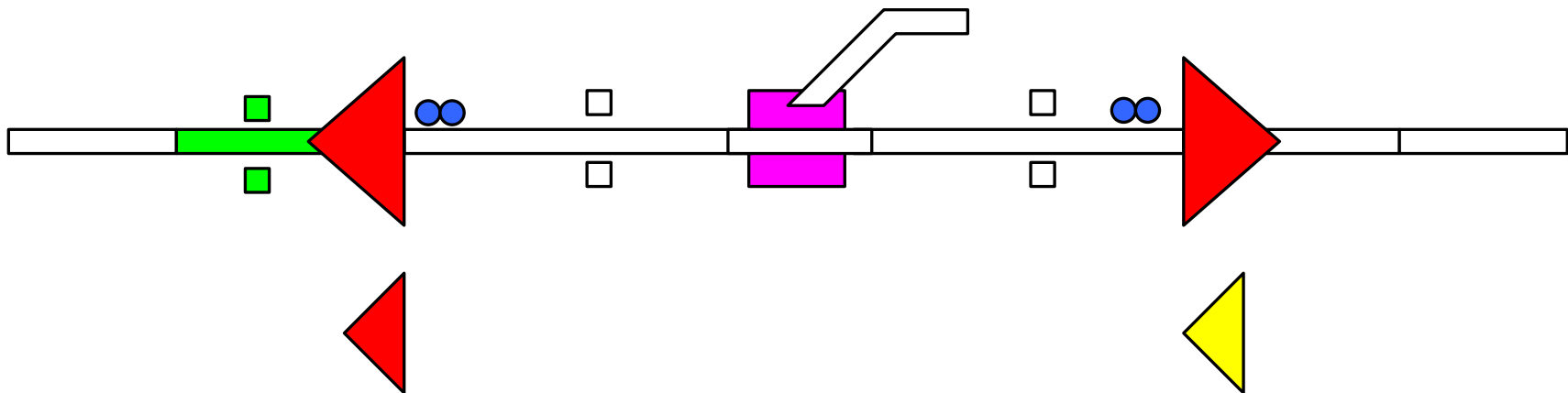


- Train exits the line



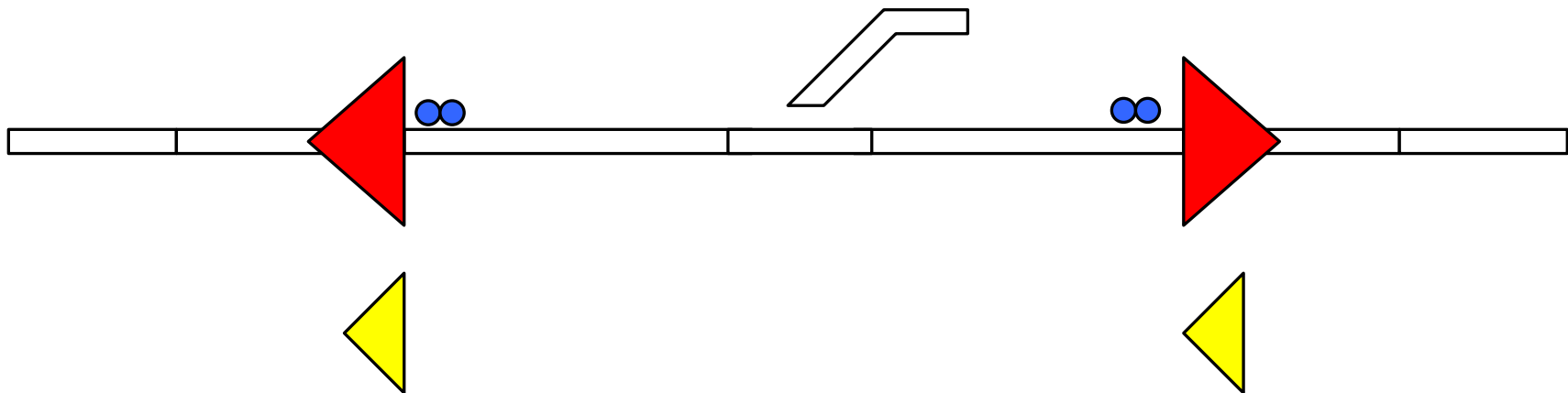
[Next](#)

- Line Points is turned back to the original position



[Next](#)

- Local Permission is cancelled
- Line Block is clear



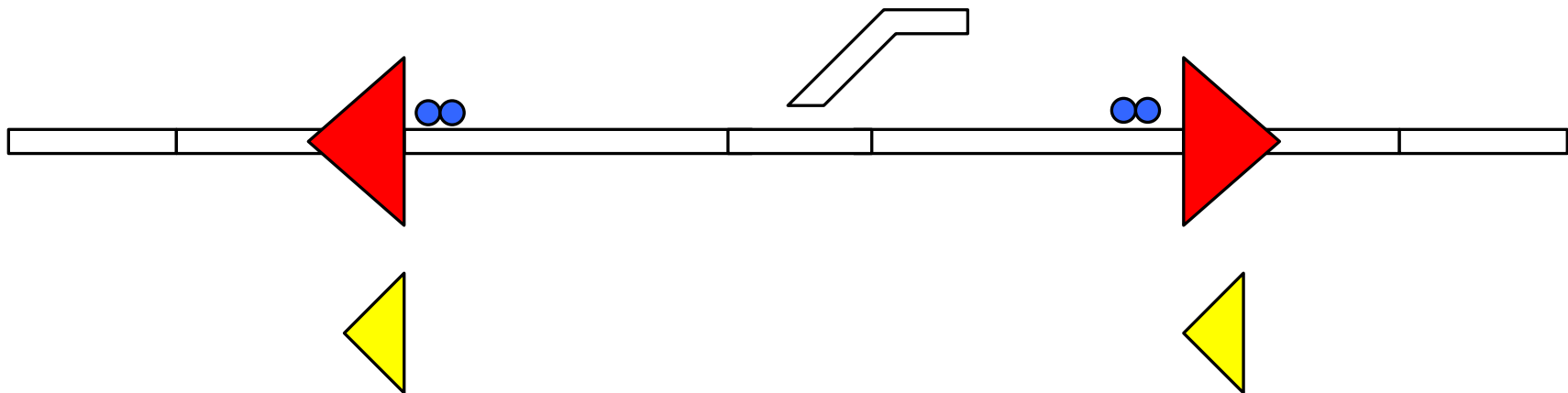
Return

# Line Block

Line Points out of control

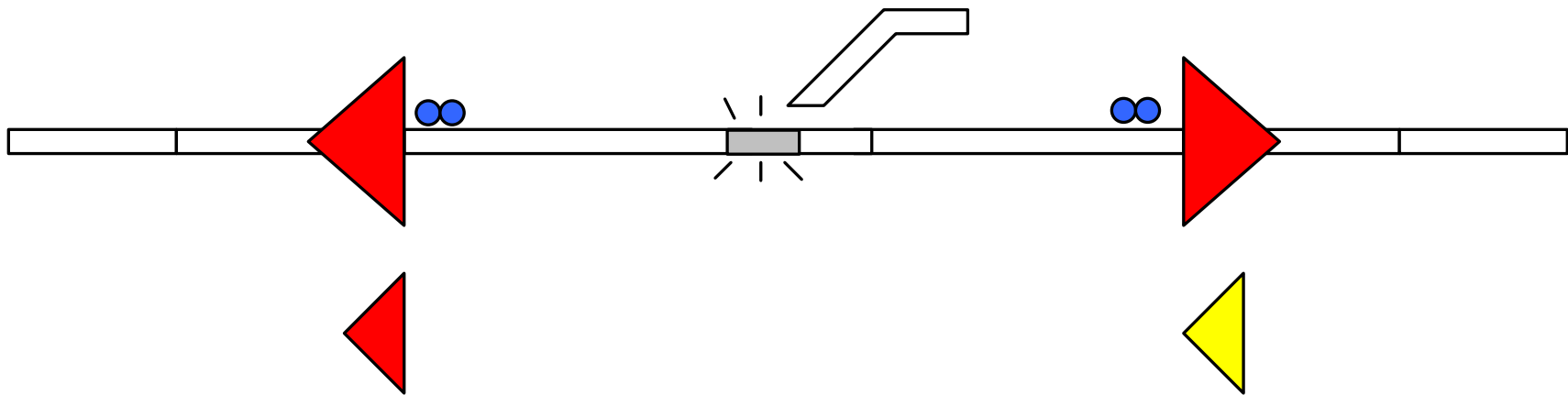


- Line Block is clear



[Next](#)

- Line Point monitoring is lost
- Line Block direction may not be changed
- Exit signal is not allowed



Return

