

# NSG 600 Running signals

## Description

This document describes the types of running signals.

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## Purpose

To describe the types of running signals used in the Network.

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## Principle

Running signals are used to authorise through-movements from one running signal to the next.

Running signals may be passed only in accordance with:

- [NSG 606 Responding to signals and signs](#), and
- [NSG 608 Passing signals at STOP](#).

The Figures in this Rule show examples of the running signals used in the Network.

## Route signalling

Running signals provide information about the route for which a signal is cleared.

## Colour light running signals

In colour light signalled territory, a cleared signal indicates the route immediately beyond the signal by:

- the combination of lights displayed
  - a route indicator
  - a lower turnout unit.
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## Colour light signals

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Colour light signals display singly or in combinations of red, yellow and green.

### Note

In the Figures, white or lunar white lights are shown in blue .

## Semaphore signals

The front face of a semaphore running signal arm is red, with a transverse (across the arm) white stripe. The back face is white with a transverse black stripe.

The signal arm of fixed **STOP** semaphore signals may be reflective.

Semaphore signals that can be cleared have arms with red and green glass panels that are lit from behind at night.

## Lower quadrant semaphore signals

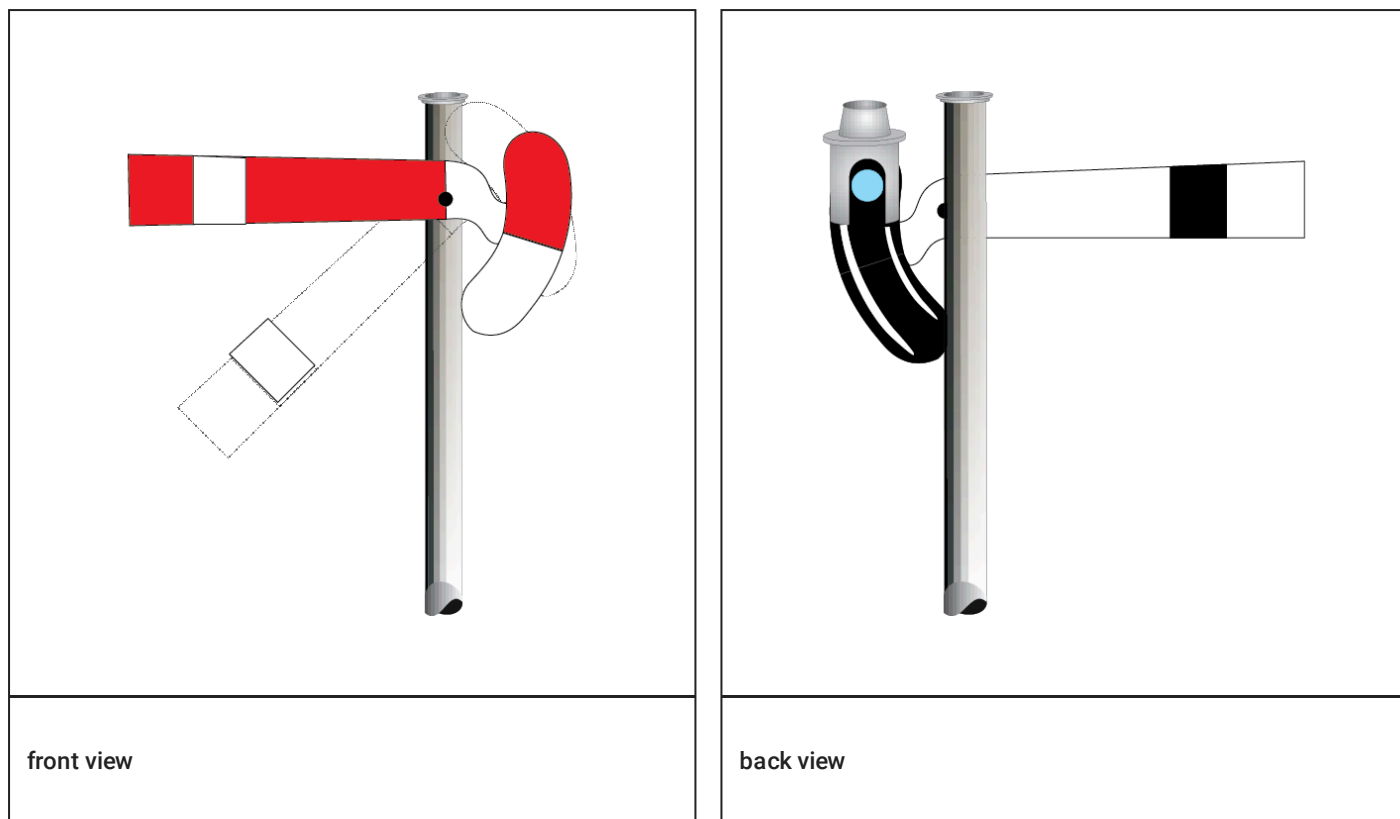
Lower quadrant semaphore running signals have large arms to control main line movements.

Lower quadrant semaphore running signals have a back light to show that the lamp is lit and the signal is set at **NORMAL**.

Lower quadrant semaphore signals with square-ended arms are home, outer home, starting, or home/starting signals.

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FIGURE 1: Lower quadrant semaphore signal.



### Signal designations

Running signals, except for distant signals that cannot show **STOP**, are used to protect the block ahead.

Running signals are designated according to their purposes.

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Operation	Designation	Description
Controlled	Outer home or accept	Used to control entry to the block ahead, but not otherwise protect points or other identified risks.
	Home	Used to protect points and other identified risks. Some home signals are kept permanently at <b>STOP</b> .
	Starting	Used to authorise departure from a controlled area.
	Home/starting	Functions as home and starting signal.
	Distant	Usually shows only <b>CLEAR</b> or <b>CAUTION</b> and cannot be used to protect the portion of line to the next signal. Some controlled distant signals can show <b>STOP</b> and can be used to protect the portion of line to the next signal.
Automatic	Automatic	Protects the block ahead. Displays a <b>PROCEED</b> indication only if the block ahead is unoccupied
	Distant	Usually shows only <b>CLEAR</b> or <b>CAUTION</b> and does not protect the portion of line to the next signal. Some automatic distant signals can show <b>STOP</b> and can be used to protect the portion of line to the next signal

## Running signal operation

### Controlled signals

Controlled signals, other than distant signals, can be set and kept at **STOP**.

Controlled signals are operated by:

- signalling equipment controlled by Signallers, or
- a combination of track-circuits, or axle counters, and signalling equipment controlled by Signallers.

Controlled signals can display a **PROCEED** indication only if:

- points in the route are in the correct position

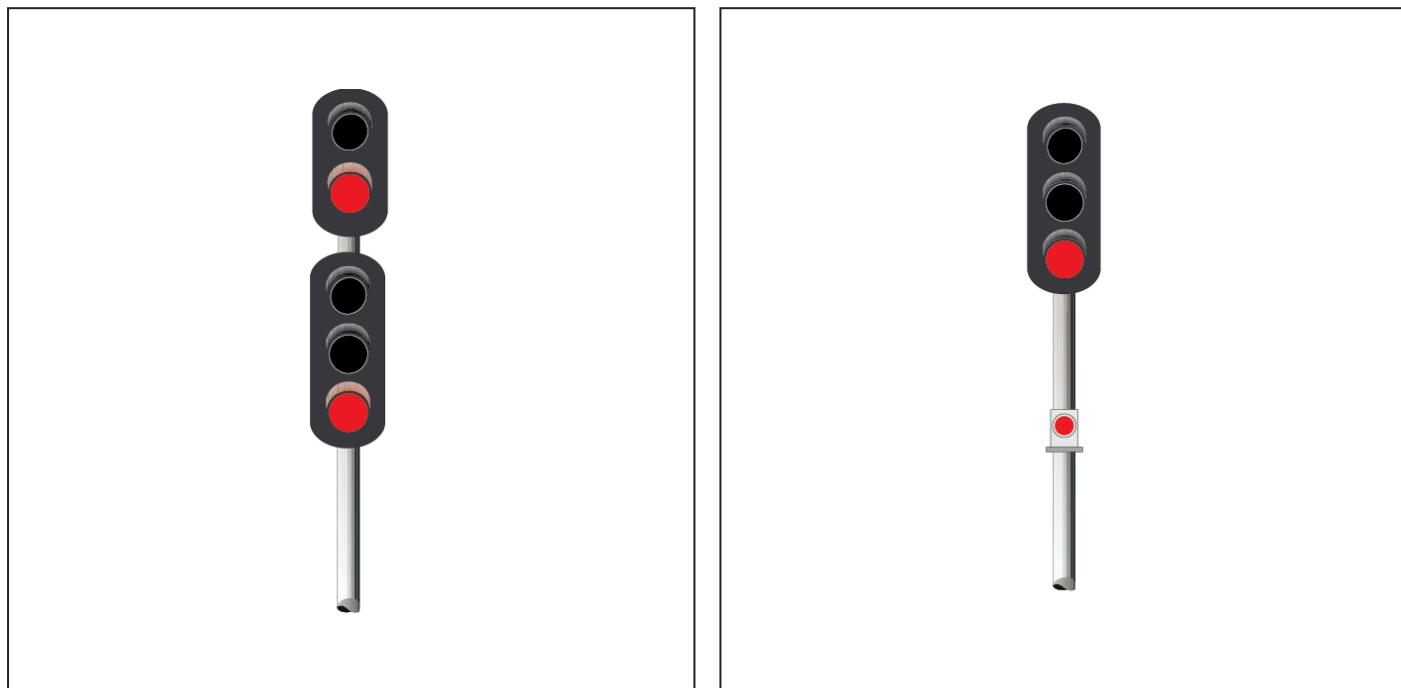
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- there are no conflicting routes set
- in Rail Vehicle Detection territory, the block ahead is unoccupied.

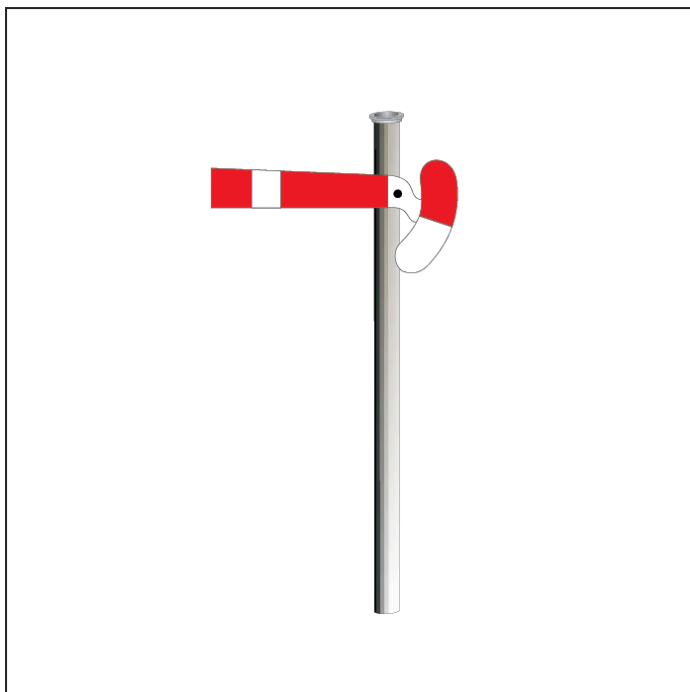
Controlled signals at attended locations are absolute signals.

Type	Controlled operation status identified by
Double light colour light signal	Vertical lights. If an A sign or illuminated A light is on or near the signal, the operation mode is automatic.
Single light colour light signal	Marker light vertically below main signal lights. If an A sign or illuminated A light is on or near the signal, the operation mode is automatic.
Lower quadrant semaphore signal	Lower quadrant signals are controlled signals.

FIGURE 2: Controlled signals.



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### Automatic signals

Automatic signals are controlled exclusively by the operation of track-circuits.

An automatic signal displays a **PROCEED** indication only if the line is unoccupied as far as the overlap point beyond the next signal.

Automatic signals are permissive signals. They can become absolute signals if they:

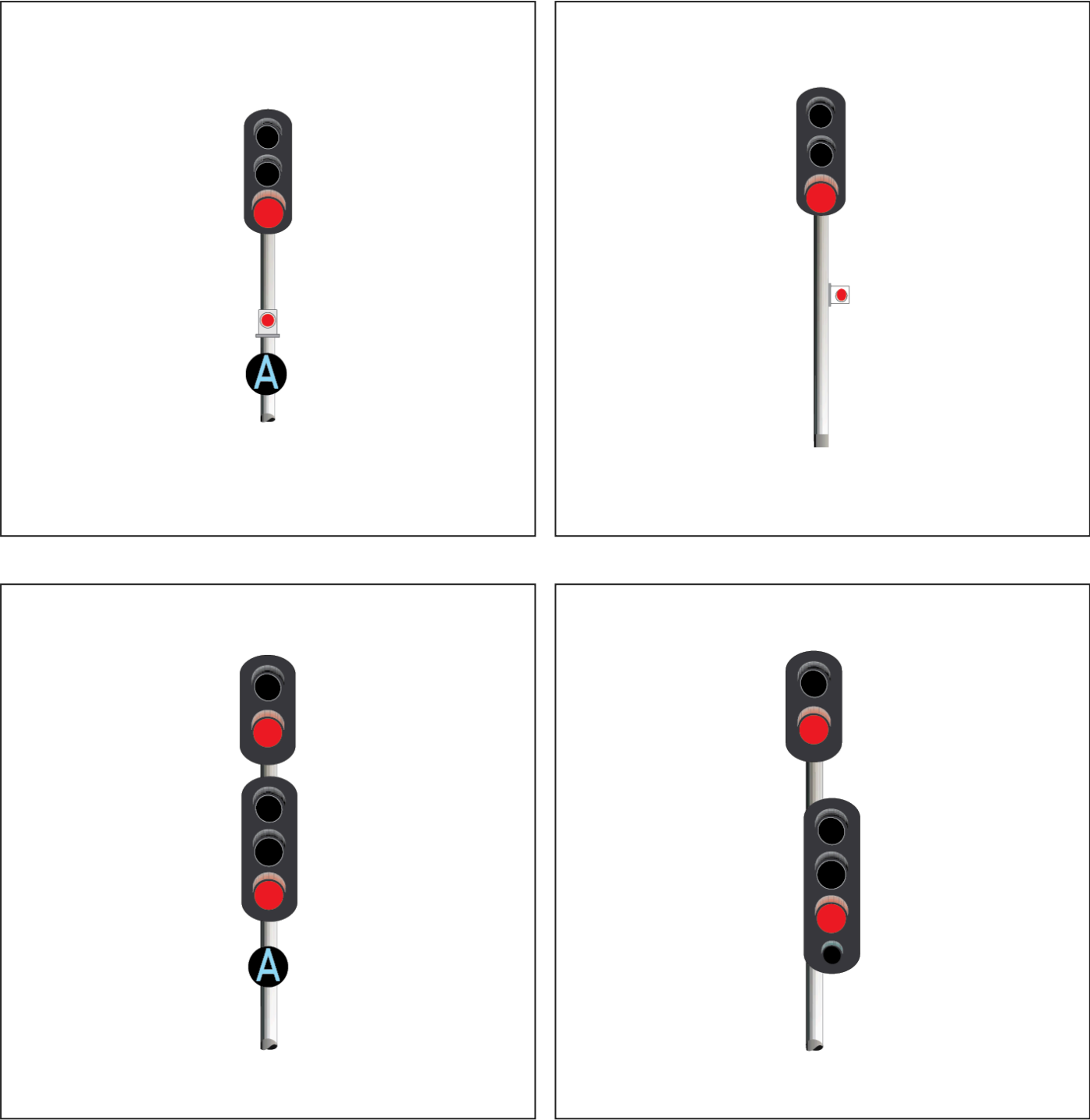
- are so designated by an instruction sign, or
- are interlocked with trackside monitoring equipment that sets them at **STOP**, or
- can be switched between automatic and controlled operation.

Type	Automatic operation status identified by
Double light colour light signal	Staggered lights, or vertical lights with an <b>A</b> sign or illuminated <b>A</b> light on or near the signal.
Single light colour light signal	Marker light staggered below main signal lights; marker light vertically below main signal lights with an <b>A</b> sign or illuminated <b>A</b> light on or near the signal.

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Type	Automatic operation status identified by
Lower quadrant semaphore signal	There are no lower quadrant automatic signals.

FIGURE 3: Automatic signals.



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### A lights and A signs

In Rail Vehicle Detection territory only, some signals may be fitted with an A light or an A sign.

An A light can be fitted:

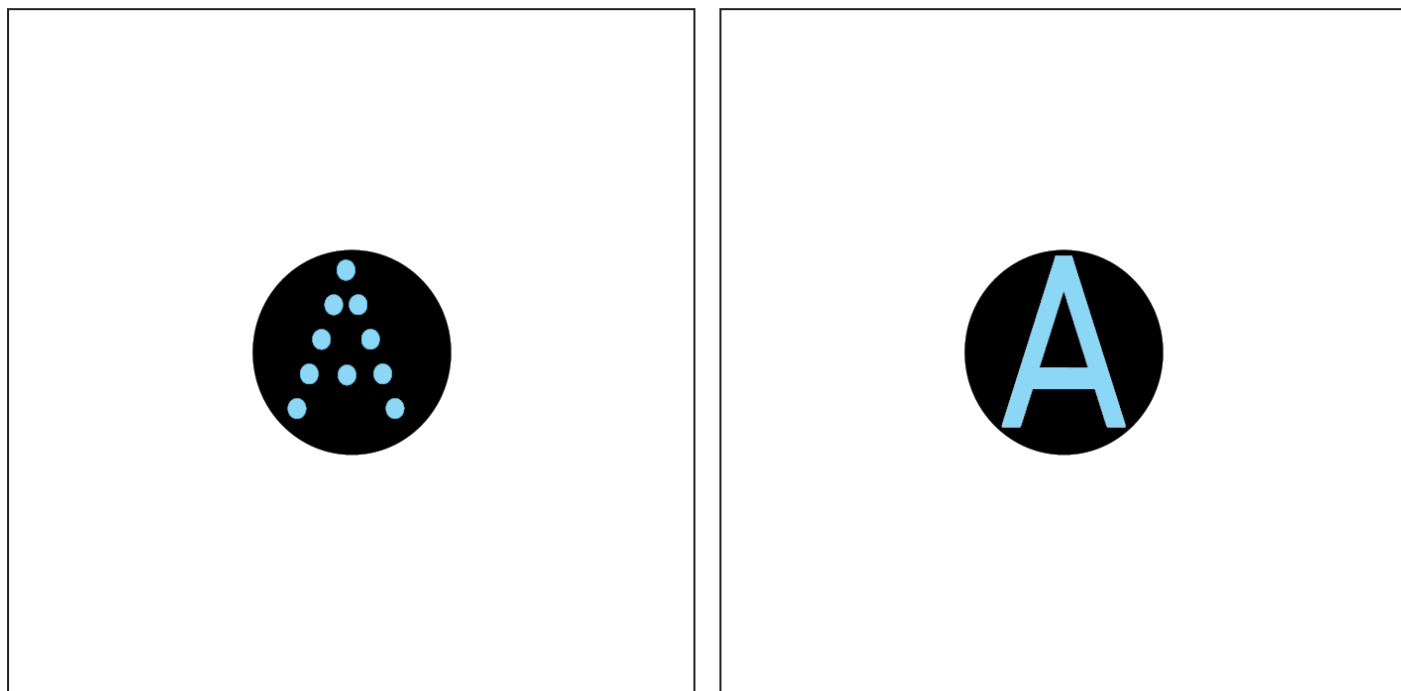
- on the post below a signal, or
- on or near a tunnel-type signal.

If an A light is not lit, the signal is a controlled signal.

If the A light is lit, or the signal has an A sign on or near the signal, the signal:

- operates automatically
- is designated as an automatic signal.

**FIGURE 4: Three types of A light.**





## Signals and Signs

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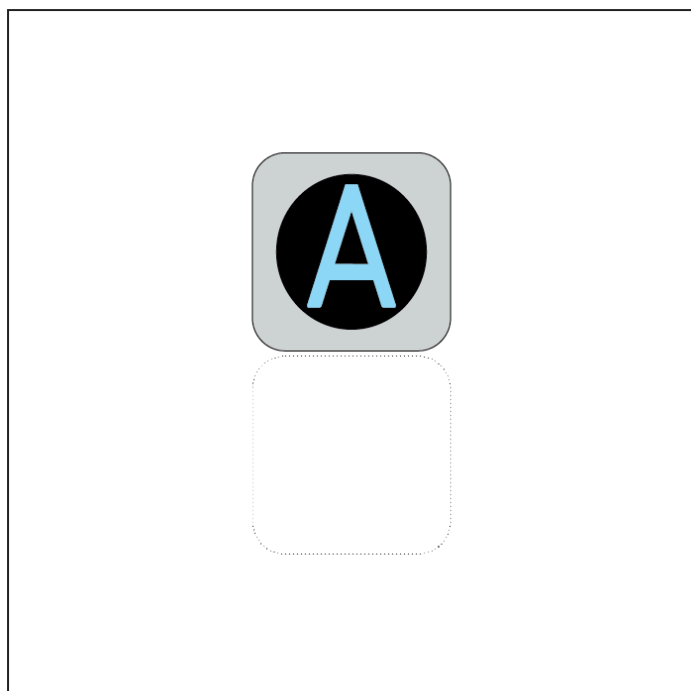
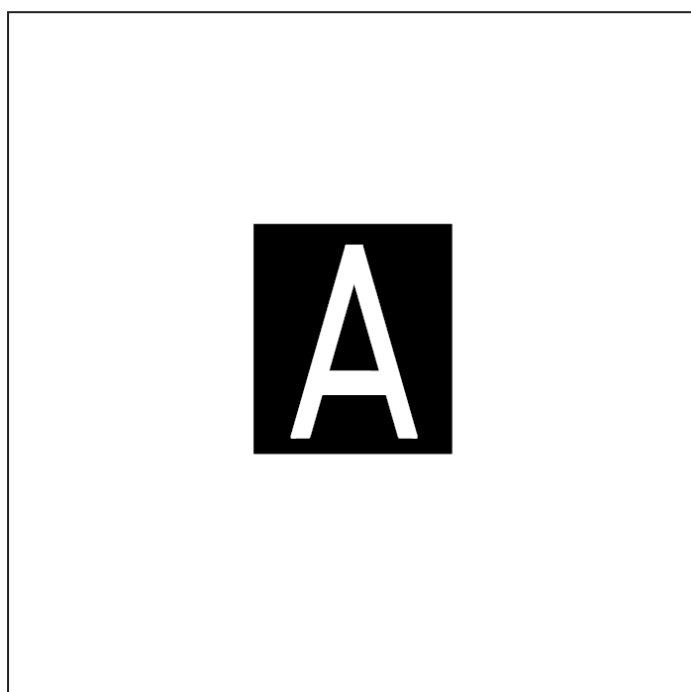


FIGURE 5: Example of an A sign.



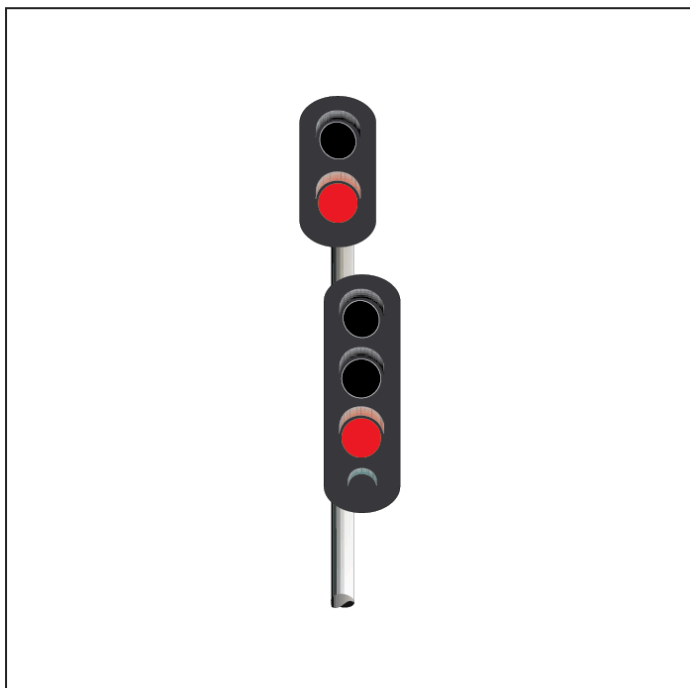
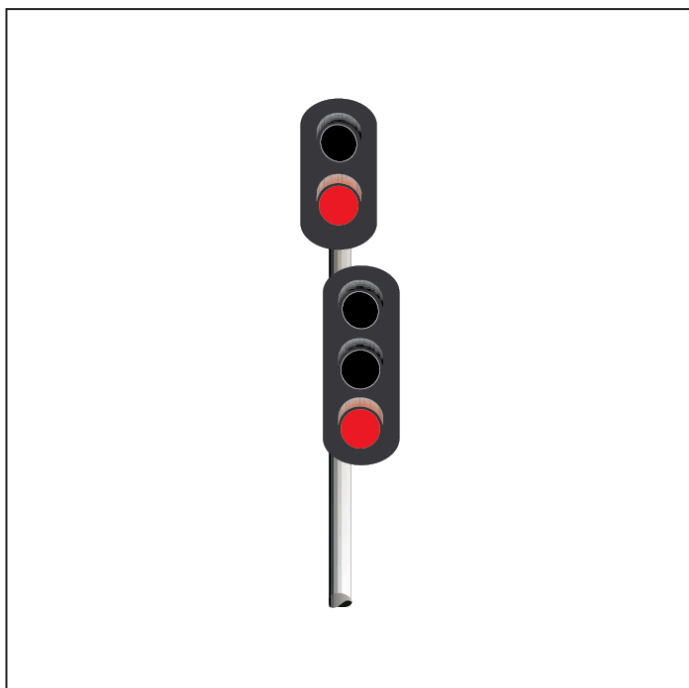
## Double light colour light signals with staggered lights

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Double light colour light signals with staggered lamp cases are:

- automatic signals, or
- distant signals.

**FIGURE 6: Staggered colour light forms.**

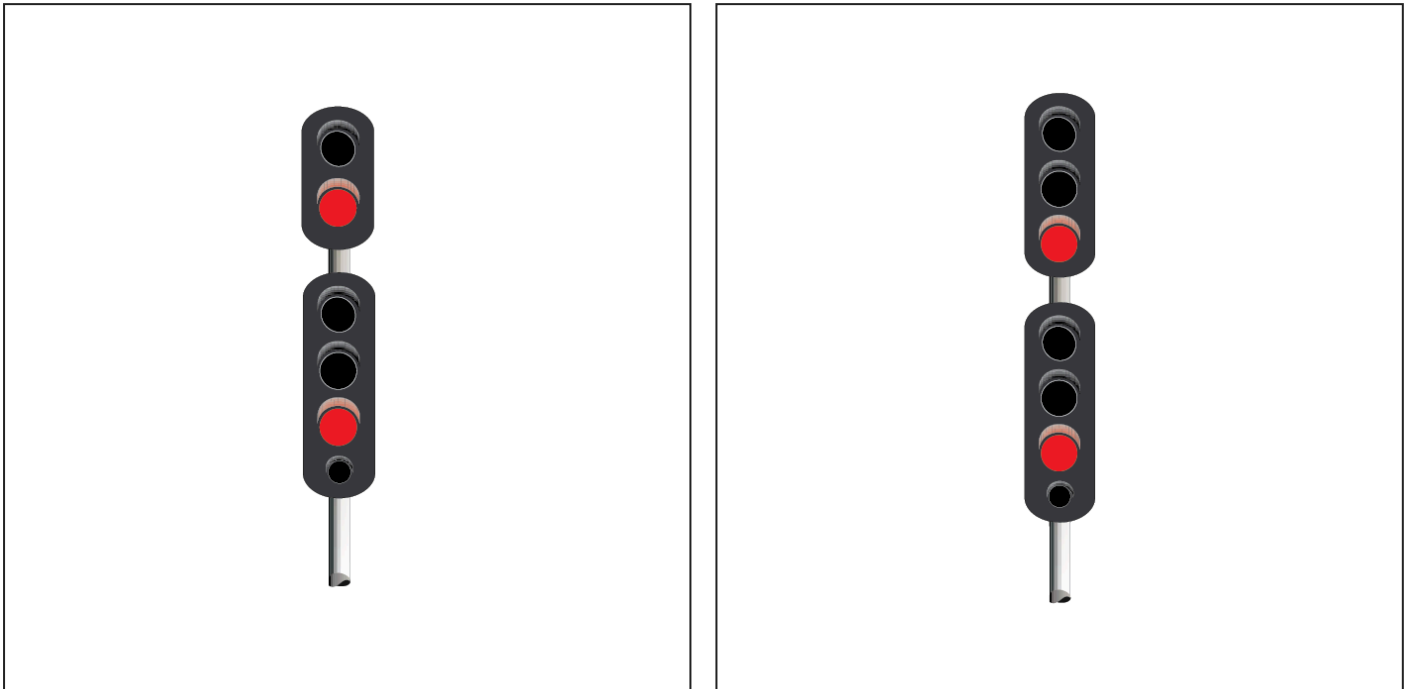


## Double light colour light signals with vertical lights

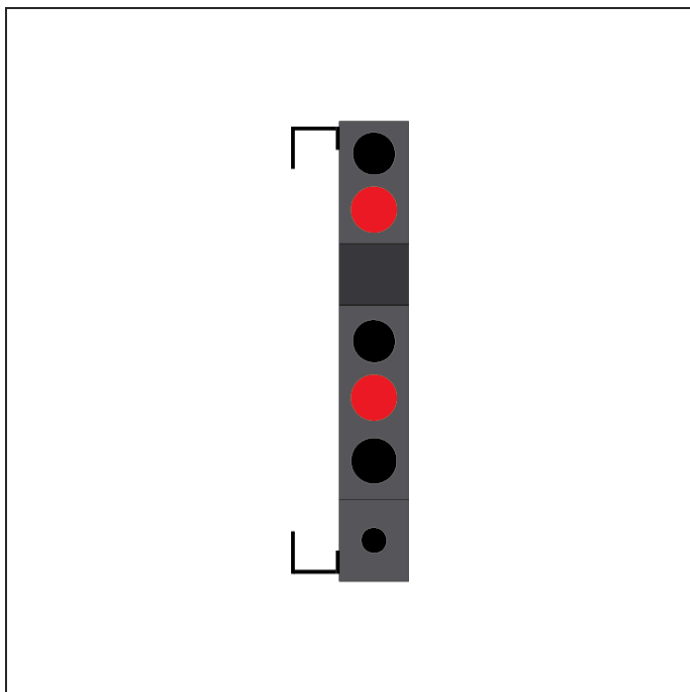
Double light colour light signals with vertical in-line lamp cases are:

- controlled signals, or
- automatic signals, if an A sign is fitted or an A light is lit.

**FIGURE 7: Vertical colour light forms.**



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### Single light colour light signals with staggered marker light

Single light colour light signals with a staggered marker light are:

- automatic signals, or
- distant signals.

#### Automatic signals

Automatic single light colour light signals have a red marker light.

The marker light is lit if:

- the signal is at **STOP**, or
- the main light fails.

#### Distant signals

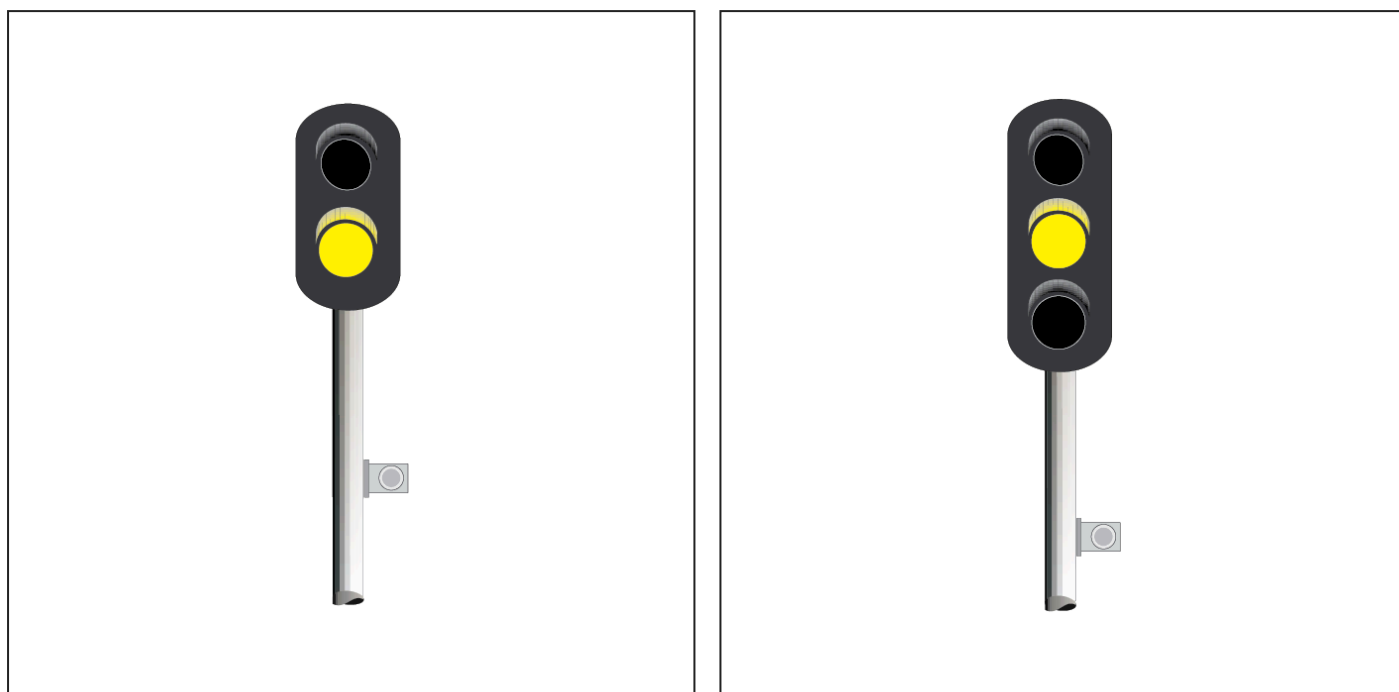
Single light colour light distant signals have a yellow marker light that is lit if the main light fails.

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Some distant signals indicate **STOP** if the line between the distant signal and the next signal is occupied.

Distant signals may have a signal identification sign with the same signal identification as the signal ahead. The identification sign includes the word **DISTANT**.

**FIGURE 8: Distant signals at CAUTION.**



### Single light colour light signals with in-line marker light

Single light colour light signals with an in-line red marker light are:

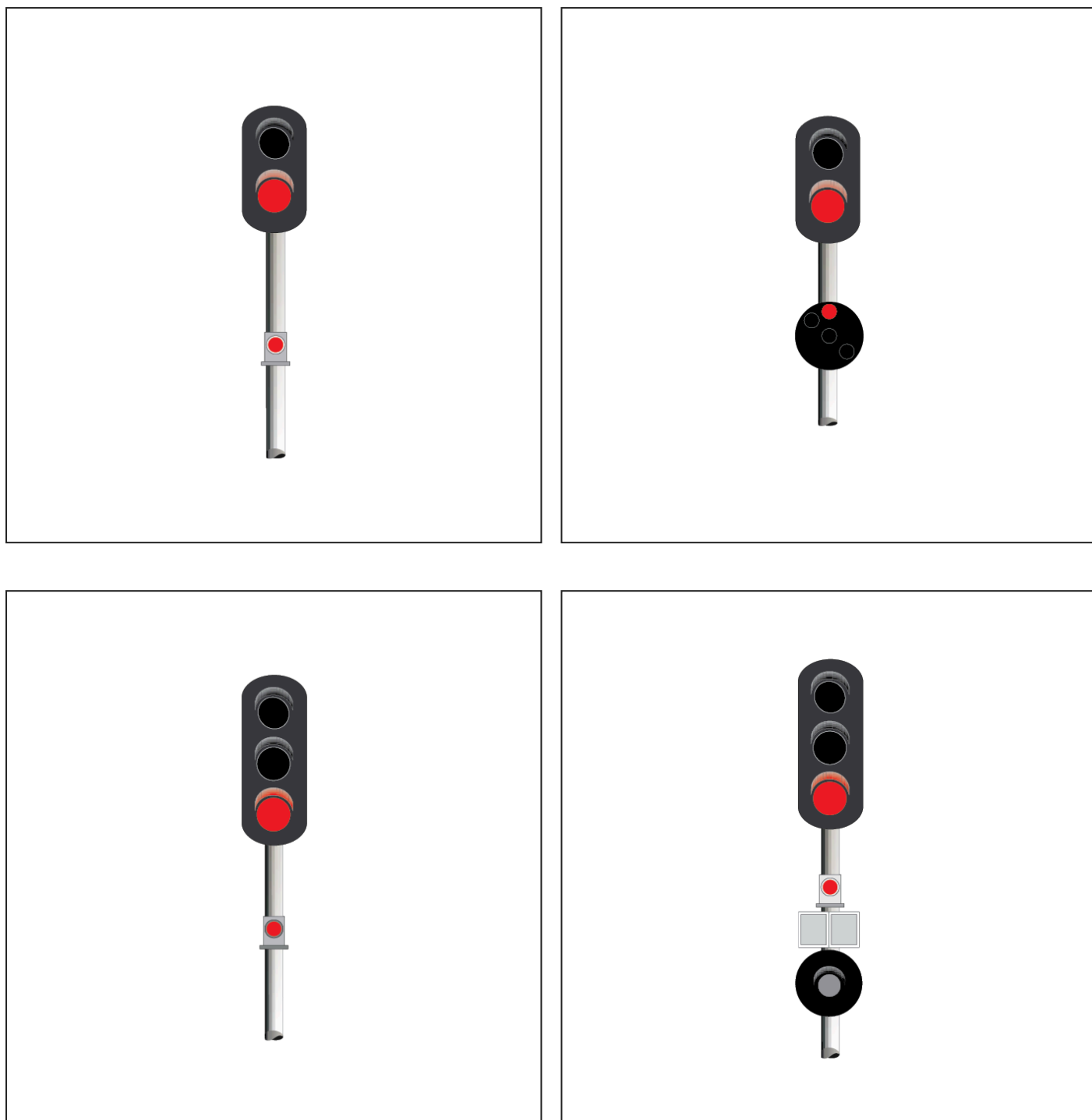
- controlled signals, or
- automatic signals, if an **A** sign or an **A** light is lit.

The marker light is lit if:

- the signal is at **STOP**, or
- the main light fails.

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FIGURE 9: Single head signal forms.



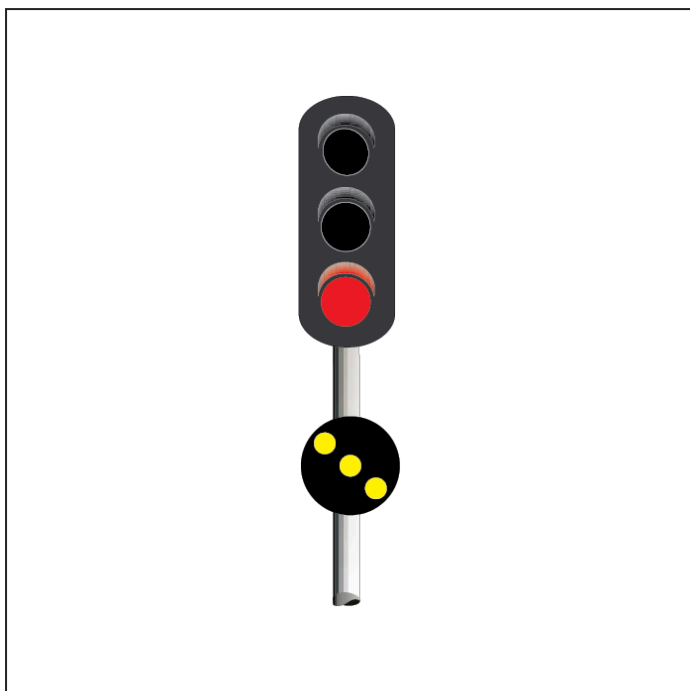
### Lower turnout units

A **PROCEED** indication for a turnout route is displayed by a diagonal row of yellow lights on the turnout unit.

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The row of lights is angled up towards the turnout route.

**FIGURE 10:** Single colour light signal indicating **PROCEED** for a left turnout route.



### Co-acting signals

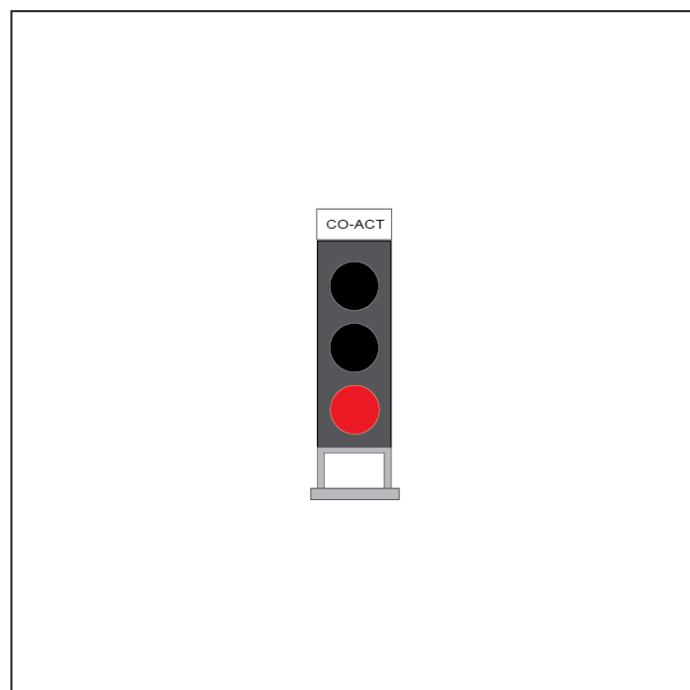
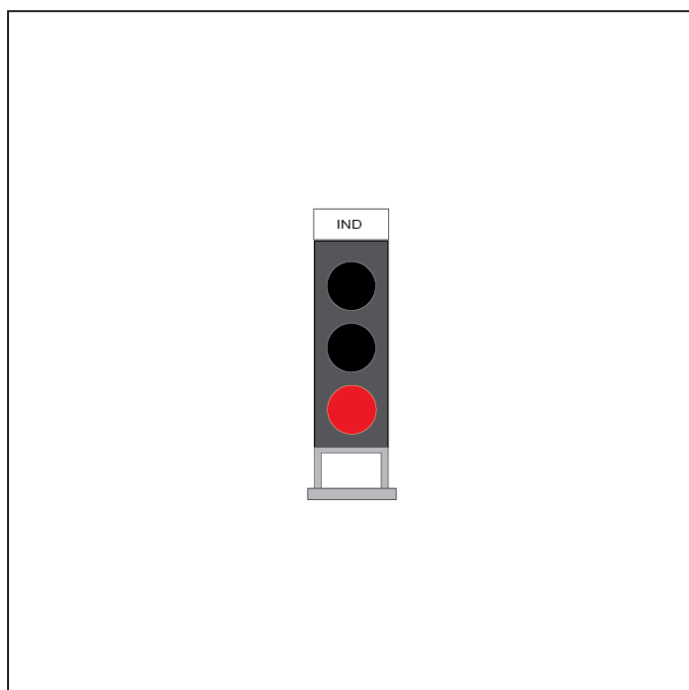
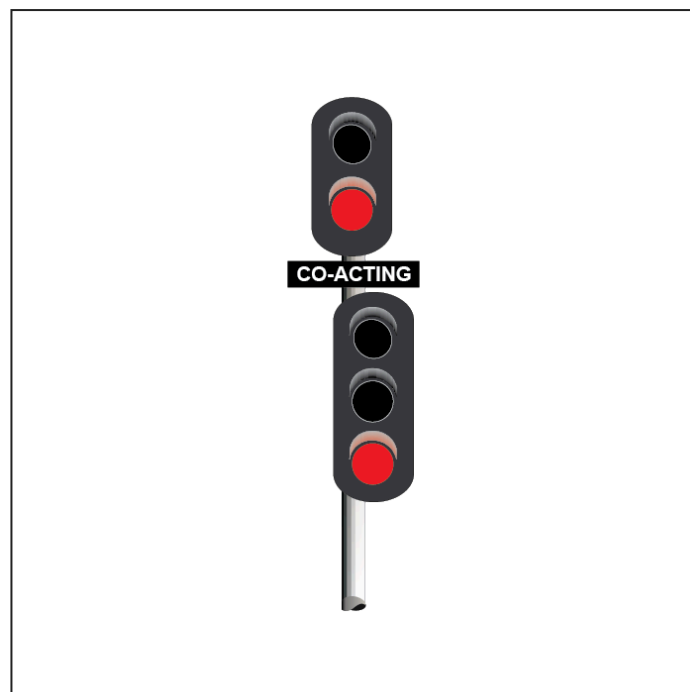
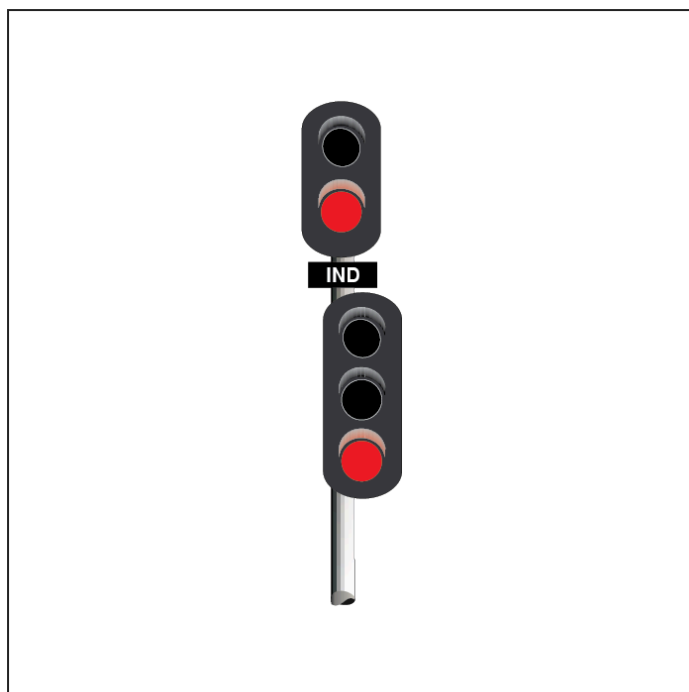
If it is possible for a running signal to be obscured from a Driver's or Track Vehicle Operator's view, a co-acting signal may be used to provide information about the running signal indication.

Co-acting signals may have:

- a sign showing **CO-ACTING, INDICATOR**, or an abbreviation
- a signal identification sign with the same details as those on the primary signal.

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FIGURE 11: Typical co-acting signals.





## Signals and Signs

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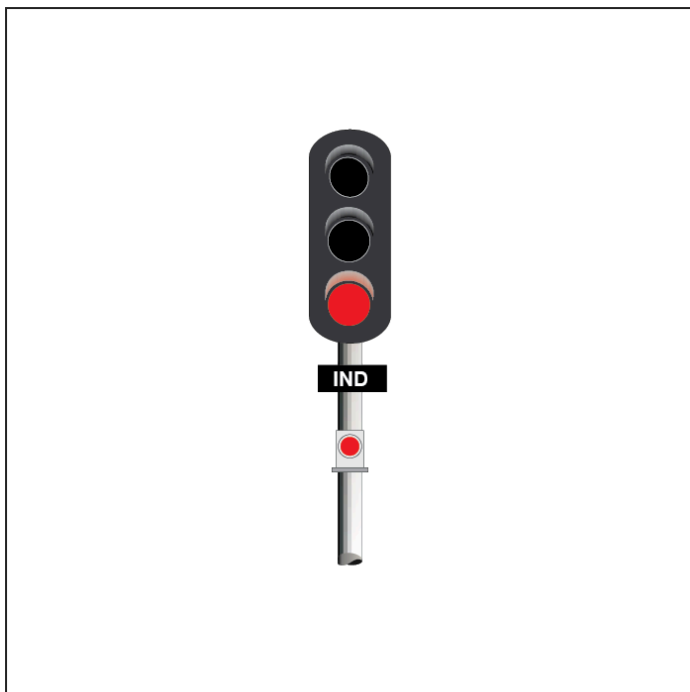
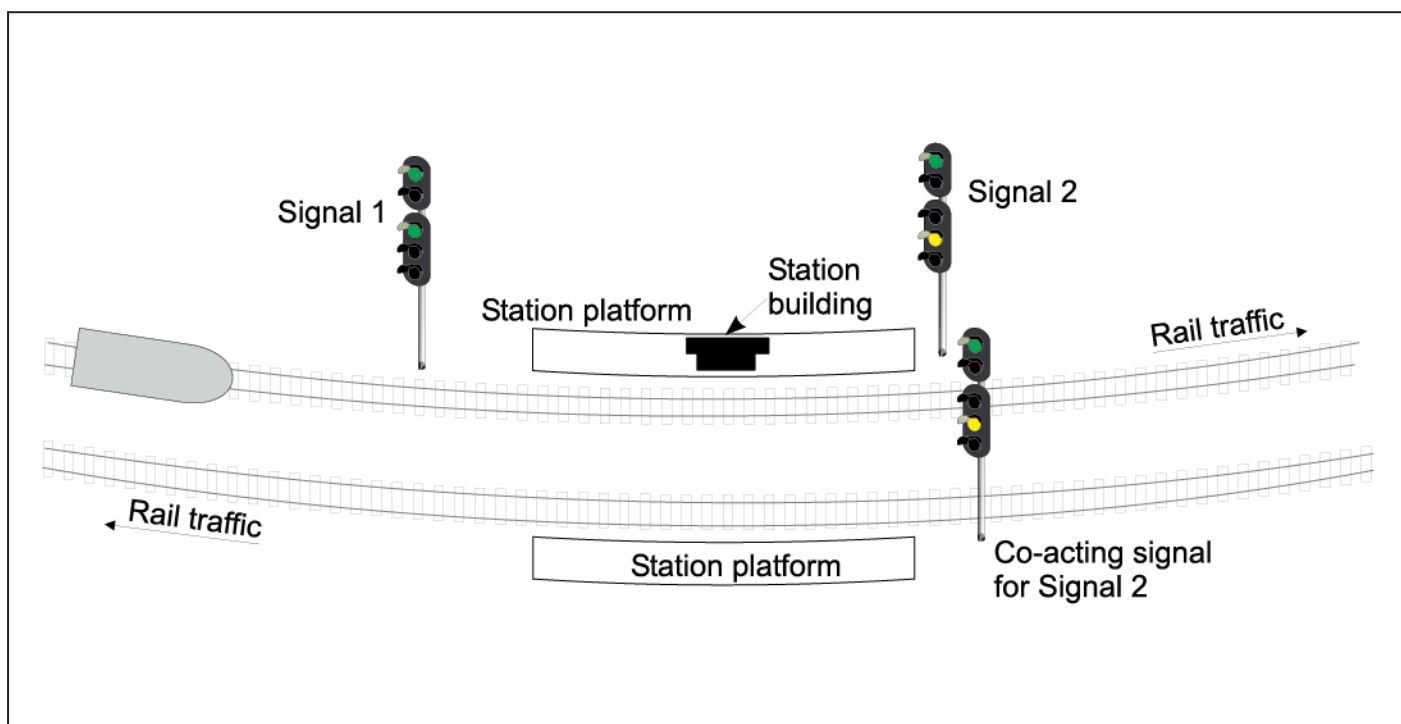


FIGURE 12: Example of co-acting signal placement where the Driver's view of Signal 2 is obstructed by the station building and the track curvature. The Driver will see the co-acting signal for Signal 2.



## Repeater signals

An intermediate signal, known as a repeater signal, may be provided at some locations to give Drivers and Track Vehicle Operators better information about the indication of the next signal.

Repeater signals may or may not:

- be of the same appearance as the ordinary signals, or
- display the same types of indications.

A repeater signal may have a sign with the word **REPEATER** or some abbreviation. The repeater signal may display the same identification number as the next signal.

Colour light repeater signals display **STOP** if the line between the repeater signal and the next signal is occupied.

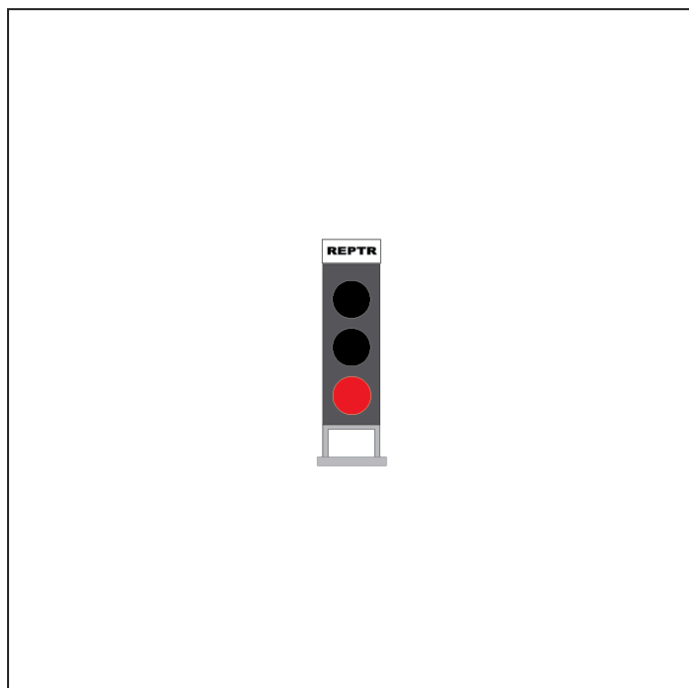
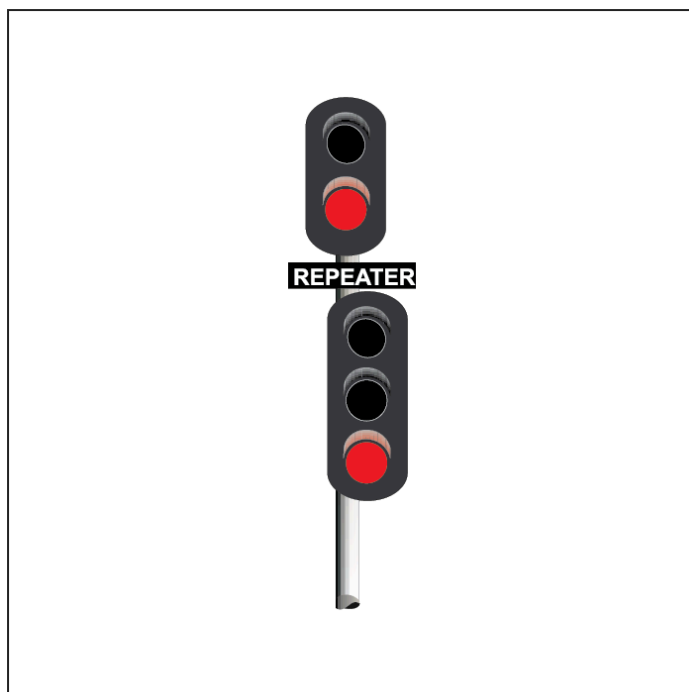


### Warning

A repeater signal will not necessarily display the actual indication of the next signal, as its purpose is to give early information about that indication.

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FIGURE 13: Colour light repeater signals.

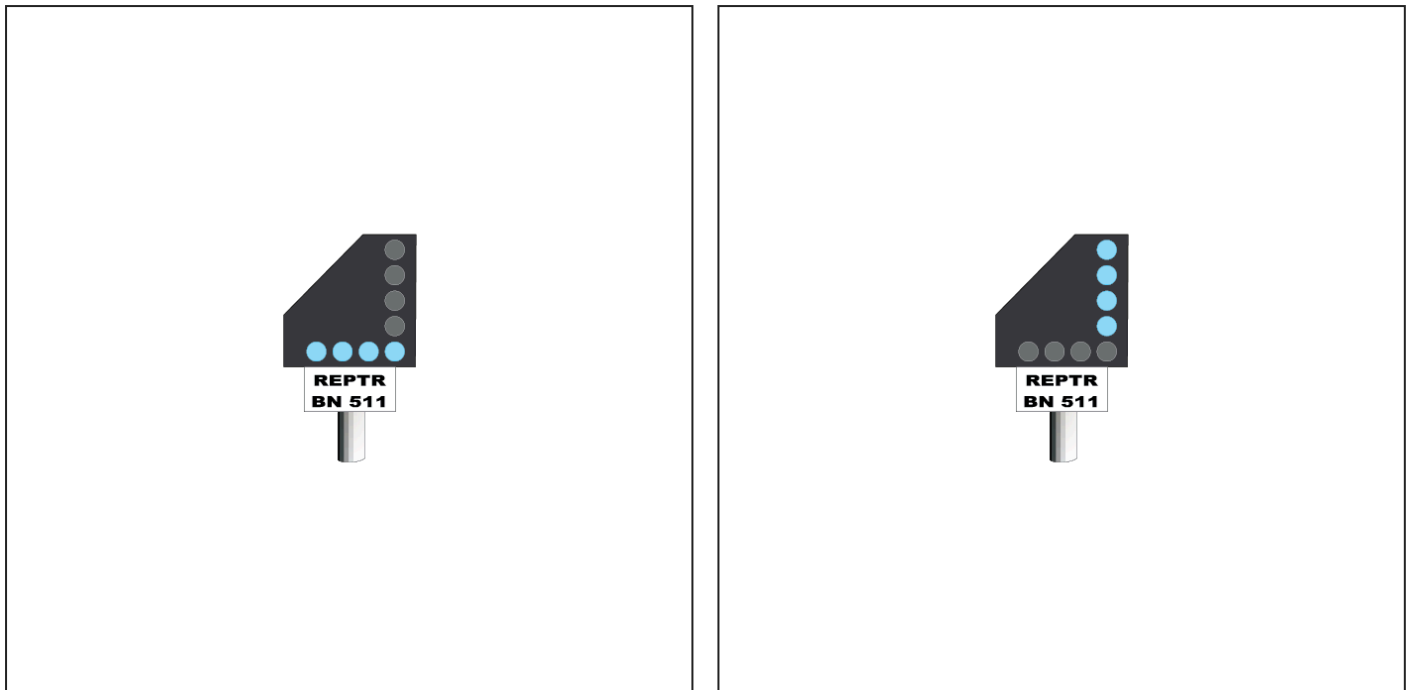


### LED repeater signals

Light-emitting diode (LED) repeater signals display four white lights.

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FIGURE 14: LED repeater signal indications.



### Position light repeater signals

Position light repeater signals display two white lights.

FIGURE 15: Position light repeater signals.

