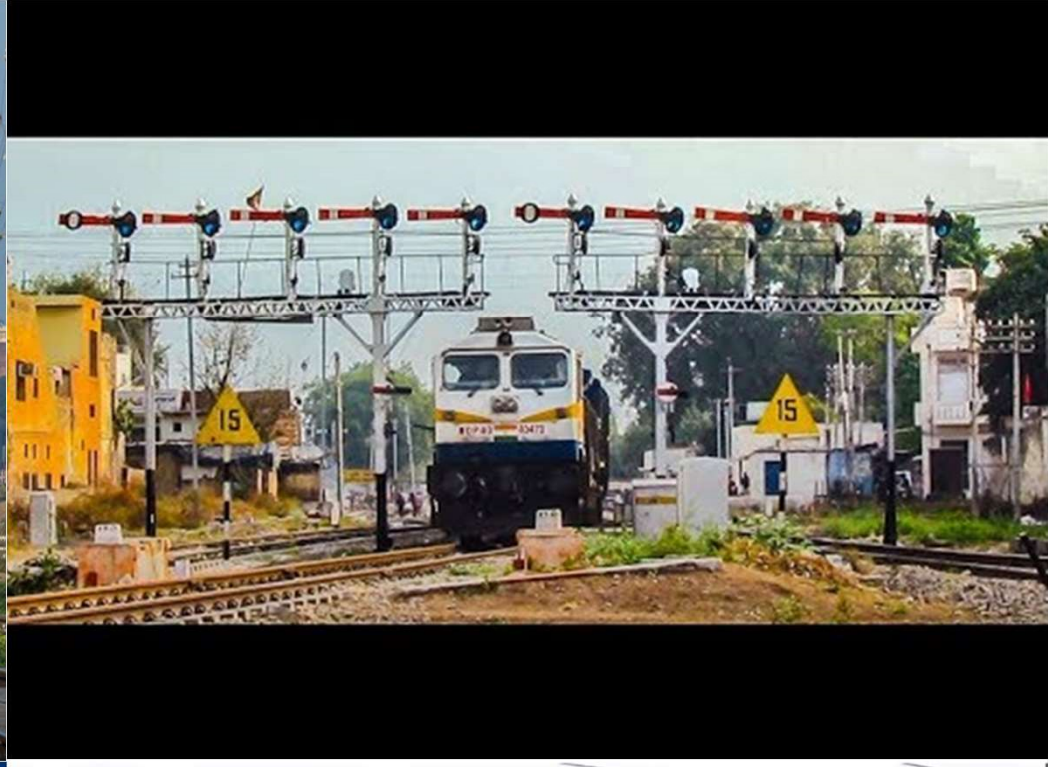


Types of signals








15
15



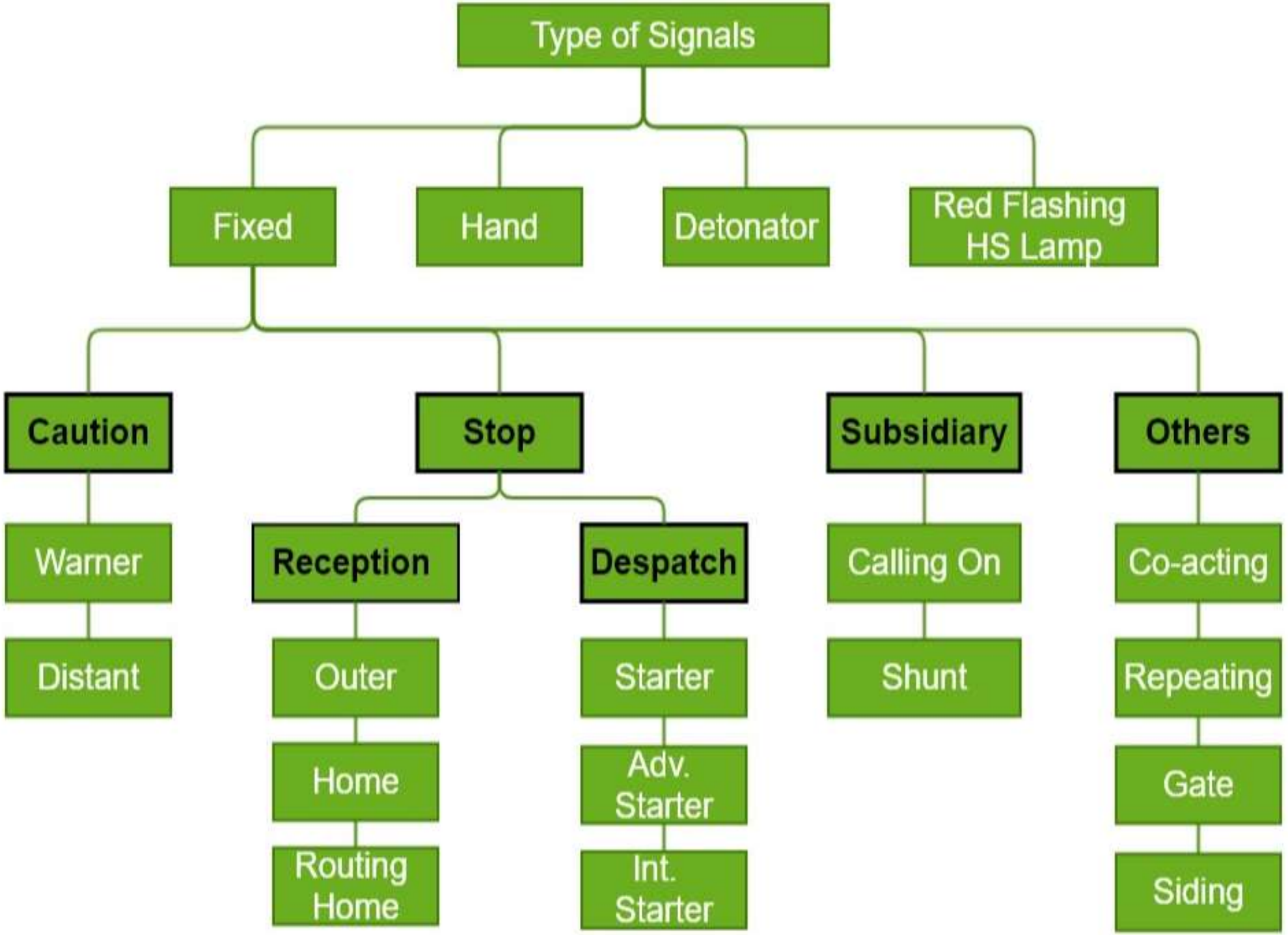

12A
12B
SH32

Definition

- Signal means some pre-decided indications those are used to control the train operation in safe mode.

General use of signals

- The signals shall be used for controlling the movement of trains in all cases in which exceptions are not allowed by approved special instructions.


Type of Signals
Fixed
Hand
Detonator
Red Flashing HS Lamp
Caution
Stop
Subsidiary
Others
Warner
Distant
Reception
Outer
Home
Routing Home
Despatch
Starter
Adv. Starter
Int. Starter
Calling On
Shunt
Co-acting
Repeating
Gate
Siding

Fixed signals

- "fixed signal" means a signal of fixed location indicating a condition affecting the movement of the train and includes a semaphore arm or disc or fixed light for use by day and fixed light for use by night;

Kinds of Fixed Signal

1. Warning/caution Signal,
2. Stop Signal,
3. Subsidiary signal,
4. Other signal.

CAUTION SIGNALS

LQ/ TWO ASPECT SIGNALLING : WARNER SIGNALS

MAUQ/ MULTIPLE ASPECT SIGNALLING : DISTANT SIGNALS

a) <u>Description of Warner signals and their indications</u> :– (GR 3.06)

(1) Fish-tailed arm .

(2) Intended to warn a Driver -

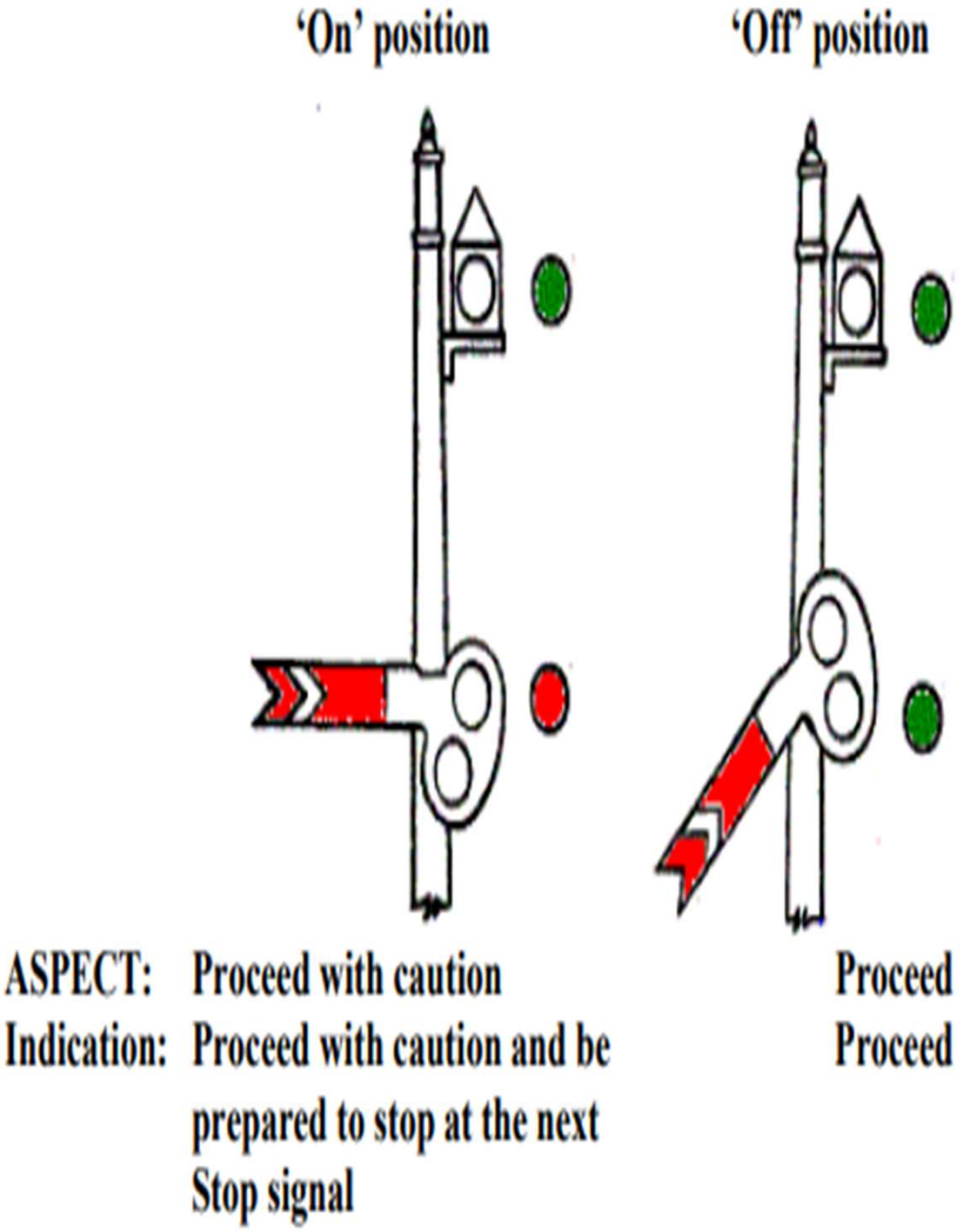
(a) of the condition of the block section ahead, or

(b) that he is approaching a Stop signal.

(3) A Warner signal may be placed either -

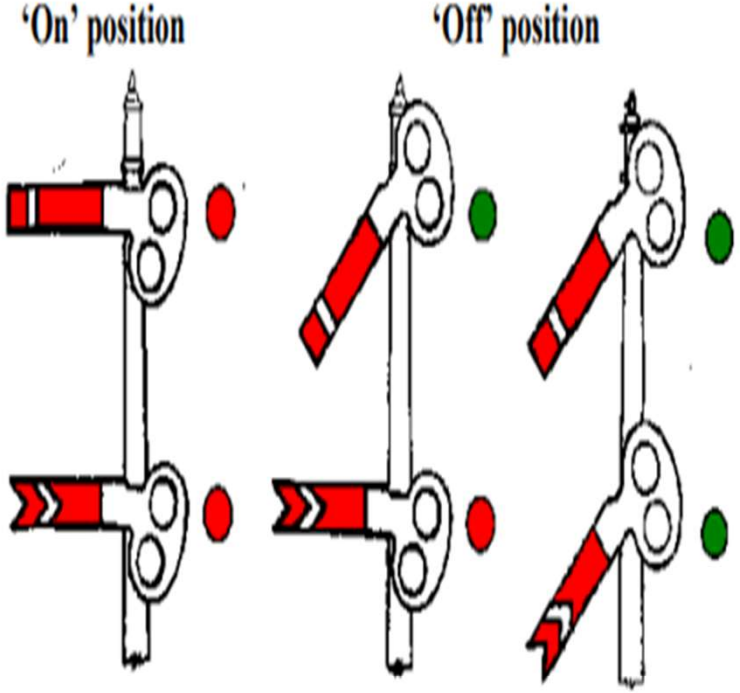
(a) **on a post by itself** with a fixed green light 1.5 to 2 meters above it by night , or

(b) on the **same post below the first Stop signal or the last Stop signal.**



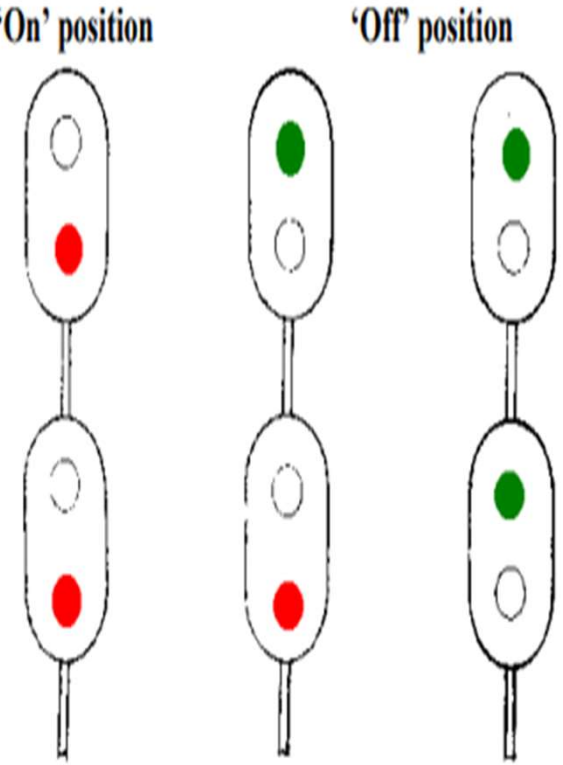
3.06. Description of Warner Signals and their indications :

(b) Semaphore Warner signal in Two-Aspect Signalling Territory-below a Stop signal



ASPECT:	Stop	Proceed with caution	Proceed
Indication:	Stop dead	Proceed with caution and be prepared to stop at the next Stop signal	Proceed

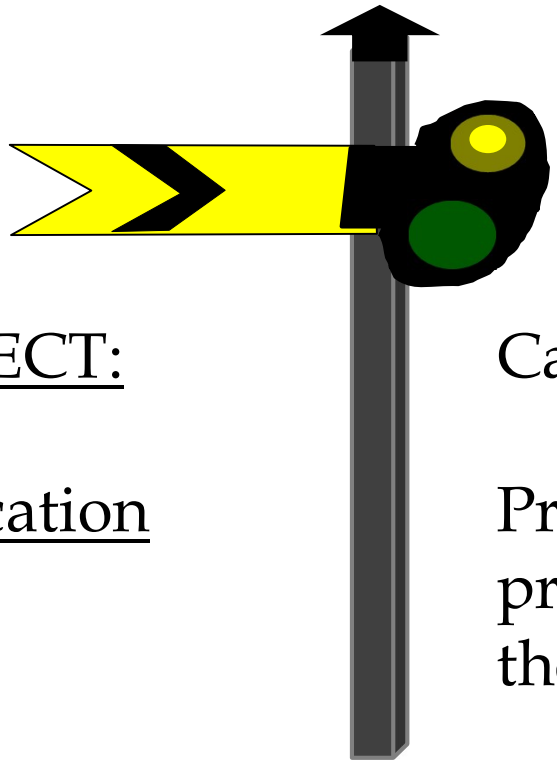
(b) Colour Light Warner Signal in Two – Aspect Signalling Territory-below a Stop signal

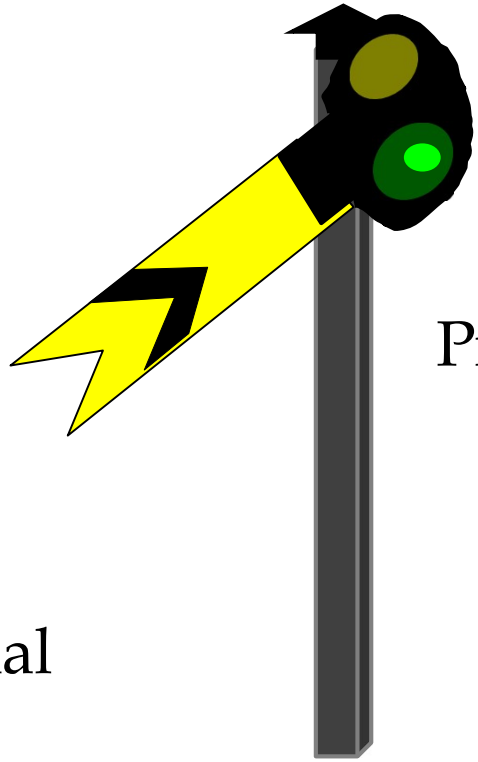


ASPECT:	Stop	Proceed with caution	Proceed
Indication:	Stop dead	Proceed with caution and be prepared to stop at the next Stop signal	Proceed

Description of Distant signals and their indications : –

Semaphore Distant signal in Two-aspect Signaling Territory



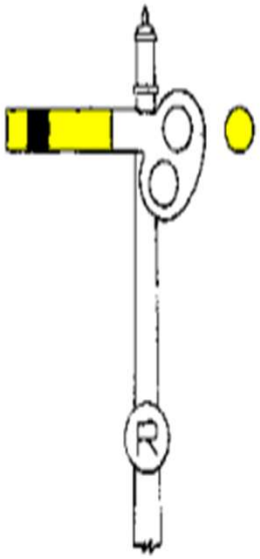
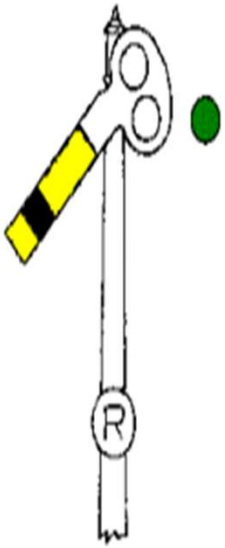


ASPECT:	Caution	Proceed
Indication	Proceed and be prepared to stop the next Stop signal	Proceed

3.07. Description of Distant Signals and their indications :

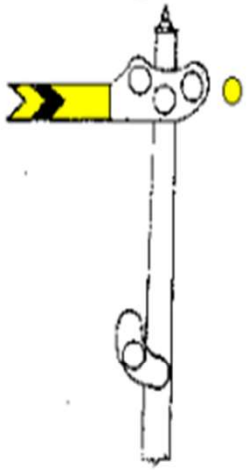
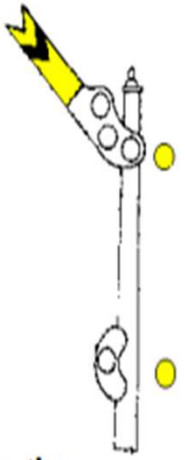
(4) The aspects and indications of a semaphore arm type Repeating signal are shown below: -

Semaphore Arm type Repeating signal in Two-aspects Signalling Territory

	'On' position	'Off' position
		
ASPECT:	Signal 'On'	Signal 'Off'
Indication:	Signal which it repeats is at 'On'	Signal which it repeats is 'Off'

(3) The aspects and indications of a semaphore Distant signal working in the upper quadrant are shown below: -

Semaphore Distant signal in Multiple-Aspect Signalling Territory

	'On' position	'Off' position		
				
PECT:	Caution	Attention	Proceed	
lication:	Proceed and be prepared to stop at the next Stop signal	Proceed and be prepared to pass next signal at such restricted speed as may be prescribed by special Instructions. Train is being received on main line and is required to stop at the Starter signal; or on a Loop line required to stop at the Starter signal or to pass run through via Loop Line.	Proceed, Block Section ahead is clear, train is to pass run through via Main Line.	

STOP SIGNALS

RECEPTION	DESPATCH
OUTER	STARTER
HOME	INT. STARTER
ROUTING HOME	ADV. STARTER

FIXED RECEPTION STOP SIGNALS…

are to control the movement of approaching trains & of three kinds.

1. OUTER :

1. Is First Stop Signal where provided. It is located at an adequate distance from outer most point.

2. HOME :

2. First Stop Signal where Outer not provided and second Stop Signal if Outer provided, located outside all connections.

3. ROUTING :

Indicates to Loco Pilot which of two or more diverging line/route is set, if Home cannot serve the purpose.

DESPATCH FIXED STOP SIGNALS...

Are to control movement of departing trains & are of two kinds, Starter and Advanced Starter..

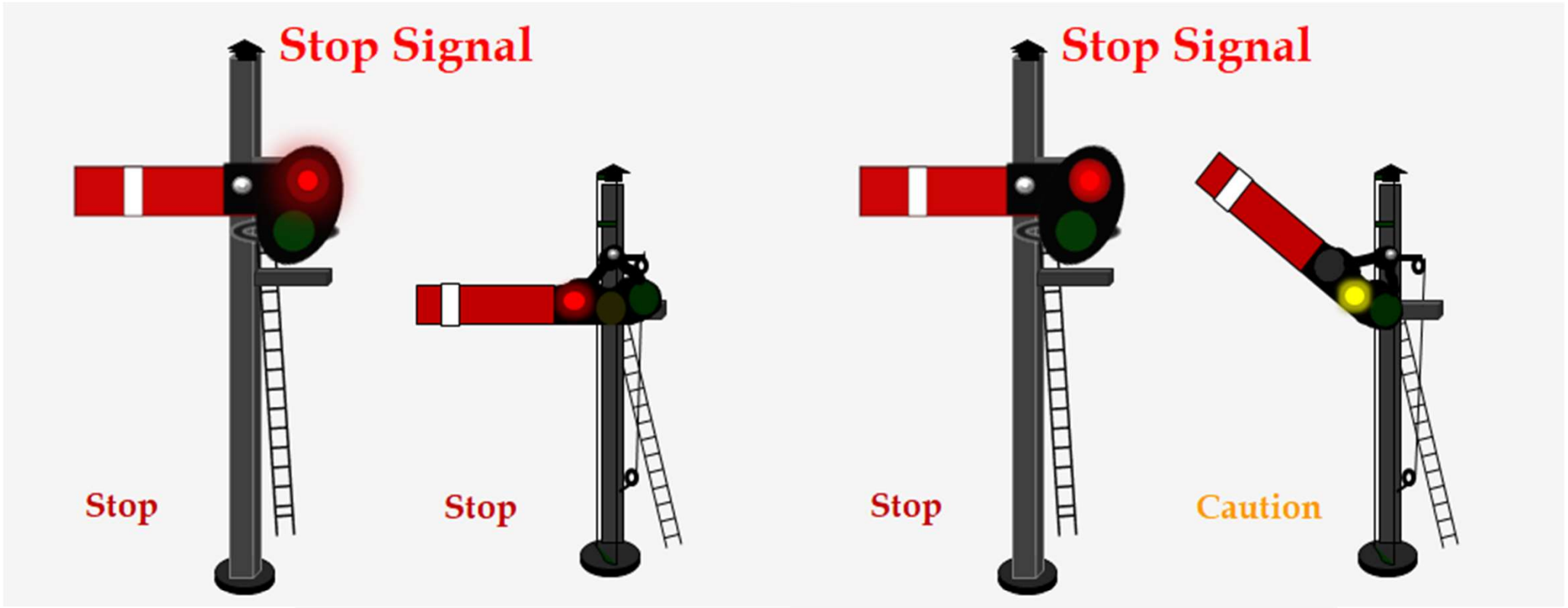
1. STARTER :

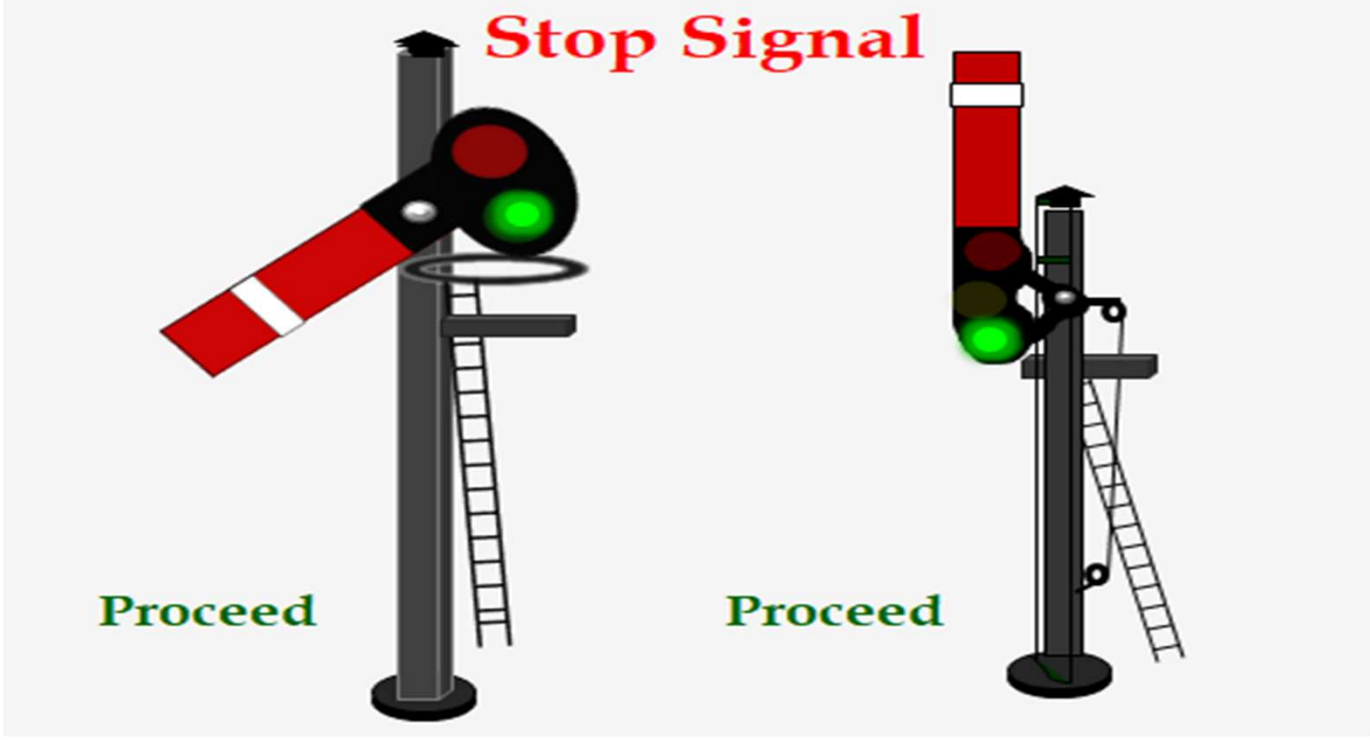
1. When there is only one departing signal, it is Last Stop Signal and known as Starter.

2. ADVANCED STARTER :

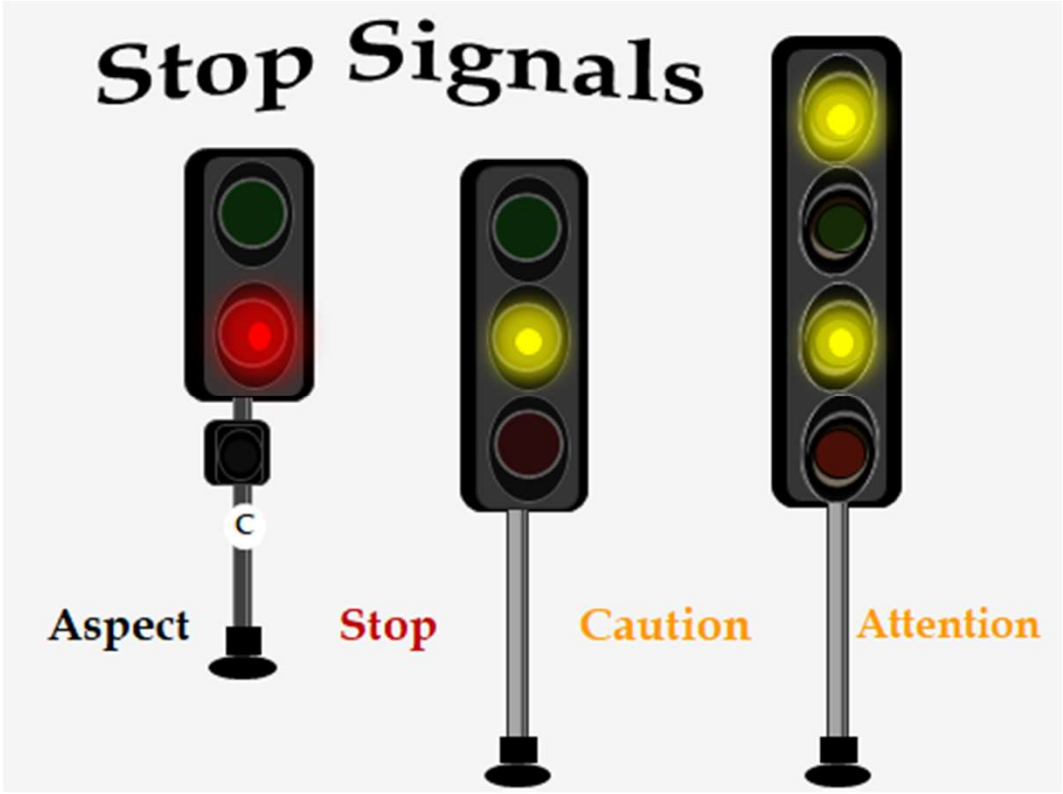
2. Where more than one departing signals provided, outer most is the Last Stop Signal and is called the Advanced Starter.

Beyond Advanced Starter or Starter, if Advanced Starter not provided, no train may pass without Authority to proceed under the System of Working in force.


Stop Signal
Stop
Stop
Stop Signal
Stop
Caution


Stop Signal
Proceed
Proceed


Stop Signals
C
Aspect
Stop
Caution
Caution


Stop Signals
C
Aspect
Stop
Caution
Attention


Stop Signals
C
Aspect
Proceed
Proceed
Proceed

SUBSIDIARY SIGNALS...

CALLING – ON SIGNALS

&

SHUNT SIGNALS

- Calling on Signal…

- A Subsidiary Signal may be semaphore having white painted, red band miniature arm or with "C" marker, miniature white light in off condition only, no independent aspect in "ON" position.

- Under Approved Special Instructions may placed below any stop signal except Last Stop Signal.

- Can be taken off only after train stops for specified time duration.

- Warns Loco Pilot to proceed cautiously and to be prepared to stop short of any obstruction

Shunt Signal

- Used for shunting purposes and not applicable to a running train

- May be separately located on posts or close to the ground or below a stop signal except the first Stop Signal of a station.
- When provided below stop signal it will show no light in on condition
- In case Shunt signals are not provided, hand signals may be used for shunting.

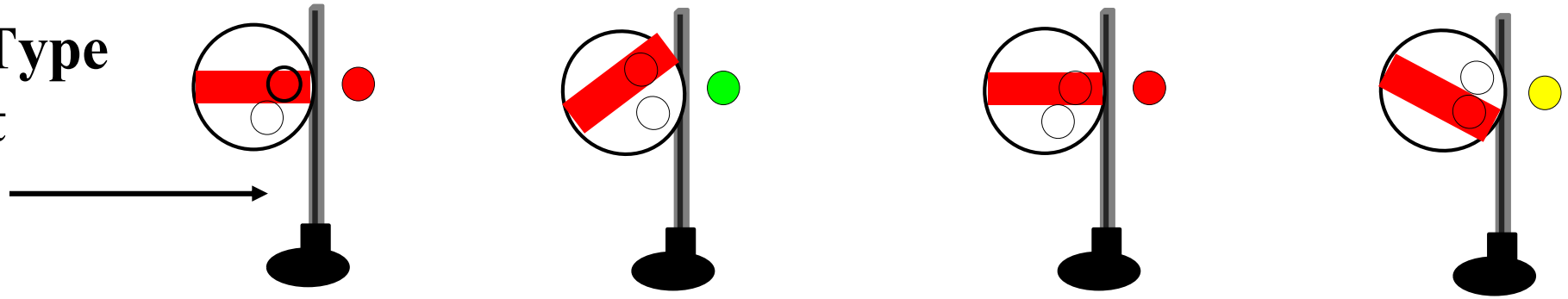
Shunt Sig. : May be of :

1. Miniature Arm type.
2. Disc type.
3. The position light type.

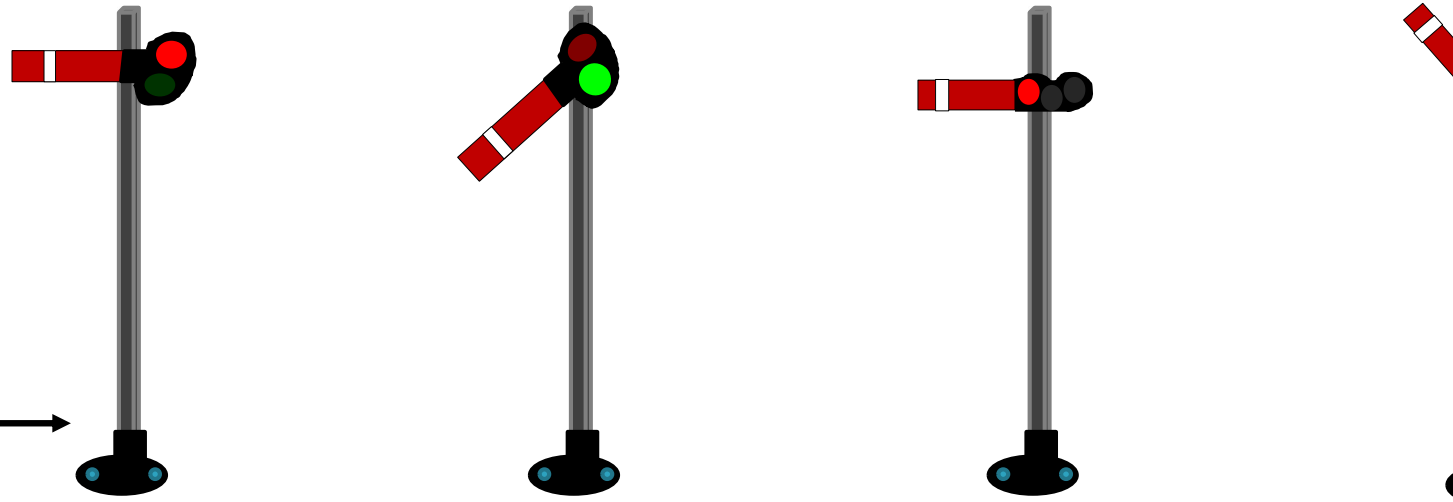
SHUNT SIGNALS

ON OFF ON OFF

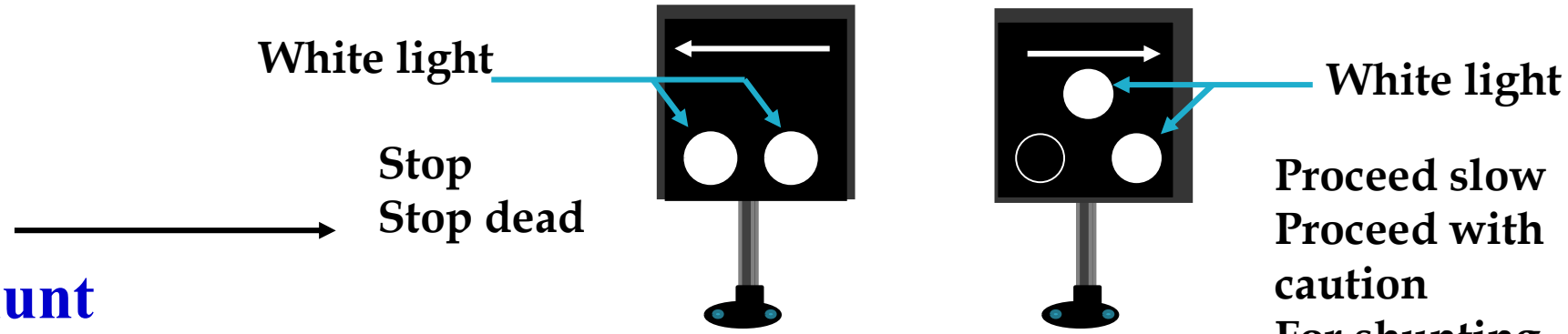
Disc Type Shunt



Miniature Arm Type Shunt



Position Light Shunt



OTHER SIGNALS...

CO – ACTING SIGNALS

REPEATING SIGNALS

GATE SIGNALS

&

SIDING SIGNALS

CO – ACTING SIGNALS : –

1. Co-acting signals are duplicate signals fixed below ordinary signals and are provided where, in consequence of the height of the signal post, or of there being an over-bridge or other obstacle, the main arm or light is not in view of the Loco pilot during the whole time that he is approaching it.

2. Co-acting signals shall be fitted at such height that either the main arm or light, or the Co-acting arm or light, is always visible.



REPEATING SIGNALS

1. A Signal placed in rear of a fixed signal for the purpose of **repeating** to the Loco Pilot of an approaching train **the aspects of the fixed signal in advance** is called a Repeating Signal.

2. A Repeating signal shall be provided with an '**R**' **marker** and shall be of : –

- banner type, or
- a square ended semaphore arm, or
- a colour light signal.

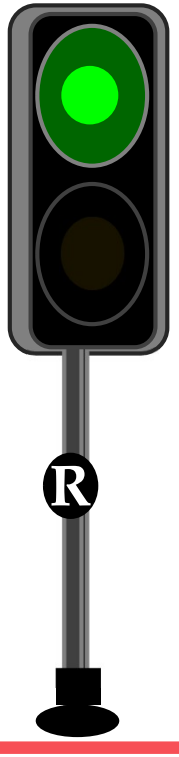
Repeating Signals..

Color Light

ON

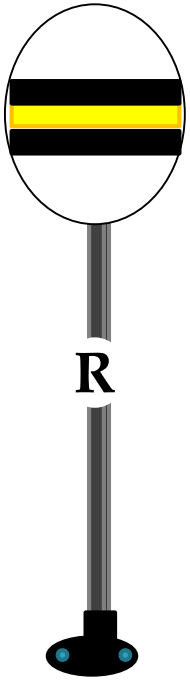


OFF

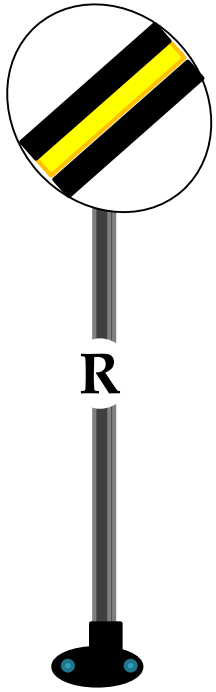


Banner Type

ON

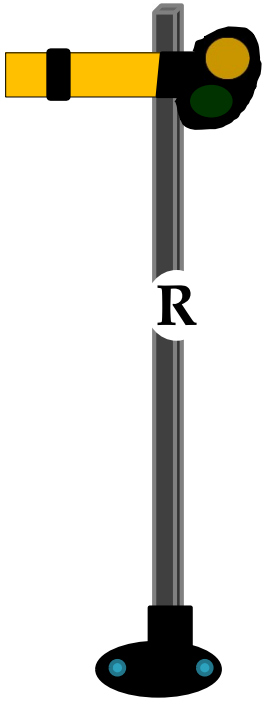


OFF

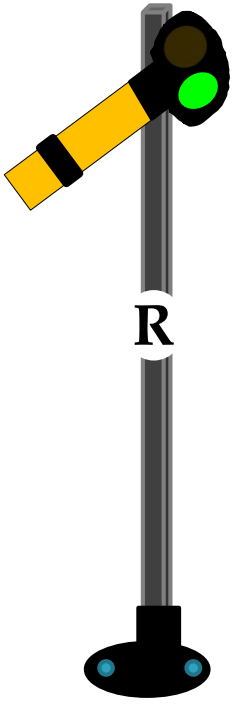


Semaphore Type

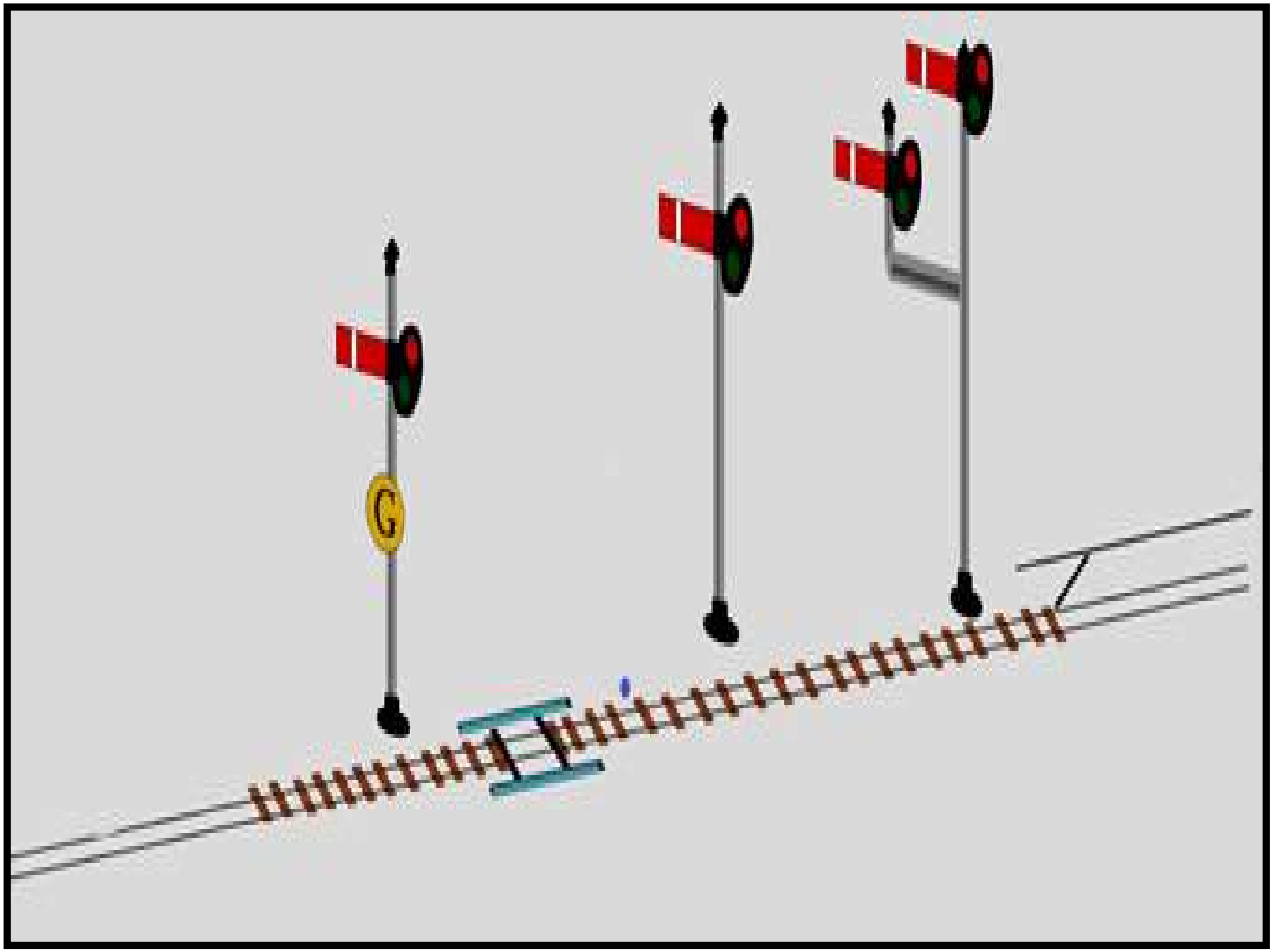
ON



OFF



GATE STOP SIGNAL

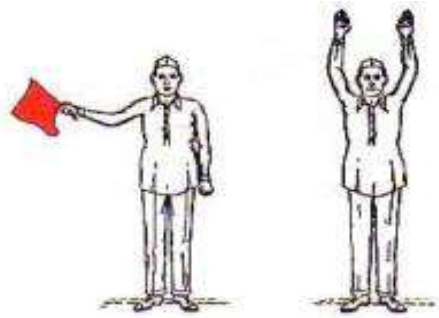


Detonating Signals



- Detonators are audio device fixed on rails by bending the clasps around the head of rail, to attract the attention of loco pilot, to be used…
- Visibility impaired weather
- For protection
- Life generally 5 years, may be extended annually up to 8 years maximum, provided the testing results as conducted upon 2 detonators of same lot, are found satisfactory.

HAND SIGNALS





To be exhibited by day, by showing a flag or hand and by night, by showing a light, as prescribed.

During day flag to be used, hand to be used in emergencies only or when flags not available.

During night, a red or green light to be used but in absence of red light, white light should be waved violently horizontally across the body of the person showing the signal.

THANK YOU!