Chapter- 05

DESIGNATION OF SIGNALS

TOPICS TO BE COVERED

Chapter- 05

Designation of signals

A. Introduction
B. Signals for reception
C. Signals for departure of trains
D. Aspect sequence chart of stop signals used for departure of trains

A

Introduction

Introduction

These signals are used for two main purposes:

- **Approaching Trains:** Some signals are used to manage trains that are approaching the station.
- **Departing Trains:** Other signals are used to manage trains that are departing from the station.

- Signals at stations are crucial for managing train movements.
- Separate signals are needed for trains arriving at and departing from stations.
- Multiple stop signals can be confusing to identify, so **naming them is essential**.

B

Signals for Reception

Signals for reception

- **Signals Governing Train Approach and Entry into Stations**

  - **Distant Signals:**
    - Used to indicate the condition of the stop signal ahead.
    - One distant signal is provided for sectional speeds below 120 kmph.
    - Two distant signals are provided for sectional speeds 120 kmph or above:
      - Distant Signal
      - Inner Distant Signal

  - **Stop Signals:**
    - Minimum of one permissive and one stop signal are required for trains approaching a station.
    - A stop signal taken 'OFF' (showing a Proceed aspect) permits the train to enter the station.
    - The first stop signal a train encounters is called the "Home" signal.
    - In some cases, a second stop signal called the "Routing Home" signal may be provided between the Home signal and the Reception lines of the station.

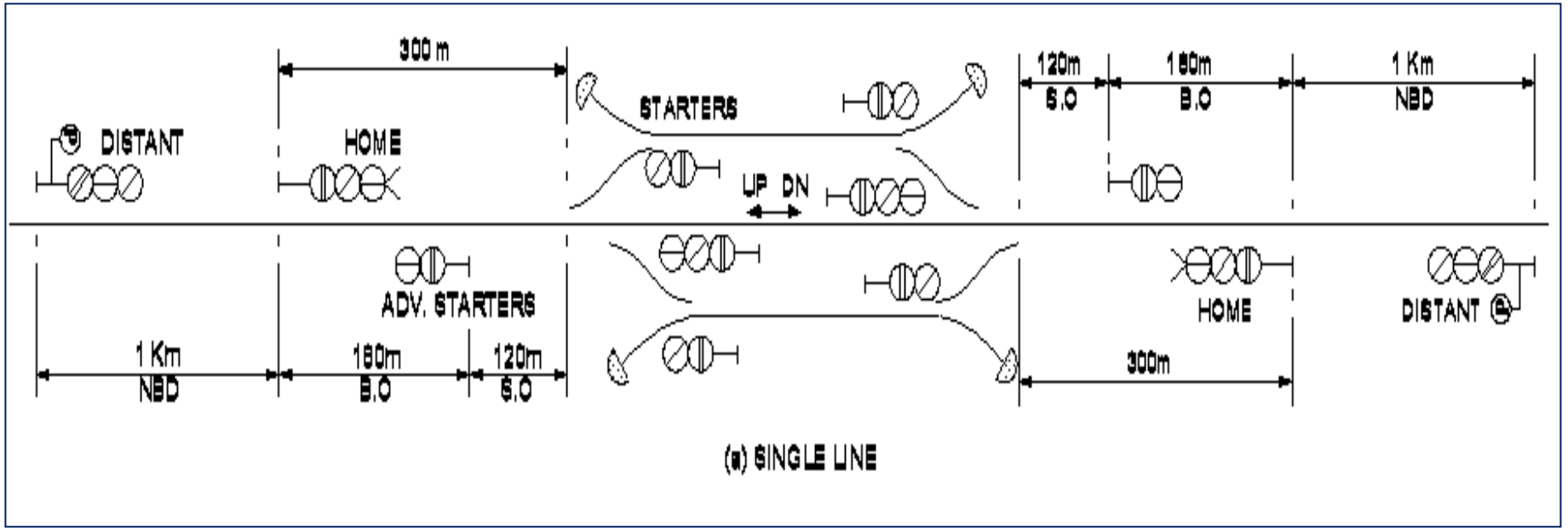
Signals for reception

- **Approaching signals used in MACLS**

Distant	HOME	Indication
Y	R	Train is required to stop at Home signal
YY	Y with Route	Reception on Loop Line. Stop at Starter
YY	Y	Reception on main line Stop at starters
G	G	Run through on main line

Aspects Sequence Chart of Approaching Signals used in MACL

Signals for reception



Distant	HOME	Indication
Y	R	Train is required to stop at Home signal
YY	Y with Route	Reception on Loop Line. Stop at Starter
YY	Y	Reception on main line Stop at starters
G	G	Run through on main line

Signals for reception

- **Two distant signals in approach (MACLS). (Sem 7.1.12 (b)**

Distant	Inner Distant	Home	Indication
YY	Y	R	Stop at Home Signal
YY	YY	Y with Route	Enter on Loop Line. Stop at Starter if at 'ON'
G	YY	Y	Enter on Main Line. Stop at Starter
G	G	G	Run through via main line

Aspects Sequence Chart of Using two Distant Signals in approach (MACLS)

C

Signals for Departure

Signals for Departure

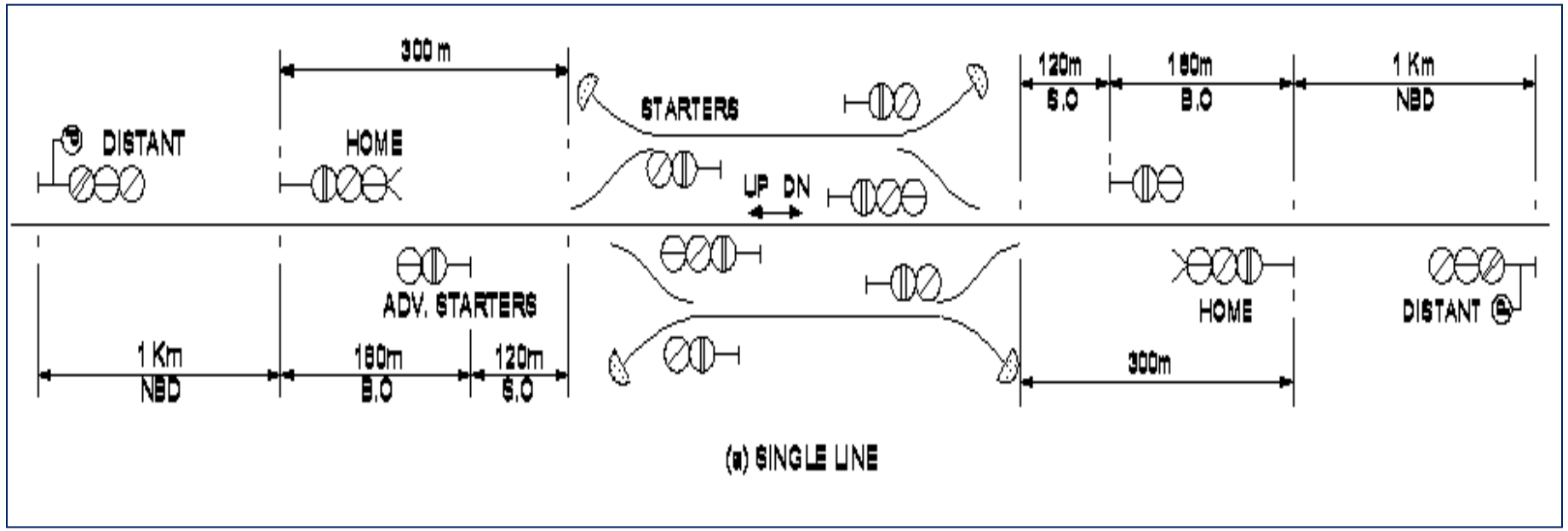
- Starter Signal:
  - Controls the departure of trains when only one stop signal is used.
  - Placed outside all connections on the line to which it refers.
  - Placed at least 400 meters in advance of the Home signal.

- Advanced Starter:
  - Controls the departure of trains when more than one stop signal is used.
  - Placed outside all connections on the line to which it applies.
  - Placed at least 120 meters in multiple aspect signaling from the outermost point on a single line and outside all point connections on a double line.
  - Placed at least 400 meters in advance of the Home Signal.

- Intermediate/Routing Starter:
  - Placed between the starter and advanced starter when necessary.
  - Placed in rear of the point it protects.

The starter referring to any line shall be placed so as to protect the first facing point or fouling mark; and shall not be less than 400 mts in advance of home signal.

Signals for Departure



Starter	Advanced Starter	Indication
R	R	Stand in rear of starter signal
Y	R	Shunt up to adv. Starter signal
G	G	Proceed into Block section, line is clear

Signals for Departure

Departure signals in MACLS

Starter	Advanced Starter	Indication
R	R	Stand in rear of starter signal
Y	R	Shunt up to adv. Starter signal
G	G	Proceed into Block section, line is clear

Aspects Sequence Chart of Departure signals in MACLS

Signals for Departure

Departure signals in MACLS

Starter	Advanced Starter	Indication
R	R	Stand in rear of starter signal
Y	R	Shunt up to adv. Starter signal
G	G	Proceed into Block section, line is clear

Aspects Sequence Chart of Departure signals in MACLS

E

A.C. Traction Manual

Summary

Reception Signals:

- **Distant Signal: Indicates the condition of the stop signal ahead.**
- **Inner Distant Signal: Used when sectional speeds are 120 kmph or above if required.**
- **Home Signal: The first stop signal a train encounters when approaching a station.**

Dispatch Signals:

- **Starter Signal: Controls the departure of trains when only one stop signal is used.**
- **Intermediate Starter: Placed between the starter and advanced starter when necessary.**
- **Advanced Starter: Controls the departure of trains when more than one stop signal is used.**

Aspect Sequence Charts:

- **Aspect sequence charts show the different aspects of a signal and the actions a train driver should take in response to each aspect.**
- **They are used to ensure safe and efficient train movements.**

End of Session

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End of Session