

APPENDIX- XVI**EMUs/MEMUs**

EMUs/MEMUs are with quick acceleration/deceleration and higher carrying capacity. They are equipped with electro pneumatic brakes which are positively acting with fast/high braking effort. The motive power is distributed over the rake and consequent higher acceleration/deceleration. The EMU/MEMU is vestibuled from one end to the other.

1. Bell Signals:

1.1. The following Bell Signal Codes shall be given by the Loco Pilot/Motorman and to be acknowledged by the Guard working EMU/DMU trains.

S. No.	Bell Signal Code by LP/Motorman	Indication	Acknowledgement by Guard	Indication
1.	0	1. Signal is ON or 2. Stopping train or 3. Unable to start.	0	Acknowledge
2.	00	Signal is OFF and starting the train	00	Acknowledge and Ensure conditions to start before starting.
3.	00	Run through signals given. Train is running through station.	00	Acknowledge
4.	00----00	1. Passing Automatic signal at "ON" or 2. Semi - Automatic Signal at "ON" with "A" or "AG" marker illuminating or 3. Passing IBS signal at ON, IBS telephone out of order or 4. Passing Gate signal at ON	00----00	Acknowledge and ensure conditions to start before starting.
5.	000	Guard required by Loco pilot	000	Acknowledge, secure the train, protect in rear and proceed.
6.	0000----00	1. Received authority to pass Stop signal at ON or 2. Passing IBS signal at ON, with SM's PN.	0000----00	Acknowledge and ensure conditions to start before starting.
7.	000----000----0	Calling on signal given starting the train.	000----000----0	Acknowledge and ensure conditions to start before starting.
8.	0000	Protect train in Rear	0000	1. Acknowledge; 2. Place Skids/Wedges and protect the train; 3. Repeat the bell code;
9.	00----0----0	Apply brakes and place Skids/Wedges	00----0----0	1. Acknowledge; 2. Apply brakes; 3. Place Skids/Wedges; 4. Repeat the bell code;

S. No.	Bell Signal Code by LP/Motorman	Indication	Acknowledgement by Guard	Indication
10.	00----0----00	Remove Skids/Wedges	00----0----00	1. Acknowledge. 2. Remove Skids/Wedges; 3. Repeat the bell code.
11.	00000	1. Initiating Joint Brake Test; 2. Joint Brake Test is completed;	00000	Acknowledge.
12.	000000	Need assistance of Guard in applying brakes.	000000	Apply brakes and acknowledge.

Note: 1. '0' denotes for bell signal and '----' denotes for pause.

2. When there is any doubt on the bell signal codes received, LP/Motorman and Guard may establish personal communication.

1.2. The following Bell Signal codes shall be given by the Guard and to be acknowledged by the Loco Pilot/Motorman working EMU/DMU trains.

S. No.	Bell Signal Code by Guard	Indication	Acknowledgement by LP/Motorman	Indication
1.	0	Stop the train	0	Stop and acknowledge.
2.	00	Start the train	00	1. At signalled (Block) stations, ensure off aspect or Authority, acknowledge and start; 2. In case of Non-block of Class 'D' Stations ensure the conditions to start and start.
3.	00----00	Pushback Train	00----00	Acknowledge and push back train.
4.	000----000	Motorman/Loco Pilot not to exceed prescribed speed.	000----000	Acknowledge and reduce speed.
5.	0----0	Zone of speed restriction is over. Resume prescribed speed.	0----0	Acknowledge and Resume normal speed.
6.	0000	Leaving the cab.	0000	Acknowledge and wait for return of the Guard.

Note: 1. '0' denotes for bell signal and '----' denotes for pause.

2. When there is any doubt on the bell signal codes received, LP/Motorman and Guard may establish personal communication.

- 1.2. EMUs/MEMUs have been provided with electric bell signals between Loco Pilot/Motorman and Guard and also flasher lights. In case EMUs/MEMUs come to a stop on account of an accident or any other cause which is not immediately obvious and the train cannot proceed, the Loco Pilot/Motorman shall immediately switch on the flasher light and also apprise the Guard of his inability to proceed by sounding 4 bell signals which shall be acknowledged by the Guard. The Guard shall switch on the flasher light and protect the train as per Rule 6.03/9.10. In case of failure of the bell signals, the horn and also the hand signals should be used. When the Loco Pilot/Motorman of an approaching train see the flasher light, he shall act as under:

If the flasher light is observed on the same line on which he is travelling, he will stop short of the train and arrange to protect the train as per Rule 6.03/ 9.10. If the flasher light is not on the line in which he is preceding, he shall exercise greater vigilance and be guided by the hand signals ahead, if any.

2. **Maximum number of persons permitted in the cab:**

Only two persons other than the Loco Pilot / Motorman or the Guard are authorized to travel in the cab with special permits issued by the competent authority.

3. **Guards applying the brake:**

If it should be necessary for Guard to stop the train in an emergency as provided for in G.R. 4.45 and S.R. thereunder, he should apply emergency brakes and simultaneously give one bell signal to the Loco Pilot/ Motorman.

4. **Changing destination indicators:**

It is the duty of Guard to change the destination indicators and exhibit tail board/tail lamp in the rear of EMU/MEMU.

5. **Testing of brake power:**

Guard and Loco Pilot /Motorman would take over charge of MEMU/EMU at least 30 minutes before the actual departure.

The detailed instructions of conducting Joint Brake Test (JBT) are given below:

Loco Pilot working MEMU/EMU should conduct the JBT after continuity of brake pipe pressure has been observed. This should be conducted before taking out MEMU/EMU on the 1st daily service run from MEMU/EMU shed, stabling siding and platform line.

Following procedure should be observed for Joint Brake Test to be conducted by Loco Pilot/Motorman and Guard.

S. No.	To be done by Loco Pilot/Motorman	S. No.	To be done by Guard
1	Build up 7Kg/cm ² MR pressure and turn ON the BIV key and charge BP pressure to 5 Kg/cm ² . Give 5 bells to indicate the Guard to be ready for brake test.	2	Acknowledge by giving 5 bells after ensuring 4.9 kg/cm ² BP pressure and watch for brake cylinder pressure gauge.
3	Move brake controller handle between I & II position and hold the brake cylinder(BC) pressure to 0.7 kg/cm ²	4	Guard will note the brake cylinder (BC) pressure which will be about 0.7 kg/cm ² and acknowledge by giving one bell
5	Move the brake controller handle to position – II and observe that	6	Note the Brake cylinder pressure 1.5kg/cm ² in gauge and acknowledge