

संरक्षा
परिपत्र



01 / 2011

Safety
Circular



Prepared by : Pravin N. Dargude Patil

विषय - बी पी ए सी का संचालन (ब्लाक प्रुविग धुरा गणक)
Subject - Working of BPAC (Block Proving Axle Counter)

सतर्क आदमी संरक्षा का सर्वोत्तम साधन है ।

The best safety device is a careful man.

घोषणा - इस संरक्षा परिपत्र के साथ संलग्न जानकारी केवल गाड़ी गुजारने, गाड़ी चलानेवाले, पर्यवेक्षक और निरीक्षणकर्ताओं के मार्गदर्शन के लिए है, कोई दुर्घटना जांच या अन्य किसी प्रयोजन के लिए इसका उपयोग नहीं करना चाहिए । विषय के संबंध में सभी महत्वपूर्ण पहलूओं को समाविष्ट करने का प्रयास किया गया है परंतु त्रुटि गलती आदि के कारण किसी भूल के लिए किसी भी प्रकार का उत्तरदायित्व निर्धारित न किया जाए । दुर्घटना के समय और संबंधित मामलों के लिए संबंधित नियमवली में दिए गए विशिष्ट प्रावधान इस परिपत्र की जानकारी से अधिक प्रबल रहेंगे ।

Disclaimer: - The Contents of the enclosed Safety Circular is meant only for the guidance of train passing, train running, Supervisory & inspecting officials and should not be used as evidence for any accident enquiry or any other purpose. Every effort has been made to incorporate important aspects related with the subject but no responsibility whatsoever is to be fixed for any error due to omission, oversight etc. During accidents & matters related with them, the specific provisions contained in the relevant manual will prevail over the contents of this circular.

Central Railway

No: PA/Safety Circular /38/2010 -11

Office of the DRM

Safety Branch, Pune

Date : 03.02.2011

**All concerned
Pune Division**

Safety Circular No. 01/2010-11

Subject – Working of BPAC (Block proving Axle Counter)

Ref: - Operating Manual (Para No. 14.07, 14.08, 14.09, 14.10, 14.11)
& JPO of CSTE & COM No. 01.04.2008 of TR/policy/136

General :-	Block Proving Axle counter is provided along with block instrument for verification of clearance of block section. Block proving axle counter is provided in between advance starter (Last stop signal) of the station and adequate distance beyond the Home signal of the station ahead in the same direction (block section) on both UP & DN lines on D/L and in advance of last stop signals and UP & DN home signals of the station on S/L. An indication cum reset box is provided at SM's office or at a place where block instruments are provided; one each for each block section.
Indication cum reset box : - It contains	
1.	SM's key for authorizing reset operations.
2.	Reset Push button.
3.	Counter for recording reset operation.
Indication – Various indications on Reset box are as under :-	
1.	Power ON indication :- indicates availability of power supply.
2.	Red light (large) - Clear - indicates block section is clear. Occupied / failed - indicates block section is occupied / BPAC failed.
3.	Red light (Small) line verification – indicates when co-operations button's pressed.
4.	Green light (Small) preparatory reset - Indicates that axle counters resetting operation of both ends is completed.
5.	Green light (Large) clear – Indicates block section is clear.
The SM's key of axle counter reset box shall be kept in a separate glass fronted case & key of the glass fronted case shall be in personal custody of SM. Reset button is provided in reset box; to reset the axle counter, whenever it shows failed indication (Red light (large), by the SM on duty after ensuring that block section is clear. Operation of reset button is countered in a digital counter & each operation is to be recorded in a separate register, indicating the movement before & after operation (proforma of register as given in SWR)	
14.07	<u>Complete arrival of trains:-</u> The section where BPAC are provided the trains will work as per GR. 14.10(4) for ensuring complete arrival of train. In case the Axle Counter shows ' Occupied ' (Red Light – Large) indication with an Audible Warning, even after the complete arrival of the Train, no effort shall be made forcibly to bring the Block Instrument to ' Line Closed ' condition. The buzzer shall be acknowledged by pressing the button provided for this purpose. Before initiating action to reset the Axle Counter and permitting the next Train into the Block Section, the SM shall comply with the provisions of GR 14.10(1) 'when the block section has been cleared by the arrival of the train or by the removal of the cause of blocking, the block section shall be closed by the block section in advance by giving the prescribed bell code signal'. & (2) 'Before such signal is given, the Station Master shall satisfy himself as per the prescribed special instructions – (a) that the train was arrived complete, or the cause of blocking the section has been removed, and (b) that the condition under which line clear can be given, are complied with' And satisfy that the train, for which line clear is given, has arrived complete. Once the complete arrival of the train is verified, action can be initiated to reset the Axle Counter at both ends of the affected section as per the procedure given under Para 8. Note:- In addition to observing the clear indication of the Axle Counter for ensuring the complete arrival of train, the existing procedure of ensuring the complete Arrival of train by personally verifying the Tail Board / Tail Lamp or by authorized means in terms of SR 14.10-1 shall continue to be followed. This shall be incorporated in the respective SWR.

i.	The SM on duty at the receiving station in which the train has arrived complete shall give a Private Number to the SM at the other end (dispatch station) confirming the complete arrival of the train.
ii.	The SM on duty at the dispatch end shall acknowledge the same by communicating a Private Number.
iii.	The Key of the reset box shall then be inserted in the reset box, turned and pressed along with pressing of reset push button by both SMs independently.
iv.	The reset operation pertaining to Block Section is carried out independently at both ends.
v.	‘Preparatory Reset’ (Green Light – Small) indication, will appear on the Axle Counter indication-cum- reset Box at both ends to indicate that the Axle Counter resetting operation is complete.
vi.	The counter, provided for recording resetting operation will register next higher number. Necessary entries shall be made in the ‘Block Proving Axle Counter Resetting Register’ maintained for this purpose. Similar entries are made by the SM at the other end of the Block Section also.
vii.	When the ‘Preparatory indication’ appears, the receiving end Station Master should advise the Station Master at the other end that the block section is being closed. The other end SM shall give a PN to this effect to receiving end Station Master.
viii.	The receiving end Station Master shall then close the block section by normalizing the block instrument.
ix.	With the preparatory reset indication available at both Stations the line clear for the next train can be obtained through the block instrument and LSS can be taken off and the train dispatched normally.
x.	On clearance of the first train after preparatory reset at the receiving station, the Axle Counter will show ‘clear’ indication at both stations and subsequent trains can be normally dealt.
xi.	If on arrival of the first train on preparatory reset, the axle counter does not show ‘Clear’ indication but preparatory indication continues and Block handle will remain locked in TOL position, the block working shall be suspended and S & T officials of the section shall be advised to attend to the failures. And trains will work on laid down procedure for block failure by issuing necessary authorities until the failure is attended by S & T staff and put right.
xii.	The entries in TSR shall be made in red ink at both stations whenever ‘line clear’ has been obtained with the Axle Counter showing ‘preparatory reset indication’ .
xii.	No attempt shall be made to close the block section on arrival of the train on preparatory reset if Axle Counter is still showing preparatory reset indication, instead of ‘clear’ indication.
14.09	<u>Failure of Axle Counters :-</u> If Axle Counter does not show ‘Clear’ (Green Light – Large) indication, after clearance of the train on ‘Preparatory Reset’ , it shall be treated as failure of Axle Counter. The Block Instrument Working of the concerned Block Section shall remain suspended till S & T staff rectified the same. During the period Trains shall be dealt as per GR 14.13 and block manual paras 4.20 and 10.12 for single line & Double line, and closing of Block Section done as per GR 14.10 (1), 2) & (3) and block manual paras 4.16 and 4.17
14.10	Working of trolley / Motor trolley / Lorry etc. Trolley protection Track Circuit is not provided to prevent the operation of Axle Counter by insulated Trolleys. Only 4/6 spoke trolleys to be used as directed by R Board vide letter No. 2007/sig/M/7 dated 18.06.07. Motor Trolleys, when required to proceed to adjacent station, shall be issued with necessary Authority to proceed, suspending Block Working. After the motor trolley has cleared the section, the SM on duty shall resume block working for subsequent trains. However in case the Axle Counter does not show clear indication after arrival of the Motor Trolley at the adjacent station, resetting of the axle counter shall be done as per Para 8 and Train operations restored.
14.11	Shunting – Shunting shall be done as per the instructions contained in the Block Working Manual. However, after a Block Forward or a Block Back Operation is completed, before bringing the Block Instrument to ‘Line Closed’ position, it shall be ensured that the Axle Counter shows ‘Clear’ (Green Light – Large) indication.

(S. Ravichandran)
DSO / PUNE