GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

LOK SABHA
UNSTARRED QUESTION NO.648
TO BE ANSWERED ON 06.02.2019

SIGNALLING AND TELECOM MECHANISMS

† 648. SHRI DHARMENDRA YADAV:
SHRI SHRIRANG APPA BARNE:

Will the Minister of RAILWAYS be pleased to state:

(a) whether strengthening of signalling and telecom mechanism is the only way to control the increasing traffic on rail tracks; and

(b) if so, the details thereof along with the efforts made in this direction so far?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF RAILWAYS

(SHRI RAJEN GOHAIN)

(a) and (b) : A Statement is laid on the Table of the House.

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STATEMENT REFERRED TO IN REPLY TO PARTS (a) AND (b) OF UNSTARRED QUESTION NO.648 BY SHRI DHARMENDRA YADAV AND SHRI SHRIRANG APPA BARNE TO BE ANSWERED IN LOK SABHA ON 06.02.2019 REGARDING SIGNALLING AND TELECOM MECHANISMS

(a) and (b) : Strengthening Signal & Telecommunication System is one of the ways to increase the throughput on existing rail tracks. This is a techno-economic solution which can be implemented at a faster pace. Signaling System controls increase in traffic on rail tracks in following ways:-

1. Signaling:

i) Automatic Signaling: By providing Automatic Signaling throughput can be increased, as multiple trains can be handled simultaneously in one block section. The train operation in suburban sections is the best example of automatic signaling. Upto 31.12.2018, 3009 Route Kilometers (RKMs) of Indian Railways has been provided with automatic signaling.

ii) Provision of modern signaling also improves throughput and line capacity. By quicker operation of signaling gears, the operation time is reduced and trains can be dealt one after another quickly. Centralized Electronic/Electrical Interlocking Systems, centralized operation of points and signals are being provided by replacing old mechanical lever frame systems. These systems have been provided at 5866 stations upto 31.12.2018.

Hitherto, complete train arrival was informed by Guard to the Station staff after which only line clear for the next train could be granted. This loses significant time in the train operation. In order to reduce this time loss, Axle Counters for automatic clearance of block section (BPAC) are being provided for ensuring complete arrival of train before granting of line clearance for next train. BPAC has been provided at 5813 block sections up to 31.12.2018.

iii) Centralized Traffic Control: Another important landmark in the history of Indian Railways' Signaling is introduction of 'Centralized Traffic Control' (CTC). CTC system enables controlling of signals,

points etc centrally without any limitation of distance. CTC is effective in regulating trains by monitoring their movements, taking timely decision for diversion of trains, induction / withdrawal / reversal of rakes and Emergencies.

Presently, CTC is being implemented at Tundla for controlling Ghaziabad – Kanpur section (47 stations) wherein the movement of trains of entire section shall be controlled centrally by CTC Operator rather than Station masters individually at all stations. This shall improve train control efficiency and thus the line capacity.

iv) Train Management System (TMS) : Train Management System, commissioned on Churchgate-Virar and Chatrapati Shivaji – Kalyan and Harbour line sections of Mumbai Suburban Section in 2003 and 2013 respectively, provides live train movements of the entire 60 KM Churchgate-Virar Section, in the Control Centre at Mumbai Central. Eastern Railway also has commissioned TMS at Howrah divisional control office for managing its Howrah-Bandel suburban sections. This is an efficient tool to control train movements.

Announcements at stations are triggered automatically from the central servers. The advantages of online train information were appreciated by the commuters.

Railways is planning to provide Train Management System for all the suburban sections of metro cities. The work is sanctioned for provision of TMS on East Coast Railway, suburban section of Chennai, Southern Railway, Howrah-Kharagpur Section, South Eastern Railway and Sealdah Division, Eastern Railway.

v) Automatic Train Protection: Automatic signaling features can also be achieved by providing Automatic Train Protection (ATP) equivalent to ECTS level II. Railways have implemented ATP System like ETCS L-I in selected sections. This system provides assistance to the loco pilot in knowing the aspect of signal ahead so that loco pilot can run the train confidently at maximum permissive speed.

Further, Indian Railways has decided to modernize the signaling system. Now, 4 works of modernization of signaling system on 640

RKMs including European Train Control system (ETCS L-2) has been sanctioned in the Supplementary Works Programme 2018-19. The new signaling system is planned to be installed for extensive evaluation on Nagpur-Badnera, Jhansi-Bina, Yerraguntla-Renigunta and Vizianagram – Palasa sections on Golden Quadrilateral and Diagonal routes. This will also increase time capacity of the sections concerned.

2. Telecommunication :

By providing communication between driver, guard and Station staff, trains are not unnecessarily delayed in case of any unusual incidence. Trains can be better regulated if timely communication and information is available with the Control Office as well as Station staff in case of any unusual happening. Walkie-Talkie sets as an intermediate measure, has been provided with driver & guard of all the trains. Mobile Train Radio Communication System (MTRC) is also under consideration as a part of modernization of Signaling & Telecommunication System based on LTE (4G) to cover all routes over Indian Railways. As on date, MTRC based on GSM-R has been provided at 2541 RKMs and work is sanctioned for additional 3408 Kms. As a part of modernization plan under Phase I, Railways have planned to extend MTRC based on LTE in 4 sections (Total 635 RKMs) i.e. Renigunta-Yerraguntla (165 RKMs) of South Central Railway, Nagpur-Badnera (175 Kms) of Central Railway, Jhasni-Bina (153 Kms) of North Central Railway & Vizianagram-Palasa (142 Kms) of East Coast Railway.

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