

TRACK CIRCUIT

No: 77/W3/SG/W/5/3, New Delhi, dt.26.11.1977.....	3
No:62/W3/SG/122 New Delhi, dt.29.8.1968.....	4
No.79/W3/SG/T/2 dt.13.3.79	5
No: 94/CE-II/TS/6, New Delhi, dt.21.9.95.....	6
No.79/WTM/22/11/6, New Delhi,Dt.15.11.1984.....	7
No: 84/W3/SG/W/5/4, New Delhi, dt.18.12.1984.....	9
No: 81/W3/WP/9/1 New Delhi, dated: 4.11.81.....	13
NO: 82/W3/SG/PLN/4. New Delhi, dated: 3.1.1983.	14
No: 79/WTM/22/11/6 New Delhi, dt. 15.11.1984.....	15
No: 80/WTM/22/12/2 New Delhi, dated: 1.10.1983.....	17
No.STS/E/ETC-I dated: 3.8.1982.....	18
No: 79/W3/SG/PI/1, New Delhi, dt.30.6.1982.....	19
No: 77/W3/SG/W/5/3, New Delhi,dt:16.2.1981.....	20
No: 8/WS/SG/G/3 New Delhi, dt.10.8.88	21
No:62/W3/SG/122 New Delhi, dt.29.8.1968.....	22
No.70/W3/SG/T/1 dt.12.5.76	23
No.79/W3/SG/T/2 dt.13.3.79	24
No: 77/W3/SG/W/5/3 New Delhi, dt.26.11.1977.....	25
No:77/W3/SG/G/9 New Delhi, dt.23.5.1978.....	26
No.77/W3/SG/G/9 dt.29.6.79.....	28
No:84/W3/WP/RE/ New Delhi,18.12.1984.....	29
No: 95/Sig/W/P/1/TC New Delhi,dt. 14/16.10.97.....	33
No: 81/W3/WP/9/1 New Delhi, dated: 4.11.81.....	35
No.8/W3/SG/G/3, New Delhi,dt.10-8-1988.....	36
No: 87/W3/SG/T/1 New Delhi, dtd: 4.4.1989.....	37
No: 84/W3/SG/W/5/4 New Delhi, dt.18.12.1984.....	38
No: 79/WTM/22/11/6 New Delhi, dt. 15.11.1984.....	40
No: 80/WTM/22/12/2 New Delhi, dated: 1.10.1983.....	42
No.STS/E/ETC-I dated: 3.8.1982.....	43
No; 79/W3/SG/PI/1 New Delhi, dt.30.6.1982.....	44
No: 77/W3/SG/W/5/3 New Delhi,dt:16.2.1981.....	45
No: 77/W3/SG/A/16 New Delhi, dated: 7.10.1980.....	46
No: 77/W3/SG/A/16 New Delhi, dated: 1.3.1980.....	48

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 77/W3/SG/W/5/3, New Delhi, dt.26.11.1977.

The General Managers,
All Indian Railways.

Sub: Extension of Track circuiting from fouling mark to block section limits.

Ref: Board's letter of even number dt.18.1.1977.

The work of extension of track circuiting from fouling mark to advance starter has been approved to 75 stations in the Works Programme 1978-99. Further, Railways have been directed under this office letter of even number dated: 18.11.1977 to take up the work of 25 more stations as out of turn works during the current year and complete then by 31.3.1978.

The work involves the provision of track circuiting ahead of the starter upto the trailing point and provision of one set of Axle Counters between the trailing point and the advance starter, a long with the provision of reversers on the starter signals, controlled by the track circuit beyond the starter upto the trailing point and the Axle counter beyond the trailing point upto the advance starter. A sketch showing the arrangement is enclosed.

As a part of this work, in stations provided with two cabin system, it is also necessary to provide circuit arrangements by which the slot for any line, once pulled and put back for the reception of a train, cannot be effective again until the relevent starter is also pulled and put back.(This will constitute and extension of the principle of one-slot-one-home already provided on the double line sections of the Indian Railways).

The requirement of wooden sleepers for the provision of track circuiting ahead of the starters upto the trailing point should be arranged from the existing stock for the completion of the work of 25 stations during the current year on top priority. The requirements for 1978-79 for this work may please be catered while communicating your requirements of special timers to the Railway Board for the year 1978-79.

Please acknowledge receipt of the letter.

DA;One.

*Please see board's
Letter No.77/W3/SG/G/9
Dt.23.5.78.

Sd/-
(K.Subrahmanyam)

Jt.Director(Signals),Rly.Board.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No:62/W3/SG/122 New Delhi, dt.29.8.1968.

The General Manager,
Eastern Railway, Calcutta.

Sub: Provision of track circuits on the run through lines of wayside stations.
Ref: Your letter No.SG/219/4/I Vol. I dt11.6.88.

The issue, regarding the provision of track circuiting all 'C' Class stations(block huts), raised in your letter referred to above has been examined.

It has been explained in your letter that when a train is standing at Home Signal (the only stop signal in the concerned direction)block instruments cannot be close for giving fresh line clear and that even when a train is standing beyond the Home Signal(but before passing the block overlap), the block instruments cannot again be closed since the block release track circuit is kept beyond the block overlap thereby eliminating the possibility of giving fresh line clear when a train is standing either at the Home signal or even beyond upto the block overlap.

In the light of the above, it is agreed that the track circuiting, as stipulated in Board's letter No.66/W6/MPW/14 dt.27.7.66 at 'C' Class stations(Block huts) may not be provided.

Sd/- J.N.Sikka
Dy.Director Signal
Railway Board.

No.62/W3/SG/122

New Delhi, dt.29.8.1968.

Copy to all the GMs(except Eastern), the Director General, RDSO/Lucknow and the Principal, IRISSET/SC for information and necessary action.

Sd/- J.N.Sikka,
Dy.Director Signal
Railway Board.

Copy of Sri R.Krishnaswamy, Dy.Director (Signals)/Rly.Board, New Delhi's letter

No.79/W3/SG/T/2 dt.13.3.79

forwarded to G.Ms/All Indian Railways, copy to GM(S&T)/Con.,S.E.Rly., and others.

Sub: Shifting of fouling Mark to suit Track circuit termination.

Arising out of collision of 332 down Passenger with down Tughlakabad Goods Train at Meerut Cant station of Northern railway on 25.5.77 the Commissioner Railway Safety had recommended as under.

“For Track circuited lines or points it is necessary to provide indication boards at site opposite the point which a train should clear. This would enable the guard of the train to ensure that his train has cleared the Track Circuit, Definition of ‘Fouling Mark’ as per General rules is only linked with the infringement of the fixed standard dimension but this will not ensure any clearance of required Track Circuit which will interfere with the setting of route for reception of trains on other lines. Alternatively, Fouling Mark should be fixed in such a position so as to ensure clearance of the track Circuits and definition of fouling Mark modified suitable’.

2. The Ministry of Railways have considered the recommendation of the C.R.S. and have decided that track Circuit termination should be provided at the same place as a fouling Mark feasible. If it requires unnecessary cutting of rails to provide for insulation joints the fouling Mark on the ground may be suitably shifted, so that not only the infringement of fixed standard dimension are avoided but also the same coincides with the Track Circuit terminations.

3. Receipt of the letter may be acknowledged.

DA: Nil.

No: 4/1819/Con/2761

GRC, dt.22.5.79.

Copy forwarded to DSTE(W)/KGP/TATA & BSP,DSTE(RRI)KGP,DSTE(DEV) WAT and DSTE(DEV)WAT at KUR Cell, DSTE9MW-W)/GRC & KGP and Dy.CSTE(WK/RE)/WAT for information and guidance.

Copy to All BSIs at Hd.Qrs./GRC for information.

Sd/-
For chief signal & Telecom.Engineer/Con.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No: 94/CE-II/TS/6, New Delhi, dt.21.9.95.

The Chief Engineer,
All Indian Railways.

Sub: Sleeper Density for concrete Sleepers.

The adoption of a desirable sleeper density keeping in view the machine maintenance of concrete sleepers has been under consideration.

It has now been decided by the Board that henceforth the maximum spacing for concrete sleepers will be 65 cms., i.e., 1540 Nos. sleepers will be provided per kilometer. In nominal terms the number of concrete sleepers to be provided would be M+7 and no works will be proposed/carried out with density of M+4.

The above mentioned instructions have to be kept in view while formulating fresh proposals. It is also desired that in all cases of works in progress where the sleepers spacing has been specified above 65cms., the same is revised to 65cms. and arrangements made to carry out the works accordingly.

Please acknowledge receipt.

Sd/-
(B.S.Kapur)
Executive Director/Civil Engg(P).

No; TC/TR/POLY/4891

Dt. 10.10.95.

Copy forwarded for information and necessary action to:-

CEE/CEE(Con)/CSTE/CSTE(Con.)/CME/FA&CAO/GRC.
CTE(TP)/CTETM/CE(West)/CE(South)CPDE/CBE/CGE/GRC.
Dy.CE(Track)/Dy.CE(TP)/Dy.CE(Safety)/Dy.CETM/Dy.CE(Project) /Dy.CE(B&F)/GRC.
Sr.DEN(Co-Ord.)/S.E.Rly./ADA/BSP/CKP/KGP/KUR/NGP/SBP/WAT.
CAO(P)/BBS.
Chief Project Manager)Con)/S.E.Rly., VSKP,BBS, RGDA,NGP,BSP,GRC,SBP & KNJR.

Sd/-
(H.N.chatterjee)
Senior Engineer/Track
For GENERAL MANAGER(ENGG.)

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS (RAIL MANTRALAYA)
(RAILWAY BOARD)

No.79/WTM/22/11/6, New Delhi,Dt.15.11.1984.

The General Manager,
All Indian Railways,
DG/RDSO/LKO.

Sub: Use of prestressed concrete sleepers for track
Circuiting.

Board vide their letter No.79/WTM/22/11/6 dt.7.6.79 have already desired that use of concrete sleepers should be made for track circuiting to reduce dependence on wooden sleepers. It has been observed that electric resistance from insert to insert on concrete sleepers manufactured in various factories varies considerably. To ensure proper performance of track circuiting it has been provisionally decided till such time better quality can be achieved that only such concrete sleeper should be used for track circuiting which the following requirements:-

I. AC Traction Areas.

Sl.No	Type of traction Type of Track circuit.	Min.insert-to insert electrical resistance on production in the factory(15 days old).	Min.insert-to-insert electrical resistance at the time of laying.
1	AC Traction/DC/TC	200 Ohms	500 Ohms
	AC Traction/AC-TC.	200 Ohms	500 Ohms

1. to comply with the above requirement, it is essential that concrete sleepers should be tested for electrical resistance in the production unit itself and sleepers with minimum electrical resistance of 200 Ohms (15 days after production) should be stacked separately with suitable marking. These sleepers shall than be despatched to the site where electrical resistance shall again be measured after 3 to 6 months of manufacture and subject to minimum resistance of 500 Ohms being obtained, only these concrete sleepers shall be laid in the track circuited lines.
2. To ensure the above requirements, the following action should be taken.
 - a) RDSO will arrange to issue a simple procedure along with a design of testing equipment for supply to each Unit.

- b) Railway will ensure that these instructions and the equipment for measuring electrical resistance is made available to inspecting officer immediately.
- c) Zonal Railways will provide in their estimates for on SI Grade III chargeable to concrete sleeper inspection for carrying out test checks in the production units under the control of the zonal Railways. This Inspector will go under the administrative control of C.E.

II. DC Traction Area :

- 3. In respect of track circuits in – DC traction areas of Bombay Suburban section (excluding Bombay VT-Kalyan-Karjat and W.Rly.routes CCG-VR section for other preset), the Board desire that pending availability of adequate feedback data, to permit laying of requisites standards for electrical resistance of concrete sleepers and purely as a temporary measure, the following action may be taken.
 - i) A stretch of about 10 Kms.in 2 block sections may be laid with concrete sleepers having insert electrical resistance of 500 Ohms and 700 Ohms respectively at the time of laying for track circuits upto 400 metres and above 400 metres upto 800 metres length.
 - ii) The above work should be done jointly by the Engg.and Signalling Departments after checking the stipulated electrical resistance of concrete sleepers before laying.
 - iii) Only glass filled liners shall be used in the above stretches.
 - iv) A system of regular monitoring should be introduced to collect the feed back data for laying down future standards.
 - v) The laying of sleepers as indicated above should be completed in the mininated stretch by 31.3.1985 so that their behaviour can be studied in the pre-monsoon and monsoon periods,regular measurement being taken for the initial and subsequent electrical resistance with passage of time.

Kindly acknowledge receipt.

Sd/-
(N.K. Sikka)
Director(Track)
Railway Board.

D.A.Nil

CC: CTE and CSTE, all Indian Railways,
CE(Con)/All Indian Railways & CSTE(con)/All Indian Rlys.
Dir.Stds(civil)RDSO and Dir.Stds(S&T)/RDSO.
D.S&T/Rly.Bd.
DCE and DW/Railway Board.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No: 84/W3/SG/W/5/4, New Delhi, dt.18.12.1984

The General Managers,
All Indian Railways.

Sub: Priority regarding provision of Track Circuiting.

Board approved as a policy the provision of track circuits from the Home Signal to the Last Stop Signal at stations on the BG trunk/important main line routes and also M.G.trunk routes.

2. Board have been informed that whenever minor works are undertaken by the Railways,the C.R.Ss insist on the provision of track circuits also to be combined with such works resulting in delays.

3. In view of the overall financial constraints and the non-availability of sufficient wooden sleepers for track circuiting purposes,the following priorities within the overall policy framework are laid down.

I) Fouling mark to Fouling mark track circuiting of only the run-through line on all the BG trunk/important main line and MG trunk routes(the sections are indicated in the Annexure).

ii) Fouling mark to Block section limit track circuiting on only the sections included in the Annexure,where any of the following conditions exist :-

(a) Visibility of othe portion between fouling mark to Block Section limit is obscured from the place of operation; or

(b) frequent shunting involving main line takes place; or

(c) Advanced Starter is placed at a distance of full train length beyond the trailing points.

This track circuiting is to be provided where track circuiting already exists from Fouling Mark to Fouling Mark. In case tracks ocircuiting from Fouling Mark to Fouling mark has not been done at a station and Fouling mark to Block Section Limit track circuiting is warranted,track circuiting from Fouling Mark to Fouling mark should also be caried out to provide complete track circuiting from Fauling Mark to Fouling Mark and Fouling Mark and Fouling Mark to Block Section Limit.

While undertaking track circuiting between fouling Mark to Block Section Limit,the full point-zone portion may also be track circuited.

iii) Complete Track Circuiting of station sections(i.e fouling mark to fouling mark and fouling mark and fouling mark to Block Section limit,both run through and loop lines)where centralised operation of points and signals from the Station Master's office by Electrical/Panel Interlocking ohas been provided.

At stations provided/programmed with end-panel operation from cabins,track circuiting may be provided only on the run-through lines from Fouling Mark to Fouling Mark and Fouling Mark to Block Section Limit.

These norms for track circuiting at panel interlocked stations will be adopted,whether or onot the stations are situated on sections listed in the Annexure.

(iv) Track circuiting of both main and loop reception lines from fouling mark to fouling mark at stations provided with single arm home signals in MAUQ territory,on sections even other than these listed in the Annexure.

4. After covering stations in accordance with the above priotiry order,track circuiting may be extended progressive to stations on sections other than those mentioned in the annexure,again in the above order of priority.

5. Works already sanctioned/programmed, where the provision of track circuiting has not been catered for in the estimated may be completed as sanctioned. The provision of track circuiting should be taken up separately in terms of above priorities.
6. This is in supersession of all earlier directives issued on this subject.
7. Please acknowledge receipt.

Sd/-

(V. Ramasamy)

Director(S&T), Railway Board.

New Delhi, dt.18.12.1984.

No: 84/W3/SG/W/5/4

Copy to:-

1. C.S.T.Es, All Indian Railways.
2. C.S.T.Es(Constn),All Indian Railway.
3. C.T.S.S.,All Indian Railways.
4. C.S.T.E.,Railway Electrification,Nagpur.Vijayawada,Allahabad.
5. The C.A.O.(R),Metropolitan Transport Project(Madras)
Poonamale High Road, Madras-8.
6. The General manager,S&T,Metro Railway,Metro Rail Bhavan,33- A,J.L.Road,Calcutta.
7. The CAO(S&T)(R)/MTP(R)s/Bombay,2nd Floor,Churchgate,Station Building,Bombay-100020.
8. The Principal,Railway Staff College,Baroda.
9. The Principal,IRISET/Secunderabad.
10. The Director General,RDSO/Lucknow.

Sd/-

Director(S&T),Railway Board.

80(I)

TRUNK ROUTES:

Central Railways:

- (1) New Delhi-Mathura-Jhansi-Nagpur-Wardha-Balharshah.
- (2) Wardha-Badnera-Bhusawal,Kalyan-Bombay V.T.
- (3) Kalyan-Pune-Vadi.

Eastern Railway :-

- (1) Moghalsarai-Gaya-Gomoh-Sitarampur-Khana-Burdwan.
- (2) Burdwan-Powrah (both on Main and Chord)

Northern Railway:-

- (1) Moghalsarai-Allahabad-Tundla-Ghaziabad-Delhi-New Delhi.
- (2) Delhi-Rawari.

North Eastern Railway:-

- (1) Lucknow-Senca, Gorakhpur-Sonepur-Muzzafarppur-Barauni-Katihar
(including Rajipur-Bsachwara).

Northeast Frontier Railway:-

- (1) Katihar-Siliguri-Alipurduar-Gauhati.

Southern Railway:-

1. Madras Egmore-Villupuram Vridachalam-Tiruchchirapalli-

Madurai-Virudunagar-Quilon.

2. Madras-Gudur.
3. Madras-Arakonam-Renigunta.

South Central Railway:-

1. Gudur-Bezawada.
2. Bezwada-Nidaduvolu(direct)-Waltair
3. Bezawada-Kazipet-Balharshah
4. Renigunta-Guntakal-Raichur-Wadi.

South Eastern Railway :-

- 1) Howrah-Kharagpur
- 2) Khragpur-Waltair
- 3) Kharagpur-Nagpur.

Western Railway :-

1. Mathura-Kotah-Ratlam-Baroda-Bombay Central
2. Ahmedabad-Palanpur-Marwar-Ajmer-Jaipur-Bandikui-Rewari.

80 (ii)

B. IMPORTANT MAIN LINES:-

Central Railway:

1. Naini-Santna
2. Itarsi-Bhuswal
3. Itarsi-Jahalpur-Satna

Eastern Railway:-

1. Khana-Barharwa
2. Patna-Kiul
3. Moghalsarai-Patna
4. Kiul-Madhupur
5. Madhupur-Sitarampur
6. Kiul-Sabibganj
7. Sahibgani-Borharwa

Northern Railway:

1. Delhi-Panipat-Ambala
2. Ambala-Kalka
3. Moghalsarai-Banaras-Pratagarh-Lucknow-Rose-Barailly-Rampur
Moradabad-Saharanpur-Ambala-Ludhiana-Jullunder-Patankot.
4. Lucknow-Faizabad-Varanasi
5. Delhi-Rohtak-Bhatinda
6. Ghaziabad-Saharanpur.

Northeast Frontier Railway:-

1. Farakka-Bridge-Malda Town-Barsoi
2. Barsoi-New Jalpaiguri
3. Gauhati-Lumding-Tinsukia(MG)
4. Lumding-Badrapur(MG)

Southern Railway:-

1. Arkonam-Katpadi-Jolarpettai-Erode-Coimbatore-Ernakulam.
2. Jolarpettai-Bangalore
3. Gudur-Ranigunta

South Central Railway:-

1. Secunderabad-Wadi
2. Nidaduvolu-Bhimavaram-Gudivada-Vijayawada.
3. Secunderabad-Kazipet
4. Renigunta-Gudur.

Western Railway:-

1. Baroda-Ahmedabad
2. Ahmedabad-Viramgam(BG)
3. Anand-Godhra(BG)
4. Agra East Bank-Bharatpur-Bandipui(MG)
5. Palampur-Gandhidham(MG)
6. Mehsana-Jamnagar-Okha(MG)
7. Ahmedabad-Botad-Bhavngagar(MG)

GOVERNMENT OF INDIA (BHARAT SARKAR)
MINISTRY OF RAILWAYS (RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 81/W3/WP/9/1 New Delhi, dated: 4.11.81.

The General Manager,
Western Railway,
Bombay.

Sub: Track Circuiting works on Godhra-Ratlam and Godhra-Anand
Sections for Railway Electrification.

Ref: Western Railway's letter No.W.722/2/33/1 dated: 26.9.81.

The matter has been considered and it has been decided by the Board that track circuiting from the end of the top point to othe Block Section Limits on the run through line as also from Fouling Mark to Fouling Mark on the loop line shall be done by the open line Railway and cannot be charged to the Railway Electrification.

Receipt of this letter may be acknowledged.

Sd/-
(R.Krishnaswamy)
Joint Director(S&T)I,Railway Board.

No: 81/W3/WP/9/1.

New Delhi, dated: 4.11.81.

Copy to :

1. Chief Engineer,Railway Electrification,Allahabad.
2. General Manager(S&T) and General Manager(S&T)/Contn., All Indian Railways for information and necessary action withh regard to similar works where Railway Electrification is being programme.

Sd/-
(R.Krishnaswamy)
Joint Director(S&T)I,Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

NO: 82/W3/SG/PLN/4. New Delhi, dated: 3.1.1983.

The General Managers,
All Indian Railways.

Sub: Planning for Intermediate Block Signalling Works.

During the last S7T Production Schedule Meeting held at Bombay on 6.9.1982, some of the C.S.T.E./Constn.'s had brought out that considerable difficulty is being faced in executing intermediate block signalling works on sections where LWR and CWR are existing or are planned.

2. As provision of IBS signalling requires a track circuit ahead of the IBS signal for 400 metres and would require cutting of rails for provision of insulation block joints, in the case of LWR, CWR sections, it is necessary that while planning for such works in the works Programme the same is done in consultation with the Chief Track Engineer of your Railway, so that the location of the IBS, signal and insulated block joint for either direction may be suitably fixed to fit in with the track structure to the extent possible. Any matching track renewal works will also have to be planned simultaneously.

While the work of IBS is proposed, specific mention of this fact has also to be brought out in the justification that the work has been planned in consultation with the Chief Track Engineer to ensure that no difficulty is faced subsequently when executing such works.

Receipt of this letter may be acknowledged.

Sd/-
(R.Krishnaswamy)
Joint Director(S&T)-I
Railway Board.

No: 82/W3/SG/PLN/4.
New Delhi, Dated: 3.1.1983

Copy to:-

1. The General Managers(S&T), All Indian Railways.
2. The General Managers(S&T)/Con/All Indian Railways.
3. The C.A.O.(R)/S&T/MTP(Rlys)Bombay, 2nd Floor, Churchgate Station Building, Bombay-100 020.
4. The General Manager, Metro Railway, Metro Railway Bhawan, 33-A, Jawaharlal Nehru Road, Calcutta-700071.
5. The C.A.O/M.T.P./Railways/Delhi, Vikas Kuteer, Tilak Bridge, New Delhi.
6. The C.A.O(R)/S&T/MTP(Rlys)/Madras, Poonamalle High Road, Madras-8.
7. The Principal, Railway Staff College, Baroda.
8. The Principal, IRISSET, Secunderabad.
9. The Director General, R.D.S.O., Lucknow.
10. Chief Engineer(O/L), All Indian Railways.

Sd/-
(R.Krishnaswamy)
Joint Director(S&T)-I
Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAY)
(RAILWAY BOARD)

No: 79/WTM/22/11/6 New Delhi, dt. 15.11.1984.

The General Manager,
All Indian Railways,
DG/RDSO/LKO.

Sub: Use of prestressed concrete sleepers for track circuiting.

Board vide their letter No.79/WTM/22/11/6 dt. 7.6.79 have already desired that use of concrete sleepers should be made for track circuiting to reduce dependence on wooden sleepers. It has been observed that electric resistance from insert to insert on concrete sleepers manufactured in various factories varies considerably. To ensure proper performance of track circuiting, it has been provisionally decided till such time better quality can be achieved that only such concrete sleeper should be used for track circuiting which the following requirements:-

I. AC Traction Areas

SINo.	Type of traction Type of Track circuit	Min.insert-to-insert electrical resistance on production in the factory(15 days old).	Min.insert-to-insert electrical resistance at the time of laying.
1.	AC Traction/DC-TC	200 Ohms.	500 Ohms.
2.	AC Traction/AC-TC	200 Ohms.	500 Ohms.

2. To comply with the above requirements, it is essential that concrete sleepers should be tested for electrical resistance in the production unit itself and sleepers with minimum electrical resistance of 200 Ohms(15 days after production) should be stacked separately with suitable marking. These sleepers shall than be despatched to the site where electrical resistance shall again be measured after 3 to 6 months of manufacture and subject to minimum resistance of 500 Ohms being obtained, only these concrete sleepers shall be laid in the track circuited lines.

3. To ensure the above requirements, the following action should be taken.

a) RESO will arrange to issue a simple procedure along with a design of testing equipment for supply to each Unit.

b) Railway will ensure that these instructions and the equipment for measuring electrical resistance is made available to inspecting officer immediately.

c) Zonal Railways will provide in their estimates for one SI Grade III chargeable to concrete sleeper inspection for carrying out test checks in the production units under the control of the zonal Railways. This Inspector will be under the administrative control of C.E.

II. DC Traction Area :

4. In respect of track circuits in - DC traction areas of Bombay Suburban section(excluding Bombay VT-Kalyan-Karjat and W.Rly.routes CCG-VR section for othe present), the Board desire that pending availability of adequate feedback data, to permit laying of requisits standards for electrical resistance of concrete sleepers and purely as a temporary measure, the following action may be taken.

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- (ii) The above work should be done jointly by the Engg. and Signalling Departments after checking the stipulated electrical resistance of concrete sleepers before laying.
- (iii) Only glass filled liners shall be used in the above stretches.
- (iv) A system of regular monitoring should be introduced to collect the feed back data for laying down future standards.
- (v) The laying of sleepers as indicated above should be completed in the mentioned stretch by 31.3.1985 so that their behaviour can be studied in the pre-monsoon and monsoon periods, regular measurements being taken for the initial and subsequent electrical resistance with passage of time.

Kindly acknowledge receipt.

Sd/-
(N.K. Sikka)
Director(Track)
Railway Board.

D.A.Nil.

CC: CTE and CSTE, All Indian Railways,
CE(Con)/All Indian Railways & CSTE(Con)/All Indian Rlys.
Dir.Stds.(Civil) RDSO and Dir.Stds(S&T)/RDSO
D.S&T/Rly/Bd.
DCE and DW/Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 80/WTM/22/12/2 New Delhi, dated: 1.10.1983.

The General Managers(Engg.),
All Indian Railways.
The General Managers(Constn.),
All Indian Railways.

Sub: Use of concrete sleepers in place of wooden sleepers.

Supply of wooden sleepers is shrinking progressively and immediate steps have to be taken to restrict the use of wooden sleepers progressively to match the anticipated supplies.

2.0 Taking into consideration that the production of PRC sleepers on BG has already increased and is further increasing and that approved drawings for RCC two block sleepers for yards(BG & MG) have also been issued,it has been decided that henceforth no wooden sleepers should normally be used in the following situations:-

2.1 On track circuited sections on BG except in DC traction areas with AC track circuit. As regards such DC traction areas trial length with PRC sleepers have already been laid on C.Rly.and use of wooden sleepers in such stretches will also be stopped as soon as RDSO clear the use of PRC sleepers.

2.2 No new wooden sleepers or CST-g sleepers,shall be used in yards and only RCC two block sleepers or second hand Metal/Wooden sleepers shall be used instead.

2.3 Wooden sleepers for points and crossings shall,howeve,continue to be used where the point and crossing fall within the track circuited section.

3.0 The requirement of PRC sleepers (BG) for use on track circuited lengths shall be arranged by the respective CE(OL) on each railway irrespective of the department under which the work of track circuiting falls. Any residual unavoidable demand of wooden sleepers for track circuiting shall also be consolidated in the Zonal Railway itself under CE(OL). The consolidated demands of PRC and wooden sleepers will be presented by CE(OL) in the annual CTEs Conference held in Jan/Feb. each year. The requirement of Construction Organisations shall, however,continue to be presented by CE(Constn.).

4.0 Henceforth,whenever a demand of wooden sleepers is advised to the Board,it should be clearly certified by CE(OL)/CE(Constn.) as the case may be,that no wooden sleepers is intended for use in the yards (BG or MG) or on track circuit length on BG. In case any wooden sleepers are required to be used e.g. in DC traction areas,the number of such sleepers should be clearly indicated.

The receipt of the letter may please be acknowledged.

Encl: Nil.

Sd/-
(Y.P Anand)
Director (Track),
RailwayBoard.

Copy to CSTE/OL & CON. (All Railways).

Copy of letter

No.STS/E/ETC-I dated: 3.8.1982

from D.G./S&T,RDSO Lucknow to the Chief Signal & Telecom.Engineer,Railway Electrification,Allahabad.

Sub: Maximum permissible length of track circuit with concrete sleepers in RE areas.

Ref: Your D.O.letter No.RE/S&T/W-2/33 dt.18.5.82.

Length of track circuits on 25 KV AC electrified sections (using 90 Ohms shelf type AC immunised relays to BSS : 1659 Class A) is specified in the RE Manual (Table 1A) and is as under :-

- (a) For platform tracks(Min.ballast resistance 2 Ohms/Km) - 350 m.
- (b) For block section and station yard - (Min.ballast resistance 4 Ohms/8 Ohms - 450 m.

(The above values are with ref.to catenary(per km.) currents of 300 A/600A).

2. Lengths to be permitted for higher catenary current are still under consideration of the Sub-committee constituted by Signal Standards Committes,in this regard.

3. The laboratory trials in RDSO had indicated that concrete sleepers provide a ballast resistance of only 1 Ohms/Km. From the data received from Railways,however,it appears that the actual values of minimum ballast resistance may be higher than 1 Ohms/km the actual value depending upon location of track circuit,type of sleepers used etc. There is no objection to increasing the actual length of track circuit upto 450 m for block sections and station yards(subject to any other restrictions separately specified)provided that the minimum ballast resistance available is 4 Ohms/8 km Ohms per km.as specified in the RE Manual. It would be necessary that the actual ballast resistance be measured and recorded in each case before a length longer than 350 m is permitted.

DA: Nil.

Sd/-
(A.C. Huria)
for Director General/S&T.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 79/W3/SG/PI/1, New Delhi, dt.30.6.1982.

The General Manager(S&T)
All Indian Railways.

Sub: Track circuiting of goods lines at panel interlocked stations-i.e.on lines
where direct reception of goods train is done.
Ref: Board's letter No.76/Safety-1/3/23 dt.16.4.79.

It has already been clarified that at stations interlocked with panel operated from the ASM's Office complete track circuiting of the station section either by provision of conventional track circuiting or by provision of axle counter requires to be done.

2. A doubt has been raised whether track circuiting of goods lines of such stations is required to be provided.

3. The matter has been considered and it has been decided that provision of track circuiting of goods lines,at such stations where direct reception of goods trains is done is also necessary normally. However,due to oversiding reasons if the railways are not in a position to provide the same,they may approach the Board for dispensation of such track circuiting on goods lines.

Receipt of this letter may please be acknowledged.

Sd/-(Kalyan Singh)
Joint Director(S&T)III,Rly.Board.

No: 79/W3/SG/PI/I

New Delhi, dt.30.6.1982.

Copy to:

1.General Manager(S&T)/Construction, Central, Eastern, Northern, N.E., Southern, South Central, S.E. Railway and Western Railways and others.

Sd/-(Kalyan Singh)
Joint Direct (S&T)III,Rly.Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 77/W3/SG/W/5/3, New Delhi,dt:16.2.1981.

The General Manager(S&T)
All Indian Railways.

Sub: Extension of track circuiting from Fouling Mark to Block Section Limits.
Ref: Board's letter No. 1)70/Safety(A&R)/2/11 dt.15.12.70
2)No.77/W3/SG/5/3 dt.18.11.77
3)No.77/W3/SG/W/3 dt.28.8.78.

It has already been clarified that the facility of extension of track circuiting from Fouling Mark to Block Section Limit should be provided at stations on the trunk and main line routes as satisfying one or more of the following criterial:

- a) Train run through the station withouts topping at maximum permissible speed.
- b) Frequent shunting involving the main lines is carried out at the station.
- c) The lay-out of the station permits a train to be kept waiting at the advance starter,clear of the trailing points in rear,permitting reception on the main line from rear.
- d) The station is already provided with track circuiting on run through lines from Fouling Mark to Fouling Mark.

The issue of locating the advance starter at 180m. from the trailing point instead of at 670m i.e. at full strain length has been considered and it has been found that in order take advantage of operational convenience wherever avance starters are located at 670m. from the trailing point they may continue to remain there as hitherto. However,while doing the track circuiting from FM to BSL priority would have to be given to stations where the advance starters/last stop signals are located at full train lengths of 670m or thereabout. It is however,reinterated that such facilities should be provided only at these stations where the portion between FM to FM on the run through line is already track circuitued.

receipt of this letter may be acknowledged.

Sd/-(R.Krishnaswamy)
Joint Director(S&T)
Railway Board.

No:77/W3/SG/W/5/3

New Delhi, dt.16.2.1981.

Copy forwarded to:-

1. The CSTEs,All Indian Railways and all concerned.

SD/-(R.Krishnaswamy)
Joint Director(S&T)
Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 8/WS/SG/G/3 New Delhi, dt.10.8.88

The General Manager,
Railway Electrification,
Allahabad.

Sub: Provision of two track circuits ahead of Home Signal for Block Clearance.

Ref: Your letter No.RE/S&T/Instruction dated:12.7.1988.

Approval is accorded for a retention of existing block clearance arrangement with one track circuit till provision of standard arrangement with two track circuits is programmed and got approved by South Eastern Railway.

You may, however, provide necessary spares in the cable so that the railway can do the work as and when the same is sanctioned.

Sd/-
(K. N.Jain)
Exe.Director (S&T) R
Railway Board.

Copy to: General Manager(S&T),S.E.Railway,Calcutta for information and necessary action.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No:62/W3/SG/122 New Delhi, dt.29.8.1968.

The General Manager,
Eastern Railway, Calcutta.

Sub: Provision of track circuits on the run through lines of wayside stations.
Ref: Your letter No.SG/219/4/I Vol. I dt11.6.88.

The issue, regarding the provision of track circuiting all 'C' Class stations(block huts), raised in your letter referred to above has been examined.

It has been explained in your letter that when a train is standing at Home Signal (the only stop signal in the concerned direction)block instruments cannot be close for giving fresh line clear and that even when a train is standing beyond the Home Signal(but before passing the block overlap), the block instruments cannot again be closed since the block release track circuit is kept beyond the block overlap thereby eliminating the possibility of giving fresh line clear when a train is standing either at the Home signal or even beyond upto the block overlap.

In the light of the above, it is agreed that the track circuiting, as stipulated in Board's letter No.66/W6/MPW/14 dt.27.7.66 at 'C' Class stations(Block huts) may not be provided.

Sd/- J.N.Sikka
Dy.Director Signal
Railway Board.

No.62/W3/SG/122

New Delhi, dt.29.8.1968.

Copy to all the GMs(except Eastern), the Director General, RDSO/Lucknow and the Principal, IRISSET/SC for information and necessary action.

Sd/- J.N.Sikka,
Dy.Director Signal
Railway Board.

Copy of Dy.Director Signals, Railway Board's letter

No.70/W3/SG/T/1 dt.12.5.76

addressed to GM(S&T) S.E.Railway/Cal.

Sub: Use of Miniature plug-in-type track relays(Q-series)to DRS Spech.939.

Ref: Your Railways D.O.No.4.1404/W/111/1950.

In view of the circumstances brought out in your above letter the Ministry of Railways hereby approve of a drop shunt value of 0.25 Ohms for the D.C.single rail track circuit using QTA1-9 Ohms relay on the 3rd line between PKU and ULB of your railway.

Sd/-
Dy.Director(Signals)
Rly.Board,New Delhi.

Copy of Sri R.Krishnaswamy, Dy.Director (Signals)/Rly.Board, New Delhi's letter

No.79/W3/SG/T/2 dt.13.3.79

forwarded to G.Ms/All Indian Railways, copy to GM(S&T)/Con.,S.E.Rly., and others.

Sub: Shifting of fouling Mark to suit Track circuit termination.

Arising out of collision of 332 down Passenger with down Tughlakabad Goods Train at Meerut Cant station of Northern railway on 25.5.77 the Commissioner Railway Safety had recommended as under.

“For Track circuited lines or points it is necessary to provide indication boards at site opposite the point which a train should clear. This would enable the guard of the train to ensure that his train has cleared the Track Circuit, Definition of ‘Fouling Mark’ as per General rules is only linked with the infringement of the fixed standard dimension but this will not ensure any clearance of required Track Circuit which will interfere with the setting of route for reception of trains on other lines. Alternatively, Fouling Mark should be fixed in such a position so as to ensure clearance of the track Circuits and definition of fouling Mark modified suitable’.

2. The Ministry of Railways have considered the recommendation of the C.R.S. and have decided that track Circuit termination should be provided at the same place as a fouling Mark feasible. If it requires unnecessary cutting of rails to provide for insulation joints the fouling Mark on the ground may be suitably shifted, so that not only the infringement of fixed standard dimension are avoided but also the same coincides with the Track Circuit terminations.

3. Receipt of the letter may be acknowledged.

DA: Nil.

No: 4/1819/Con/2761

GRC, dt.22.5.79.

Copy forwarded to DSTE(W)/KGP/TATA & BSP,DSTE(RRI)KGP,DSTE(DEV) WAT and DSTE(DEV)WAT at KUR Cell, DSTE9MW-W)/GRC & KGP and Dy.CSTE(WK/RE)/WAT for information and guidance.

Copy to All BSIs at Hd.Qrs./GRC for information.

Sd/-

For chief signal & Telecom.Engineer/Con.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 77/W3/SG/W/5/3 New Delhi, dt.26.11.1977.

The General Managers,
All Indian Railways.

Sub: Extension of Track circuiting from fouling mark to block section limits.
Ref: Board's letter of even number dt.18.1.1977.

The work of extension of track circuiting from fouling mark to advance starter has been approved to 75 stations in the Works Programme 1978-99. Further, Railways have been directed under this office letter of even number dated: 18.11.1977 to take up the work of 25 more stations as out of turn works during the current year and complete then by 31.3.1978.

The work involves the provision of track circuiting ahead of the starter upto the trailing point and provision of one set of Axle Counters between the trailing point and the advance starter, a long with the provision of reversers on the starter signals, controlled by the track circuit beyond the starter upto the trailing point and the Axle counter beyond the trailing point upto the advance starter. A sketch showing the arrangement is enclosed.

As a part of this work, in stations provided with two cabin system, it is also necessary to provide circuit arrangements by which the slot for any line, once pulled and put back for the reception of a train, cannot be effective again until the relevant starter is also pulled and put back.(This will constitute and extension of the principle of one-slot-one-home already provided on the double line sections of the Indian Railways).

The requirement of wooden sleepers for the provision of track circuiting ahead of the starters upto the trailing point should be arranged from the existing stock for the completion of the work of 25 stations during the current year on top priority. The requirements for 1978-79 for this work may please be catered while communicating your requirements of special timers to the Railway Board for the year 1978-79.

Please acknowledge receipt of the letter.

DA;One.

*Please see board's
Letter No.77/W3/SG/G/9
Dt.23.5.78.

Sd/-
(K.Subrahmanyam)
Jt.Director(Signals),Rly.Board.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No:77/W3/SG/G/9 New Delhi, dt.23.5.1978.

The General Managers(S&T),
All Indian Railways.

Sub: (I) "One-Slot-Train" and Replacement of Advance starters on Single line sections with
Token Working(Board's letter No.69/W3/SG/A/2 dt.6.9.70 &
77/W3/SG/G/7

Dt.26.11.77.

(ii)Provision of reversers of starter signals in single like sections provided with Tokenless Working (Board's letter No.72/W3/SG/A/1 dt.7/8.8.1972).

(iii) Provision for Reversers on Starter Signals of Run Through Lines at
Station

on Double line sections-Board's letter No.74/W3/SG/A/1 dt.7/8/8/1974).

(iv) Provision of circuits to ensure "One -Slot-One-Starter" Principle-
(Para 3 of
Board's letter No.77/W3/SG/25/3 dt.26.11.1977).

The instructions issued in Railway Board's letters referred to above on the various issue have been re-examined in detail in the Board's office in the context of the accelerated pace of providing track circuiting of Run Through Lines, reception lines.

2. In partial modification of the earlier instructions issued on the subject, the following fresh instructions are issued.

2.1 The provision of the facility of "One-Slot-One-Train" shall only be provided for those Home Signals which lead to non-track circuited reception lines. As such this work need not be done for those Home signals which lead to reception lines which are programmed to be track circuited.

Workload in this regard should be programmed in the next three years i.e. 1979-80, 1980-81 and 1981-82. For the present this work may be confined to stations on Trunk Routes and Important Main Lines as defined in this office letters mentioned at the foot of the letter.

2.2 The provision of reversers on Starter Signals in Single Line Tokenless section provided with Tokenless Working is compulsory and the workload in this regard should be completed by programming the works in the next two years i.e. 1979-80 and 1980-81.

2.3 The workload arising out of need for the provision reversers on Starter Signals of Run Through Lines at stations on Double Line Sections shall be programmed in the next three years i.e. 1979-80, 1980-81 and 1981-82.

2.4 The principle of "One-Slot-One-Starter" is compulsory at all these stations where the portion between the starter and Advance Starter is not Track Circuited. The workload arising in this regard at those stations, where track circuiting between the Starter and the Advance Starter is not programmed, shall be programmed over the three years i.e. 1979-80, 1980-81 and 1981-82 confining the work to stations on Trunk Routes and Important main lines as defined in Board's letters referred to Para 2.1 above.

2.5 Automatic replacement of Starter Signals shall be achieved by means of a Track Circuit ahead of the Starter Signal wherever wooden sleepers exist for this purpose and by means of treadles at other places.

2.6 The work of automatic replacement of Advanced Starter in Single line section provided with Token Working shall for the present be programmed only for Trunk Routes as defined in Board's letter mentioned in para 2.1. The work in this regard shall be programmed in the next three years i.e. 1979-80, 1980-81 and 1981-82.

- *(1) 77/W3/SG/W/5/2 dt.31.1.78
- (2) 77/W3/SG/W/5/2 dt.13/14.2.78
- (3) 77/W3/SG/W/5/2 dt.27.4.78

Sd/-
(K. Subrahmanyam)
Addl. Director/Signal
Railway Board

No.77/W3/SG/G/9

New Delhi, Dt.23.5.78

Copy forwarded for information to : The General Managers(S&T/CON),
S.E.Railway & others.

Copy of Sri R.Krishnaswamy,Dy.Director(Signals),Railway Board, New Delhi's letter

No.77/W3/SG/G/9 dt.29.6.79

forwarded to GM(S&T)/S.E.Railway/Madras and copy to GM(S&T)/Con/All Indian Railways and others.

Sub: "One-Slot-One-Train" and "One-Slot-One-Starter" features.

1. The feature of "One-Slot-One-Starter" has to be provided even where a common Home Signal reads over a number of lines whether coaching or goods, in all such cases where for each of the lines an independent slot lever is provided. Thus it is to be ensured that slot for a second train cannot be given for particular line unless the starter lever for the same line has been pulled, and put back, after the first slot.
 2. However, where a common slot lever is used for those lines having a common Home signal the feature of "One-Slot-Starter" need not be provided.
1. Receipt of this letter may please be acknowledged.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No:84/W3/WP/RE/ New Delhi,18.12.1984

The General Managers
All Indian Railways.

Sub: Priority regarding provision of Track Circuiting.

Board approved as a policy the provision of track circuits from the Home Signal to the Last Stop Signal at stations on the BG trunk/important main line routes and also M.G.trunk routes.

2. Board have been informed that whenever minor works are undertaken by the Railways,the C.R.S.s insist on the provision of track circuits also to be combined with such works resulting in delays.

3. In view of the overall financial constraints and the non-availability of sufficient wooden sleepers for track circuiting purposes,the following priorities within the overall policy framework are laid down.

(I) Fouling mark to Fouling mark track circuiting of only the run-through line on all the BG trunk/important main line and MG trunk routes(the sections are indicated in the Annexure).

(ii) Fouling mark to Block section limit track circuiting on only the sections included in the Annexure,where any of the following conditions exist:-

(a) Visibility of the portion between fouling mark to Block Section limit is obscured from the place of operation; or

(b) frequent shunting involving main line takes place; or

(c) Advanced Starter is placed at a distance of full train length beyond the the trailing points.

This track circuiting is to be provided where track circuiting already exists from Fouling Mark to Fouling mark. In case track circuiting from Fouling mark to Fouling mark has not been done at a station and Fouling mark to Block Section Limit track circuiting is warranted,track Circuiting from Fouling Mark to Fouling Mark should also be carried out to provide complete track circuiting from Fouling Mark to Block Section Limit.

While undertaking track circuiting between Fouling Mark to Block Section Limit,the full point-zone portion may also be track circuited.

(iii) Complete Track Circuiting of station sections(i.e. fouling mark to fouling mark and fouling mark to Block Section limit,both run through and loop lines) where centralised operation of points and signals from the Station Master's office by Electrical/Panel Interlocking has been provided.

At stations provided/programmed with end-panel operation from cabins,track circuiting may be provided only on the run-through lines from Fouling Mark to Fouling Mark and Fouling Mark to Block Section Limit.

These norms for track circuiting at panel interlocked stations will be adopted,whether or not the stations are situated on sections listed in the Annexure.

(iv) Track circuiting of both main and loop reception lines from fouling mark to fouling mark at stations provided with single arm home signals in MANQ territory, on sections even other than those listed in the Annexure.

4. After covering stations in accordance with the above priority order, track circuiting may be extended progressively to stations on sections other than these mentioned in the Annexure, again in the above order of priority.

5. Works already sanctioned/programmed, where the provision of track circuiting has not been catered for the estimate may be completed as sanctioned. The [provision of track circuiting should be taken up separately in terms of above priorities.

6. This is in supersession of all earlier directives issued on this subject.

7. Please acknowledge receipt.

DA: As above.

Sd/-
(V. Ramasamy)
Director (S&T)
Railway Board.

No: 84/W3/SG/W/5/4.

New Delhi, dated: 28.23.2984.

Copy to:-

1. Chief Signal & Telecommunication Engineer, All Indian Rlys.
2. Chief Signal & Telecom. Engineers (Constn.), All Indian Rlys.
3. C.T.S.S., All Indian Railways.
4. C.S.T.E., Railway Electrification, Nagpur, Vijayawada, Allahabad.
5. The C.A.O.(R), Metropolitan Transport Project (Madras)
Poonamalle High Road, Madras-8.
6. The General Manager, S&T, Metro Railway, Metro Rail Bhavan, 33-A,
Jawahar Lal Road, Calcutta.
7. The C.A.O.(S&T)/(R)/MTP(Rlys)/Bombay, 2nd Floor, Churchgate Station Building
Bombay-100020.
8. The Principal, I.R.I.S.E.T., Secunderabad.
9. The Principal, Railway Staff College, Baroda.
10. The Director General, R.D.S.O., Lucknow.

D.A. : As above.

Sd/-
(V. Ramasay)
Director(S&T), Railway Board.

Copy to : Safety (A&R) Branch, Railway Board. (with 10 spare copies).

TRUNK ROUTES:

Central Railways:

- (1) New Delhi-Mathura-Jhansi-Nagpur-Wardha-Balharshah.
- (2) Wardha-Badnera-Bhusawal,Kalyan-Bombay V.T.
- (3) Kalyan-Pune-Vadi.

Eastern Railway :-

- (1) Moghalsarai-Gaya-Gomoh-Sitarampur-Khana-Burdwan.
- (2) Burdwan-Powrah (both on Main and Chord)

Northern Railway:-

- (1) Moghalsarai-Allahabad-Tundla-Ghaziabad-Delhi-New Delhi.
- (2) Delhi-Rawari.

North Eastern Railway:-

- (1) Lucknow-Senca, Gorakhpur-Sonepur-Muzzafarppur-Barauni-Katihar (including Rajipur-Bsachwara).

Northeast Frontier Railway:-

- (1) Katihar-Siliguri-Alipurduar-Gauhati.

Southern Railway:-

1. Madras Egmore-Villupuram Vridachalam-Tiruchchirapalli-Madurai-Virudunagar-Quilon.
2. Madras-Gudur.
3. Madras-Arakonam-Renigunta.

South Central Railway:-

1. Gudur-Bezawada.
2. Bezwada-Nidaduvolu(direct)-Waltair
3. Bezawada-Kazipet-Balharshah
4. Renigunta-Guntakal-Raichur-Wadi.

South Eastern Railway :-

- 1) Howrah-Kharagpur
- 2) Khragpur-Waltair
- 3) Kharagpur-Nagpur.

Western Railway :-

1. Mathura-Kotah-Ratlam-Baroda-Bombay Central
2. Ahmedabad-Palanpur-Marwar-Ajmer-Jaipur-Bandikui-Rewari.

B. IMPORTANT MAIN LINES:-

Central Railway:

1. Naini-Santna
2. Itarsi-Bhuswal
3. Itarsi-Jahalpur-Satna

Eastern Railway:-

1. Khana-Barharwa
2. Patna-Kiul
3. Moghalsarai-Patna
4. Kiul-Madhupur
5. Madhupur-Sitarampur
6. Kiul-Sabibganj
7. Sahibgani-Borharwa

Northern Railway:

1. Delhi-Panipat-Ambala
2. Ambala-Kalka
3. Moghalsarai-Banaras-Pratagarh-Lucknow-Rose-Barailly-Rampur
Moradabad-Saharanpur-Ambala-Ludhiana-Jullunder-Patankot.
4. Lucknow-Faizabad-Varanasi
5. Delhi-Rohtak-Bhatinda
6. Ghaziabad-Saharanpur.

Northeast Frontier Railway:-

1. Farakka-Bridge-Malda Town-Barsoi
2. Barsoi-New Jalpaiguri
3. Gauhati-Lumding-Tinsukia(MG)
4. Lumding-Badrapur(MG)

Southern Railway:-

1. Arkonam-Katpadi-Jolarpettai-Erode-Coimbatore-Ernakulam.
2. Jolarpettai-Bangalore
3. Gudur-Ranigunta

South Central Railway:-

1. Secunderabad-Wadi
2. Nidaduvolu-Bhimavaram-Gudivada-Vijayawada.
3. Secunderabad-Kazipet
4. Renigunta-Gudur.

Western Railway:-

1. Baroda-Ahmedabad
2. Ahmedabad-Viramgam(BG)
3. Anand-Godhra(BG)
4. Agra East Bank-Bharatpur-Bandipui(MG)
5. Palampur-Gandhidham(MG)
6. Mehsana-Jamnagar-Okha(MG)
7. Ahmedabad-Botad-Bhavngagar(MG)
8. Ajmer-Ratlam-Indore-Mhow(MG)
9. Bhola-Bhasa-Jetalsar-Junagadh-Verawal(MG).

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No: 95/Sig/W/P/1/TC New Delhi,dt. 14/16.10.97

General Manager,
All Indian Railways

Sub: Signalling Safety Works on Indian Railways.

Board in their meeting held on 1st Oct'97 reviewed the status of implementation of signalling safety works of track circuiting shifting of advance starter to 180 m SM's Control on Last Stop and modification of Home Signal slot circuit on Indian Railways. Taking into account the works already completed, that in progress and balance to be completed on A,B,C,D & E routes, the cost involved and the present resource constraints action to be taken by the Railways as per decision of the Board for implementation of these signalling safety works on Indian Railways is as follows.

FM to FM Track Circuiting

FM-FM TC is complete on A and B routes (except 6 stations on B route of ER where work is in progress. This track circuiting at balance stations on C and D routes should be taken up on priority and proposed in 98/99 WP

2. FM to BSL track circuit on straight portion

FM - BSL track circuiting on straight portion at balance stations on A,B,C route should be taken up on priority and proposed in 98-99WP

3. FM to BSL Track circuit on turnout portion

FM - BSL track circuiting on turnout portion should be taken on priority on A route and included in 98-99 WP. If all stations of A route are already covered in a railway this Track Circuit on B route should be proposed in 98-99 WP.

4. Track Circuiting of Loop line at PI/RRI stations

Track circuiting of loopline at balance PI stations should be taken on priority and proposed in 98-99 WP.

5. Track Circuiting from Home Signal to FM

Home to FM Track circuiting at stations on A route should be taken on priority and proposed in 98-99 WP.

For Track Circuiting works the cost of sleepers and turnouts should be charged as in Board letter No.93 Sig WP 39(NR)dt. 26.8.94.

The turnouts on PRC sleepers should be provided on A,B,C route to coincide with track circuiting works of Home to FM and FM to BSL.

6. Shifting of Advance Starter to 180m.

The work is Shifting of Advance Starter to 180m from outermost trailing point must be completed at balance stations by December,98. At such stations where COM requires the Advance Starter to be retained at existing locations for operational reasons, track circuiting from FM to BSL in lieu of shifting should be completed by December,98 within GM's powers.

7. SM's Control on LSS

The work of provision of SM's control on Last Stop Signals at balance station must be completed by December,98 within GM's powers.

8. Modification of Home Signal slot

The work of Modification of Home Signal Slot Circuit at balance station must be completed by Dec,98 within GM's powers.

9. Auto replacement of Main Line Starter

The work of FM to BSL track circuiting may be expedited which will facilitate automatic replacement of both mainline and loopline signals instead of providing only two rail length track circuiting in front of main line starter for automatic replacement of only the main line starter signal.

Necessary action should be taken for submission of works proposals for WP 98-99 for the above signalling safety works and execution of the same on your railway.

This issues with the concurrence of Finance Directorate of Ministry of Railways.

Sd/-
Chandrika Prasad
Addnl.Member(Signal)
Railway Board.

Copy to: CSTE)
FA & CAO)
CSTE(C)) For information & Necessary action.
CE)
CAO(C))

GOVERNMENT OF INDIA (BHARAT SARKAR)
MINISTRY OF RAILWAYS (RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 81/W3/WP/9/1 New Delhi, dated: 4.11.81.

The General Manager,
Western Railway,
Bombay.

Sub: Track Circuiting works on Godhra-Ratlam and Godhra-Anand
Sections for Railway Electrification.

Ref: Western Railway's letter No.W.722/2/33/1 dated: 26.9.81.

The matter has been considered and it has been decided by the Board that track circuiting from the end of the top point to othe Block Section Limits on the run through line as also from Fouling Mark to Fouling Mark on the loop line shall be done by the open line Railway and cannot be charged to the Railway Electrification.

Receipt of this letter may be acknowledged.

Sd/-
(R.Krishnaswamy)
Joint Director(S&T),Railway Board.

No: 81/W3/WP/9/1.

New Delhi, dated: 4.11.81.

Copy to :

1. Chief Engineer,Railway Electrification,Allahabad.
2. General Manager(S&T) and General Manager(S&T)/Contn., All Indian Railways for information and necessary action withh regard to similar works where Railway Electrification is being programme.

Sd/-
(R.Krishnaswamy)
Joint Director(S&T),Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD).

No.8/W3/SG/G/3, New Delhi,dt.10-8-1988

The General Manager,
Railway Electrification,
Allahabad.

Sub:- Provision of two track circuits ahead of
Home Signal for Block clearance.

Ref:- Your letter No.RE/S&T/Instruction dated.
12.7.1988.

Approval is accorded for a retention of existing block clearance arrangement with one track circuit till provision of standard arrangement with two track circuits is programmed and got approved by South Eastern Railway.

You may, however, provide necessary spares in the cable so that the railway can do the work as and when the same is sanctioned.

Sd/-
(K. N. Jain)
Exe.Director(S&T)(R)
Railway Board.

Copy to: General Manager(S&T), S.E. Railway,Calcutta for information and necessary action.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No: 87/W3/SG/T/1 New Delhi, dtd: 4.4.1989.

The General Manager,
Railway Electrification,
Allahabad.

Sub: RE modification to Route Relay Interlocking.
Ref: Your letter No.RE/S&T/W/37/RRI dt.13.12.88.

Retention of Drs.Track Relays of M/s.Siemens in 25 KV AC electrified areas is approved as a temporary in single rail DC track circuits to a length of 450 mts.and the one choke(9113/70) at the feed end.

This is further subject to the following points being checked:

- (a) Each relay used in 450 mts.long track circuit in the yard should be checked as per the method given in the sketch attached and only those meeting the requirements should be allowed to be used.
- (b) The track circuit should not be located within 2 Kms.of the feeding post;
- (c) Provision of cross bonding to be done at atleast every 100 mts;
- (d) Ensuring availability of minimum of two rails cross bonded over the entire length of track circuits and its extremities;and
- (e) The maximum catenary current does not exceed 600 Amps.

Kindly acknowledge.

Sd/-
(V. Sanker)
Director (S&T)I
Railway Board.

1. Copy to: CSTEs,All Indian Railways.
2. Copy to: CSTEs(Const.),All Indian Railways.
3. Copy to: Director General/Standard/RDSO,Lucknow.
4. Copy to: Director,I.R.I.S.E.T.,Secunderabad.
5. Copy to: CSTE(MTP)/Bombay,2nd floor,Churchgate station Building,Churchgate,Bombay.
6. Copy to: CSTE,Metro Railway,33-A,Jawahar Lal Nehru Road,Calcutta.
7. Copy to: Dy.CSTE/MTP/Rly.Poonamallee High Road,Madras-8.
8. Copy to: Principal,Railway Staff College,Vadodara.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No: 84/W3/SG/W/5/4 New Delhi, dt.18.12.1984

The General Managers,
All Indian Railways.

Sub: Priority regarding provision of Track Circuiting.

Board approved as a policy the provision of track circuits from the Home Signal to the Last Stop Signal at stations on the BG trunk/important main line routes and also M.G.trunk routes.

2. Board have been informed that whenever minor oworks are undertaken by the Railways,the C.R.Ss insist on the provision of track circuits also to be combined with such works resulting in delays.

3. In view of the overall financial constraints and the non-availability of sufficient wooden sleepers for track circuiting purposes,the following priorities within the overall policy framework are laid down.

I) Fouling mark to Fouling mark track circuiting of only the run-through line on all the BG trunk/important main line and MG trunk routes(the sections are indicated in the Annexure).

ii) Fouling mark to Block section limit track circuiting on only the sections included in the Annexure,where any of the following conditions exist :-

(a) Visibility of othe portion between fouling mark to Block Section limit is obscured from the place of operation; or

(b) frequent shunting involving main line takes place; or

(c) Advanced Starter is placed at a distance of full train length beyond the trailing points.

This track circuiting is to be provided where track circuiting already exists from Fouling Mark to Fouling Mark. In case tracks ocircuiting from Fouling Mark to Fouling mark has not been done at a station and Fouling mark to Block Section Limit track circuiting is warranted,track circuiting from Fouling Mark to Fouling mark should also be caried out to provide complete track circuiting from Fauling Mark to Fouling Mark and Fouling Mark and Fouling Mark to Block Section Limit.

While undertaking track circuiting betwen fouling Mark to Block Section Limit,the full point-zone portion may also be track circuted.

iii) Complete Track Circuiting of station sections(i.e fouling mark to fouling mark and fouling mark and fouling mark to Block Section limit,both run through and loop lines)where centralised operation of points and signals from the Station Master's office by Electrical/Panel Interlocking ohas been provided.

At stations provided/programmed with end-panel operation from cabins,track circuiting may be provided only on the run-through lines from Fouling Mark to Fouling Mark and Fouling Mark to Block Section Limit.

These norms for track circuiting at panel interlocked stations will be adopted,whether or onot the stations are situated on sections listed in the Annexure.

(iv) Track circuiting of both main and loop reception lines from fouling mark to fouling mark at stations provided with single arm home signals in MAUQ territory,on sections even other than these listed in the Annexure.

4. After covering stations in accordance with the above priotiry order,track circuiting may be extended progressive to stations on sections other than those mentioned in the annexure,again in the above order of priority.

5. Works already sanctioned/programmed,where the provision of track circuiting has not been catered for in the estimated may be completed as sanctioned. The provision of track circuiting should be taken up separately in terms of above priorities.

6. This is in supersession of all earlier directives issued on this subject.
7. Please acknowledge receipt.

Sd/-

(V. Ramasamy)

Director(S&T), Railway Board.

New Delhi, dt.18.12.1984.

No: 84/W3/SG/W/5/4

Copy to:-

1. C.S.T.Es, All Indian Railways.
2. C.S.T.Es(Constn),All Indian Railway.
3. C.T.S.S.,All Indian Railways.
4. C.S.T.E.,Railway Electrification,Nagpur.Vijayawada,Allahabad.
5. The C.A.O.(R),Metropolitan Transport Project(Madras)
Poonamale High Road,Madras-8.
6. The General manager,S&T,Metro Railway,Metro Rail Bhavan,33- A,J.L.Road,Calcutta.
7. The CAO(S&T)(R)/MTP(R)s/Bombay,2nd Floor,Churchgate,Station Building,Bombay-100020.
8. The Principal,Railway Staff College,Baroda.
9. The Principal,IRISET/Secunderabad.
10. The Director General,RDSO/Lucknow.

Sd/-

Director(S&T),Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAY)
(RAILWAY BOARD)

No: 79/WTM/22/11/6 New Delhi, dt. 15.11.1984.

The General Manager,
All Indian Railways,
DG/RDSO/LKO.

Sub: Use of prestressed concrete sleepers for track circuiting.

Board vide their letter No.79/WTM/22/11/6 dt. 7.6.79 have already desired that use of concrete sleepers should be made for track circuiting to reduce dependence on wooden sleepers. It has been observed that electric resistance from insert to insert on concrete sleepers manufactured in various factories varies considerably. To ensure proper performance of track circuiting, it has been provisionally decided till such time better quality can be achieved that only such concrete sleeper should be used for track circuiting which the following requirements:-

I. AC Traction Areas

SINo.	Type of traction Type of Track circuit	Min.insert-to-insert electrical resistance on production in the factory(15 days old).	Min.insert-to-insert electrical resistance at the time of laying.
1.	AC Traction/DC-TC	200 Ohms.	500 Ohms.
2.	AC Traction/AC-TC	200 Ohms.	500 Ohms.

2. To comply with the above requirements, it is essential that concrete sleepers should be tested for electrical resistance in the production unit itself and sleepers with minimum electrical resistance of 200 Ohms(15 days after production) should be stacked separately with suitable marking. These sleepers shall than be despatched to the site where electrical resistance shall again be measured after 3 to 6 months of manufacture and subject to minimum resistance of 500 Ohms being obtained, only these concrete sleepers shall be laid in the track circuited lines.

3. To ensure the above requirements, the following action should be taken.

a) RESO will arrange to issue a simple procedure along with a design of testing equipment for supply to each Unit.

b) Railway will ensure that these instructions and the equipment for measuring electrical resistance is made available to inspecting officer immediately.

c) Zonal Railways will provide in their estimates for one SI Grade III chargeable to concrete sleeper inspection for carrying out test checks in the production units under the control of the zonal Railways. This Inspector will be under the administrative control of C.E.

II. DC Traction Area :

4. In respect of track circuits in - DC traction areas of Bombay Suburban section(excluding Bombay VT-Kalyan-Karjat and W.Rly.routes CCG-VR section for othe present), the Board desire that pending availability of adequate feedback data, to permit laying of requisits standards for electrical resistance of concrete sleepers and purely as a temporary measure, the following action may be taken.

I) A stretch of about 10 Kms. in 2 block sections may be laid with concrete sleepers having insert to insert electrical resistance of 500 Ohms and 700 Ohms respectively at the time of laying for track circuits upto 400 metres and above 400 metres upto 800 metres length.

(ii) The above work should be done jointly by the Engg. and Signalling Departments after checking the stipulated electrical resistance of concrete sleepers before laying.

(iii) Only glass filled liners shall be used in the above stretches.

(iv) A system of regular monitoring should be introduced to collect the feed back data for laying down future standards.

(v) The laying of sleepers as indicated above should be completed in the mentioned stretch by 31.3.1985 so that their behaviour can be studied in the pre-monsoon and monsoon periods, regular measurements being taken for the initial and subsequent electrical resistance with passage of time.

Kindly acknowledge receipt.

Sd/-
(N.K. Sikka)
Director(Track)
Railway Board.

D.A.Nil.

CC: CTE and CSTE, All Indian Railways,
CE(Con)/All Indian Railways & CSTE(Con)/All Indian Rlys.
Dir.Stds.(Civil) RDSO and Dir.Stds(S&T)/RDSO
D.S&T/Rly/Bd.
DCE and DW/Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 80/WTM/22/12/2 New Delhi, dated: 1.10.1983.

The General Managers(Engg.),
All Indian Railways.
The General Managers(Constn.),
All Indian Railways.

Sub: Use of concrete sleepers in place of wooden sleepers.

Supply of wooden sleepers is shrinking progressively and immediate steps have to be taken to restrict the use of wooden sleepers progressively to match the anticipated supplies.

2.0 Taking into consideration that the production of PRC sleepers on BG has already increased and is further increasing and that approved drawings for RCC two block sleepers for yards(BG & MG) have also been issued,it has been decided that henceforth no wooden sleepers should normally be used in the following situations:-

2.1 On track circuited sections on BG except in DC traction areas with AC track circuit. As regards such DC traction areas trial length with PRC sleepers have already been laid on C.Rly.and use of wooden sleepers in such stretches will also be stopped as soon as RDSO clear the use of PRC sleepers.

2.2 No new wooden sleepers or CST-g sleepers,shall be used in yards and only RCC two block sleepers or second hand Metal/Wooden sleepers shall be used instead.

2.3 Wooden sleepers for points and crossings shall,howeve,continue to be used where the point and crossing fall within the track circuited section.

3.0 The requirement of PRC sleepers (BG) for use on track circuited lengths shall be arranged by the respective CE(OL) on each railway irrespective of the department under which the work of track circuiting falls. Any residual unavoidable demand of wooden sleepers for track circuiting shall also be consolidated in the Zonal Railway itself under CE(OL). The consolidated demands of PRC and wooden sleepers will be presented by CE(OL) in the annual CTEs Conference held in Jan/Feb. each year. The requirement of Construction Organisations shall, however,continue to be presented by CE(Constn.).

4.0 Henceforth,whenever a demand of wooden sleepers is advised to the Board,it should be clearly certified by CE(OL)/CE(Constn.) as the case may be,that no wooden sleepers is intended for use in the yards (BG or MG) or on track circuit length on BG. In case any wooden sleepers are required to be used e.g. in DC traction areas,the number of such sleepers should be clearly indicated.

The receipt of the letter may please be acknowledged.

Encl: Nil.

Sd/-
(Y.P Anand)
Director (Track),
RailwayBoard.

Copy to CSTE/OL & CON. (All Railways).

Copy of letter

No.STS/E/ETC-I dated: 3.8.1982

from D.G./S&T,RDSO Lucknow to the Chief Signal & Telecom.Engineer,Railway Electrification,Allahabad.

Sub: Maximum permissible length of track circuit with concrete sleepers in RE areas.

Ref: Your D.O.letter No.RE/S&T/W-2/33 dt.18.5.82.

Length of track circuits on 25 KV AC electrified sections (using 90 Ohms shelf type AC immunised relays to BSS : 1659 Class A) is specified in the RE Manual (Table 1A) and is as under :-

- (a) For platform tracks(Min.ballast resistance 2 Ohms/Km) - 350 m.
- (b) For block section and station yard - (Min.ballast resistance 4 Ohms/8 Ohms - 450 m.

(The above values are with ref.to catenary(per km.) currents of 300 A/600A).

2. Lengths to be permitted for higher catenary current are still under consideration of the Sub-committee constituted by Signal Standards Committes,in this regard.

3. The laboratory trials in RDSO had indicated that concrete sleepers provide a ballast resistance of only 1 Ohms/Km. From the data received from Railways,however,it appears that the actual values of minimum ballast resistance may be higher than 1 Ohms/km the actual value depending upon location of track circuit,type of sleepers used etc. There is no objection to increasing the actual length of track circuit upto 450 m for block sections and station yards(subject to any other restrictions separately specified)provided that the minimum ballast resistance available is 4 Ohms/8 km Ohms per km.as specified in the RE Manual. It would be necessary that the actual ballast resistance be measured and recorded in each case before a length longer than 350 m is permitted.

DA: Nil.

Sd/-
(A.C. Huria)
for Director General/S&T.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No; 79/W3/SG/PI/1 New Delhi, dt.30.6.1982.

The General Manager(S&T)
All Indian Railways.

Sub: Track circuiting of goods lines at panel interlocked stations-i.e.on lines
where direct reception of goods train is done.
Ref: Board's letter No.76/Safety-1/3/23 dt.16.4.79.

It has already been clarified that at stations interlocked with panel operated from the ASM's Office complete track circuiting of the station section either by provision of conventional track circuiting or by provision of axle counter requires to be done.

2. A doubt has been raised whether track circuiting of goods lines of such stations is required to be provided.

3. The matter has been considered and it has been decided that provision of track circuiting of goods lines,at such stations where direct reception of goods trains is done is also necessary normally. However,due to oversiding reasons if the railways are not in a position to provide the same,they may approach the Board for dispensation of such track circuiting on goods lines.

Receipt of this letter may please be acknowledged.

Sd/-(Kalyan Singh)
Joint Director(S&T)III,Rly.Board.

No: 79/W3/SG/PI/I

New Delhi, dt.30.6.1982.

Copy to:

1.General Manager(S&T)/Construction,Central,Eastern,Northern,N.E.,Southern,South Central,S.E.Railway and Western Railways and others.

Sd/-(Kalyan Singh)
Joint Direct (S&T)III,Rly.Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 77/W3/SG/W/5/3 New Delhi,dt:16.2.1981.

The General Manager(S&T)
All Indian Railways.

Sub: Extension of track circuiting from Fouling Mark to Block Section Limits.
Ref: Board's letter No. 1)70/Safety(A&R)/2/11 dt.15.12.70
2)No.77/W3/SG/5/3 dt.18.11.77
3)No.77/W3/SG/W/3 dt.28.8.78.

It has already been clarified that the facility of extension of track circuiting from Fouling Mark to Block Section Limit should be provided at stations on the trunk and main line routes as satisfying one or more of the following criterial:

- a) Train run through the station withouts topping at maximum permissible speed.
- b) Frequent shunting involving the main lines is carried out at the station.
- c) The lay-out of the station permits a train to be kept waiting at the advance starter,clear of the trailing points in rear,permitting reception on the main line from rear.
- d) The station is already provided with track circuiting on run through lines from Fouling Mark to Fouling Mark.

The issue of locating the advance starter at 180m. from the trailing point instead of at 670m i.e. at full strain length has been considered and it has been found that in order take advantage of operational convenience wherever avance starters are located at 670m. from the trailing point they may continue to remain there as hitherto. However,while doing the track circuiting from FM to BSL priority would have to be given to stations where the advance starters/last stop signals are located at full train lengths of 670m or thereabout. It is however,reinterated that such facilities should be provided only at these stations where the portion between FM to FM on the run through line is already track circuitued.

receipt of this letter may be acknowledged.

Sd/-(R.Krishnaswamy)
Joint Director(S&T)
Railway Board.

No:77/W3/SG/W/5/3

New Delhi, dt.16.2.1981.

Copy forwarded to:-

1. The CSTEs,All Indian Railways and all concerned.

SD/-(R.Krishnaswamy)
Joint Director(S&T)
Railway Board.

GOVERNMENT OF INDIA(BHARAT SARKAR)
MINISTRY OF RAILWAYS(RAIL MANTRALAYA)
(RAILWAY BOARD)

No: 77/W3/SG/A/16 New Delhi, dated: 7.10.1980.

The General Managers,
All Indian Railways.

Sub: Indicators for Track and Signals to be provided.
Ref: Board's letter No.77/W3/SG/A/16 dated: 1.3.80.

Railways were instructed to provide means for distinguishing between normal occupation of the track circuit beyond the Advanced starter, and in the case of power supply failure in the Automatic Block Section where the power supply to the Automatic Signalling section and the semi-automatic Signal are from different sources.

The railways were also asked about the arrangement proposed to be provided by them.

The suggestions put by Western Railway, Southern Railway and IRISSET, Secunderabad have been considered.

The arrangement proposed by Southern Railway at item (ii) of their letter No.SG,192/P dated: 12.5.80 is found acceptable and it may be adopted on your railway, to ensure a uniform pattern of indication/working in such cases over all Railways.

In this arrangement the power feeding the Automatic Section may be monitored by a power supply replay(PR) and track indication circuits arranged as per Annexure I.

In this case 'Red' indication will appear only during track occupation, while white will indicate that the train has not passed the Automatic Signal and no indication during failure of power supply.

DA: One.

Sd/-
(R. Krishnaswamy)
Joint Director(S&T)I, Railway Board.

No: 77/W3/SG/A/16.

New Delhi, dated: 7.10.80.

Copy for information to:-

1. The General Manager(S&T)/Const., Central, Eastern, Northern, Southern, South Central, South Eastern and Western Railways.
2. The Chief Commissioner of Rly. Safety, 16-A, Ashok Marg, Patiala House, Lucknow (with 10 spare copies).

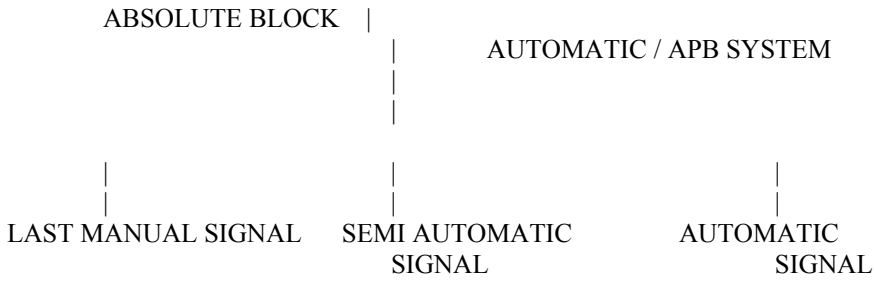
3. The General Manager(S&T)/MTP(Rlys.), 14, Strand Road, 5th Floor, Cal-700001.
4. The CAO(R)/S&T/MTP(Rlys) C/o. General Manager, W. Railway, Bombay.
5. The CAO(R)/S&T/MTP(Rlys.), Madras, Poonamalle oHigh Road, Madras-8.
6. The CAO(R)/S&T/MTP(Rlys), 35/36 Rani Jhansi Road, Motia Khan, New Delhi.

7. The Principal, Railway Staff College, Baroda.
8. The Principal, IRASET, Secunderabad.
9. The Director General, RDSO, Lucknow.
10. The Chief Engineer, Railway Electrification, Allahabad.

SD/-(R.Krishnaswamy)
Joint Director(S&T)-I, Railway Board.

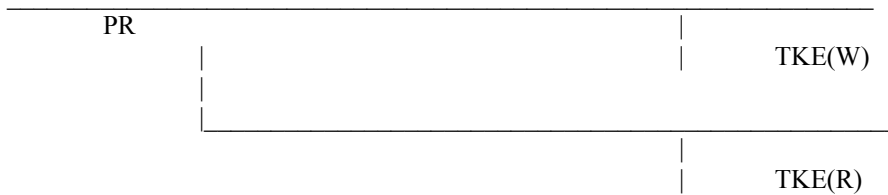
Copy to Safety(A&R) & SAFETY(IMP).

ANNEXURE - I.



LAST MANUAL SIGNAL

AUTO SECTION TRACKS



GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No: 77/W3/SG/A/16 New Delhi, dated: 1.3.1980.

The General Managers,
All Indian Railways.

Sub: Indicators for Track and Signals to be provided.

At Naini station on Northern Railway, Automatic Signalling Section begins beyond the UP Advanced Starter of Naini, upto the section is worked on Absolute Block System. The UP advanced Starter is a Semi-Automatic Signal. The power supply to the Automatic Signalling is from the OHE(UP or DOWN) where the power supply to the station signals is the local supply from the State Electricity Board. In the accident at Naini on 10-10-1977, when the supply from OHE to other Automatic Signals got interrupted, the Automatic Signals blank and the aspect of the UP Advanced Starter Signal changed to 'RED' since the same was working as an Automatic Signal at that point of time. Accordingly the repeater of the UP Advanced Starter Signal in the West Cabin construed the above indication as though the train had entered the Automatic section and put back the Signal Lever controlling the Semi-Automatic UP Advanced Starter Signal.

2. The Ministry of Railways, therefore, desire that in order to avoid such confusion the repeaters of semi-Automatic signals, where provided in the Cabins, should be such that means must be provided for distinguishing between normal occupation of other track beyond the Advanced Starter, and in the case of power supply failure in the Automatic Block section where the power supply to the Automatic Signalling section and the Semi Automatic Signal are from different sources. The arrangement proposed to be provided by you may be intimated to this office so as to see whether a uniform pattern of indication/working in such cases can be evolved.

3. Similarly, at Track Circuited stations where track indicators are provided, the following arrangements shall be made.

(i) Stations not provided with Panel Interlocking:

Normally the indicator should show yellow/White light when the line is unoccupied and Red when occupied. When there is a power failure, the track indicator would get extinguished.

(ii) Panel Interlocked/Route Relay interlocked Stations:

In such cases normally the track indicators would show no light when the line is unoccupied. When action is initiated to set the route for taking off a signal and the concerned route is set, the track indicator light for the route shows Yellow/White if unoccupied. However, if any portion of the Track Circuited yard is occupied, a 'RED' indication is shown on the panel diagram, irrespective of the route being set or not. The track indicators would show White/Yellow when the track is cleared after the intended movement is completed till the route/signal button or switch is restored to normal unless the Panel Interlocking/Route Relay Interlocking is provided with Automatic Route release facility. For the point zone, have, if the supply is from a battery, the same may shown even in normal circumstances white/Yellow light when unoccupied.

4. Receipt of this letter may please be acknowledged.

DA: Nil.

Instructions modified
vide Board's letter No.77/

Sd/-
(R.Krishnaswamy)
Joint Director(S&T),Rly.Board.

W3/SG/A/16 dt,7.10.80

No: 77/W3/SG/A/16

New Delhi, dt.28.2.1980.

Copy for information to:-

The General Managers(S&T)/Const.Central,Eastern,Northern,Southern,South Central,South Eastern and Western Railways.

2. The Chief Commissioner of Railway Safety,16-A,Ashok Marg,Patiala House,Lucknow(with 10 spare copies).

3. The General Manager(S&T)/MTP(Rlys.),14-Strand Road,5th Floor,Calcutta-700001.

4. The CAO(R)/S&T/MTP(Rlys.)C/o General Manager,Western Railway Bombay.

5. The CAO(R)/S&T/MTP(Rlys.),Madras,Poonamallee High Road,Madras-8.

6. The C.A.O.(R)/S&T/MTP(Rlys.)35/36 Rani Jhansi Road,Motia Khan,New Delhi.

7. The Principal,Railway Staff College,Baroda.

8. The Principal,I.R.I.S.E.T.,Secunderabad.

9. The Director General,R.D.S.O.,Lucknow.

10. The Chief Engineer,Railway Electrification,Allahabad.

Sd/-

(R.Krishnaswamy)

Jt.Director(S&T)I,Rly.Board.

Copy to: Safety(A&R) & Safety (IMP) with 10 spare copies.