

NORTH EASTERN RAILWAY

CE'S CIRCULAR NO.48 OF 1966 (IN SUPERSESSSION
OF CE'S CIRCULAR NO.19 OF 2.2.1955).

Sub: Casual Renewal of Wooden Track
Sleepers.

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Since the position of supply of wooden track sleepers has considerably improved during the last 2 years and it is expected that it will continue to be good in the future years, it has been decided that instead of spot renewals being carried out on all sections the sleeper renewal henceforth should be done on a through-cum-spot renewal basis i.e. casual renewal of sleepers should be laid in 2 or 3 continuous stretches in his section and the released serviceable sleepers should be utilised in the remaining section for spot renewals.

While carrying out sleeper renewal care should be taken to ensure that soft wood sleepers do not get mixed up with hard wood sleepers or vice versa. In existing stretches where soft wood sleepers have got mixed up with hard wood sleepers these should be weeded out alongwith through sleeper renewals to conform to the above instructions.

The stretches under each P.W.I. where through sleeper renewal will be carried out, should be decided by the DEN on consideration of high percentage of unserviceable sleepers. Normally endeavours should be made to ensure that the percentage of unserviceable sleepers on the trunk line is kept below 10% and on other sections not more than 15%. However, as high percentage are already existing, the DEN while instructing the P.W.Is for carrying out through sleeper renewals should see that those stretches are taken up first where the percentage of unserviceable sleepers is persistently in the region of

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about 25% . In case the percentage of unserviceable sleepers in a certain stretch is more than 30% a speed restriction may have to be imposed by the DEN and inform the Dy.C.E.concerned.

The spot renewals with the realeased sleepers should be carried out by the P.W.Is in such a manner that no two consecutive sleepers or the joint and the shoulder sleepers are worn out.

After through sleeper renewal in a certain stretch has been carried out the same should be mentioned in the P.Way track diagram book available with the P.W.I., A.E.N. and D.E.N. This information should also be incorporated in the track diagram of the district which is submitted by each DEN to the C.E. at the end of the financial year. In this connection attention is invited to CE's letter No.W/81/4/W-2, dated 16.2.1965, according to which the P.Way track diagram book and the track diagram of the district has to be submitted duly corrected and brought upto date, by each DEN to the CE by 15th April.

Stock of wooden sleepers on sections maintained on the basis of spot or casual renewals should be enough consistent with essential requirements. These instructions are in conformity with para 647(b) of the Indian Railways Way and Works Manual.

Detailed instructions for renewal of wooden sleepers are contained in para 644-648 of the I.R.W.W. but as the detailed procedure for sleeper renewals may vary from Rly. to Railway, the following subsidiary instructions for this Railway are being issued in order to make the procedure for this item of work complete in all respects.

1. During the annual overhauling or through packing of the track, when the ballast is drawn out, the Gang Mate will mark at one end with paint or coaltar 'O' on those sleepers which require immediate renewal or which will last for another one year. The P.W.I's or A.P.W.I's in independent charge will check the sleepers telegraph post by telegraph post and mark those sleepers requiring immediate or early renewal with one line over the mark 'O' made by the Gang Mate in order to produce a mark 'O' indicating early renewal. All the other sleepers marked 'Ø' should also be checked to verify their correct classification. The aim should be to obtain the maximum life out of the sleepers before classifying them as unserviceable. Improvement of sleepers by plugging the old spike holes and by tying the split ends should be fully considered by APWIs before declaring the sleepers as unserviceable.

2. The marked sleepers will be counted between all the telegraph posts by P.W.Is and entered in the appropriate columns showing 'O' and 'Ø' in Form A-E4(E.117) which will be maintained for each gang separately.

The AEN will test-check the requirements of the P.W.Is and examine the sleepers between 2 telegraph posts in each half mile and initial with date in the form A-E4(E.117) at the checked telegraph post giving remarks as regards the standard of classification of P.W.I., if any. The checking of 2 telegraph posts in a mile will ensure a 8-10% check of sleepers in line.

3. The DENs while inspecting works of gangs will also test check the telegraph posts other than those checked by the A.E.N. and also initial the form A-E4 at the appropriate telegraph post mentioned in the form A-E4. DENs should, however,

carefully check sleepers in those mileages which show a 20% or a still higher percentage of unserviceable sleepers and satisfy themselves about the correctness of classification.

4. The Permanent Way Inspectors will then consolidate the details and intimate the same to the respective DENs through AENs. The DENs should then submit the consolidated statement of track sleepers marked with 'O' and 'Ø' for their district to the C.E. in the proforma enclosed as annexure 'A'. This information should be furnished to C.E. by the 15th of May so that the requirements of the current year and an assessment for the next year is known before the Annual Sleeper Conference. This information will also form a basis for obtaining allotment of wooden sleepers for the next year from the Railway Board in the T.S.O.'s Meeting which is held some time in November or December.

Yearly allotment of track sleepers for the current year will be made district-wise by the T.S.O. in consultation with the Dy. CEs on the basis of the statement of sleepers marked 'O'. This allotment will be made by 15th February keeping in view the allotment made by the Board in the T.S.O.'s Meeting. This advance allotment is subject to modifications on the basis of actual assessment of the requirement of sleepers for the current year when the D.E.Ns. send their statements for the track sleepers marked with 'Ø' by 15th of May as pointed out in para 4 above. The DENs should submit their indents for the wooden sleepers required for the current year on the basis of the advance allotment given by the T.S.O. and also keeping in view the sleepers marked 'Ø' as intimated to them by their P.W.Is. These indents should also be submitted by 15th May along with the statement showing sleepers marked 'O' and 'Ø'. The indents will then be passed by T.S.O. and forwarded to the

Sleeper Control Officer for issuing necessary booking instructions. All correspondence upto the stage of issue of booking instructions should be referred to the Track Supply Officer and afterwards the Sleeper Control Officer should be contacted for supply of sleepers, raising and acceptance of debits etc.

The booking instructions for sal sleepers are given by the Sleeper Control Officer to the suppliers i.e. the firm or Divisional Forest Officers as the case may be. Booking instructions for non-durable treated sleepers are given by the Track Supply Officer to the Superintendent, Sleeper Creosoting Plant, Clutterbuckganj or in some cases to the other Railways. Copies of these booking instructions are also endorsed to the consignee, and Distt. Engineer concerned. On receipt of the booking instructions the consignee should also contact the firm or the Divisional Forest Officer or the Superintendent, Sleeper Creosoting Plant, Clutterbuckganj as the case may be, for early despatch of passed treated sleepers and should acknowledge the consignment on the challans (form OT-NG 3) to the Sleeper Control Officer within 15 days of receipt of consignment. This will enable prompt payment to the suppliers and avoid undue correspondence between the suppliers and the department / delayed payments. If the sleepers are not received within about 60 days of the issue of the booking instructions by the Sleeper Control Officer then the District Engineers concerned should remind the suppliers and intimate Sleeper Control Officer by a D.O. letter for taking up the matter further with the suppliers.

6. The consignee should check the durable(sal) sleepers for the passing officer's brand, a fascimile of which is given in the relevant booking instruction. Any complaints regarding unbranded or defective sleepers should be made by the P.W.Is directly to the Divl. Forest Officer with a copy endorsed to the Sleeper Control Officer and to Assistant Engineer and the Distt. Engineers concerned within 15 days of the receipt of the sleepers. The discrepancy for the sleepers not received or received in a damaged condition should be taken up with the Commercial Deptt.in terms of paras 2128S to 2138S of the Indian Railway Code for the Stores Department. If the claims are not lodged in time and C.C.Ss' acknowledgement not obtained then the responsibility for the shortage of sleepers in transit will lie with the P.W.I.or the D.E.Ns concerned. In this connection CE's Circular No.27 of 1962 regarding lodging of claims for missing consignments must be strictly followed.

7. On receipt of challans in form OT-NG 3 from trade and issue vouchers in case of Forest Deptt. supply debits known as adjustment memo for the sleepers despatched as per challan are prepared in quaduplicate in the form NG 15 by the Sleeper Control Officer. These memos are sent in triplicate to Distt.Enginers for acceptance, allocation and return of third copy to Sleeper Control Officer, North Eastern Railway, Gorakhpur for necessary posting in their Works Registers and carrying out adjustment.The discrepancies,if any,found by the consignees in the details given in the adjustment memo are regularised through supplementary debit or credit adjustment memo on the form NG 15 as the case may be.The acceptance of the adjustment memos should not,in any case be held up by Distt. Engineers for verification of the details as delays in acceptance of A/Memos mean delays in booking of expenditure by F.A.& C.A.O.and Sleeper Control Officer.

8. For the purpose of correct accountal and distribution of sleepers for casual renewal each P.W.I. must maintain a M.A.S. account booklet for the work of casual renewal of sleepers". This M.A.S. account will be operated in the same manner as a M.A.S. account of any other Capital work. Thus the P.W.I. on receipt of the booking instructions should enter these in the Column provided for the description of material in the M.A.S. account booklet. On receipt of the sleepers physically from the supplier he should first enter the receipt along with other particulars in his P.Way book and then in the M.A.S. booklet against the booking instructions already written as pointed out above. After this, the receipt should be entered in the capital ledger giving cross reference of the P.Way book item and page number. The entries so made in the M.A.S. booklet will enable the P.W.I. to see whether there have been any short receipts or whether full supplies against the particular booking instructions have been made. The P.W.I. should in case of delay in supplier against the booking instructions issued, chase the suppliers and in case of short receipts lodge claims as pointed out in para 6 above. The receipt of sleepers from suppliers and issues to Gangs besides being shown in the P.Way book, the M.A.S. booklet and the capital ledge should also be compiled and entered into the monthly P.Way Return. In this connection your attention is also invited to CE's letter No.W/308/O/Pt.II dated 8.3.1965 which gives the revised proforma of the monthly P.Way return. A copy of this revised proforma is enclosed for ready reference as Annexure B. In this monthly P.Way return the opening balance of the sleepers meant for casual renewals should be indicated alongwith the receipts from the suppliers and the number of booking instructions, the name of suppliers being indicated in the Col of "Reference of Receipts".

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The issues of sleepers made to each individual gang monthly for casual renewals should be obtained from the chart AE 4 and also entered in this monthly P.Way return indicating clearly the number of gangs to which these sleepers have been issued in the column of "Reference of Issues". The closing balance should then be found out and entered in the appropriate column. The P.W.Is must also indicate in column Nos. 20, 21, 22 the sleepers they will be able to use in the next 3 months, in column Nos. 23, 24 & 25 the sleepers for which release orders have been issued but the same have not yet been despatched and if there are any surplus sleepers which the P.W.Is do not need, these should be indicated in column Nos. 26, 27 & 28. As no separate return will now be submitted for the sleepers which have been released as a result of casual renewals or through renewal of sleepers, these receipts in respect of new, second hand or unserviceable sleepers should also be entered in the column of receipts, indicating in the column "Reference of Receipts" that these sleepers have been released from such and such gang. This return will enable the T.S.O. to assess the position of supplies made and issues made to the gangs for a particular P.W.I.

9. The original copy of the M.A.S. booklet, as for other works, will be submitted to the D.E.Ns every month and should be taken personally by the Time Keepers who go for the preparation of the labour pay sheets. The duplicate copy of the M.A.S. booklet is retained by the P.W.I. The D.E.N's office will check the M.A.S. booklet and also the monthly P.Way return and return the M.A.S. booklet to the Time Keepers when they go back to their headquarters. This check will enable a watch being kept by the D.E.N. over the allotment, receipts and issues of sleepers and will also held them in pressing for the reminder of the demand not yet arranged by the T.S.O. While reconciling the monthly return submitted by the P.W.Is, the DENs office must check that all sleepers received have been taken into the M.A.S. booklet.

10. Issue of sleepers to the gang mates should be recorded by the A.P.W.Is personally in their P.Way note books from where these should be copied on the back side of the form AE 4 kept with the Mates. As soon as the sleepers have been renewed in the track, the transaction is recorded against the appropriate telegraph post and against the appropriate month in the form AE-4 and intialled by the A.P.W.I. and the P.W.I. The particulars of the sleepers renewed in the track are collected at the end of each month and the transaction is recorded in the A.P.W.I's P.Way **note** books. On the basis of the entries in the A.P.W.I's P.Way note books, entries are made in the P.W.I's P.Way note book, M.A.S. booklet, the capital ledger and the monthly returns for sleepers are submitted to the DENs and Head Office as mentioned in para 8. The form AE-4 must be posted regularly and should show the transaction of the previous month. The A.E.N. during his trolly inspection should check the number of sleepers actually renewed between any two telegraph posts and compare the same with the entries made in the form kept with the gang and initial with date on the form against the particular telegraph posts as a token of such a check. Any discrepancy noticed should be immediately noted and proper action taken to see if there has been any irregularity. The DEN on gang inspection should scrutinise the form AE-4 and ensure that it has been periodically checked and initialled by the A.E.N. The D.E.N. should also initial the sheet in token of having scrutinised it. The sleeper renewals carried out must also be indicated by suitable symbols in the gang charts. In this connection please also refer to instructions contained in CE's Circular No.39 of 1964.

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11. The P.W.Is should submit the sleeper renewal form AE-4 to the D.E.N. by 1st of May and 1st of November every year noting therein the total number of sleepers renewed Gang by Gang throughout the 6 month period concerned. These forms are checked with M.A.S. booklet of the P.W.Is to see that sleepers supplied and renewed tally with the balance in hand. Other normal checks as detailed in the Way and Works Manual and the Chief Engineer's policy circulars for maintenance of P.Way books, M.A.S. booklets and the ledger should also be exercised.

12. Each hard wood sleeper renewed must bear the year cut on the centre of the sleepers in Arabic numerals omitting the first two figures of the century and should be inserted in the position which will enable the numerals to be read facing in the direction of Gorakhpur.

13. Sleepers should be inserted after breaking the packing below the sleepers. In no case should the track be jacked up in order to facilitate the removal of unserviceable sleepers and insertion of new sleepers. Such lifting disturbs the packing of adjacent sleepers. After the insertion of wooden sleepers, the sleepers should be packed lightly.

14. Dogspikes should be driven only after supporting the ends of sleepers by crow bars. Supporting the sleeper ends by crow bar helps in driving the dog spikes fully into the sleepers and will prevent the hanging of the sleepers from the rail foot under traffic. Keymen should be discouraged from hammering the spike heads to make up proper gauge. The remedy lies in proper boring of holes so that the dog spike shank touches the edge of the rail foot.

15. The sleeper so inserted should then be packed finally to correct level. The adjacent sleepers which have been disturbed should also be packed to the extent required. As the packing of sleepers so renewed is on a new bed, the sleepers will require sufficient number of packings before the sleepers have a firm bedding. The track should then be reboxed at this point.

16. Cars should be taken in handling and packing creosoted softwood sleepers as any chipping of wood beyond the extent of penetration of creosote in the timber will cause the uncreosoted timber to be exposed to the deteriorating influences of weather and fungus.

17. In carrying out spot renewals of sleepers preference should be given to the joint and shoulder sleepers. When there are four adjacent sleepers need renewal, attempts should be made to renew the alternate sleepers first, if the supply is short of the demand.

18. The main points for laying and other particulars in regard to wooden sleepers as per para 644 and 648 of I.R.W.W. Manual which are reproduced below with certain modifications must be strictly followed:-

- (i) Sleepers shall be laid and maintained square to the rails on straight and radial on curves.
- (ii) The sleeper spacing on straights and curves shall be in accordance with approved plans.
- (iii) Hard wood sleepers shall be laid with sap wood on top and heart-wood below. Treated sleepers shall be laid with heart-wood on top and sap wood below.

(iii) Stacking:

(a) New hard wood sleepers should be stacked in 1 in 9 system in loss of 100 and covered with atleast 6 inches of earth as a protective measure. The ground should be dressed to a flat slope and cleared of grass and undergrowth.

(b) Treated wooden sleepers, released second hand and scrap wooden sleepers awaiting disposal may be stacked in horizontal tiers, each stack being covered with a 6" layer of earth.

(c) A fire zone about 30' in width should be left around each group of 25 stacks and kept clear of grass and other combustible material. Sleepers should be stacked as far away from the track as possible to avoid damage by fire.

(iv) End.binding:

To save hard wood sleepers from the splitting, the ends after being pressed may be bound firmly with wire, hoop-iron or clips. End bolting the split is expensive.

(v) Adzing:

(a) When wooden sleepers are used without bearing plates, the rail seat should be adzed to a slope of 1 in 20, bored for the section of rail with the correct template and treated with coal tar or creosote afterwards. Adzing should be done on the sap side.

(b) When bearing plates or chairs are used, it should be ensured that seating is adzed or planed to ensure even bearing and that the two bearings are truly in the same plane.

(c) No boring or adzing or dating should be done at site for treated sleepers as any such operation will expose the inner material of sleeper and cause deterioration and early decay of sleeper:

(vi) Auguring:

(a) Spikes holes should be bored vertically and right through the sleeper. The size of auger for boring should be as follows:-

5/8" dogspikes with Deodar or soft wood sleepers- 9/16"

5/8" dogspikes with Deodar hardwood sleepers- 5/8"

During the process of boring the tips of augurs should frequently be dipped in oil to facilitate work. When sleepers are being bored outside the track correct template should be used; when being bored as rebored while in the track, the auguring should be done correctly with the gauge held in position.

(b) The holes after being bored should be given a coating of coal-tar or creosote.

(c) For treated sleepers, the boring should be done before treating and no boring or respiking should be done.

(d) If treated sleepers are to be laid in sharp curves, the boring for necessary slackgauge should be done before treatment.

(vii) Use of bearing plates:

(a) M.S. bearing plates need not be provided on hard wood sleepers except on:-

- i) all sleepers on girder bridges.
- ii) all sleepers of turnouts.
- iii) all timbers of ashpits and examining pits.

(b) Bearing plates should be provided on all soft wood sleepers.

(c) On sharp curves, when sleeper which has a tendency to split is used, bearing plates must be provided with three dog spikes.

(viii) Dogspikes on rail seat:

The dog spikes on rail seats, except on curves, should be provided as laid down in CE's circular No. P.W. 21 of 1961, keeping in view the following:-

When two dog spikes are used on each rail seat, the arrangement of spikes should be as per sketch 1(a) for single line track and as per sketch 1(b) for double and multiple lines i.e. for single line track, the outer dog spikes should alternate towards up and down side of centre line of sleepers on consecutive sleepers while for double and multiple lines, the outer dog spikes should be provided on that side of centre line of sleepers which is towards the direction of traffic. The dog spikes provided in this manner resist creep to some extent.

On curves the dog spikes on rail seats should be provided in accordance with CE's letter No. W/168/1/Track/Pt. II/I/1294 dated 4.5.1963, the instructions being reproduced below:-

(i) 4 spikes per rail, per sleeper,
on curves for 50 lbs. rails, 55 lbs
and $41\frac{1}{4}$ lbs rails.

(ii) 3 spikes per rail seat, per sleeper,
on curves for 60 lbs and above i.e.
2 outside and one inside.