

INTRODUCTION:

In the present scenario, the need of the day is to prevent and control the Pests & Rodents in coaches. Cockroaches, Bedbugs, Mosquitoes and Rodents are nuisance to traveling passengers and potential health hazard. With the prime objective of controlling the menace of Pest and Rodent in trains, arising out of the experience gained through the trials with the professional agencies, Board constituted a Committee to frame model guidelines for effective Pest and Rodent control measures for uniform and effective implementation on all Indian Railways.

PEST & RODENTS CONTROL

Railway Board has drawn a schedule for Pest control and Rodent control in passenger coaches and also for Rodent control in the coaching depots, Yards and Station premises. All reserved coaches (both AC and non-AC) and pantry cars have been covered under the ambit of pest and Rodent control in trains as given below. Based on local conditions and the levels of infestations, Railways may also consider providing the **Pest control** treatment in unreserved coaches.

Recommended Pest control treatments in the Coaches

Railway recommends the following chemical treatments for Railways coaches.

The minimum frequency of treatment in the coaches is as under;

SN	Type of Coach	Frequency of treatment
1.	AC Coaches	Fortnightly
2.	Pantry Cars	Fortnightly
3.	Non-AC Coaches (Reserved)	Fortnightly in first three months & thereafter monthly
4.	Non-AC Coaches (Un reserved)	Bi-monthly

1. The Pest Control operator/ contractor shall be required to use only such chemical/ pesticides that have been approved for house hold purpose by Central Insecticides Board and Registration Committee (CIB & RC) under Rules 1971 framed under Insecticides Act 1968 .
2. They must undertake changes in the chemicals quarterly so that insects don't acquire immunity for a particular type of chemical.
3. The contractor must specify the chemicals (with brand name) proposed for the Pest Control treatment, concentration of the solution(dilution ratio), dose (quantity / coach/ treatment).
4. The Pest Control operation should at no time violate the provisions of Insecticides Act 1968 & Rules 1971 & other relevant Government laws/ Rules.

5. Pest Control operations shall be done only by agencies which have been approved by the plant protection officers of concerned state's agriculture department or CIB & RC, Faridabad.
6. Pest Control agencies should provide copy of their license in prescribed form.
7. The license should not be only for selling, exhibiting and stocking insecticide but for operation also. Their license should be valid for the entire duration of contract with Railways.

RODENTS CONTROL

Many complaints of rodents sighting in AC and Sleeper coaches were reported which set to think about possible ways and means of controlling/eliminating this menace. Conventional system was not effective enough as rodents were omnipresent and could easily sneak into AC coaches from Primary and Secondary Terminals. Therefore to overcome the shortcomings of present system, "On Board Rodent Control System" was developed. The idea was to have an "Always On" system in place which will trap rodent as and when it sneaked into AC Coaches.

PRESENT SYSTEM

In the present system coaching yards and station yards are being targeted for rodent control with the help of poison tablets and mechanical traps. Apart from this, Glue Boards are laid in the Primary AC coaches during its Primary

Maintenance in the yard. These Boards are removed when the rake is ready for dispatch for passenger service.

This system is not effective because of the various maintenance activities going on in the coaching yard, rodents remain hidden in the AC coaches and come out in the night time when the coach is on run and passengers are settled. Moreover rodents also get inside the coach from secondary coaching Depots and Station yards or wherever the rake is stabled.

IMPROVED SYSTEM

In the improved system, a Glue Board called "TRUBLE GUM" has been used. Photograph of the Glue Board is given as under -



To use these Boards, a 4 to 5" wide area is cordoned off below the partition walls of berth no 21 and 25 in conventional two tier AC coaches. (Berth nos. are not sacrosanct. Idea is to provide a strip of glue boards, below one of the inner berths, in the middle along the coach length).

A set of 1" square, wire screens of 9" height and six feet long is required for this work as illustrated in the photograph below



9" wide and 6 feet long wire screens to be fitted below inner berths at the coach centre.

The screens are welded with 4 mm rods of 2.5" length in horizontal directions (6 rods per screen) and 4 mm rods of 3" to 4" length in vertical direction at every 6" to 8" interval along the length of the screen. These two screens are fitted below the long berth, one screen from each side of existing partition below the berth.

The purpose of providing these two screens is to create an enclosure for laying Glue Boards inside a confined space in such a manner that :

1. Passenger luggage do not come in contact with Glue Boards as the glue is very sticky and water proof and creates nuisance if got stuck up with passenger luggage.
2. Rats can freely move over these Glue Boards but can not cross below the berth without crossing these boards.
3. The final system after fitting the screens and laying Glue Boards inside it looks like the photograph given below:-



4. These 4 mm dia bars are provided to create a 3 to 4" gap between coach floor and wire screen. All bars/pins must Touch coach floor. 6"to 8" interval between two adjacent bars.

Rodent Control in Coaches:

The minimum frequency of rodent control treatment in the coaches shall be as under:

S. N	Type of coach	Frequency of treatment
1.	AC Coaches & Pantry cars	During every primary maintenance
2.	Reserved Non AC Coaches	Weekly

For treatment as per above frequency, food based attractant Glue-Boards of reputed make shall be provided in the coaches during primary maintenance as under:

S N	Type of coach	No. of Glue Boards to be placed
1	AC-I Coach	One in each cabin, coupe, attendant cubicle and Electrical control panel
2	Other AC Coaches	4 Nos. in Passenger compartment and 1 in Electrical control panel
3	Pantry Cars	6 Nos.
4	Reserved non-AC coaches	4 Nos. in Passenger Compartment

1. Glue-Boards are taken off from the coaches at the end of Primary maintenance.
2. Rats/Rodents trapped in the glue Boards are removed before departure of train & dead/live rats are disposed of.
3. 02 nos. of Glue Boards shall continue to remain in AC-I,AC-II & Pantry car for the entire leg of journey.
4. 02 Glue-Boards per train shall also be provided by contractor to OBHS staff for specific requirement/complaints enroute.
5. These Glue Boards must be replaced in every trip whenever they become ineffective for trapping rodents.
6. Other devices as deemed fit by contractor such as Rat traps guards on cables, ultrasonic devices etc. may also be used in addition.

LIST OF RODENTICIDE / PESTICIDE/ INSECTICIDE

A. Dis-infestation/ General Pest Control:

1. Propoxure 20% EC
2. Deltamethrin: 2.5 % wp
3. Cyfluthrin : 5% ew
4. Cyphenothrin-S : 5% EC
5. Cypermethrin: 10% wp
6. Beta Cyfluthrin: 2.45 % SC
7. Smoke Generator Canon (For Fogging)

B. Rodent Control :

1. Bromadiolone: 0.005%RB
2. Aluminium Phosphide
3. Anticoagulants & Glue Boards

Methodology & Guidelines to be followed for Rodent control in Pit lines / Coaching depots yard.

1. On commencement of contract, on 1st day contractor and railway shall jointly survey entire area to locate pockets Burrows and shell simultaneously plug all the burrows.
2. On next day active burrows shall be treated with aluminum phosphide (or equivalent) fumigant tablets and laced food attractant baits.
3. From second month onwards, baiting should be done on fortnightly basis or as and when required. Burrow fumigation treatment should also be done on monthly basis or as and when required.
4. All dead Rats / Rodents found shall be disposed off suitably same day by contractor. The disposal of dead/ live Rats / Rodents must not cause any environmental hazard.

Maximum Tolerance:

A maximum tolerance of + 7days shall be provided in the frequency of Pest / Rodent control treatment in coaches to take care of operational exigencies and disturbance in rake links etc.

Other Instructions:

1. Contractor shall ensure that only trained personnel in the field of Pest/ Rodent control, certified by training institutes are deployed for this treatment .
2. The contractor is expected to take all measures, whether mentioned tender schedule or not, required for complete elimination of Pests/ Rodents.
3. **In order to get maximum time for the chemicals to act, the contractor may start the pest control treatment immediately on arrival of terminating train at platform after de-training of the passengers.**
4. In order to prevent cross infestation, the contractor may make efforts to treat all the AC coaches and Non AC coaches of a particular rake together.
5. Besides maintaining written records, **the date of treatment and next due date** shall also be indicated by the contractor through appropriate **stickers inside the coach in the door way/ toilet area.**
6. Spare coaches lying in yards shall also be treated for Pest/ Rodent control as per laid down frequency.

7. Coaching Depot incharge shall make efforts to detach pantry cars from rakes **once a month** to facilitate complete vacation and intensive cleaning for thorough Pest/Rodent control treatment & give adequate time.
8. The contractor shall carry out surprise inspections of work carried out by his staff and submit report of inspection whenever called for perusal of railway authority .
9. The measurement of infestation levels at various stages shall be **jointly recorded** by contractor and railway staff.

A link on the website :

Passenger need to be informed about the measures taken for Pest & Rodent control. A link may be provided on the website for registering complaints on this account & a suitable Mechanism must be put in place to collect customer response regarding quality of service in rakes taken up for Pest/ Rodent control.

Disclaimer

The information given in this pamphlet does not supersede any existing provisions laid down in RDSO and Rly. Board's instructions. This document is not statutory and instructions given in it are for the purpose of guidance only. If at any point contradiction is observed, Rly. Board/RDSO's guidelines or Zonal Rly.'s instructions may be followed.

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MINISTRY OF RAILWAYS

Pamphlet
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