

INDIAN RAILWAY CONFERENCE ASSOCIATION  
NEW DELHI

TECHNICAL COMPETITION

SUBMITTED TO: *SECRETARY GENERAL*  
IRCA/NEUTRAL CONTROL  
N.RLY/NDLS.

SUBMITTING BY: **TEAM OF SSE(NC) OFFICE /CRS/TIRUPATI**  
**SOUTH CENTRAL RAILWAY**

1.G.YESURATHNAM      SSE(NC)  
2.SK.JILANI              TECH-GR-I (NC)  
3.M.V.APPARAO        TECH-GR-II(NC)

SUBJECT TOPIC: *BIOLOGICAL TOILET SYSTEM OF INDIAN RAILWAYS*  
(Maintaining for neat and clean of Rly. premises)

**APPROVAL } BY: NCO/IRCA/NC/NDLS**  
FOR COMPETITION

\*\*\*\*\*

India is one of largest country in this world corodes of people living in this county different communities and culture is there in our county. Daily thousands of peoples are traveling here and there, some corner to another corner like Jammu Khashmir to Kanya kumari by Indian Railways.

Due to this floating of public and thrown out their waste things here and there in Railway premises , regarding this viral decease are happened like Kalara ,Plagu& Swinflue etc. The Government of India having take care for good health of public through so many plannings like slogans,banners and also visuals to improve healthy motivate pictures cutouts arranging in railway areas and upon passengers travel coaches .

*cont: 2nd page*

*P M "SWATCHA BHARAT" programme also conducting in railways to make India healthy country when public in healthy automatically country growth up in wealthy that's why to avoid ugly maintenance of Rly passengers and to take care of their good health Rly motivate the public in slogan like "Rly property is your property" and Railway asked the passengers to help railways to make its neat and clean for maintenance of neatness Railway interduced and implimented "BIO - TECHNOLOGY" like that Bio Gases. Bio Diesel plants, particularly arrange Bio Toilet Systems on railway plat forms and also in Railway Coaches . Before this Railway interduced Control Discharge Toilet System(CDTS)that system working as computerised programme/speedo meter technology. So train running more than 30 KMPH the toilet human solid waste dropping out of railway station permits ,train speed working as per Railway speed maintenance -prefixed caution limits at Railway station areas.*

*Where as the Bio-Technology fitment use in railway that Bio-Toilet System unit fitted under lavatory of coaches useful to maintain of Railway Station area is in neat & clean to over come of all shabby/ugly area cleaning of Railway place. In the begging **Bio-Toilet** made CDTS /PLC planning model then it has been changing flushout through bal-valve door open/close model Providing of Biological Toilet System having additional use of other units for disposal of human waste coming out use through asection.*

### THE NEED OF BIO-TOILET SYSTEM:-

In the conventional and CDTS system the human waste discharged to the land without any treatment which is not EC friendly, made shabby to railway premises and tracks, stickin with coach under gear to overcome all this problems Biological Toilet system is made trail in Indian Railways

### PRINCIPLE OF BIO TOILET SYSTEM:-

This is a bacteriological system for disposing of human waste. In the treatment tank the human waste and water mixture (slurry)enters and the artical " bacteria booster"(micro culture) develop more number of bacteria which is continuously broken down the solid human waste into the liquid which drain with water, after proper chemical treatment(CI) to kill the bacteria in the water. The Bacteria free water is drained to the track bed in between Rails, the various gases(primary CO)developed while chemical reaction in a exhausted developed to the tank vents.

## BIO TOILET TREATMENT PROCEDURE:-

**After using the toilet flushing is done by the passenger indicate button in lavatory which makes open the flapper door / Ball valve door the water flushed out and then flapper/valve goes to the original closed position.**

**The wasted water mixture (slurry) enters into top treatment tank-the liquids gravity flows through series of fiber filter columns mounted in the lower part of the fitment tank. The solid waste which continuous to remain synthetic media into liquid form, this effluent flow through a series of fiber filter columns mounted in the lower portion of the treatment tank. Then the liquid is pass through chlorine and treated. Finally the bacteria free water passed to lower tank through drained out through drain hole to the road bed in between rails the gases developed or exhausted through the vent of tank**

### PROBLEMS

1. Flopper/Ball valve not opend
2. Water leaking through Air Vent/Tank
3. Flopper/Ball valve open but water not flushing

### REMEDIES

- 1.By pass the Air way in the panel
- 2 Slightly open the front door by opening only on toggle clamp.
- 1.**Check the water available in tank**
- 2.**Open the water dirt collector and clean**
- 3.**Solenoid valve defective/replace.**

**IMPORTANT DATA:**

- 1. Entry of other than human waste and tissue paper will make the system trouble.**
- 2. More water usage /more people using toilet make the system overload so unfit for General Compartment.**
- 3.Subsequent dosing of chemical slugs .**
- 4.Lavotary cleaning with acid ,phenol prohibited ,hence cleanliness inside l ivory is poor.**
- 5.Water seepage in side panel when cleaning the lavotory ball valve unit repair does.**

*IN OBSERVATION:-*

*THIS BIOLOGICAL METHOD IMPLEMENTS IN RAILWAYS TO USE*

THE INDIAN CIVILIZATION , THE PART OF IRCA EMPLOYEES VINGE WHICH TO ENSURE GOOD FACILITIES GOES TO PUBLIC THROUGH RAILWAY'S HAVING SPECIAL INVOLVEMENT INTO QUALITY CHECKING AND LIKE TO KNOW GIVE A SAMALL SUGGETION

- a) Better to increase the area volume of bio toilet sludge tank having inside that shells
- b) Provide easily opening ball valve handle method visually used by the passengers also with the connection of Hydraulic/Air pressure exhausted mechanism in passengers emergency timing, However this Bio Toilet technical system is very easy method of technology. Maintenance of technology and spend the cost of components of Railways are reduced on expenses of neet and clean of Railway premises.

"MAKE IN INDIA NEET &CLAEN"

SSE(NC) TEAM

IRCA/NC/POINT

CRS/TIRUPATI(TPTY)