

9343177097, 7019329204

airtuindia@gmail.com

airtu.swrtu@gmail.com

@AIRTUINDIA

airtuindia, airtuswrtu

Page - AIRTU

Kantharaju A.V

All India National General Secretary

Add: Railway Apartment (New Quarters)

54,H,1st Floor, TIPTUR Railway Station

Tiptur City, Tumkur Dist.,

Karnataka, India. PIN-572201

A.I.R.T.U



All India Railway Track Maintainer Union

Reg.No. 6597(All India Registered Under Trade Union Act 1926) Reg.office :A-2,
Shankheshwar Appt, Kabirchowk, Sabarmati,Ahmedabad - 380005

॥ कार्य ही पूजा है ॥

Ref.No.AIRTU/GS/33

Dated: 13.02.2022

To,

The Chairman of Railway Board & (CEO)
New Delhi.

Respected sir,

Sub: About Providing "Rakshak device" for All Track Maintainers of all Zones, divisions,
& Sections of Indian Railways.

Ref: 1) Letter No. 563/1/141/TRACK/2018-19, Dated: 10.01.2018.

2) RBE No. 2017/Transt.cell/Civil/03, Dated: 05.02.2018.

Regarding the above subject the 1.5 lakh KM of Indian Railway Track has been under supervising of Track maintainers for many years. They work hard 24X7 for the protection of track. In this situation every year 300 to 400 TM's are dying on track while they are doing their work. This is the situation of Indian TM's who are called the backbone of Indian Railway. How the formers are important for our country in the same way we Track maintainers are also for Indian Railway.

This is condemned thing that Our railway administration & officials are not providing any facility. Ref. No.02 RBE -05/02/2018, The uniform & Tool kit recommended by R.B(CRB) Constituted Committee, it's not provides fully in anywhere. 5.0] The Rakshak Device by recommended by Constituted Committee, that it is very important thing for us, its play a vital role in preventing every day's TM's Run over. It gives us signal & horn sound before arrivals of trains, so we can get alert & save our lives. In Indian Railway the Trains speed increasing day by day & Electrifications is setting also. So because Our Organization requests to you please provide Rakshak Device to all TM.

According to Ref. No.1 The Chief Track Engineer of SCR Zone Secundrabad Division, sends a report to R.B that they've got success in their experiment of using Rakshak device.

Our AIRTU Organization heartily request to you that please provide Rakshak Device to all TM's Zones, Divisions, & Sections of Indian Railway. By this way we can reduce Track maintainers run-over rate that happens every day, so please help us to save our TM's Life.

Thanking You

Yours Faithfully

Copy to,

- 1) Ministry of Railway, New Delhi.
- 2) Member of Infrastructures R.B
- 3) Principle Executive Director (IR) Railway Board.
- 4) The Commissioner, Rly Safety, Luknow .
- 5) Minister of State's I.R, New Delhi.
- 6) All India GS's of Affiliated Union's of AIRTU.

Kantharaju A.V
All India National General
Secretary- AIRTU

*Save our Track Maintainer's Life *



SOUTH CENTRAL RAILWAY

Headquarters' Office
Works Branch
Secunderabad

No. 563/1/141/TRACK/2018-19

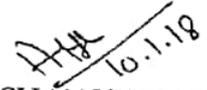
Dated: 10.01.2018

ED/CE (P)
Rly.Bd., New Delhi

Sub: Special report on 'RAKSHAK' - Reg.

A special report on 'RAKSHAK' is enclosed for your ready reference.

Encl: as above


(AKSHAY KUMAR JHA)
Chief Track Engineer

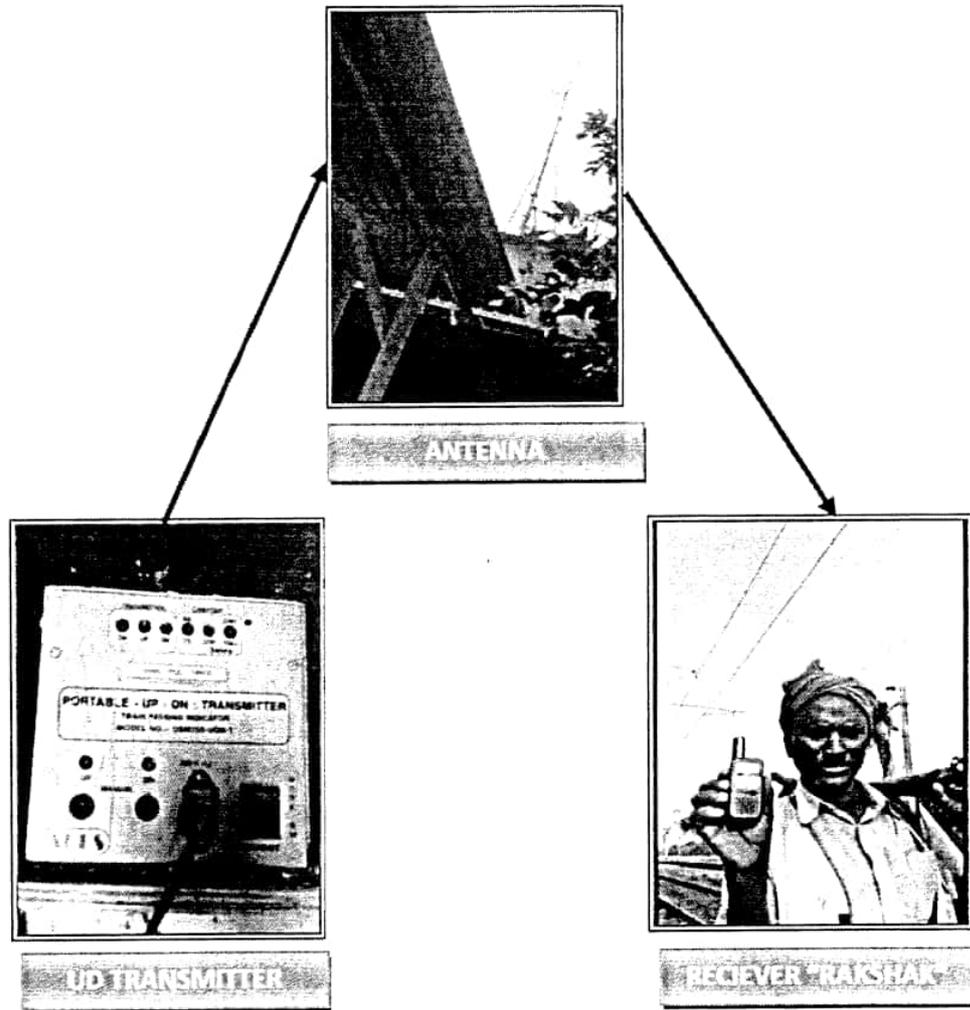
C/- ED/Transformation (Civil)/Rly.Board, New Delhi



SPECIAL REPORT ON
RAKSHAK

SOUTH CENTRAL RAILWAY
SECUNDERABAD

RAKSHAK SYSTEM



S.No.	Description	Page No.
1.0	Executive Summary	3-4
2.0	Special Report on Trial and Implementation of RAKSHAK on Secunderabad Division of S.C.Railway.	5-8
3.0	Schematic Diagram of Signal Transmission and Reception in a typical block section and Google Map	9-10
4.0	Approximate cost of provision RAKSHAK	11
5.0	Performance Report	9 Page Annx.

1.0 EXECUTIVE SUMMARY ON RAKSHAK

1.1 Introduction:

RAKSHAK is a wireless safety warning system for Railway Workforce working along the Railway track regarding the approaching trains. For this purpose, coded digital signal is transmitted to indicate approaching trains. Signal strength needs to be strong enough to be detected and decoded by the receiver under "Line-of-Sight" conditions. M/s. ACES Enterprises, Mumbai has developed above system.

1.2 Trials and installation of system:

On Secunderabad - Kazipet section of Secunderabad Division between Pindial (PQL) – Naskal (NSKL), Naskal (NSKL) – Ghanpur (GNP) and Ghanpur (GNP) - Ippuguda (IPG) (24 km stretch) trial was conducted from 10-12-2010 to 18-06-2011. Subsequently, on single tender basis work was awarded to M/s. ACES Enterprises, Mumbai for above section in Aug, 2012 with installation period of one month and maintenance period of 12 months which expired on 22-09-2013.

1.3 Brief details of equipments & Functioning:

1.3.1 Equipment Details

The system consists of two parts.

- (i) Portable UP/DN Transmitter
- (ii) Digital Signal Receiver

Transmitter Unit is normally placed in station and Antenna for this Unit is mounted at substantial height in free air and connected to transmitter through suitable RF cable.

Transmitter Unit consists of

- Digital Signal Modulator
- Built in 12V/7AH Battery
- Antenna with cable
- Built in Battery Charger

Above product is called "UD Transmitter"

1.3.2 Functioning: Transmitter gets a feed regarding taking off of Last Stop Signal (LSS) from Relay Operation but apart from getting feed through a cable there is no interference to Relay room operation. Digital Signal Receiver Unit is available with gang man/patrolman/Trackman working along Railway track. This product receives signal (UP/DN) as per trigger transmitted by "UP/DN Transmitter" and provides visual display (LED "UP" – and/or "DOWN") at specified interval, audible buzzer and vibrations (in the beginning only) the moment last stop signal is taken off. When train hits LSS signal LED visual display is stopped. During the period when receiver (RAKSHAK) does not receive any signal from transmitter in uncovered patches the equipment gives two beep/buzzer without LED display and Vibration after every 60 seconds (approx).

1.3.3 Frequency: This System works at 160.450 MHz carrier which is within the allotted bandwidth to Railways (150-170 MHz).

1.4 Performance:

"RAKSHAK" protection system for patrolmen/trackmen on Secunderabad Kazipet Section between Pindial – Naskal – Ghanpur – Ippuguda Section in stretch of 24 km (both UP & DN Lines) found to be very useful for getting advance information regarding both UP & DN approaching train by way of LED indication along with audible buzzer and vibration.

The RAKSHAKs have added additional safety for the Patrolmen, Keymen and Gangs working on the track. *There was not a single incidence of run over cases after introduction of Rakshak, and interfering with the relay working due to this connection in the relay room.* The performances of all the Rakshaks have been found very satisfactory and the results were found encouraging.

1.5 Sanctioned works of RAKSHAK (Aler (ALER) –Pembarti (PBP) –Jangaon (ZN) –Yasantapuru (YSPM) –Wangapalli (WP)):

The work of RAKSHAK devices for 48 km (252/0-300/0) under SSE/P.Way/ALER in above mentioned stretch of Secunderabad – Kazipet section is sanctioned and Tender finalized. Currently, Wireless possession certificate (WPC) is under process by Sr.DSTE/Tele/Secunderabad, which is expected shortly after which agency will take up the work.

1.6 Current status of RAKSHAK installed on 300/0 to 324/0 on Ippaguda-Pindial station:

The system was not covered by AMC and due to maintenance issues it had gone defective. However now asset has been brought under AMC by OEM M/s. ACES Enterprises and maintenance has been taken up recently by firm M/s. ACES Enterprises and system is functioning properly.

1.7 Approximate Cost: The approximate cost of RAKSHAK system considering life cycle of about 4 to 5 years is about Rs.50,000 per km/per year including yearly cost of WPC license fee.

1.8 Recommendation:

RAKSHAK is very useful for getting the advance information regarding approaching train to Trackmen/Patrolmen/Other Officials. *However, there is need to go for AMC with OEM's for maintaining the system on a continuous basis for entire life cycle of equipment.*

2.0 SPECIAL REPORT ON TRIAL AND IMPLEMENTATION OF RAKSHAK ON SECUNDERABAD DIVISION OF S.C.RAILWAY.

2.1 Objective of Project:

Safety is the prime aspect on Indian Railways and being monitoring at all levels. But it is quite essential to take Safety Measures for the staff working on track like Trackman, Key man, Monsoon/Winter patrol man who are monitoring safety of track from time to time and trolley inspections officials. **In order to mitigate such problems Very High Frequency (VHF) based approaching train warning system developed called as "RAKSHAK" and introduced between Pendial - Nashkal - Ghanapur - Ippaguda stations of Secunderabad – Kazipet sections of Secunderabad division on S.C.Rly.**

The product have undergone rigorous tests between Pendial - Nashkal - Ghanapur – Ippaguda block sections of SC-KZJ section to check the efficiency of this system the trials have been conducted during the period 10.12.2010 to 18.06.2011 and the performance of the equipment was very much encouraging . Further with the approval of HQ trial was extended by one more year duly warding a single tender to M/s ACES enterprises Mumbai for the installation of 4Nos Digital signal modular portable UP/DN Transmitters and 64 nos Digital signal receivers which includes installation period for one month and maintenance period for 12 months which ended on 22.09.2013.

This project had been conceived with the idea of providing Wireless safety warning system for the Railway work force working along the Railway tracks about the approaching trains. For this purpose coded signal is transmitted to indicate approaching train. Signal strength should be strong enough to be detected and decoded by the receivers under LINE OF SIGHT conditions.

The system consists of two parts

- i) Portable UP/DN Transmitter
- ii) Digital Signal Receiver-RAKSHAK

2.2 Technical Brief of the System

2.2.1 Portable UP/DN Transmitter

This is a transmitter unit which will be normally placed in the station or IB hut. Antenna for this unit will be mounted at substantial height (10-15 m) in free air and connected to transmitter through suitable RF cable. This system works at frequency 160.450 MHz which is within the allotted band width to Railways 150MHz to 170MHz. This transmitter is connected to Relays pertaining to operation of advance starter signal and works in a manner detailed below:

- a) ***Whenever LSS is taken off transmission unit transmits the signal to Digital receiver and it will decode the same in to VISUAL (LED "UP'AND / OR LED "DOWN"), AUDIBLE (Buzzer) and VIBRATIONS indication depending on type of signal received.***

- b) The moment train crosses the LSS, transmission of signal ends as it indicates that train entered into block section and staff to be alert until train passes.
- c) The LED light, buzzer and vibration will be different for both UP and Down lines.

Transmitter consists of :

- Digital Signal Modulator (DSM 25S)
- Built in 12V/7AH Battery
- Antenna with cable
- Built in Battery charger

This product will be referred to as "UD" Transmitter"

2.2.2 Digital Signal Receiver:

This is a small receiver which will be available with the Gangmen/ Keyman /Patrolmen working along the Railway track. Here after this product will be referred to as "RAKSHAK"

This product has following features.

Receiver signal (Say UP/DN) as per Trigger will be transmitted by UD TRANSMITTER approximately once every 20 seconds.



UD TRANSMITTER

This received signal is decoded by every RAKSHAK between two stations that is available within "LINE OF SIGHT" condition and coverage distance. RAKSHAK will then provide VISUAL (LED "UP" AND / OR LED "DOWN"), AUDIBLE (Buzzer) and VIBRATIONS indication type of signal received. The three different methodologies adopted to convey the indication of approaching of train will definitely be conveyed to the Gagmen/Patrolmen/Trackmen.

2.2.3 This system works at frequency 160.450 MHz which is within the allotted band width to Railways 150MHz to 170MHz viz.,



RECIEVER "RAKSHAK"

44

2.3 WORKING OF RAKSHAK DEVICE:

- RAKSHAK will receive transmitted signal within the "LINE OF SIGHT" condition & coverage distance.
- RAKSHAK will give respective LED indication along with Buzzer & Vibration to suggest type of signal received.
- To indicate "UP" condition
 - "LED (UP Blue)" will Blink, "Buzzer" will give beep for 3 times & "Vibrator" will vibrate for 3 times of 1 second duration each.
 - After which, Buzzer and vibrator will stop but LED will continue to blink for every 20 sec or till the UP signal is put ON.
- To indicate "DN" condition,
 - "LED (DN Yellow)" will Blink, "Buzzer" will give beep (long Beep) & "Vibrator" will vibrate for 1 time of about 3 seconds duration.
 - After which Buzzer and vibrator will stop but LED will continue to blink for every 20 sec or till the DN signal is put ON.
- IN-RANGE
 - When Rakshak is able to receive Transmitted "RANGE" signal (within Range)
 - both "UP" & "DN" LED will blink twice without any Buzzer or Vibrate for every 60seconds.
- OUT OF RANGE
 - When Rakshak is not able to receive Transmitted "RANGE" signal (Out of Range) only two beep of Buzzer sound will come without any LED or Vibrate after every 60 seconds.
- "Low Bat" & Battery Charging" status is indicated by LED.
- To switch OFF the RAKSHAK the ON-OFF switch has to be kept pressed for about 5 sec Only 2 buzzer beeps will be heard without any LED or Vibrations while equipment switches off.
- Equipment used :
- 64NO.s of digital receivers supplied for four block section, 16 Nos. for each station .

The Transmitter unit at each station will be normally placed in the station manager Room. Antenna for this unit will be mounted at substantial height in free air on antenna Tower and connected to Transmitter through suitable RF cable.

2.4 PERFORMANCE REPORT ON RAKSHAK:

The Rakshak was provided to the keyman and patrolman of each unit under SSE/P.Way/Central/Kazipet section (Km 300/0 to 324/0 both UP & DN) under ADEN/North /Kazipet subdivision. It has been found very helpful for getting the advance information regarding both UP&DN approaching trains by way of **LED indication** along with **audible Buzzer** and **vibration** where the keyman could safely stand on the cess during passage of trains

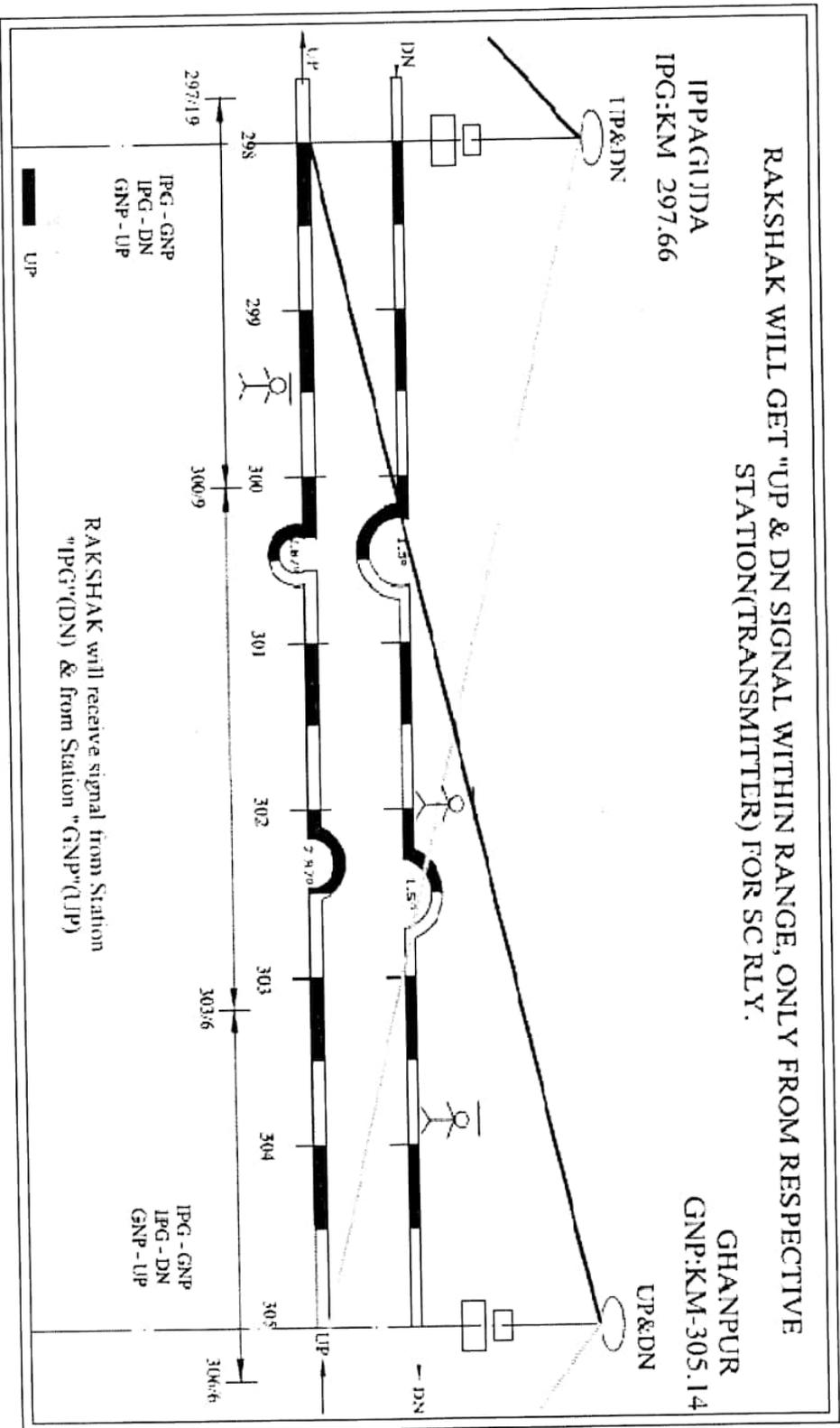
There was no incidence of missing buzzers regarding approach train. The Raskhaks have provided additional safety for the key men, patrolmen and gangs working on the track. *There was not a single incidence of run over cases after introduction of Rakshak, and interfering with the Relay working due to this connection in the relay room. The performances of all the Rakshaks have been found very satisfactory and the results were found encouraging.*

Based on satisfactory performance of Rakshak in SSE/P/C/KZJ section, the utilisation of Rakshak devices is extended to SSE/P.Way/Aler section in four block section i.e., Wangapalli – Aler , Aler – Pembarti , Pembarti – Jangaon & Jangaon – Ragunathpally stations (Km 252/0 – 300/0 both UP & DN) of Secunderabad – Kazipet sections also, for which Agency is fixed and procurement of WPC license is under process which is dealt by Sr.DSTE/Secunderabad.

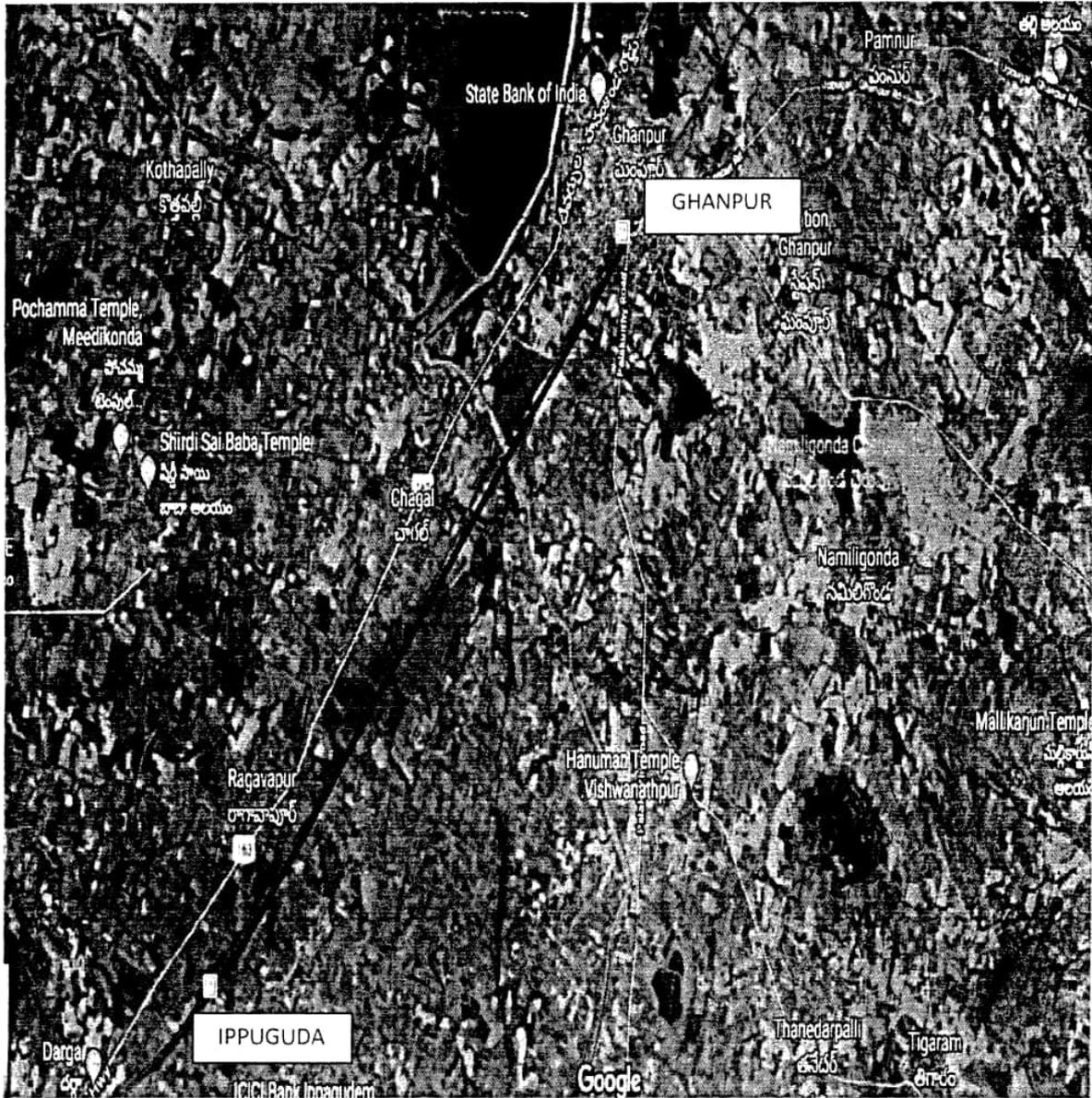
u/s

3.0 Schematic Diagram of Signal Transmission and Reception In a typical block section

5



GOOGLE MAP



4.0 APPROXIMATE COST OF PROVISION RAKSHAK

A) SCHEDULE FOR PROVISION OF RAKSHAK DEVICE IN 4 BLOCK SECTION (KM 252/0 - 297/0 = 45KMs) UNDER SSE/P/ALER SECTION ON SC-KZJ SECTION

S No	Description	Unit	Rate	Qty	Amount (Rs)
1	Supplying, installation and commissioning of Digital Signal Modulator - Portable UP/DN Transmitter (including one year AMC)	each	354375	4	14,17,500
2	Supplying and commissioning Digital Signal Receiver RAKSHAK to receive signal Transmitted from Digital Signal Modulator (including one year AMC)	each	21853	64	13,98,592
3	WPC license for Transmitter & Receiver Per Year	each	23100	4	92,400
	a) Transmitter	each	14766	64	9,45,024
	b) Receiver				
	TOTAL				38,53,516

B) COST ANALYSIS FOR PROVISION & MAINTENANCE OF RAKSHAK DEVICE PER KM

S No	Description	Amount (Rs)
1	Cost for installation of RAKSHAK Transmitter & Receiver for 45 Kms in 4 block sections under SSE/P/Aler section on SC-KZJ section for both UP & DN lines	3853516
2	Total length : Both UP & DN lines put together i.e. 45Kms X 2	90 Kms
3	Cost of supplying, installation including AMC for 1 Km	3853516 / 90
4	Hence Per Km Cost of supplying, installation	42817

5 By adding contractor profit 10%, it will be

47099

Say 50000/Per Km/Year

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
रेलवे बोर्ड RAILWAY BOARD

No. 2017/Transf.cell/Civil/03

New Delhi, dated: 05 - 02 - 2018

The General Manager, All Indian Railways/PUs, NF(Con), CORE
The DG/RDSO & NAIR,
CAOs, DMW/Patiala, WPO/Patna, COFMOW/NDLS, RWP/Bela

Sub: Report of the Committee to Review Uniform & Tool Kits for Trackmen/Keymen/Patrolmen

Ref: Board's letter No. 2018/Transf.cell/03 dated Jan 8, 2018

Considering the importance of Trackmaintainers in ensuring safe running of trains on IR and the hardships being faced by them, Board (CRB) had constituted a committee of GMs of SCR (Convener), CR & NR to recommend measures that would improve their working conditions including better uniform and tool kits.

Committee's report with all annexures is enclosed herewith and same is uploaded in Transformation Cell section of the Railway Board's website (<http://www.indianrailways.gov.in/railwayboard>). Based on the recommendations of the committee, Board (ME, MS, FC & CRB) have approved the following for compliance.

1.0 Dress Allowance:

1.1 The Dress Allowance for the Track Maintainers as per RBE No.141/2017 dated 03.10.2017, shall continue to be followed. For Track women, dress allowance will cover Kurta (both summer & winter), Salwar, Jersey, headgear other than helmet, mittens, socks and water bottles. The colour scheme of dress for Track women will be the same as that for Trackmen.

2.0 Uniform and Protective Gears:

As the Track Maintainers have to walk on ballast in extreme climatic conditions ranging from very high temperature during summer while carrying out hot weather patrolling and also in very low temperatures in the night for cold weather patrolling, it is necessary to provide special gears to them to protect them from extreme weather conditions. Also the work of the track maintainers involves working with heavy objects like rails and sleepers, which can topple on their feet while working. The feet need to be adequately protected. Their working conditions are similar to that as existing on a shop floor or in construction projects. Hence following special protective gears are to be provided to them:

Sanjit Kumar

5/2/18

3.0 Tools and Equipment:

- 3.1 Provide light weight improvised tools and equipment such as spanner, hammer, crow bar, mortar pan etc. to track maintainers, as per extant Board's instructions.
- 3.2 Provide tricolor LED 3-cell Torch/ rechargeable torch developed by NR/SCR in place of H. S. Lamps to Mate, Keymen & all Track maintainers deputed for Night patrolling. Regarding payment for purchase of dry cells to the Track Maintainers deputed for night patrolling duties, it has already been decided by Board (ME & FC) vide Railway Board's letter no 2016/CE-1/GNS/4 pt. dated 07.12.2017 to pay @ Rs 150 per month to all track maintainers deputed for night patrolling. Same may be followed.
- 3.3 Improvised staff for patrolman, as being used on SCR may be provided in place of conventional staff.
- 3.4 Sturdy light weight backpack Tool Kit bag with provision to keep various equipment as developed by Pune Division of Central Railway and Firozpur Division of Northern Railway were considered appropriate. Such Tool Kit bag may be provided to all Track maintainers including P-way-artisans and their helpers.

4.0 Mode of Procurement

As on date Stores department is procuring luminous vests; This system may continue. The other items mentioned in **table 1** (para 2.1) above, may be procured at Divisional Level through **Spot purchase committee** comprising of Sr.DEN/DEN incharge, Sr.DFM/DFM, Sr.DMM/DMM. Once the system gets stabilized, and the vendors are developed, these may be procured through stores department of the division.

5.0 Rakshak

"Rakshak" protection system for patrolmen/trackmen has been adopted by SCR on Secunderabad- Kazipeth section in a stretch of 24 KMs and has been found to be useful in getting advance information regarding approaching trains by way of LED indication along with audible buzzer and vibration. Keeping in view large number of run-over cases of Trackmen that occur during discharge of their duty on Track, putting in place a Rakshak type protection system is essential and needs to be expeditiously implemented. However since the system is still in infancy stage, deployment on entire Rail Network may not be feasible right now. However keeping in view large number of run-over cases, it has been decided to extend deployment of Rakshak type protection systems on the entire **High Density Network** on a crash basis. This being a safety item, may be booked under RRSK.

6.0 Gang Tool cum Rest Room

A tool cum rest room should be provided in the gang beat of each sectional gang preferably at the station or at level crossing. The room may have resting facility, private lockers for keeping their small belongings. The toolbox can also be accommodated in the same building. This type of accommodation can be provided near the station building as far as possible or at the level crossing falling in the gang beat. In addition to regular supply of electricity alternate source of solar lighting may also be provided in these rooms. For watering, hand-pump/piped water supply may be provided. Prefabricated modern construction methods already in use on certain Railways (KGP div of SER & of WCR) may be used for early and quality construction. These should be constructed in a phased manner through funds from Track renewal works/RRSK. Priority may be decided locally by the DRM.

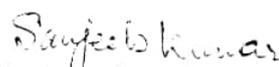
This issues with the concurrence of Associate Finance of Transformation Cell Railway Board.

Kindly acknowledge the receipt and ensure compliance.


(T. K. Pandey)

Executive Director, Transformation

1. PFAs, All Indian Railways & Production Units
2. The ADAI (Railways), New Delhi
3. The Director of Audit, All Indian Railways


(Sanjeeb Kumar)

Executive Director (Accounts), Transformation

Copy to

4. The Director, Indian Railway Institute of Civil Engineering, Pune.
5. The Director, Indian Railway Institute of Mechanical and Electrical Engineering, Jamalpur.
6. The Director, Indian Railway Institute of Signal Engineering and Telecommunications, Secunderabad.
7. The Director, Indian Railway Institute of Electrical Engineering, Nasik.
8. The Executive Director, Indian Railways Centre for Advanced Maintenance Technology, Gwalior.
9. The Director, Indian Railway Institute of Transport Management, Lucknow.
10. The Registrar, Railway Claims Tribunal, Delhi.
11. The General Secretary, IRCA, New Delhi.

