

S&T TRAINING CENTRE

N.RLY. GHAZIABAD
(AN ISO 9001:2015 CERTIFIED INSTITUTE)



S&T Training Centre, N. Rly.

At a Glance

सिगनल एवं दूरसंचार प्रशिक्षण केन्द्र

की

एक इलक

उत्तर रेलवे NORTHERN RAILWAY



निदेशक

संकेत एवं दूरसंचार प्रशिक्षण केंद्र

गाज़ियाबाद 201009

<http://sttcgzb.railnet.gov.in>

ISO 9001-2015 प्रमाणित

सिग्नल एवं दूरसंचार विभाग की रेल परिवहन के सम्बन्ध में, संरक्षा, सुरक्षा के साथ रेल को तीव्र गति प्रदान करने में मुख्य भूमिका है। इस कार्य में अनुरक्षण स्टाफ का महत्वपूर्ण योगदान है।

सिग्नल एवं दूरसंचार प्रशिक्षण केन्द्र, गाज़ियाबाद उत्तर रेलवे और उत्तर मध्य रेलवे के सिग्नल और दूरसंचार अनुरक्षकों का एकमात्र प्रशिक्षण संस्थान है। इस प्रशिक्षण संस्थान द्वारा विभिन्न प्रशिक्षण कोर्स के माध्यम से अनुरक्षकों को कार्यक्षेत्र में लगे हुए उपकरणों के रख रखाव का प्रशिक्षण प्रदान किया जाता है। इसके अतिरिक्त यह प्रशिक्षण संस्थान अनुरक्षकों को विभिन्न उपकरण निर्माताओं से सीधे संवाद का अवसर प्रदान करता है जिससे कार्यक्षेत्र में आ रही नयी समस्याओं का समाधान किया जा सके। इसके अतिरिक्त समय समय पर विभिन्न कार्यशालाएँ और संरक्षा संबंधी कोर्स भी आयोजित किए जाते हैं जिनका उद्देश्य कार्यबल को संरक्षा के प्रति जागरूक करना है।

आज तकनीकी के आगमन इसके परिणामस्वरूप हो रहे उत्परिवर्तनों से जीवन का कोई क्षेत्र अछूता नहीं है। सिग्नल और दूरसंचार के क्षेत्र में भी लगातार नयी नयी तकनीकों का आगमन हो रहा है जिससे कार्यक्षेत्र में नयी दक्षताओं और कौशल की आवश्यकता है। यह प्रशिक्षण संस्थान प्रशिक्षार्थियों को नवीन तकनीकियों जैसे एलेक्ट्रॉनिक इंटरलाकिंग (EI), टीकास (TCAS), केन्द्रीकृत ट्राफिक नियंत्रण (CTC) में भी प्रशिक्षण प्रदान करता है।

रेलवे प्रशासन द्वारा, प्रशिक्षण को अत्यधिक प्राथमिकता दी जा रही है ताकि मानव संसाधन का महत्तम उपयोग, रेल संसाधनों के अनुरक्षण के लिये किया जा सके। ISO प्रमाणित, **सिग्नल एवं दूरसंचार प्रशिक्षण केन्द्र, गाज़ियाबाद**, का मुख्य उद्देश्य, तकनीकी प्रशिक्षण द्वारा, रेल संसाधनों के प्रभावी अनुरक्षण के लिये, सिग्नल एवम् दूरसंचार प्रशिक्षुओं की दक्षता एवम् कार्य कुशलता में निरन्तर अभिवृद्धि करना है।

इसी लक्ष्य को ध्यान में रखते हुए, प्रशिक्षणार्थियों के लिए, उपयोग में आने वाले विभिन्न रेलवे उपकरणों के रख-रखाव के बारे में, पाठ्यक्रम पर आधारित सरल भाषा में पुस्तिकाएँ तैयार करके प्रशिक्षण दिया जाता है तथा प्रशिक्षणार्थियों को पुस्तिकाएँ भी उपलब्ध कराई जाती हैं।

मुझे विश्वास है कि विभिन्न पाठ्यक्रमों में आने वाले प्रशिक्षणार्थी इससे लाभान्वित होंगे और रेलवे परिवहन के संचालन में लगाये गये उपकरणों के प्रभावी अनुरक्षण में अहम भूमिका निभायेंगे।

संकेत एवं दूरसंचार प्रशिक्षण केन्द्र के सभी सहयोगियों का मैं धन्यवाद करता हूँ।

नये वर्ष की शुभकामनाओं सहित

दिनांक – 01-01-2022

निदेशक

S&T TRAINING CENTRE

N.R.LY. GHAZIABAD
(AN ISO 9001:2015 CERTIFIED INSTITUTE)



INTRODUCTION:-

This Training Centre was established in 1955 by Mr. W C Liebenhalf, a Railway Engineer and was initially located in a small hut inside the Railway Signal Workshop, N. Rly, Ghaziabad.

It was shifted to the present premises (Arya Nagar, Near Railway Station, Ghaziabad) in 1967.

Initially, only one Hostel (Ganga Hostel) with 50 bed capacity, one Model Room and six class rooms were available for training. Subsequently, Training in Telecommunication was introduced in the year 1972 alongwith addition of latest state of art labs.

Institute launched its own youtube channel in Jan 2020 and android Mobile App in Feb 2020. At present, institute offers training in various courses through ONLINE as well as OFFLINE i.e. classroom programs.

Quality Certificate ISO-9001

This institute was recognized with ISO-9001:2000 Certification first time on 10th March 2005 and updated as ISO-9001:2015 on 1st December 2018 for next three years

(Present Certificate valid up to 30 November 2021)



COURSES CONDUCTED BY TRAINING CENTRE

(A) MANDATORY COURSE

COURSE	CATEGOR Y	Phase	DURATION		PERIODICITY
			ONLINE	ON Campus	
Initial Course	App. Technician Signal- I	Ph-I(8 weeks)	4 weeks	4 weeks	on Joining
		Ph II(17weeks)	9 weeks	8 weeks	
	App. Technician Signal- III	Ph-I(8 weeks)	4 weeks	4 weeks	
		Ph-II(9 weeks)	4 weeks	5 weeks	
	App. Technician Tele.- III	Ph-I(8 weeks)	5 weeks	3 weeks	
		Ph-II(9 weeks)	5 weeks	4 weeks	
Refresher Course	Technician Signal & Technician Telecom	--	3 weeks	1 week	every 04 years
Foundation course Helper to Technician	Helper Khallasi (Sig) Helper Khallasi (Tele)	--	8 Weeks	--	Before promotion
Promotion course (Tech. to JE)	Technician Signal	Ph-I (9 weeks)	4 weeks	5 weeks	Before promotion
		Ph-II (9weeks)	4 weeks	5 weeks	
	Technician Telecom.	Ph-I (7 weeks)	3 weeks	4 weeks	
		Ph-II (7 weeks)	3 weeks	4 weeks	
Induction to Unskilled	KH/ Signal KH/ Tele	--	04 Weeks	--	Once after joining
Refresher Course for Helper	KH/Signal KH/Tele	--	02 Weeks	--	every 04 years

B (i) EQUIPMENT COURSES ON SIGNALLING

BASIC SIGNALLING

- ☐ Basic concepts of signaling & Accident analysis
- ☐ Power Equipment
- ☐ Relays & Track Circuits with RE bonds, Point machines & Solar panel
- ☐ S/L Token & D/L SGE B/I
- ☐ S/L Token less B/I (Handle Type)
- ☐ Diado B/I
- ☐ Panel Interlocking (British)
- ☐ Panel Interlocking (Siemens)
- ☐ Signaling in 25 KV RE area & Cable testing
- ☐ Study & Testing Practice of Quad Cable & Fuse classification.
- ☐ Track Ckt, LED Signal & Pt. M/c (Fault Rectification)
- ☐ MLB, ELB, E type lock, EKT & Sliding Boom.

MODERN SIGNALLING

- ☐ IPS
- ☐ SSDAC
- ☐ MSDAC
- ☐ AFTC, Duel detection & Auto Signaling.
- ☐ UFSBI
- ☐ EI (Ansaldo , Invensis & Medha)
- ☐ ELB (Different Make Type)
- ☐ Axle Counter, IBS& BPAC
- ☐ Datalogger – Preventive Maintenance
- ☐ Data Logger & Networking,
- ☐ ELD
- ☐ CTC
- ☐ TCAS

OTHER COURSES

- ☐ Soldering Technique
- ☐ Computer Appreciation
- ☐ Safety Course.
- ☐ Course on Signal Engineering Manual

B (ii) EQUIPMENT COURSES ON TELECOM

BASIC COURSES ☐ Telephone Instruments ☐ Train Traffic Control ☐ PA System ☐ Study & Testing of Quad Cable, Fuse classification & Testing. ☐ Study, Testing & Jointing of 6Q Cable OTHER COURSES ☐ Computer Appreciation ☐ Soldering Technique	MODERN COURSES ☐ Electronic Exchange ☐ GSM-R ☐ OFC with PDH & SDH System. ☐ PIS, ISS & GPS Clock ☐ Computer Networking, Railnet & Wi-Fi ☐ Video Conferencing
--	--

B (iii) Fire Safety COURSE

- ☐ Training Centre is conducting Fire Safety course on every month as per Rly Bd. guideline. A special team from HQ, Northern Railway visit Training Centre on regular basis and deliver lectures on Fire Safety.

Infrastructure

Different dates of commissioning of infrastructures:-

S. No.	Infrastructure	Date of Installation	Application/ Use
1	Yamuna Hostel	June - 1975	For Accommodation
2	Satluj Hostel	August - 1990	For Accommodation
3	Hindon Hostel	December - 1999	For Accommodation
4	Saraswati Hostel	February - 2010	For Accommodation
5	Signalling Yard	May - 1967	For Training of Signalling Gears
6	Auditorium	June - 1991	For cultural Activity/ Seminar/ Workshop/ Modern Class Room
7	Signalling Class Room & Labs	May - 1999	For Theoretical & Practical Training.
S. No.	Infrastructure	Date of Installation	Application/ Use
8	PI (British)	22-09-2005	For Practical Training.
9	AFTC (Alstom)	21-08-2006	For Practical Training.
10	BPAC (CEL)	June- 2007	For Practical Training.
11	SSDAC (CEL)	Sept.- 2008	For Practical Training
12	EI (Ansaldo) MLK-II	27-04-2011	For Practical Training
13	Video Conference	07.11. 2007	For Virtual Class From IRISET/SC & Training on Modern topics through S&T E-Contents.
14	E- Learning Lab	07.11.2007	For Practical Training to computer appreciation

			course, computer Networking course.
15	OFC Lab (Fibcom- STM-4) & Tejus STM-1)	16.02. 2010	For Practical Training
16	Wireless and MTRC Lab	1975	For Practical Training
17	ELB (Hezt)	01-10-2010	For Practical Training
18	IRIS-IVDX Exchange-Coral	16-11-2011	For Practical Training
19	Solar Water Heater	27-08-14	To provide hot water to the trainees of Satluj Hostel.
20	AFTC (Siemens)	27-08-14	For Practical Training
21	Sliding Boom (Signal Workshop)	27-08-14	For Practical Training
22	Chapati Making Machine	June 2013	For preparation of good quality Chapati @ 1000 nos per Hr.
23	Modern Technical Library	June 2014	For free intellectual exploration and learning.
24	MSDAC (Siemens) Lab	Feb. 2018	For Practical Training
25	Data logger lab with remote accesses	Feb. 2018	For Practical Training
26	STTC Web Server & Web portal	Feb. 2018	For information & data processing

Hostel Accommodation:



Initially only **Ganga Hostel** was available for trainees and its capacity were only **50 Nos.** of bed in 1955. At present this Hostel is abandoned by Engineering Department in year 2012.

Yamuna Hostel came to existence in the year 1975 to meet the additional demand of trainees and the capacity was increased to additional **32 Nos.** of beds. Afterwards requirement of hostel beds increased more with the passage of time **Satluj Hostel** came to existence in year 1990 after regular chasing in Works Programme for inclusion of new Hostel Building work. As a result the capacity increased by additional **44 Nos.** of beds.



With the passage of time Technology drastically changed and more advance modern equipment has been introduced in Indian Railway for safe running of train operation, causing increment in nos. of courses. As a result, the requirement of beds also increased. After marathon efforts from STTC & HQ, the three storey **Saraswati Hostel** came into existence on 18th Feb, 2010 and the capacity is increased by additional **72 Nos.** of beds.

Hostel Wise accommodation availability:

SN	Hostel	No of Rooms	Capacity
1	Saraswati	33	66
2	Yamuna	16	32
3	Satluj	24	48
4	Hindon	4	8
5	Ganga	Condemned in 2012	
	Total	67	134

STC MESS:

Mess is run by a **“STC Mess Management Committee”** comprises of few faculty staff members & representatives from trainees. Mess Hall can cater 100 trainees at a time.



Two separate Current Bank accounts, one in SBI and one in PNB are opened for managing the Mess fund. Financial report prepared every month and auditing account conducted on half yearly basis.

Generally, there are average 200 Nos. of trainees in an average, take training in this training centre so lunch hours timing segregate for different courses trainees to prevent overcrowding & to manage meal distribution smoothly during lunch hours. First Lunch hours timing start from 12:30 Hrs and Second Lunch hours timing start from 12.50 Hrs. There is 20 minutes gap in Lunch timing for trainees of different courses.

The mess having one **Chapati Making Machine** from which 1000 Nos. of Chapati prepared per Hour. For emergency Light one solar plant has been installed on the top of Mess roof. Commercial LPG gas supply is

used for preparation of meal. Installation of PNG Gas pipe line connection is under progress. For procurement of general routine raw material of food items for preparation of meals, separate contract from outside agency from open market has been arrange done through quotations and renew time to time. Similarly separate contract for preparation and serving of food has also been arrange through quotation from open market.



Monthly Mess menu meeting held regularly to discuss Mess problems and revision of Mess weekly menu time table as per trainees demand and use of seasonal vegetables.

For smooth running of Mess, duties and responsibility has been defined to different faculty staff and trainees for effective output.

Modern Technical Library:

Library and Information Centre is the backbone of any Research & Training Institution. Signal & Telecommunication Training Centre (STTC), Ghaziabad has given due importance for the development of its Technical library like any other academic activity.

Our Technical Library has about 3000 books and Journals on various subjects. A wide collection of technical books like



Railway Signalling System, Workshop Technology, Railway establishment books are available here.

This library also having Hindi Technical books written by STTC/GZB faculty staff on Railway Signalling system and Railway Telecommunication system used in Train Operation and administrative use. Training Centre also having various Railway Manual Codes & Journals.

The books are issue with the help of Bar code machine to take less time for issue of books and no error in maintaining the library record. One touch screen display device is also available in the library for searching the availability of required books. Good space available in the Library hall for easy seating and reading purposes.

For the benefit of trainees we keep our library open from 10:00 hours to 17:00 hours on working days and from 09:00 hours to 12:30 hours on Saturdays. Sh. Ashok Kumar Gupta, SSE/Tele is In-charge of Technical Library.

Hindi Library:

Training Centre having one “**Swami Vivekanand Hindi Library**”. More than 1000 Hindi books are available in this library. Monthly magazines like India Today, Computer Snachar Suchna, Nirogdham, Aarogdham, Sarita, Pratiyogita Darpan, Samanya Gyan Darpan, Vigyan Pragitee and three Hindi news papers like Hindustan, Danik Jagran, Amar Ujala are provided in regular basis.



For the benefit of trainees, Hindi library open for one hour after closing of training Centre i.e. from 17:00 hour to 18.00 hours.

Recreation & Sports:

There are two recreation rooms in Hostel. 2 Nos. colour TV with dish connection are provided. One TV is in Mess Hall.

Facility of indoor/outdoor games like chess, Carom. Volley Ball, Badminton, Table Tennis etc. are available.



Story books and magazines are also issued to trainees from club/Hindi library. Daily newspapers are provided in the hostel as well as in institute library.

Above arrangements are made through Sports & Recreation Club of STTC GZB for which nominal contribution is mandatorily taken from faculties and trainees.

YOGA:

Every morning 6.00 AM to 7.00AM on working day, Yoga session is organized under the guidance of experience yoga teacher. The online classes can be joined by field staff. No charge is levied for attending YOGA Classes.

Yoga classes are conducted in blended form- ONLINE as well as OFFLINE in hostel. Attending Yoga Classes is mandatory for trainees undergoing training through ONLINE as well as Classroom programs.



GYMNASIUM:

Gymnasium facility is provided in the hostel to keep trainees physically fit and mentally fresh. It is open in the morning and evening every day. All type of Physical fitness equipment such as trade mill, Vibrator etc are available in the GYM Room.

MODEL ROOM:

All the basic Signalling Instruments with simulation working models are installed in this huge Hall such as IBS model, Auto Signalling model, LED Signal, all type of working Block instruments etc.

IBS (Intermediate Block Signalling) Model

It is a signalling system used to increase the section capacity. Generally it is used in Double Line Section to split a long Block Section into two equal parts so that at a time two trains can be send in a Block section.

In Model Room, one practical model of IBS has been installed to demonstrate actual happening during real train operation practically. One small toy type Rail Engine model is used for demonstrating the train movement on rail track, prepared by metallic brass stick (used as rail track). With the movement of Rail Engine model manually, changes in the signal & IBS panel of Rear and Advance Stations are shown to trainees. This gives good understanding of the topic.



Automatic Signalling System Model:-

It is a signalling system in which Signals are controlled (or its aspect changes) according to movement of train. The system is used merely to increase the section capacity. It is used in busy Sections to divide a long Block Section into many small signalling sections by placing multi aspect colour light signals of 3 aspects or 4 aspects.

In Model Room, one practical model of Automatic Signalling System of 3 aspects & 4 aspects has been installed to demonstrate actual happening during real train operation practically. One small toy type Rail Engine model is used for demonstrating the train movement on rail track, prepared by metallic brass stick (used as rail track). With the movement of Rail Engine model, manually, the signal aspects in the route changes sequentially which gives good understanding of the topic to trainees.



Neal's Token Block Instrument Model It is the oldest and robust Single Line Block instrument working very successfully all over Indian Railways still now. In Model Room, one practical model, a pair of Neal's Token Block Instrument has been installed to demonstrate how actually train operations done in between two stations. With the help of the model different functions such as taking Line clear or closing of line by Line closed or performing Line clear cancellation along with interlocking of concerned signals with the block instrument. One small toy type Rail Engine model is used for demonstrating the complete train movement manually from one station to other on rail track, prepared by metallic brass stick (used as rail track). This gives good understanding of the topic.

SIGNALLING YARD:



Signalling yard at STTC/GZB is for imparting Practical training called “SANKET VEHAR”. All types of field Signalling equipments, such as LED Signal, Point Machine of IRS & SIEMENS make, Conventional DC Track Circuit, Audio Frequency Track Circuit of ALSTOM & SIEMENS make, Electrical Lifting Barrier Gate of HEIDZ INDIA make with high voltage operation of 110 VDC with Sliding Boom, Mechanical Lifting Barrier (MLB) Gate etc. are installed in this yard. These signalling equipments can be controlled from a central place, by two different means. One is Panel Interlocking (PI) (British Make) & other one is Electronic Interlocking (EI) Panel (ANSALDO Make). One mechanical yard is also there which is controlled by Mechanical Lever Frame both of *Direct Type* & *Catch Handle Type Levers*.

Data Logger is connected with the Panel Interlocking System. One remote terminal of Delhi Division Data Logger which is installed at Test Room, DRM office, New

Delhi is available at STTC/GZB and connected through Railway Network. IPS of *STATCON* & *Amar Raja* are also used to strengthening the Power Supply. *EARTH LEAKAGE DETECTOR* (ELD) has been provided with Electrical Signalling System for on line monitoring the earth leakage of cables as well as for practical training.

VIDEO CONFERENCE ROOM:

Video Conference Class Room is equipment with all types of modern Teaching Aids such as Interactive display Board, Digital Video Presenter, LCD Projector, ZTP Camera, Cordless Mick etc.

This Class Room is also used for interactive distance learning education with IRISSET/SC, a Railway Central Training Institute through a dedicated 2MBPS Pt. to Pt. connectivity from RailTel. Face to face interaction with Trainees during On-Line lecture deliver from IRISSET/SC is a normal feature which make education more interesting. This system is also having local Server at STTC/GZB and Remote

Server at IRISSET/SC, in which animated videos are available to play On-line or Off-line for class training during there is no On-line class.

All the 10 Zonal S&T training Centre are connected with IRISSET. Every Training centre can see other training Centre class. Upcoming distance learning class room Training Time Table program issue from IRISSET in advance so that associated trainees as well as faculty staff can be accommodate on that lecture well in time.

NEW FACILITIES AT STTC:

STTC WEB PORTAL

S&T Training Centre, Ghaziabad has developed one web Portal, which is a part of **Northern Railway officially web site** (<http://10.2.2.19/dept/sig&tele/index.htm>) on Railnet (Intranet). It can be access directly on Railnet URL- (<http://10.255.201.110>). STTC/GZB web Portal is having its own Server installed at Server room.

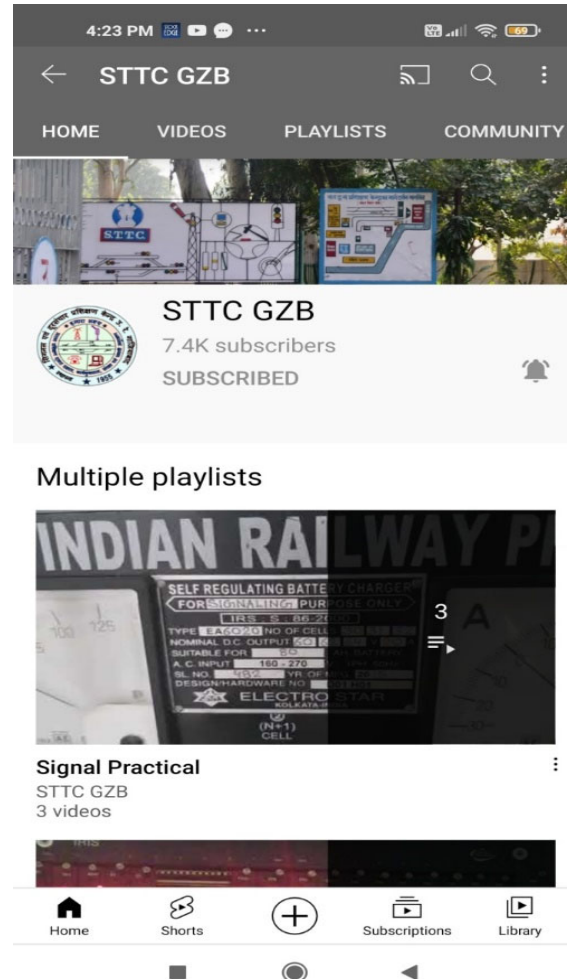
Web site provide round the clock (24X7) STTC/GZB general information like About STTC/GZB, History, facility & Infrastructure, Training course calendar, Seat allotment in different courses, latest news, upcoming courses etc.

Web site is having Trainees Bio Data and their training details program, Course Timetable program, Faculty workload program etc. This will help to Administrator in planning of staff future training schedule, deployment of staff as per his performance result in training, not to book staff in repeated training course done recently, staff who over due for mandatory training etc.

Web site also help to Training Centre for keeping record of trainees Competency certificate their automatic printing with Pass book printer, Future course calendar planning, Faculty timetable their work load, Hostel room booking etc.

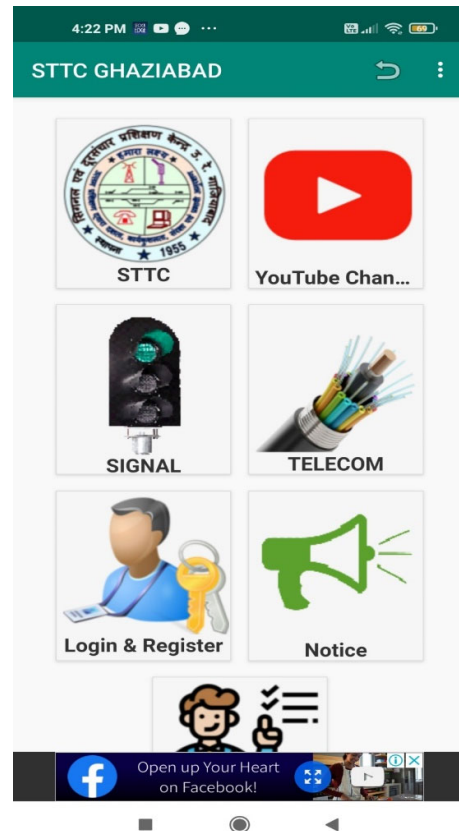
Online Training Initiatives: STTC YouTube Channel

YouTube channel of STTC/GZB was launched. It has now more than 7.28 k subscribers & 182 videos (On Signal, Telecom & Physical fitness) Videos are of short duration, in simple language made by Staff of STTC themselves.



Online Training Initiatives: STTC Mobile App

Fully In house developed, launched in Jan 2020. All training modules can be accessed through App. Joining of Trainees is done through App. Online Objective exam portal developed in App. Feedback of trainees is taken online through app. Fault diagnostic portal has been added in the mobile app.



Sanctioned Strength and On roll position:

There are 02 sanctioned Gazetted Posts (01 Director in SAG & 01 Principal in JAG/SS) and 51 sanctioned post of non-gazetted staff.

S&T Training Institute has following Sanction Strength and On Roll staff:-

S.N.	Designation	Sanction Strength
1.	Director	1
2.	Principal	1
3.	Instructor SSE- Sig	8
4.	Instructor JE- Sig	6
5.	Demonstrator-Sig	3
6.	Technician –Sig	1
7.	Instructor SSE- Tele	4
8.	Instructor JE- Tele	3
9.	Demonstrator- Tele	1
10.	Technician- Tele	2
11.	Chief OS/OS	1
12.	Clerk	2
13.	Hostel Warden	1
14.	Assistant S&T- Helper Khallasi	9
15.	Gen Assistant- Chowkidar	6
16.	Gen Assistant -Safaiwala	4
	Total	53

For details of S&T Training Centre and their activities- log on to Northern Railway Railnet official website link-

<http://10.2.2.19/dept/sig&tele/index.htm>

OR

<http://10.255.201.110>

**For latest details of faculty &
Contact numbers: *Download &
Install: STTC GZB Android App***

e-mail address:

[psttcgzb@nr.railnet.gov.in.](mailto:psttcgzb@nr.railnet.gov.in)

Visit us at:

**Signal & Telecommunication Training
Centre, Near Ghaziabad Railway Station,
Arya Nagar, Ghaziabad (UP) 201001**

Phone Number - 030-24301 (Rly.)

Phone Number - 0120-2863970 (DOT)

Fax Number - 030-24302