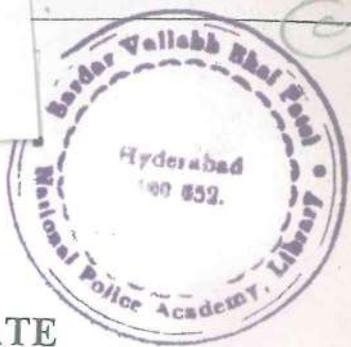


Access 18/12/03

HYDERABAD 500 052
NATIONAL POLICE ACADEMY
SARDAR VALLABH BHAI PATEL



TELECOMMUNICATION TRAINING FOR STATE POLICE IN INDIA AND NATIONAL POLICE ACADEMY - A Case Study

(Ministry of Personnel, D.O.P.T. Sponsored Research Project)



D.P. Mishra
Assistant Director

BOOK DONATED BY
SHRI D.P. Mishra
YEAR 2003

2001



Sardar Vallabhbhai Patel
NATIONAL POLICE ACADEMY
Hyderabad - 500 052

THESIS

ACKNOWLEDGEMENTS

Inspired by Dr.A.K.Saxena, Reader (T.M.), SVP National Police Academy, Hyderabad this Case Study has been taken-up by me. For this I thank Dr.A.K.Saxena for advising and guiding me at all stages of the study.

I thank Secretary, Ministry of Personnel, Department of Pers. & Trg. (DOPT), Government of India, New Delhi for providing me an opportunity to carryout this Project by sanctioning research grant.

I thank Director to SVP National Police Academy for recommending my proposal to Ministry of Personnel.

I am grateful to all Police Officers who responded to my questionnaires and provided the data for the research project.

Thanks are due to Shri P.Venugopal, AO (Admn.) for prompt Administrative Support at every stage.

Thanks are also due to Ms. Leena, Research Associate, Shri Jayanand, Jr.Stenographer and Smt P.Sailaja, DEO for analysing the data, typing and also giving final touches to the Report.

Last but not the least I thank Shri K.Sannayya Pantulu, Steno Gr.II for typing out the Questionnaires and Proposal of Research Project.

D.P.MISHRA

CONTENTS

CHAPTER 1 : ADVANCES IN THE TELECOMMUNICATION

1.1	<i>Telecommunication – An important Focal Area in Police</i>	1
1.2	<i>Police Telecommunication in 21st Century</i>	2
1.3	<i>New Challenges for Police Arising out of development in Telecommunications</i>	3
1.4	<i>Modern Telecommunication Systems – An Aid to Law Enforcement</i>	5
1.5	<i>Modem and Telephone System</i>	15
1.6	<i>Modern Surveillance Systems</i>	16
1.7	<i>The Role of Police in the New Social Context and Its Implications for Telecom Training to Police</i>	19
1.8	<i>Impact of Science and Technology</i>	23
1.9	<i>Status of Police Communication in India</i>	25
1.10	<i>Status of Training to Police Personnel in Different States</i>	25
1.11	<i>Training Infrastructure</i>	26

CHAPTER 2 : RESEARCH DESIGN OF THE STUDY

2.1	<i>Statement of Study</i>	27
2.2	<i>Objectives of Study</i>	30
2.3	<i>Sample</i>	31
2.4	<i>Data Gathering Instruments</i>	33
2.5	<i>Procedural Dimensions of the Study</i>	39

CHAPTER 3 : SENIOR POLICE OFFICERS AND EXPERTS VIEWS ON TELECOMMUNICATION TRAINING

3.1	<i>Analysis of Data</i>	40
-----	-------------------------	----

CHAPTER 4 : VIEWS OF SUPERINTENDENT OF POLICE ON TELECOMMUNICATION TRAINING OF POLICE PERSONNEL

64

CHAPTER 5 : MAIN FINDINGS AND RECOMMENDATIONS

5.1	<i>Main Findings of the Study</i>	82
5.2	<i>Following Areas require training interventions in terms of priority</i>	88
5.3	<i>Methods</i>	89
5.4	<i>Efforts</i>	91
5.5	<i>Views of Supdt. of Police on Telecommunication Training</i>	93
5.6	<i>Response to what a specific topics/subject matter should be covered in Telecommunication training in Police Personnel</i>	94
5.7	<i>Findings in respect of specific tasks the police personnel are to be trained in Telecom</i>	96
5.8	<i>Valuable views of District Supdt. and senior Supdt, of Police</i>	97
5.9	<i>Contents and duration of course for Sub -Inspectors and Inspectors of Police</i>	97
5.10	<i>Findings on Duration of Telecommunication training for O.Ts. of the I.P.S.</i>	98
5.11	<i>Recommendations</i>	100

BIBLIOGRAPHY

A. APPENDICES

- Appendix I : Proposed Training Programme on Telecom for IPS Officer Trainees.*
- Annexure : Computer Literacy for Dy.S.Ps.*
- Appendix II : Proposed Training Programme on Telecom for Dy. Supdts. of Police.*
- Annexure : Computer Literacy for Sub-Inspectors*
- Appendix III : Proposed Training Programme on Telecom for Sub -Inspector of Police .*
- Annexure : Computer Literacy for Constables*
- Appendix IV : Proposed Training Programme on Telecom for Police Constables.*

B. QUESTIONNAIRE

- 1. Views on Telecommunication Training in Police of Sr.Police Officers/External Telecommunication Experts.*
- 2. Resource Evaluation Questionnaire.*
- 3. Opinionaire on Telecommunication Training in Police of Distt. S.Ps and Sr.S.Ps.*

CHAPTER 1

ADVANCES IN THE TELECOMMUNICATION

1.1 TELECOMMUNICATION – AN IMPORTANT FOCAL AREA IN POLICE

During last decade of the 20th Century, the overall environment of country has changed tremendously, be it administration, law and order or nature of crime and criminals etc; Causes can be many few of them are liberlisation of economy, globalisation and advancements in the field of Telecommunication and computer technology (I.T). These have opened-up new vistas of unique development. Because of these unique developments, the work environment has changed considerably. Presently the Information Technology is changing very rapidly and is invading to all walks of life right from kitchen to battlefield. Therefore, we cannot look the police in isolation, it is essential that we look in a broader way and provide inputs to police personnel through their training programmes and prepare them to avail the fruits of modern telecommunication technologies in better Policing. The Police Telecommunication system has grown manifold due to introduction of modern and sophisticated equipment required to meet pressing needs of law and order situation in the country. In order to impart the technical skills and knowledge to police personnel to use these equipment effectively, training in the modern system is essential and also play vital role, training of police personnel in modern concepts of communication which would help them in maintenance of law and order, investigation and other jobs related to policing effectively. With this in view curricula of Police Telecommunication training to police of different ranks is suggested.

Electronics Tele communication and Computer have grown very rapidly with the advent of newer and newer technologies from the days of discrete electronics element to the present Surface Mounted Devices (SMDs). The new technologies have provided the conversion of computer and communication to an extent that present communication is known as COMPU-COMMUNICATION. The marriage of Communication with Computer, has given the birth of Information Technology. As on today the communication from a caller to the called party has become fully automatic and user friendly.

Last but not the least, the basic objective of the police communication in the country is that policemen should be able to communicate with its rank and files in worst possible situation when all other mode of communications might fail.

1.1.1 Area of Study

1. To critically examine and review the existing syllabi of telecommunication training to directly recruited IPS officers, DSPs, Sub-Inspectors and Constables in the states taking into consideration the rapid modernization,

which are taking place in the field of telecommunication computer and electronics.

2. To recommend the new syllabi based on study to impart training about latest communication techniques and the new state of the art telecommunication equipment being introduced in the police organization.
3. The training should be made more centred towards hands -on experience and learning by doing, in other words knowledge application and skill oriented.

1.1.2 Telecommunication, Computers and Electronics

Presently the human life has been heavily invaded by intelligent memory based equipment right from the morning till evening. The telecommunication systems like Radio, TVs, Satellite links, Computers, Videotext, Tele-Text, Interactive Cable TV, Electronic mail Teleconferencing and Videophone to name few. The convergence of communication, Electronics, and Computers has led to Computer Communication and Networks like Internet, Intranet, etc. The 20th century had brought revolutions in Information Technology and thus reducing the barrier of distance and transforming this large physical world into a Global village. The Internet is the most unique development of 20th century which has changed and is having the capability of changing all the age old working concepts like Business Correspondence, Education, Distance Education, Training, Medical and Health care Agriculture, and Entertainment. Its impact has been felt in all spheres of human life.

Wireless communication have come a long way since its demonstration in the year 1901 when the Italian Scientist Marcony covered Atlantic ocean with Radio waves for the first time. After agricultural and industrial revolution, it is information technology, which is sweeping the world today. Now telephone density has become the measure of the progress of a country. The Micro miniaturization of the equipment and Mobility of telecommunication has provided a big boost to the Information Technology and has tremendously increased its application indoor as well as outdoor.

1.2 POLICE TELECOMMUNICATION IN 21ST CENTURY:

The 21st century is expected to bring convergence of various technologies. Computer, Telecommunication, and other modern technologies. These technologies would change the world civilization in days to come. Computation will be faster and cheaper by every passing day. The size of computer may probably become like the visiting card. The vast capabilities of computing associated with artificial intelligence will lead to new market conditions and start an era of user-friendly systems. Police vans will have cameras fitted in them to monitor whether driver is sleeping or other wise. If the eyelids of the driver are closed for more than certain time then the camera will accentuate a system to awaken him. Similarly vapour analyzer system of the car will detect the alcohol level from the air coming out of the mouth of the driver and will not allow the car to start if level exceeds beyond certain limits. The growth of Internet is considered to be the development of 20th century. The Internet will act as mirror of human knowledge in the years to come so the convergence of the developments in the

field of Computers and Telecommunications is likely to play major role in changing the world of civilization. While planning the police Telecommunications of tomorrow, we have to keep in mind the emergence of this new world civilization we have to really visualize the overall impact of these changes in the human society. Already through the low orbiting satellites global mobile satellite communication has come within our reach. With the help of information Highways like Optical Fibers the society of tomorrow will be doing every thing like attending offices, attending classes, going to market by telecommunication means as the terms like Teleconferencing, Tele-shopping, Tele-Medicine etc. are already within our knowledge.

*video conferencing
transfer of crime data
etc etc*

1.2.1 Emerging Telecommunication Technologies

We are already familiar with the emerging technologies like Radio Paging, Radio Trunking Services, Electronic Mail (E-Mail), Electronic Data Interchange (EDI), Network Directory Services, X500 Standard, Video Tele conferencing, Home shopping, Home Office, Home Banking, Electronic Commerce, Multi-Media, ATM, etc. which are fast changing the life style of mankind.

Another developing field with much relevance to that of police is the Global Positioning System (GPS). The GPS is a highly accurate, world wide navigation and positioning system which can be used 24 hrs a day in most parts of the earth's surface. The system comprises of three major segments; space segment, control segment, and user segment. It is based on accurately measuring the propagation time of signals from the satellite to the users receiver. GPS is a constellation of satellites that consists of 24 satellites in six orbital planes with three additional spare. These Satellites orbit the earth twice a day. Each satellite is in a fixed orbit approximately 20,200 kms above the earth's surface and inclined at 55 degrees to the equator. The spacing of the satellites is such that at least 4 satellites will be visible to the user at any time, thereby ensuring worldwide coverage round the clock.

1.3 NEW CHALLENGES FOR POLICE ARISING OUT OF DEVELOPMENT IN TELECOMMUNICATIONS

As aware, communication is the backbone of any organization world over. HF/VHF/UHF/ and wireless network using high power transmitters have been successfully used in the country for long distance communication.

The evolution of a new global culture of electronic information exchange and networking has made the user organizations more vulnerable of being a victim of fraud, E-Mail eaves dropping, data theft as well as unintentional corruption of files by unauthorized personnel. Information security is now a major issue being faced today by the electronic society. As the information highway transcends borders and locked doors are no longer sufficient for protecting the organization's most valuable assets i.e information.

To overcome the above-referred problems, various measures have been available. Security agencies and police forces world over are using state-of-the-art strong information security crypto systems. Other similar system such as anti-bugging devices, electronic surveillance counter measures device, frequency jamming devices, direction finding systems, frequency hopping equipment etc. are also in use by the security agencies world over.

Another area, where immediate attention of the law enforcement agencies is required, is the large-scale use of computers in the government / public sectors in association with communication network like Telephone lines, Leased Lines and Internet. With the ever-increasing requirement in this age of automation, no government, military, industry, trade or commerce can operate without computers. Besides the advantage of having transaction of huge amount of business over the computer networks, the computer revolution has a darker side also. It is very likely that computer fraud and computer related crimes such as unauthorized access, theft of computer services, interruption of computer services; misuse of computer systems and destruction of computer equipment etc. may become quite common. The law enforcement agencies have to take counter measures for prevention of such computer crimes.

The advancement of technology has also made radical changes in information gathering, information storage, information processing and information dissemination. The globalization of economics has resulted in globalization of information and this poses a challenge for the management of changed environment and demand appropriate security measures, audit trails, controls, changes to legal system and reforms in the judicial process. The Internet and World Wide Web (WWW) services are being used for commercial purposes for information flow through multi-networks, connecting multi-located computers through a variety of communication media making the whole world a 'Global Village' and demand cooperative means of sharing authorized information for the benefit of society. This has further posed number of legal and security threats, which are to be countered by the law enforcement agencies.

1.3.1 Challenges Posed by Criminals to Police Through Communication

With the latest developments of telecommunication the anti-social elements have also been strengthened for committing global crimes and cyber crimes. In the near future majority of crimes anywhere in the world will take place in cyber space-a physical or geographical area that is not clearly definable and which transcends the boundaries of the states and nations. The alarming situation for the law enforcement agencies throughout the world is that crimes can be remote-controlled from thousands of kilometers away by criminals located in different countries and the crimes can be executed within a fraction of a second in a third country. The cellular phones, the note book PCs, the faster means of communication media and the Internet have already become a powerful communication medium for criminals. The cases of extortion and even terrorism over the Internet and also cases of planning and execution of murders through E-Mail over the Internet are very common and these international gangs of extortionists and terrorists operating over the Internet are called 'Cyber-Terrorists'.

In the context of the above, it is quite evident that cyber crimes will be crimes of the 21st century. Law enforcement agencies cannot afford to be silent onlookers, while information warfare and cyber-terrorism rules the world. Policing the Internet requires knowledge of the technology involved. Equipping the police to counter this menace of computer crimes including Internet related crimes through effective training, creation of specialized units, necessary legislation, and international co-operation are some of the steps that require immediate attention of Governments all over the world for the well-being of a global information society. The cyber society of tomorrow will definitely need a new policing mechanism, which will be a real challenge.

From the above, it is evident that the challenges faced by the Police will be of Multidimensional nature and whatever we will do may look very little in the years to come. To combat this situation, the basic knowledge about working and capability of the modern telecommunication system is a must for every individual of the law enforcement agencies, as the main culprit of the cyber crime is communication in absence of which no cyber crime can be executed.

1.4 MODERN TELECOMMUNICATION SYSTEMS – AN AID TO LAW ENFORCEMENT

The basic equipment of the civil police consists of motor vehicles, telecommunication sets, rifles, muskets and revolvers, facilities to scientific investigation. However, the equipment and facilities available to the Indian police do not compare well with those available to the police in the advanced countries. Walkie-talkie sets are just being considered for issue to policemen on beat patrol while this is a common feature in the advanced countries. Situation in this aspect has not changed much in most of the state. Most police stations in the country do not have even one motor vehicle and a large number of police stations do not have either wireless or telephone communication facilities.

1.4.1 CAD System – For Control Room Operations

The development of computer-assisted dispatch (CAD) plans consists of modern communication and automated record systems, can enable senior police officers to improve the allocation or use of uniformed officers assigned to patrol duties. A number of CAD system software packages are available in the law enforcement market. Most packages offer dispatch speed and flexibility well beyond any manual system. Uniformed officers are dispatched based on the type of incident and the location. When this information is entered, the CAD system responds with detailed information about that location, such as verification of address, best access route, dangers near the location, immediate police post or emergency service history and any other information that previously was entered. Additionally, most systems maintain a dynamic status review for

✓
CAD
↓
Response.

available personnel and suggest the closest available unit to the location. In systems incorporating automatic transponders within patrol vehicles, units are visually monitored and assigned in coordination with the computer suggestion. Enhanced CAD systems utilize mobile digital terminals (MDTs) placed within each patrol car. Dispatching can then be conducted electronically from the host computer to each MDT, eliminating most of the mundane and routine voice communication of the past.

Mobile digital terminals and CAD systems provide a number of important advantages for the individual police officer as well as the law enforcement agency:

- Officers are free to query names and license plates directly through records and warrant files without interfering with radio communications or requiring the time of a dispatcher. Thus, CAD systems can provide an interface or direct computer-to-computer linkage between the police control rooms of the district, state, and centre (if needed).
- Document control numbers and initial report formats can be directly entered into the automated records system, thereby eliminating certain clerical functions.
- Exact addresses can be displayed with nearest cross streets, map coordinates, and in some cases even floor plans.
- The officer and the dispatch center can visually monitor coordination of all emergency agencies to include fire and ambulance services.
- Response time is dramatically decreased as the complete dispatch process from call-in to arrival time is fully automated.
- Automatic processing of incident information via a preformatted incident form is completed.
- Geo-coding is utilized to identify responsible agencies; assign the nearest unit; capture reported, dispatched, arrival, and completion times; and verify address locations.
- The status of patrol units and personnel is constantly monitored, which enhances officer security and safety.
- CAD system enable the accumulation of large amounts of data over time that can be used in basic crime analysis and allocation planning to assign personnel when and where crime is highest or calls for service are heaviest.
- To have officers available when and where services are needed.

incident
↓
modules
↓

For the most part, CAD systems and manpower allocation design models have been parallel in development. The most intricate plans combine the immediate database

from a CAD system with an ongoing allocation format. To understand this unique convergence of advancing computer and communication technology with allocation modeling, it is important to assess various developments.

1.4.2 Communication

An efficient communication system, which will ensure speed, accuracy, and integrity of transmission, is a fundamental requisite for the satisfactory performance of police tasks in the context of present day crimes and other law and order problems. Prevention and detection of crimes within the limits of one police station frequently calls for quick exchange of information with functionaries in neighboring police station limits and even beyond, and a coordinated handling of the entire matter with guidance and directions from a supervisory level extending over a district or a range. Public order situations frequently arise on issues, which have a Statewide spread and require handling under close supervision and guidance from the State Police Chief himself. It is, therefore, imperative that the police force is provided with a satisfactory intradepartmental communication network which will enable, when the occasion demands, a direct hot line communication from the State Police headquarters to any remote part of the State where an operational police unit might be engaged in handling a law and order situation. The police wireless network plays a very important role in this context.

1.4.3 Video / Audio Conferencing

Not so long ago video conferencing was the exclusive purview of fortune 500 organizations, reserved for high-level meetings. The average, small, and medium organizations rarely had training budgets that could accommodate the technology. Not to mention the fact that videoconference equipment required a team of technical savvy people to launch and run the meeting.

All that has changed. Today's videoconferencing equipment is faster, cheaper and easier to use, which makes it feasible communication tool for many more organizations. Along with formal pre-planned meetings, videoconferencing is now easy to use for more casual purpose – work groups meetings, coaching career counseling and so on. Trainers and mid-level officers have eagerly adopted this once-elite technology.

1.4.4 Scrambler

With the advance of science and technology, there are varieties of equipment available in the market to eves-drop on police radio channels. Persons interested in VVIP movements, getting advance information by reporters for leads on news stories, by criminal or terrorist outfits, can now monitor communication. To prevent this leak of information scramblers need to be fitted into communication equipment being used.

Scramblers can be fitted on old radios and provide management of radio network as well as up-gradation of old radios.

1.4.5 FAX

Facsimile, or fax, refers to the transmission of text or fixed images and drawings by wire or radio channels. Fax permits the transmissions of a mix of documents — including handwriting, graphs, pictures, and maps — that often cannot be transmitted at all over other communications media. Although the concepts of fax were developed in the 19th century using contemporary telegraph technology, widespread employment of the method did not take place until the 1980s, when inexpensive means of adapting digitized information to telephone circuits became common.

1.4.6 Related Technology : Tele-Text and Videotext

In addition to fax transmission, there exist two other forms of electronic still-image transmission that have been adopted in several parts of the world. These two forms of still-image transmission — Tele-text and videotext—are usually employed to access information from computer databases. In Tele-text, still images are transmitted in several scan lines of a television signal, which may be sent by either radio or cable. In the Tele-text receiver, the still images are captured line-by-line and stored in local memory for subsequent display on a television screen. In videotext, still images are transmitted digitally over the public switched telephone network by use of a modem. At the receiver, the digital signal is recovered from a modem and is stored in local memory, again for subsequent display on a television screen.

1.4.7 Long Distance Transmission Media

Modern long-distance telephone transmission is conducted over several media, including coaxial cable systems, point-to-point microwave systems and optical fiber systems. For coaxial and microwave transmissions, either analog or digital methods may be implied. In analog transmission each telephone signal is combined with other telephone signals using a method known as frequency-division multiplexing (FDM), in which each signal is assigned a specific frequency band within a single complex waveform. In digital transmission, which is always employed in optical systems and is often used in coaxial and microwave systems as well, the telephone signals are first converted from an analog format to a quantized, discrete time format. The signals are then multiplexed together using Time-division Multiplexing (TDM), a method in which each digitized telephone signal is assigned a specific slot within a fixed time frame.

1.4.7.1 Coaxial Cable

Long-distance coaxial cable systems were introduced in 1946 in USA. The early American cable systems known as the L carrier employed analog FDM methods. With frequency multiplexing, the first coaxial system (the L1 carrier) could support 1,800 two-way voice circuits by bundling together three working pairs of cable, each pair transmitting 600 voice signals simultaneously. In the last analog coaxial system (the L5E carrier, deployed in 1978), each pair of cables transmitted 13,200 voice signals, and the cable bundle contained 10 working pairs; this combination allowed the L5E to support 132,000 two-way voice circuits. Digital coaxial systems were introduced into the US long-distance network beginning in 1962. Using Time-division multiplexing, the most recently digital cable system (the T4M system, first deployed in 1975) can support up to 40,320 two-way voice circuits over 10 working pairs of coaxial cable.

1.4.7.2 Optical Cable

Because of their great bandwidth, optical fibers have been deployed in both short-haul and long haul transmission systems since 1979. The earliest system could support 44,352 voice circuits; more recent optical fiber cables can also support tens of thousands of voice circuits. Although the first fiber-optic transmission systems employed a variety of data rates, the latest generation, known as the Synchronous Optical Network (SONET) in the United States and as the Synchronous Digital Hierarchy (SDH) elsewhere, employs the standardized hierarchy of digital transmission rates.

1.4.7.3 Microwave Link

Long-distance transcontinental transmission also has been provided by radio link in the form of point-to-point microwave systems. First employed in 1950, point-to-point microwave transmission has the advantage of not requiring access to all contiguous land along the path of the system. Because microwave systems are line-of-sight media, radio towers are spaced approximately every 42 kilometers along the route. Point-to-point microwave systems generally operate in the frequency ranges of 3.7-4.2 GHz or 5.925-6.425 GHz; some systems operate at 11 or 18 GHz. Following the trend of coaxial cable systems, the first microwave links were analog systems. Early systems had a capacity of 2,400 two-way voice circuits, and later systems could support 61,800 two-way circuits. Beginning in 1981, digital microwave systems began to be deployed in place of Analog microwave system as replacement.

1.4.8 Satellite Communications

1.4.8.1 Background

Satellite communication created a quantum leap forward in long distance communication. It competed with under sea cable for trans oceanic voice channel connectivity. It brought reliable, high quality communication to countries and rural areas that previously depended on high frequency (HF) Radio and / or ground return single-wire telegraph. Ships at sea are provided almost instantaneous connectivity to the international public switched telephone network by means of INMARSAT {International

Maritime Satellite (organization)}. INMARSAT earth stations are found in nearly all major maritime nations. The United States and the Soviet Union have a joint venture for search and rescue (SAR) alert and location by means of satellites. The Global Positioning System (GPS) consisting of constellations of 24 Satellite provides universal coordinated time (UTC time) with an accuracy of several microseconds and position within +/- 10 Meters. in three dimensions anywhere on earth.

India, Brazil, Indonesia, The Arab States, and Europe have their regional/domestic satellite systems. The United States is probably the leader in this field. TV relay by satellite is being widely used by:

- 1) Broadcasters
- 2) Cable TV
- 3) Industrial/Education Users
- 4) Direct-to-home TV Subscribers
- 5) Vehicle Tracking System

The Western Armed forces and police rely heavily on satellite communication for strategic, tactical, support communications. Typical systems are the US Navy's FLTSAT {(Fleet Satellite) Series}, DSCS (Defence Satellite communication system), MILL STAR (Military Strategic and tactical satellite system) & NATO satellites.

Telephone circuit trunking on National and International routes is another major application. Private industrial networks use satellites to provide long - haul connectivity. Bypass has become the byword. Large and medium sized corporations have found it cost effective to bypass local exchange carriers by using satellite transponder allowing direct access to their own local PBX facilities.

V-SAT (Very small aperture terminal) satellite system is a vastly expanding means for bypass. Hotels, Stock Exchanges, Banks, and other commercial entities that are spread far and wide across a geographical expanse connect individual low-bit-rate terminals through a large hub facility. This facility is often associated with the company's large mainframe computer. Such systems turn out to very inexpensive alternatives to using the public switched telephone network (PSTN).

Satellite communication has grown so much and so fast that the western hemisphere equatorial orbit is about full. The notable advantages of terrestrial fiber optic links are tempering the further growth of satellite communications.

1.4.8.2 Satellite-Based Radiotelephone Communication

The goal of these new systems is to permit ready connection to the PSTN anywhere on the Earth's surface, especially in areas not presently covered by cellular radio. A form of satellite-based mobile communication is already available in airborne cellular systems that utilize the INMARSAT satellites. However, the INMARSAT satellites are geo-stationary, remaining fixed above a single point approximately 36,000

kilometers (23,000 miles) above the Earth. Because of this high-altitude orbit, Earth-based communication transceivers require high transmitting power, large communication antennas, or both in order to communicate with the satellite. In addition, such a long communication path introduces a noticeable delay of the order of a quarter-second, in two-way voice conversations. One viable alternative to geo-stationary satellites would be a larger system of satellites in low earth orbit (LEO). Orbiting less than 1,600 kilometers above the Earth, LEO satellites are not geo-synchronous and therefore cannot provide constant coverage of specific areas on the Earth. Nevertheless, by allowing radio communications with a mobile instrument to be handed off between satellites, an entire constellation of satellites can assure that no call will be dropped simply because a single satellite has moved out of range. The first LEO system started its commercial service was the Iridium system, designed by Motorola, Inc., and owned by Iridium, Inc., a consortium made up of corporations and governments from around the world. The Iridium concept employed a constellation of 66 satellites orbiting in six planes around the Earth. Each satellite, orbiting at an altitude of 778 kilometers, would have the capability to transmit 48 spot beams to the Earth. Meanwhile, all the satellites would be in communication with one another via 23 GHz "cross-links," thus permitting ready handoff between satellites when communicating with a fixed or mobile user on the Earth. The cross-links would provide an uninterrupted communication path between the satellite serving a user at any particular instant and the satellite connecting the entire constellation with the gateway ground station to the PSTN. In this way the 66 satellites would provide continuous radiotelephone communication service for mobile and portable subscriber units around the globe. *This system became commercially unviable and subsequently non-operational.*

1.4.9 Radio-Telephones

In addition to the wire-line telephones, there exist a number of wireless instruments, which can be connected to the public switched telephone network (PSTN). These wireless telephones generally fall into one of three categories: cordless telephones, cellular radio systems, or personal communication systems. Eventually these systems expanded to include global satellite-based telephony.

1.4.9.1 Cordless Telephones

Cordless telephones are devices that take the place of a telephone instrument within a home or office and permit very limited mobility (up to a hundred meters). Because they are plugged directly into an existing telephone jack, they essentially serve as a wireless extension to the existing home or office wiring. Cordless transceivers communicate with the plugged-in base unit over a pair of frequencies in the 46- and 48-megahertz bands or over a single frequency in the 902-928-megahertz band.

1.4.9.2 Cellular Radio

Cellular radios are transportable by vehicle or personally portable devices that may be used in motor vehicles or by pedestrians. Communicating by radio wave in the 800-900-megahertz band, they permit a significant degree of mobility within a defined serving region that may be hundreds of square kilometers in area.

1.4.9.3 Cellular Telecommunication

All cellular radio systems exhibit several fundamental characteristics, as summarized in the following:

- The geographic area served by a cellular radio system is broken up into smaller geographic areas, or cells. Uniform hexagons most frequently are employed to represent these cells on maps and diagrams; in practice, though, radio waves do not confine themselves to hexagonal areas, so that the actual cells have irregular shapes.
- All communication with a mobile or portable instrument within a given cell is made to the base station that serves the cell.
- Because of the low transmitting power of battery-operated portable instruments, specific sending and receiving frequencies assigned to a cell may be reused in other cells within the larger geographic area. Thus, the spectral efficiency of a cellular system (that is, the uses to which it can put its portion of the radio spectrum) is increased by a factor equal to the number of times a frequency may be reused within its service area.
- As a mobile instrument proceeds from one cell to another during the course of a call, a central controller automatically reroutes the call from the old cell to the new cell without a noticeable interruption in the signal reception. This process is known as handoff. The central controller, or mobile telephone switching office (MTSO), thus acts as an intelligent central office switch that keeps track of the movement of the mobile subscriber.
- As demand for the radio channels within a given cell increases beyond the capacity of that cell (as measured by the number of calls that may be supported simultaneously), the overloaded cell is "split" into smaller cells, each with its own base station and central controller. The radio-frequency allocations of the original cellular system are then rearranged to account for the greater number of smaller cells.

Frequency reuse between discontinuous cells and the splitting of cells as demand increases are the concepts that distinguish cellular systems from other radiotelephone systems. They allow cellular providers to serve large metropolitan areas that may contain hundreds of thousands of customers.

1.4.10 Airborne Systems

In addition to the terrestrial cellular radiotelephone systems, there also exist several systems that permit the placement of telephone calls to the PSTN by passengers on commercial aircraft. These in-flight radiotelephones, known by the generic name aeronautical public correspondence (APC) systems, are of two types: terrestrial-based, in which telephone calls are placed directly from an aircraft to an en route ground station; and satellite-based, in which telephone calls are relayed via a geo-stationary satellite to a

ground station. This system employs digital modulation methods and operates in the 1,670-1,675 and 1,800-1,805-megahertz bands. In order to cover most of Europe, the ground stations must be spaced every 50 to 700 kilometers.

The second type of APC system, based on satellite transmission, is available through the use of INMARSAT geo-stationary-orbit satellites. Because they do not depend on ground stations, satellite-based systems may be employed anywhere in the world.

1.4.11 Personal Communication Systems

Although cellular radio systems provide a high degree of mobility within a given service area, they do so at the expense of providing voice-only service usually at a significant monthly fee. In recognition of this shortcoming, in a number of countries throughout the world a new radiotelephone service has been introduced that has been almost universally called the Personal Communication System (PCS). In the broadest sense, PCS includes all forms of radiotelephone communication that are interconnected to the PSTN, including cellular radio and aeronautical public correspondence, but the basic concept includes the following attributes: ubiquitous service to roving users, low subscriber terminal costs service fees, compact, lightweight, and unobtrusive personal portable units.

The first PCS to be implemented was the second-generation cordless telephony (CT-2) system, which entered service in the United Kingdom in 1991. The CT-2 system was designed at the outset to serve as a Tele-point system. In Tele-point system, a user of a portable unit may originate telephone calls (but not receive them) by dialing a base station located within several hundred meters. The base unit is connected to the PSTN and operates as a public (pay) telephone, charging calls to the subscriber. The CT-2 system transmits a digital signal at low power (10 mw.) in the 864-868-megahertz band. Modifications that permit two-way call placement have been incorporated into the system.

In 1988 the European Conference on Posts and Telecommunications (CEPT) began work on another personal communication system, which became known as the digital European cordless telephone (DECT) system. The DECT system was designed initially to provide cordless telephone service for office environments, but its scope soon broadened to include campus wide communications and Tele-point services. DECT has been deployed in the United Kingdom and France as well as other countries. In Japan a PCS based loosely on the DECT concepts, the personal handy phone (PHP) system was introduced to the public in 1994. The PHP system operates in the 1,895 -1,907- MHz band and is intended for home, office, and Tele-point applications.

1.4.12 Video-Telephone

In addition to the two-way speech transmission traditionally associated with the telephone, for many years there has been an interest in transmitting two-way video signals over telephone circuits in order to facilitate communication between two parties. Two-way video communication systems employ a video telephone, or videophone, at

each end. The videophone incorporates a personal video camera and display, a microphone and speaker, and a data-conversion device. The data-conversion device permits transmission of video over telephone circuits through the use of two components: a compression/expansion circuit, which reduces the amount of information contained in the video signal, and a modem, which translates the digital video signal to the analog telephone line format.

Another form of video transmission over telephone lines is videoconferencing. A videoconferencing system is quite similar to a videophone, except that the camera and display at each end are intended to serve a group of people. Frequently, the video camera in such a system may focus on either individuals or the group, often under control of the local user or under remote control of the distant party.

1.4.12.1 Analog Video-Telephone

The second-generation Picture phone was designed as a complete system. All aspects of the system such as terminal equipment, local loop transmission, switching, long-distance transmission, and private branch exchange --were designed and developed to support two-way video communication over telephone circuits. Picture phone employed analog black-and-white video transmission similar to that used in television broadcasting.

1.4.12.2 Digital Video-Telephone Systems

In the late 1980s several companies began to develop and sell still-frame videophones that could operate directly over the PSTN. The still-frame videophone employs a video camera and a frame-capture system to capture a single video frame for transmission. Since still-frames exhibit no time dependency, they do not have to be transmitted in real time over the PSTN, permitting the use of standard, commercially available modems to transmit at 2.4 to 9.6 kilobits per second.

1.4.12.3 Future Video-Telephone Technology

Future videophone and videoconferencing technology is likely to develop in two different directions. The first direction is toward lower data rates. For example, the International Telecommunication Union has set a goal of establishing standards for low-bit-rate videophone communication in the target range of 9.6 to 28.8 kilobits per second. The other direction is the development of very-high-quality videoconferencing, so that a goal of conducting business meetings without requiring travel may be reached. In 1990 B.E.L. developed a teleconferencing system in which the video images of remote participants appear to be sitting on the opposite side of the room. This system, known as Video-Window, employs multiple cameras, multiple rear-projection video displays, and high-quality, full-duplex, hands-free communication. Video-Window requires a significant amount of transmission bandwidth in order to support the communication signal provided by the system.

1.5 MODEM AND TELEPHONE SYSTEM

1.5.1 Modem

A voice band modem is a device that is designed to transform digital electronic data from a source such as a personal computer, data terminal, or fax machine into a signaling format that is compatible with the telephone line.

1.5.2 Operating Parameters

1.5.2.1 Modulation/Demodulation

Modems are necessary for data communication over the public switched telephone network (PSTN) because ordinary analog telephone circuits are designed only to pass signals end-to-end that fall within the frequency range of voice communication -- that is, 300 hertz to approximately 3,300 hertz, or 3.3 kilohertz. All other frequencies outside this limited bandwidth--especially the high frequencies associated with data transmission--are attenuated, or suffer a loss in amplitude and transmission speed. As a result, there occurs a phenomenon known as the "smearing" of signals over transmission time, and there is an overlapping of signals at the receiving end. In addition, telephone circuits are susceptible to other impairments that are unnoticeable or tolerable in voice communication but that would introduce an unacceptable number of errors into data communications. These impairments include signal "echoes," when voice paths are converted from two-wire to four-wire circuits, and various types of "noise", or interference, from other signals within the telephone system. All such impairments must be corrected by the modem. 11

One goal of a voice-band modem is to frequency-translate data signals in order to "fit" them within the nominal three-kilohertz bandwidth of the telephone circuit. It does this by a technique known as modulation. In modulation, the basic properties of an electromagnetic wave-- for instance, its amplitude, frequency, or phase--are modified by another wave in such a manner that the original wave becomes a "carrier", bearing the recognizable imprint of the modifying wave. In the transmission of data signals over the PSTN, the carrier wave is the voice-band signal, and the modifying wave is the digital data signal. At the receiving end of the transmission path, a similar modem recognizes the modifications and separates the data signal from the carrier signal and this process is called demodulation. It is this dual function of modulation and demodulation that gives the modem its name.

1.5.2.2 One-way and Two-way Transmission

Voice-band modems may operate in a variety of transmission modes, including simplex, half-duplex, and full duplex. Simplex transmission is one-way transmission between a transmitter and a corresponding receiver. In half-duplex transmission, two-way transmission is possible, but it cannot take place simultaneously; data must first be transmitted in one direction before transmission in the reverse direction is possible. Finally, full-duplex transmission is simultaneous transmission in both directions.

Depending on the nature of the data communications traffic, any one of these transmission modes may be required. In some instances, full-duplex transmission may be provided through two half-duplex modems operating over two independent telephone circuits. This arrangement is known as a four-wire circuit. In other cases, full-duplex capability over a single two-wire telephone circuit may be required, necessitating the use of a duplex arrangement within the modem to permit simultaneous transmission and reception.

1.5.3 The Future of Modems

In the early 1980s it was expected that modems would be made unnecessary by the integrated services digital network (ISDN) and its inherent data capabilities. In fact, except for certain countries, ISDN has not yet been widely accepted. Furthermore, with the present availability of V.32*bis* and V.34 modems and the data compression capabilities of V.42*bis*, the throughput rates of modems can easily rival the throughput rate of ISDN lines (64 kilobits per second). Nonetheless, there are emerging technologies that will likely replace modems in some instances, at least over the telephone circuit between the subscriber and the central office (the local loop). These new technologies include high data rate subscriber lines (HDSL), which allow bi-directional data rates of up to 750 kilobits per second, and asymmetric digital subscriber lines (ADSL), which permit half-duplex data transmission at rates up to 6.144 megabits (million bits) per second. Because these last two technologies apply only to connections over the local loop, special switching equipment will be required to transmit data at these rates over long-distance circuits.

1.6 MODERN SURVEILLANCE SYSTEMS

Police used a number of techniques, but their chief reliance is almost universally placed on patrolling.

1.6.1 Patrol Systems

Patrols vary in methodology, assignments, structure, and mobility. Their flexibility has been significantly enhanced by improved methods of communication, especially the two way radio, and by the availability of variety of vehicles such as the Automobile, the Motorcycle and in many placed the bicycle. The mobility provided by modern communication and transportation techniques is particularly useful in dealing with civil disorder. The areas covered by Metropolitan Police patrols vary enormously in population density, terrain and road.

1.6.2 Burglar Alarm Systems

Electrical protection (Alarm) systems substantially reduced burglaries and contribute to the capture of many criminals. The development of alarm equipment and the evolution of operating procedures have been significantly influenced by the published standards of under writers laboratories (UL). Central station systems and local alarm systems are the two basic categories of burglar alarm systems.

1.6.2.1. Central Station Systems are commercially operated control centers serving metropolitan and surrounding areas. Burglar alarm protective circuits and devices automatically transmit signals to these centers. Armed guards are on duty at all times and are dispatched promptly to conduct immediate investigations of unauthorized entry of protected properties. Central stations generally have direct communication channels to police control centers. Some centralized operations.

1.6.2.2. Local burglar alarm systems consists of sensitive warning mechanisms that are connected to loud alarms and often to a signal system in local police stations. Originally local burglar alarm systems were used primarily in a small towns where central station services were not available, but technological improvements and lower prices have led to their use in homes and small businesses in all types of cities. Many police departments discourage the use of these systems, however, because upto 95% of the alarms given by them are false.

1.6.3 Technical Surveillance

The application of technology to surveillance operations has greatly expanded the capabilities of law enforcement agencies and has led to the creation of a special field of police technology known as technical surveillance.

1.6.3.1 Audio Surveillance (Electronic eavesdropping)

Audio surveillance or electronic eavesdropping, became practical for obtaining evidence and investigative leads as a result of the intensive development of the magnetic tape recorder. The field has two technically and legally distinct areas: - The surreptitious interception of oral communications, commonly known as "bugging", and surreptitious interception of wire communications, commonly known as "wiretapping". Typical devices used include miniature microphones, miniature radio transmitters and a variety of radio receiving and voice recording equipment. Microphones, are always required for the interception of oral communications and can be connected by cables directly to recorders located at remote locations or can be connected to transmitters. Excellent quality microphones of very small size are available throughout the world. Some microphones located in the hand sets of telephone instrument can be modified to intercept nearby conversations. Radio transmitter of the size of a cigarette package, equipped with integral batteries and microphones, are commonly known as "wireless mikes". Most radio transmitters used for audio surveillance operate within the very high frequency (VHF) range. The most common type of interception of wire communications consists of monitoring telephone conversations. Equipment used for telephone tapping ranges from the telephone repair man's handset to automatic voice recorders connected to target telephone lines

1.6.3.2 Optical Surveillance

Optical surveillance makes use of devices like binoculars and telescopes, cameras with tele-photo lenses, close circuit television and video tape recorders. Close circuit television is a versatile surveillance method that has become widely used both by police and private security organizations. From a central location, a supervisor can monitor

events at one or several remote locations. Cameras may be fixed or they may oscillate (using Plan Tilt-Zoom – P.T.Z. platform) to sweep a large area. Optical surveillance is sometimes used as an evidence gathering technique. In arrests involving driving and the use of alcohol, the physical condition of the driver can be filmed or videotaped and later used as evidence. In an effort to reduce laws suits concerning interrogation methods, some police agencies also film or videotape proceedings of the interrogation. Low light level devices have greatly extended passive optical surveillance capabilities. Practical low light level television systems are manufactured for optical surveillance operations under light intensities as low as 10^{-8} Lumens per square meter, or virtual darkness. Night vision telescopes using two or three light amplification stages are also used.

1.6.3.3 Tagging and tracking

Object tagging and signal tracking are a third category of police technical surveillance operations. Devices emitting a unique signal are attached to vehicles or implanted in targeted objects. Compatible receiving and activating equipment is used to track the tagged objects. A typical device used in tracking is a miniature radio transmitter using distinctive tone modulation, commonly known as a “bumper beeper”, which is surreptitiously attached to a vehicle. The target is discretely tracked with one or more surveillance vehicles equipped with appropriate receiving equipment.

1.6.3.4 Interrogation Methods and Equipment

Police and other investigators depend on interrogation as a principle means of determining facts and resolving issues. Reliance on interrogation, however, involves certain problems. Ascertaining when a suspect/ witness is telling the truth, evaluating memory, allowing for the physical and mental condition of a witness of a suspect and understanding the problems created by an individual's perspective. Interrogation methods and equipment have evolved in response to these problem areas. The psychological, psychophysical and physical sciences have played vital roles in police interrogation techniques. The most dramatic games in interrogation technology have come to the polygraph or so called lie detector. The polygraph monitors and records selected body changes that are affected by a person's emotional condition. The polygraph continuously records blood pressure, pulse and respiration simultaneously hence known as polygraph. The recorded changes are then studied, analyzed, and co-related in respect to specific questions or other stimuli.

1.6.3.4.1 Voice Identification

The use of the sound spectrograph for voice identification is a new development. The sound spectrograph is an instrument that graphically presents the time, frequency, and intensity of a speech sound waves. The graphic forms of a sound, as spoken by one person, can be compared with those produced by the speech of a second person and thus differentiated. The accuracy of the technique in identifying individuals remains in doubt among speech scientists, even though voice graphs or voiceprints, have been used in court to substantiate the crime.

1.7 THE ROLE OF POLICE IN THE NEW SOCIAL CONTEXT AND ITS IMPLICATIONS FOR TELECOM TRAINING TO POLICE

The role of police changes as per the social situations, values and aspirations of the developing society and the shape of the things to come in the next 10 to 20 years would largely depend on the following:

1.7.1 Political Factors

The police are expected to get closer to the people but they are repeatedly called upon to exercise their authority, to deal with violent agitations and disturbances of a wide variety. Challenges to authority are inherited in a plural society. To enforce the law and reduce losses in terms of men and material the mobility of force has to be increased. In this regard the telecommunication system plays an important role.

1.7.2 Socio economic factors

The social equality as a goal has resulted in the intensification of social tensions and violence as the traditionally powerful groups tries to prevent the underprivileged and underdog from achieving equality as enshrined in our constitution. Since the police have to promote a feeling of confidence and security among the minorities and the weaker sections in order to make them to participate in the national development efforts. This has put an additional pressure on the Indian policing. To fulfill this requirement they have to have swift informations regarding brewing of conflicts and its impact, thereby enabling police to protect the weaker section from the atrocity of the privileged classis. To meet this requirement effectively an efficient and effective telecommunication system is necessary.

The pace of economic development and the growth of an industrial infrastructure in the country have given rise to special problems of crime and of law and order in the industrial field. Economic growth since independence has been accompanied by imbalances between the rural and the urban areas, and between regions. There has been a certain widening of the differential between the poor and the rich. These factors have also led to social strains and tensions. When these developments are viewed in the context of other problems, such as those of unemployment, rapid urbanization and the rise of an organized working class and trade union movement, one can see their implications for the law and order situation in the county. This situation has required police to have better skills and equipment (telecommunications) to deal with such situation quickly and effectively.

There has been an increasing shift from the rural to the urban area by the younger generation in search of employment. Rapid urbanization has created the growth of slums and the crowded localities. The offspring of this trend is the problems related to public order, problems connected to the traffic, the management of large crowds, demonstrations, strikes etc. has become more complex. Urbanization also leads to an increase in the incidents of crimes, both organized and unorganized, in white-collar crime and in offences by juveniles. The last of these emphasizes the greater need of telecommunication besides other factors like understanding of the problems of

delinquents and the need of helping them to grow into constructive citizens instead of becoming hardened and habitual criminals. Since urbanization is likely to increase in India this process would aid further to the demands on police resources and skills. Industrialization is another element, which has increased the number of trade unions, which create law and order problems because of inter-union rivalry and conflicts. There has also been a large increase in white-collar workers whose demands and actions put through associations, create problems.

The interconnected processes of economic growth, industrial and urbanization pose problems, bearing directly upon the law and order situation, which demand an understanding, dynamic and faster response from the police. In this complex situation of modern policing, the telecommunication is capable of giving an edge over criminals by providing early information regarding crime, movement of criminals etc. and also by offering better response time.

1.7.3 Implications for the Role of the Police

In brief, we can say that our society in the changed circumstances needs a police force which while retaining a keen appreciation of its legal responsibilities to safeguard life and property has also an understanding of the larger social issues involved in its day to day work, the implications can be summarized as under:

1. Police officers should acquire a high degree of professional competence and be fully aware of the means whereby **science and technology can help in police work.**
1. They must develop a clear understanding of the social purpose of their activity and sensitivity to the trends and forces at work in the environment in which they have to act.
2. They must develop attitudes in consonance with the concepts of social justice contained in the Constitution and the development programmes with particular reference to the weaker sections of the community, including the poor, the minorities, and the scheduled castes/tribes.

Under the above circumstances, the following points require a special attention during police training to enable them to play their role effectively as a police officer: -

1. Loyalty to the Constitution and commitment to the national integration.
2. They must develop analytical and innovative skills to deal with any situations at hand effectively without losing time.
3. The police should know the problems that may arise in their area due to conflicts, social disorganization, scarcity and controls, regional imbalances, etc. and also have social awareness for anticipating and reacting to complex situations

4. They should be able to deal effectively with the masses of different strata of society divided on the basis of religion, caste, region and income, and should be able to provide correct response on an individual basis.
5. They should be able to apply scientific aids and skills in police work.

N.B. (to deal in item no.2, 4 & 5 Knowledge of Telecom can play vital role).

The law enforcement has gone through considerable change organizationally and operationally throughout the 20th century. During the last decade much of this change has occurred in Transportation, **Telecommunication**, Weaponry, Lab Facilities and other areas, but population, greater sophistication on the part of criminals, social disturbances and new types of crime, made possible by economic and technological developments such as aircraft hijacking and computer fraud (also known as - cyber crime). Values and social changes has driven changes within the law enforcement area. Technology has played and would continue to play a major role in streamlining policing and allowing the law-enforcement officer to work more intelligently and efficiently.

In developed countries the transition of computer technology from high-cost, large room-based mainframe to user-friendly desktop P.C has allowed police to adopt this new technology in all areas of the workplace. These P.C's has brought with it numerous benefits such as statistical tracking, crime mapping, digital imaging; live fingerprints scan capabilities and the ability to instantaneously transmit information Worldwide. Convergence of computer and telecommunications system has provided wide platforms to work with.

Technology has truly pushed the law enforcement world to reconsider its practices and adopt new techniques and standards. In India law enforcement administrators have just started to realize the importance of the technologies. Within few years there will not be one repeat one area of law enforcement culture that will go unaffected. The very way of how business is done has been going to sea change through greater communications and information sharing. Over the next 10 to 20 years there will be greatest redirection, reorganization and modification in policing. The combination of communication and real time access to data, using miniaturized computing devices will require new area of specialization, organization and modification of missions. There would be greater interaction between law enforcement and all organs of government and community organizations.

Unfortunately, most law enforcement agencies find it difficult to keep up with these changes due to **Human Resource and financial crunch**. They are not in a position to recruit new staff to attend to this job and also not in a position to spare staff from law enforcement duty to work and get trained in new technologies. The tremendous amount of information to be learnt, presents such a momentous challenge to keep up with technologies that few of these administrators can anticipate and plan for the future changes that technology will bring. The cost of training to keep up with the emerging technology often presents an insurmountable financial responsibility for police organization.

As technology will continue to change the face of law enforcement in the future, it will soon demand the tearing down of many philosophical and operational walls within law enforcement organizations. Parochial law enforcement and management of resources will become a thing of the past in next 10 to 15 years. This has already appeared in the developed countries. Regional crime analysis, cross border terrorism and internet based information sharing on a state wide basis already exist but are not fully comprehended. Distance learning and crime analysis, specialization in cyber crime investigation as a career and other such changes can follow these. With so many changes already occurring or anticipated, Police Officers and Police Administrators most of the time find it difficult to stay well informed and to make intelligent and practical decisions especially when selecting and implementing these new technologies.

In order to fully exploit the Human Resource to optimum level, technology should be deployed through various layers of the organization. In fact, one of the evolving roles of administrators and senior officers are that of carriers of technology. They have to increasingly become technology driven and not method driven as there is a saying, "if you continue to do the same thing, you will continue to get the same thing". If you want to get something new do something else and also if you are doing something, which is not yielding results, do something else, do any thing else, which produce results. In this context introduction of new and appropriate technology to change the conventional one makes really a big difference.

Here we have to distinguish between methodology and technology. Method can be defined as the mode or rule of accomplishing an end or an orderly procedural manner of doing things. **Methodology is the system of methods.**

On the other hand, technique refers to the useful art of applied science and is the tactful use of knowledge or skills. To make it more clear we can have an example.

If method is not changed and we lay a road the same way as it was done in the past, we will be requiring more time to lay more roads. On the other hand, if new technology of road forming is applied to the method of laying the road, more roads can be laid in less time. This subtle difference is important in managing and accomplishing more or optimum work in the era of increasing cost of Human Resource. Human Resource management has to be taken in a larger perspective of introducing new technology in the Police work or Policing. When we compare technology development in Indian Police it is still in the nascent stage. The reasons could be various and perhaps justified in the context of focus on other areas. **One of the major reasons for not updating technology is the negligible time spent on training. In many states training efforts are not yet adequate to match the technological advancement. Whatever may be the reasons or genuine limitations, time is running out and the crime world is changing very fast. Without training there can be no technology up-gradation, and without technology up-gradation, there can be no competitive edge.**

Let us remember one thing, in the absence of focus on technology we will be working hard and not smart. Are we going to work hard or work smart in years to come?

1.8 IMPACT OF SCIENCE AND TECHNOLOGY

Science and technology are always relevant and of immense use to the Human life. There are two aspects of this as far as police are concerned. First the criminals are prompt in taking advantage of science and technology to aid their antisocial and illegal activities. Because of advancement in science and technology crime is becoming more sophisticated, the area of operation of organized gangs is widening and is becoming easier for criminals to defy/hide detection either by leaving the scenes of crime by the fastest means of transport available or by utilizing different types of telecommunication systems to commit the crime. New heinous crimes are being committed with increasing frequency by disparate groups of peoples with international repercussions e.g. Hijacking of aircraft and kidnapping for ransom to name a few.

The second aspect relates to the assistance, the science and technology can give to police work. Modern means of telecommunications, electronics, electronic data processing, forensic science and medicine, new weaponry, systems analysis etc., have started playing a major role in giving new dimensions to police work in the advanced countries. While in India the Police is using wireless even now mainly for passing messages from one place to another through static sets and limited use of mobile WT and RT sets is made for managing large crowds and VIP visits. There is still scope of extensive use of telecommunication in detection and investigation of crime through surveillance of communication networks.

The use of ordinary and closed circuit TV for administration, education, intelligence, surveillance, security and evidence is already well known. A video tape cassettes (VHS) is the best way of preserving information because it can be played back instantly besides it is easy to handle and also cost effective. This can be erased and re-used up to several times. The video camera comes in various shapes and sizes convenient for use in adverse situations to record the evidence. Facsimile transmission (FAX) equipment is already in use whereby it is possible to transmit photographs, fingerprints, documents etc., over long distances either through telephone lines or radio immediately. This way photograph of the criminal can be flashed immediately to various locations to apprehend him in the least possible time. Police department for enhanced surveillance and security should harness the capability of Cable TV and Broadcast T.V. (Doordarshan)

Moreover, telecommunication equipment is continuously becoming smaller, better, cheaper and user friendly. Almost no expertise is required for its handling. In most countries of the world, the mobility of the population has increased so much that unless the police are able to get the suspects identified quickly from crime records, they would move on and be lost. The computerization of records of crimes and criminals, their modus operandi and stolen vehicles, art objects and other valuable property etc., is,

therefore, being adopted in many countries to help in the quick location of suspects and detection of cases. Computerized criminal data banks through telecommunications network can supply complete information in such matters, including previous criminal history, associates, rendezvous etc. almost instantly. The computer has many other applications in the work of the police. It is already in use for facilitating financial and personnel management and inventory control. It can assist in the study of systems through alternative models to suggest the most cost effective to solve different problems; it can be utilized in traffic control; and it can also suggest the deployment of most suitable police force and police officer for their variety of crises situations. It can also prepare variety of reports and transmit it to the destination through available telecommunication systems. It can project areas, which require intensive deployment of the police in crisis at different times of the day or night. Computer can aid the police personnel in comparing photographs; fingerprints, image processing, and variety of other policing work and perform the work of so many days in a few minutes.

The patrol vans equipped with wireless sets provide considerable aid in police work. It is also possible to have a combination of helicopter observation, night vision devices, and radio communication in police operations of various kinds.

The maintenance of order is becoming an extremely difficult problem because of increasing challenges to authority and because the use of force by the police to control situations is being viewed by the people with increasing disfavour. In this regard a prompt and intelligent operation planned by taking the help of computer and telecommunication can avoid the situation turning into nasty one by reducing their response time. The police can use the scientific help like tear smoke devices, rubber bullets and water canon to disperse the mob and maintain the order by causing no / minor injuries and not killing the people and creating the hatred and animosity between the public and police.

Policemen have not only to be trained in the use of modern scientific methods, they must have an interest in science and technology and appreciate the significance of scientific devices and the importance of modern sophisticated techniques in optimizing police activities. It has become very necessary for police officers to familiarize themselves with scientific techniques. **They have to understand very clearly that merely employing and consulting specialists cannot derive the full benefits of science and technology in police work. They must be competent enough to be able to participate actively in the process of the injection of science and technology in police work and also appreciate the value of the help that can be given by specialists. If police training does not get the necessary bias for science and technology today, we may find ourselves saddled with a large body of policemen who cannot cope with the demands of the times effectively.**

1.9 STATUS OF POLICE COMMUNICATION IN INDIA

The police wireless in India has undergone non-uniform developments and modernization, which differs widely from state to state. On one hand state like Tamil Nadu police is using Microwave communication system for their requirement whereas on the other hand Rajasthan police is still struggling with Morse code and Wireless set obtained from the disposal of the Second World War. J&K Police has been provided with latest state of the art wireless equipment. But there is no doubt that police wireless in the country has traveled a long way since its first communication in the year 1923, with HF voice communication, Electronic teleprinter, Radio Tele-type (RTTY), Automatic Message Switching System (AMSS), PC to PC communication using telephone lines and radio links, captive and leased lines on UHF and microwave bands

The utility of mobile communications in police wireless using Battery operated, Handheld VHF/UHF sets has been proved beyond any doubt. Infact this communication is the only communication over voice, which provides connectivity between police personnel on duty to their control room in the city and to all rural police stations of the districts with the help of repeaters. This communication also comes very handy during VVIPs visit linking all the places of VVIP's visits in the state as well as neighboring states towards providing instant voice communication through repeaters. Also provides localized communication at the places of visits and communication to VVIP's convoy.

1.10 STATUS OF TRAINING TO POLICE PERSONNEL IN DIFFERENT STATES

It is an evident fact that optimum benefits of any technology can be derived through effective adaptation and appropriate application and for which understanding, appreciation and scientific attitude are essential. It is in this direction the training, both in respect of knowledge and understanding to enhance the efficiency of the individual through skill based activity should be emphasized. These factors have appreciable inherent effect for the behaviour / performance of an individual in difficult situations. During visit to some of the state academies, I have found that there was almost no input or very little input on subjects like telecommunication and computer and I have no hesitation to say that though the police telecommunication had undergone modernization with visible impact in many states the same is not the case in respect of telecommunication training of police personnel. Although the present day equipment has gone sea change than the past one's in respect of User friendliness, Miniaturization, reliability in communication etc., The new communication equipment is so user-friendly that it can be handled by any person after training and is no longer require wireless operators and technicians to operate and maintain as these equipment unlike older one's, have more replaceable part and not the repairable part. Till now no attention has been paid towards this angle. If implemented lot many telecom personnel (operators and technicians) can be spared and utilized in other urgent duties for which the police personnel are used like computer section, control room etc. this will spare the police personnel to attend the job for which they meant.

1.11. TRAINING INFRASTRUCTURE

The Government of India has been laying emphasis on improvement of police training in the country, in order to meet the challenges posed by law and order situation and extremist activities. Government has given funds to procure modern communication equipment but no attention has been paid to impart the telecommunication training to all police personnels. Because of information invasion and presence of communication and computer in a big way it is essential that proper developments are brought into training aspects of police personnel.

Although training infrastructure has developed in police immensely the same is not true in telecommunication training. Due to increase in complexity of law and order system and increase of extremist activities the police training has been strengthened and made more realistic and task oriented by modernization in respect of faculties and teaching aids. The need is now to take similar approach in telecommunication training to police personnel. The revolutionary development in the field of electronic and telecommunication systems has made training as an enjoyable task provided sufficient equipment and teaching aids in terms of demonstration films and hands on experience etc. are available.

The faculty members are the back bone of any training institution. Regular updation of knowledge is essential for the faculty by sending them to seminars, shortcourses, expositions, work shops etc., So it is suggested that atleast one faculty member of the rank of DSP's or SP's may please be posted at each State Police Academy to impart knowledge and skills to the Police personnel in respect of both Communication and Computer.

CHAPTER 2

RESEARCH DESIGN OF THE STUDY

In this chapter following aspects are being covered:

- Statement of study
- Objectives of study
- Sample
- Data gathering instruments
- Procedural steps

2.1 STATEMENT OF STUDY

The study was worded as “TELECOMMUNICATION TRAINING FOR STATE POLICE IN INDIA AND NATIONAL POLICE ACADEMY” (A Case Study)

2.1.1 Need and importance of the Study

In order to emphasize the need of efficient telecommunication system to police, it is very much essential to know the basic function of the police in the country. Indian police is for the welfare of the people. They are required to execute all law -full orders and warrants, promptly collect intelligence affecting the public peace, prevent the commission of offences, and detect them. In brief normal Police functions are:

1. Prevention of Crime: The Prevention of crime entails such duties as patrolling by day and night, surveillance of bad characters, preventive action under the provisions of the Cr. P.C. and interposing to prevent the commission of offences.
2. Detection of Crime: The detection of crime involves summoning persons and interrogating them, searching persons and premises, arresting suspects on evidence being forthcoming and releasing them on bail in bailable offences, and holding an inquest in all cases of suspicious or un -natural death in accordance with the provisions of the Cr. P.C.

3. Traffic Control: Transport Departments/Motor Vehicles Departments and the police have concurrent jurisdiction in the enforcement of the provision of the Motor Vehicles Act and related enactments.
4. Maintenance of Order: The maintenance of order is the responsibility of magistrates and police officers in this country. The Cr. P.C. in regard to the control of assemblies and the use of force vests concurrent powers in police officers and magistrates. However, prohibitory orders under section 144 Cr. P.C. can be promulgated only by magistrates.
5. Internal Security: This includes the security of vital installations, the railways, industrial establishments and VIPs, and measures against hijacking/sabotage of aircraft, subversion, and espionage by foreign agents.

The police are also called upon in a big way to render assistance in cases of disasters like aircraft and train accidents, cyclones, earthquakes and floods, etc. Policemen render whatever service they can to the aged, infirm, women, and children.

Communication is vital for efficient operation of the Police forces. It is the speed and accuracy of the 'information flow' which determines the efficiency in any police operation, be it reporting of crime, deployment of petrol vehicles or beat, apprehending the criminals, arranging a communication network to support the operation, exchanging the data in a routine way, or transferring a large amount of statistics, its retrieval and dissemination at a fast speed. At every instant of time, starting from the moment a crime is reported, to the time the criminal is apprehended and the conspiracy is solved, communication plays a very important role. Computers, on the other hand, have improved the efficiency in these operations by virtue of their fast speed and data handling capability. **The emerging telematic service concepts are very useful in police communication network. It is therefore, desirable that we should have data communication network apart from existing voice or teleprinter communication, to link specific establishments, these could be the various police control centres including various district centres, a specific police stations and mobile stations. Computers and communication have thus come very close to bridge the gap to address a variety of such requirements in a very efficient way. The two disciplines therefore need to be looked at in an integrated manner.**

The advent of Radio Communication, TV, Computer, Satellite Communication and Mobile Personnel communication systems marked revolution in the field of telecommunication. Towards the end of the century, the new technologies like Internet and Multimedia communication have made roads into telecommunication scenario and is going to play vital role in 21st Century. These new technologies have not only provided a means of resolving existing challenges but also they have brought new problems which also need to be addressed before it is too late. Some of the challenges are Cyber Crimes, Internet Crimes, Electronic Warfare and Information Warfare with the increased use of Computers and Computer Networks Communication in transactions of business. The attention of law enforcement agencies would be required in the 21st century to deal with its darker side i.e computer frauds and communication related crimes such as

unauthorised access, theft of computer services, interruption or mis-use of computer services, and destruction of computer hardware and software may become quite common. The security agencies have to take counter measures for prevention of such computer crimes and for this the basic knowledge of all systems related to computer and communication to the budding police officer is a must for efficient discharge of their responsibilities.

The evolution of new global culture of electronic information exchange and networking has made the users more vulnerable to becoming victims of fraud, e-mail eaves dropping, data theft as well as corruption of files by unauthorised users. **Information security is a major issue faced by the wired world today. As the information highway transcends borders, protection of information vital to national security assumes added significance.**

In the current age of electronics, we also face the challenge of electronic warfare. The electronic gadgets like surveillance systems, monitoring systems, bugging devices, satellites imagery pose new challenges due to advances in the communication system. Information warfare is also now widely regarded the most vital component of future conflict. Militants are already realised the immense potential of this low cost easily accessible tool for a devastating attack on civil and military infrastructure. Cyber terrorists are taking advantage of the inability of nation's to insulate themselves from electronic assaults and lack of technology for intrusion and detection. **Information revolution is a product of advances coupled with convergence in computerised information and communication technologies. This is known as information explosion, and the world is on the edge of a revolutionary shift from an industrial to an information based society which is going to be heavily dependent on the "cyberspace" or information sphere.** Cyberspace has also brought with it inherent dangers pertaining to security, crime and unauthorised access. The crime on the cyber space are equally on the rise be it in the e-commerce, banking, PSTN (STD & ISD facilities and their covert exploitation) and also CPMCS (Cellphone and Personal Mobile Communication System). The explosion in the communication connectivity and information technology presents both an opportunity and a threat with its ever increasing requirements not just by police but also by the private sector. **To countercheck these requirements and serious vulnerability of system's security, the present day police should have inputs on these topics.**

The new modern systems which shall now be available are Multimedia information highway (MIH), satellite communication and integrated subscribers digital network. The need for exploring new possibilities offered by the convergence of computers and communications is of paramount importance.

Upgradation of technology is essential if communications are not to become redundant. A modern, efficient, worldclass telecommunication infrastructure by convergence of infotech, media, telecom and consumer electronics would be the dire necessity in the 21st Century. **While good communication cannot guarantee good results, poor communication frequently contributes to failures. A responsive police**

force has to look for fast, reliable and efficient communication systems which are user friendly and technologically adaptive and which could also assimilate into the needs and security concern. Unless police communication is modernised, there will exist a danger of vulnerability which anti-social, anti-national elements will exploit.

The problems of prevention and detection of crime and maintenance of law and order, especially in big cities have become more complex and difficult with the extreme mobility of the modern day criminals and the increasing threat posed to public peace by antisocial elements. These problems are further complicated by the growth of population and rapid industrialisation. To deal with these difficult problems, the police will have to adjust their ideas and equipment to the developing situations of crime and public order. To achieve this objective it asks for having a modern efficient system of communication.

The purpose of modern police communication system is also to allow centralised control of the police personnel who are disbursed over an vast area of population. To accomplish this purpose there must be a two way flow of information, as no effective control can be exercised without information from the area of operation. In addition to this primary purpose, there is the invaluable asset at the disposal of the officer. These support services are essential to an efficient execution of these tasks. As the area of operation expands the need for communication increases. Communication makes possible the rapid dissemination of the critical information needed for apprehending the criminals. Also the wealth of information stored in the department's records as well as the other agencies, is only request away. A network of Police Radio Communication keeps the patrol force in contact while on move to control a fluid traffic movement. Rapid communication enables immediate redeployment of the police force to meet diverse situations, promoting the safety of the valuable property and security of the citizen of the country *also to the police personnel when they are in distress*.

2.2 OBJECTIVES OF STUDY

Following were the objectives of the study as defined by the investigator:

- 1) To examine the existing syllabi of Telecommunication training to directly recruited IPS Officers DSP's Sub Inspectors in the state police in the following randomly selected states:
 - 1) Andhra Pradesh
 - 2) Rajasthan
 - 3) Jammu & Kashmir
 - 4) Tamilnadu &
 - 5) Assam

- 2) To study existing training curriculum for IPS Probationers at NPA
- 3) To propose new training curriculum of Telecommunication in consonance with recent modernisation, which are taking place in the field of telecommunication, computer and electronics and its application to policing in the states Police Academy's and NPA based on the findings of the study. Training curricula will focus on:
 - 1) Subject matter
 - 2) Methodology
 - 3) Training evaluation
 - 4) Audio visual resource
 - 5) Faculty in telecom
- 4) As far as possible, the training should be made knowledge application and skill oriented i.e centred towards hands on experience and learning by doing.

2.3 SAMPLE

Stratified random sampling procedure was adopted for data collection

Table 2.3
SAMPLE OF STUDY

Sl.No.	Descriptions	Sample
1.	Senior Police Officers & Technical experts	39
2.	District S.P's	157

Since the response was grossly very poor, hence it has been decided by the investigator to have a random sampling from all over the country. Samples were collected from the police officers serving throughout the country, during their visit to National Police Academy either for training or as guest faculty.

**STATE-WISE DISTRIBUTION OF
S.Ps. & S.S.Ps. WHO RESPONDED THE QUESTIONNAIRE**

Name of the State	No.of Respondents
1) Bihar	6
2) Uttar Pradesh	5
3) Punjab	3
4) Karnataka	5
5) Tamil Nadu	20
6) Andhra Pradesh	13
7) Orissa	4
8) West Bengal	4
9) Delhi	10
10) Madhya Pradesh	10
11) Maharashtra	9
12) Assam	5
13) Kerala	9
14) Jammu & Kashmir	9
15) Rajasthan	15
16) Gujarat	10
17) CPOs	20
Total	157

2.4 DATA GATHERING INSTRUMENTS

Three types of Questionnaires were used by the investigator to collect data related to the study.

2.4.1 Questionnaire for External Experts/Senior Police Officers

2.4.1.1 A Set of seven Questions were constructed by the investigator (Appendix – I). Through intensive literature survey and study of the several telecommunication course materials of different organisations. Seven Questions were identified by the investigator, the ideal levels of these professional knowledge domains were to be marked by the External experts on the following five point scale:

- 1 - Not at all
- 2 - To a little extent
- 3 - To some extent
- 4 - To a considerable extent
- 5 - To a great extent

2.4.1.2 The second question was related to know about the recent advances in telecommunication which can benefit the police in improving their effectiveness in terms of response time.

2.4.1.3 To know the views of the Senior Police Officers the third question was about the importance of various topics related to telecommunication for police. These topics were selected after extensive study of the different telecommunication syllabi of the Indian and International Telecommunication Academy's/ Institutes and also keeping in view the effectiveness of these inputs (in order of merit) in policing with particular reference to Indian police. These topics are required to be graded on five point scale as per the importance on policing perceived by Senior Police Officers and also as per training requirement. The five point scale was as under:

- 1 - Not at all
- 2 - A Little Extent
- 3 - To some extent
- 4 - To a considerable extent
- 5 - To a great extent

2.4.1.4 Through this question investigator ascertained from police executives the methodology to be adopted for developing knowledge and skills in the area of telecommunication for police executives. The methods suggested were to be graded in the scale of 1 to 5 starting from poor to excellent as shown below eg.

<u>Excellent</u>	<u>Very Good</u>	<u>Good</u>	<u>Satisfactory</u>	<u>Poor</u>	<u>Methods</u>
5	4	3	2	1	(i) Lecture Method
5	4	3	2	1	(ii) Lecture-cum-Demonstration Method
5	4	3	2	1	(iii) Group Discussion
5	4	3	2	1	(iv) Individual guided practice
5	4	3	2	1	(v) Films on Telecommunication followed by discussion
5	4	3	2	1	(vi) Field Visits to telecom centres
5	4	3	2	1	(vii) Simulated Exercises on Telecom
5	4	3	2	1	(viii) Case-studies on Telecom

2.4.1.5 The 5th question was intended to know the views on most appropriate training aids (audio visual) for effective training in telecommunication to the police executives. The views were required to be given on the five point scale as shown below:

<u>Excellent</u>	<u>Very Good</u>	<u>Good</u>	<u>Satisfactory</u>	<u>Poor</u>	<u>Methods</u>
5	4	3	2	1	(i) Computer Presentation
5	4	3	2	1	(ii) Models
5	4	3	2	1	(iii) Through Equipment - H.F - V.H.F - G.P.S - FAX - Modem etc.

2.4.1.6 This Question explores the opinion of Senior Police Officer on kind of training materials (Books, Periodicals and precis) required in Telecommunication training.

2.4.1.7 Through this question the investigator wanted to have any other comments on telecommunication training which the senior officer may think appropriate and not covered so far in the above questionnaire.

2.4.2 Questionnaire for resource evaluation

This has been developed after comprehensive survey of literature related to teaching aids and communication skills, the questionnaire related to resource evaluation has been prepared to know the present status of telecommunication inputs given in terms of material and duration in the State Academies.

2.4.2.1 To ascertain the availability of essential equipment required to impart telecommunication training effectively, the investigator has prepared the list of equipment should be available with the training centre.

1. Function Genrator with headphone
2. Telephone Instrument, Cordless phone and Answering Machine
3. HF Trans-receivers.
4. VHF/UHF Walkie-Talkies
5. Demo Model for Satellite Communication
6. Demo Model for Cellular and Paging Systems
7. Fax (Facsimile) Machine
8. Personal Computer with Modem
9. Internet & E-mail
10. Operational HAM Club
11. Audio Tape Recorders (different sizes)
12. V.C.Rs.
13. Cordless Public Address System
14. Megaphone
15. Global Positioning System Receiver (GPSR)

2.4.2.2 Question No.2 is regarding future plans if any, for acquiring/purchasing modern equipment for Telecommunication training.

2.4.2.3 The kind of training material is available for imparting training in terms of following:

- a) Books
- b) Journals/Magazines available
- c) Periodicals
- d) Precis/Notes
- e) Films
- f) Video Cassettes
- g) _____
- h) _____
- i) _____
- j) _____

2.4.2.4 Through question no.4 is related to faculty resources in Telecommunication training.

<u>Name</u>	<u>Qualification</u>	<u>Yrs.of Experience</u>	<u>Specialized Courses</u>	<u>Any other</u>
			<u>Attended</u>	<u>Information</u>

- 1.
- 2.
- 3

2.4.2.5 Investigator through question no.5 tried to know the duration of Telecommunication training in the particular organisation for different ranks of police officers as per the following chart:

Rank	Duration		Remarks if any
	Basic Training	In Service	
Dy. S.P			
SI			
ASI			

2.4.2.6 Question No.6 was related to different topics covered during police telecommunication training and the respondents has to tick mark the topic covered out of the list enclosed and there is blank space for adding the additional topics covered.

1. Introduction to Telecom
2. Introduction to Police Telecom
3. Radio procedure
4. Principles of various Radio Telecom Systems
5. Satellites Communication/V-Sat/Pol-net
6. Personal Mobile Commn. System – Pagers/Cell Phones
7. Basic Concept of Networking
8. Working of INTERNET/E-MAIL
9. Executive Commn. System (PC to PC), FAX.
10. Radio Telephony Procedure
11. Use of Commn. In crowd control, processions, VIP Security & during natural calamities etc.
12. Radio Trunking System
13. Police Control Room/CAD System
14. Commn. Security
15. Introduction to Global Positioning System
16. Introduction to GIS
17. Introduction to CCTV
18. Direct to Home TV and its possible impact & CTV
19. International Police Wireless Network (INTERPOL)
20. Introduction to Electronic Gadgets
21. Introduction to Amateur Radio
22. Cipher System
23. Metal Detector
24. Voice Scrambler
25. _____

2.4.2.7 Question No.7 pertained to any other comments pertinent to Telecommunication training for police which have not covered earlier.

2.4.3 **QUESTIONNAIRE FOR DISTRICT S.P'S AND SENIOR SUPERINTENDENT OF POLICE**

2.4.3.1 A set of four Questionnaires were developed by the investigator (Appendix – II)

2.4.3.2 After extensive discussion with the Police Officers, and Police Trainers (Ex - & Retired) at the Academy and also keeping in view of the present Telecome Training situation and also development in telecommunication an opinionnaire has been developed for the district S.P's and Sr. Superintendent Police for their feedback on the subject.

2.4.3.3 Through this question the investigator has tried to obtain the opinion of concerned Police Officers as to what extent they feel the existing telecommunication training of police personnel is effective. Their observation should be on five point scale as shown below. Also they can offer comments if any related to Telecommunication.

- | | |
|---|--------------------------|
| 1 | Not at all |
| 2 | To a little extent |
| 3 | To some extent |
| 4 | To a considerable extent |
| 5 | Fully |

2.4.3.4 Through the second question the investigator has tried to obtain the views of respondent on a specific topics/subject matter should be covered in Telecommunication training for police personnel in consonance with present day requirements

2.4.3.5 Question No.3 is dedicated to know the which specific task the police personnel are to be trained in telecommunication to cope up with the modus operandi of criminals.

2.4.3.6 Through the last and fourth question investigator has tried to know the recommendations of respondents about the nature and duration of telecommunication training to police personnel on various levels of hirearchy starting from police constables and head constables to s uperintendent of police with the following order

- a) Police Constables/Head Constables
- b) Sub Inspectors and Inspectors of Police
- c) Dy. Supdts. Of Police
- d) Supdts. Of Police

2.5 PROCEDURAL DIMENSIONS OF THE STUDY

Six procedural steps were applied for data collection:

2.5.1 Step 1: Critical appraisal of curriculum

Telecommunication in states and in NPA outlined in objectives of the study with regard to relevance, coverage of the subject matter, training methodologies adopted and Audio-visual training aids utilised to support the training.

2.5.2 Step 2: Construction of questionnaire

A format for curriculum evaluation is constructed by involving and extensive discussion with the experts in the area of telecommunication. Accordingly Three set of questionnaires were prepared to collect responses from Technical & Senior Police Officers, S.P & S.S.P's of the district and to know the resources in respect of the training aids of the state academys, on telecommunication.

2.5.3 Step 3: Field visits for data collection

Investigator has visited the state police head quarters of Hyderabad, Jaipur, Srinagar, Chennai & Delhi to collect data and acquaint himself with the status of the telecommunication training in the states as well as NPA. During visit to the states the investigator has made available sufficient number of questionnaires were handed over to the authorities of training wing for onward dispatch to district S.Ps and S.S.Ps. Also the investigator has personally handed over set of questionnaires meant for Senior Police Officers and Technical Experts in the police Head Quarters of the States.

2.5.4 Step 4: Scoring and tabulation of data

For the analysis of data the Statistical tests like Mean, Mode, S.D. (Standard Deviation) and co-relation were used for evaluation of descriptive statistics and chi-square, t-test, factor analysis etc. were utilised for inferential statistics.

2.5.5 Step 5: Analysis and interpretation of data

2.5.6 Step 6: Preparation of Report

CHAPTER 3

SENIOR POLICE OFFICERS AND EXPERTS VIEWS ON TELECOMMUNICATION TRAINING

To elicit the views of Senior Police Officers and technical experts on Telecommunication Training in Police in India, a questionnaire was constructed by the Investigator. This questionnaire had both open and close ended questions. 39 responded to the questionnaire. Systematic analysis of data was done and results are presented below :-

3.1. ANALYSIS OF DATA

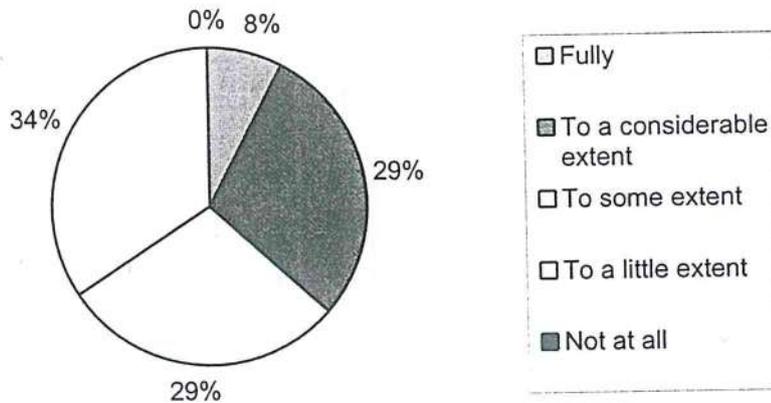
Research Question 1 : To what extent are you satisfied with the telecommunication training to the police personnel in our country?

Response : The results are presented in Table 1.

TABLE 1
SATISFACTION WITH 'TELECOMMUNICATION TRAINING TO POLICE'

Statement	<u>RESPONSE</u>					Descriptive Statistics	Comments
	To a great extent	To a considerable extent	To some extent	To a little extent	Not at all		
1. To what extent are you satisfied with the telecommunication training to the police personnel in our country?	3 (7.7)	11 (28.2)	12 (28.6)	13 (33.3)	-	Mean = 3.103 Mode = 2 S.D. = .968 Chi-square = 6.436	To a little extent

FIGURE 1 : THE EXTENT OF SATISFACTION WITH THE TELECOMMUNICATION TRAINING



From modal response it can be inferred that they are satisfied to a little extent with the telecommunication training to police in our country. Following comments were offered by the respondents :

- Telecommunication training should be made compulsory for all policemen in the country. Training in communication, operation of wireless sets. They should also be taught and deeply explained their defects which occur from time to time.
- Practically there is very little or no training facility available for executives
- With the advent of information technology it is imperative that police personnel in the country be given adequate training in telecommunication and computers, to make themselves more efficient in policing
- The telecommunication training in our country is far from satisfaction although to some extent it is satisfactory, to combat the present situation, training must be imparted to all police personnel at least the basic knowledge of such communication so that the police personnel may not put in awkward position whenever situation warranted.

- Telecommunication has one of the vast and important role in the field of communication.
- Poor, generally
- Training is done more as a formality to be completed than giving priority both by the police training institutions and telecommunication trainers for want of practical exercises/equipments in basic and in-service training courses.
- More practical oriented training is required and ability to produce innovative ideas in non standard situations should be inculcated.
- Training is mainly confined to the operating/handling of wireless sets and passing on the messages operating telex and fax. It however does not cover other advanced areas in telecommunication..
- Regular refresher courses are necessary to cope up with the latest discovery/inventions in the field of telecommunication.
- Practical training should be more emphasized than theoretical subjects.
- The past experience may not be an indication because we are amidst a telecom-revolution.
- In respect of IPS officers, who are future decision makers, should be vested with telecommunications needs.
- We now mostly depend on the telecommunication system as it has become necessity
- Totally unskilled level of handling.
- The telecom equipment as is seen, there has been no proper training on telecommunication equipment is given.
- At the O.R's level it is negligible, NGO's (ASI, SI, groups) have some training and GO's do not have any training
- The exposure to latest and state of art equipment plus latest trends in communication should be given right here in the academy. One has to rely on own initiative by procuring very expensive literature on the field
- Telecommunication skills in various degrees are taught to almost all police officers and men so that at the time of need they can handle the VHF and HF wireless sets.

- More and more police personnel should be given telecommunication training. With increasing technology in the fields there is a need for specialized training in telecommunications

Research Question 2 : What are the recent advances in telecommunication which can benefit the police in improving their effectiveness in terms of response time?

Response : The respondents reported the following :

- My bottom line answer is a question “ Can we neglect any aspect of improvisation and advance in police work” If you neglect, the criminals would not. So instead of chasing, be a leader in use of ‘Technology’.
- Satellite communication, phone, V-SAT and PC’s
- Common use of VHF communication
- Computer aided communication
- Video and audio communication.
- Application of computers, static and mobile communication, application of machine cipher system for communication security.
- Use of computers with modem, Internet/e-mail.
- Use of secrecy devices both online and on wireless communication
- Pol-net.
- Wireless communication, walkie – talkie, mobile networking, security system in wireless network
- Hand held sets with speech secrecy device
- Computerized data base in related fields of police work eg., of criminals, communal situation etc.,
- Effective use of scrambler to maintain complete secrecy
- Image transmission, on-line video conference or CCTV, spread over a larger area.

- GPS, Digital trunk system
- Up-gradation of equipment, up-gradation of HF with FM (VHF)
- Cellular phones systems
- Monitoring of police network technology .
- Technology in blocking commn., and eves – dropping
- Surveillance technique in respect of mobile/satellite phones
- Police computer network for quick sharing of relevant data
- Satellite linked portable telephone sets
- Electronic gadgets.
- W/T with telephone facilities computer multi-media, networking, internet, website.
- Sophisticated equipments, suitable conversation connections, efficient staff, proper education in the field
- Mobile/cordless communication system
- Direct to home TV and CTV in cities, satellite communications
- Point to point communication system connecting all PS's/OP's
- A dedicated country wide network
- Cyber communication, scrambling techniques, tone dialing, selective calling
- To avoid traffic violation video cameras can be fitted on main junctions
- Police stations can be connected to HQ through network connections
- Every police stations can be provided with FAX equipment
- Cell phone computer interface, telephone interface
- Voice/telephone recorder, multi channel receiver and repeaters.
- Radio paging system

Research Question 3 : In your view what is the importance of various topics related to Telecommunication for police?

Response : To the enlisted topics, the respondents attached the level of importance as presented in Table2.

TABLE 2
DEGREE OF IMPORTANCE OF VARIOUS TELECOMMUNICATION TOPICS

PERCEIVED IMPORTANCE ON THE JOB	RESPONSE					Descriptive Statistics	Comments
	To a great extent 5	To a considerable extent 4	To some extent 3	To a little extent 2	Not at all 1		
1. Introduction to Telecom	23 (57.5)	7 (17.5)	7 (17.5)	3 (7.5)	-	Mean = 4.250 Mode = 5 S.D.= 1.006 Chi-square= 23.600	To a great extent
2. Introduction to Police Telecom.	1 (2.4)	5 (12.2)	7 (17.1)	28 (68.3)	-	Mean =4.488 Mode = 5 S.D. =.898 Chi-square= 42.805	To a little extent
3. Radio procedure	14 (35.0)	13 (32.5)	7 (17.5)	5 (12.5)		Mean =3.850 Mode = 5 S.D. =1.122 Chi-square= 15.000	To a great extent
4. Principles of various Radio Telecom. Systems	8 (20.5)	13 (33.3)	12 (30.8)	4 (10.3)	2 (5.1)	Mean =3.583 Mode = 4 S.D. =.1.097 Chi-square= 11.897	To a considerable extent
5. Satellite	21	6	9	3	1	Mean	

Communication/V-Sat/Pol-net	(52.5)	(15.0)	(22.5)	(7.5)	(2.5)	=4.075 Mode = 5 S.D. =1.141 Chi-square= 31.000	To a great extent
6. Personal Mobile Commn.System pagers/cell phones	17 (43.6)	12 (30.8)	8 (20.5)	1 (2.6)	1 (2.5)	Mean =4.103 Mode = 5 S.D. =.995 Chi-square= 24.974	To a great extent
7. Basic concept of networking	12 (29.3)	14 (34.1)	10 (24.4)	2 (4.9)	3 (7.3)	Mean =3.732 Mode = 4 S.D. =1.162 Chi-square= 14.244	To a considerable extent
8. Working of Internet/e-mail	21 (51.2)	9 (22.0)	9 (22.0)	1 (2.4)	1 (2.4)	Mean =4.171 Mode = 5 S.D. =1.022 Chi-square= 32.780	To a great extent
9. Executive Commn.system (PC to PC), Fax	13 (33.3)	11 (28.2)	15 (38.5)	-	-	Mean =3.949 Mode = 3 S.D. =.857 Chi-square= .615	To some extent
10. Radio Telephony procedure	11 (29)	12 (31.6)	14 (36.8)	1 (2.6)	-	Mean =3.868 Mode = 3 S.D. =.875 Chi-square= 10.632	To some extent
11. Use of commn. in crowd control, processions, VIP Security & during natural calamities etc.	22 (55.0)	13 (32.5)	3 (7.5)	1 (2.5)	1 (2.5)	Mean =4.350 Mode = 5 S.D. =.921 Chi-square=	To a great extent

						43.000	
12. Radio Trunking System	12 (30.8)	6 (15.4)	14 (35.9)	7 (17.9)	-	Mean =3.590 Mode = 3 S.D. =1.117 Chi-square= 4.590	To some extent
13. Police Control Room/CAD system	21 (53.8)	11 (28.2)	5 (12.8)	2 (5.2)	-	Mean =4.308 Mode = 5 S.D. =.893 Chi-square= 21.615	To a great extent
14. Commn.Security	21 (52.5)	11 (27.5)	7 (17.5)	1 (2.5)	-	Mean =4.275 Mode = 5 S.D. =.933 Chi-square= 21.200	To a great extent
15. Introduction to Global positioning system	13 (30.6)	10 (25.0)	11 (33.3)	5 (11.1)	-	Mean =3.795 Mode = 5 S.D. =1.056 Chi-square= 3.564	To a great extent
16. Introduction to GIS	9 (25.7)	9 (25.7)	10 (28.6)	6 (20)	-	Mean =3.543 Mode = 3 S.D. =1.146 Chi-square= 7.714	To some extent
17. Introduction to CCTV	12 (31.6)	11 (28.9)	9 (26.3)	5 (13.2)		Mean =3.737 Mode = 5 S.D. =1.131 Chi-square= 10.947	To a great extent

18. Direct to Home TV and its possible impact and CTV.	5 (13.9)	14 (38.9)	6 (25)	8 (22.2)		Mean =3.278 Mode = 4 S.D. =1.210 Chi-square= 9.833	To a considerable extent
19. International Police Wireless Network (INTERPOL)	10 (25.0)	14 (35.0)	9 (25)	6 (15.0)	-	Mean =3.650 Mode = 4 S.D. =1.099 Chi-square= 11.750	To a considerable extent
20. Introduction to Electronic Gadgets.	15 (36.6)	11 (26.8)	10 (24.4)	3 (7.3)	2 (4.9)	Mean =3.829 Mode = 5 S.D. =1.160 Chi-square= 14.976	To a great extent
21. Introduction to Amateur Radio	2 (5.9)	8 (23.5)	12 (35.3)	9 (26.5)	3 (8.8)	Mean =2.912 Mode = 3 S.D. =1.055 Chi-square= 10.412	To some extent
22. Secret Communication – Cipher System - Scramblers	21 (52.5)	6 (15.0)	9 (22.5)	3 (7.5)	1 (2.5)	Mean =4.075 Mode = 5 S.D. =1.141 Chi-square= 31.000	To a great extent

From the Table2, it is evident that –

57.5% respondents viewed that introduction to telecom. is important to a great extent, 17.5% agreed to a considerable extent, 17.5% of them viewed it important to some extent and 7.5% viewed it to a little extent. Mean was found to be 4.250 and mode was 5.

2.4% respondents viewed that introduction to Police Telecom. is important to a great extent, 12.2% viewed to a considerable extent, 17.1% of them viewed it to some extent and 68.3% viewed it to a little extent. Mean was found to be 4.488 and mode was 5.

35% respondents viewed that Radio Procedure is important to a great extent relating to telecommunication for police, 32.5% of them viewed it to a considerable extent, 17.5% of them viewed it to some extent and 12.5% of them viewed it to a little extent. Mean was found to be 3.850 and Mode was 5.

20.5% respondents viewed that Principles of various Radio Telecom. Systems are important to a great extent relating to telecommunication for police, 33.35% of them viewed it to a considerable extent, 30.8% of them viewed it to some extent, 10.3% of them viewed it to a little extent and 5.1% not at all responded. Mean was found to be 3.850 and Mode was 5.

52.5% respondents viewed that Satellite Communication/V-Sat/Pol-net is important to a great extent relating to telecommunication for police, 15% viewed it to a considerable extent, 22.5% of them viewed it to some extent and 7.5% of them viewed it to a little extent 2.5% of them viewed not at all. Mean was found to be 4.075 and mode was 5.

43.6% respondents viewed that personal Mobile Commn.System pagers/cell phones t is important to a great extent relating to telecommunication for police, 30.8% viewed it to a considerable extent, 20.5% of them viewed it to some extent and 2.6% viewed it to a little extent 2.6% not at all viewed. Mean was found to be 4.103 and mode was 5.

29.3% respondents viewed that Basic concept of networking is important to a great extent relating to telecommunication for police, 34.1% of them viewed to a

52.5% respondents viewed that Commn.Security is important to a great extent, 27.5% of them viewed it to a considerable extent, 17.5.5% of them viewed it to some extent and 2.5% of them viewed it to a little extent. Mean was found to be 4.275 and mode was 5.

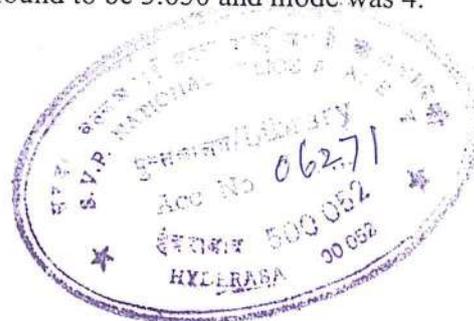
30.6% respondents viewed that Introduction to Global positioning system is important to a great extent, 25% of them viewed to a considerable extent, 33.3% of them viewed it to some extent and 11.1% of them viewed it to a little extent. Mean was found to be 3.795 and mode was 5.

25.7% respondents viewed that Introduction to GIS is important to a great extent, 25.7% of them viewed it to a considerable extent, 28.6% of them viewed it to some extent and 17.1% of them viewed to a little extent. Mean was found to be 3.543 and mode was 3.

31.6% respondents viewed that Introduction to CCTV is important to a great extent, 28.9% of them viewed it to a considerable extent, 23.7% of them viewed it to some extent and 13.2% of them viewed it to a little. Mean was found to be 3.737 and mode was 5.

13.9% respondents viewed that Direct to Home TV and its possible impact and CTV is important to a great extent relating to telecommunication for police, 38.9% of them viewed it to a considerable extent, 16.7% of them viewed it to some extent and 22.2% of them viewed it to a little extent. Mean was found to be 3.278 and mode was 4.

25% respondents viewed that International Police Wireless Network (INTERPOL) is important to a great extent relating to telecommunication for police, 35% of them viewed it to a considerable extent, 22.5% of them viewed it to some extent and 15% of them viewed it to a little extent. Mean was found to be 3.650 and mode was 4.



36.6% respondents viewed that Introduction to Electronic Gadgets is important to a great extent, 26.8% of them viewed to a considerable extent, 24.4% of them viewed it to some extent and 7.3% of them viewed it to a little extent 4.9% of them not at all viewed. Mean was found to be 3.829 and mode was 5.

5.9% respondents viewed that Introduction to Amateur Radio is important to a great extent, 23.5% of them viewed it to a considerable extent, 35.3% of them viewed it to some extent and 26.5% of them viewed it to a little extent 8.8 % of them not at all viewed. Mean was found to be 2.912 and mode was 3.

It can be summed up. Following topics were rated "Fully Important" in telecomm. Training to police personnel: (Mode = 5)

- Use of commn. in crowd control, processions, VIP Security & during natural calamities etc. (Mean=4.350)
- Police Control Room/CAD system (Mean=4.308)
- Commn.Security (Mean=4.275)
- Working of Internet/e-mail (Mean =4.171)
- Personnel Mobile Commn.System pagers/cell phones (Mean =4.103)
- Satellite Communication/V-Sat/Pol-net (Mean = 4.075)
- Radio Procedure (Mean = 3.850)
- Introduction to Electronic Gadgets. (Mean=3.829)
- Introduction to Global positioning system (Mean=3.795)
- Introduction to CCTV (Mean=3.737)

RESPONSE ON TRAINING REQUIREMENT ON VARIOUS TOPICS IN TELECOMMUNICATION

The response is presented in Table 3 :

TABLE 3
TRAINING/NON-TRAINING REQUIREMENTS

STATEMENT TRAINING REQUIREMENT	RESPONSE		DESCRIPTIVE STATISTICS	X ² - Value
	Yes	No		
1. Introduction to Telecom	29 (87.9)	4 (12.1)	Mean = 1.879 Mode = 2 S.D. = .331	18.939
2. Introduction to Police Telecom.	32 (97.0)	1 (3.0)	Mean = 1.970 Mode = 2 S.D. = .174	29.121
3. Radio procedure	28 (90.3)	3 (9.7)	Mean = 1.903 Mode = 2 S.D. = .301	20.161
4. Principles of various Radio Telecom. Systems	29 (87.9)	4 (12.1)	Mean = 1.897 Mode = 2 S.D. = .331	18.939
5. Satellite Communication/V - Sat/Pol-net	31 (93.9)	2 (6.1)	Mean = 1.939 Mode = 2 S.D. = .242	25.485
6. Personal Mobile Commn.System pagers/cell phones	29 (90.6)	3 (9.4)	Mean = 1.906 Mode = 2 S.D. = .296	21.125
7. Basic concept of networking	30 (90.9)	3 (9.1)	Mean = 1.909 Mode = 2 S.D. = .292	22.091
8. Working of Internet/e-mail	32 (97.0)	1 (3.0)	Mean = 1.970 Mode = 2 S.D. = .174	29.121
9. Executive Commn.system (PC to PC), Fax	31 (93.9)	2 (6.1)	Mean = 1.939 Mode = 2 S.D. = .242	25.485

10. Radio Telephony procedure	27 (84.4)	5 (15.6)	Mean = 1.844 Mode = 2 S.D. = .369	15.125
11. Use of commn. in crowd control, processions, VIP Security & during natural calamities etc.	33 (100.0)	0 (0)	Mean = 2 Mode = 2 S.D. = 0	nil
12. Radio Trunking System	25 (80.6)	6 (19.4)	Mean = 1.806 Mode = 2 S.D. = 0.402	11.645
13. Police Control Room/CAD system	32 (100.0)	0 (0)	Mean = 2 Mode = 2 S.D. = 0 Chi-square=	nil
14. Commn.Security	317 (96.9)	1 (3.1)	Mean = 1.969 Mode = 2 S.D. = .177	28.125
15. Introduction to Global positioning system	29 (93.5)	2 (6.5)	Mean = 1.935 Mode = 2 S.D. = .250	23.516
16. Introduction to GIS	25 (86.2)	4 (13.8)	Mean = 1.862 Mode = 2 S.D. = .351	15.207
17. Introduction to CCTV	26 (83.9)	5 (16.1)	Mean = 1.839 Mode = 2 S.D. = .374	14.226
18. Direct to Home TV and its possible impact and CTV.	22 (73.3)	8 (26.7)	Mean = 1.733 Mode = 2 S.D. = .450	6.533
19. International Police Wireless Network (INTERPOL)	31 (96.9)	1 (3.1)	Mean = 1.969 Mode = 2 S.D. = .177	28.125
20. Introduction to Electronic Gadgets.	30 (93.8)	2 (6.3)	Mean = 1.938 Mode = 2 S.D. = .246	24.5
21. Introduction to Amateur Radio	22 (75.9)	7 (24.1)	Mean = 1.759 Mode = 2 S.D. = .435	7.759
22. Secret Communication – Cipher	31	2	Mean = 1.939	

System - Scramblers	(93.9) (6.1)	Mode = 2 S.D. = .242	25.485
---------------------	--------------	-------------------------	--------

From Table 3 it is evident that following areas require training interventions in terms of priority :

- τ Use of commn. in crowd control, processions, VIP Security & during natural calamities etc.
- τ Police Control Room/CAD system
- τ Introduction to Police Telecom.
- τ Working of Internet/e-mail.
- τ Commn.Security
- τ International Police Wireless Network (INTERPOL)
- τ Satellite Communication/V-Sat/Pol-net
- τ Executive Commn.system (PC to PC), Fax
- τ Introduction to Electronic Gadgets.
- τ Basic concept of networking
- τ Personal Mobile Commn. System pagers/cell phones.
- τ Radio Procedure
- τ Introduction to Telecom
- τ Principles of various Radio Telecom.Systems
- τ Introduction to GPS
- τ Radio Telephony procedure
- τ Introduction to CCTV
- τ Radio Trunking System
- τ Introduction to Amateur Radio
- τ Direct to Home TV and its possible impact and CTV
- τ Secret Communication – Cipher System Scrambler etc.

Research Question 4 : What should be the methodology for developing knowledge and skills in telecommunication area for Police Executives?

Response : Table 4 presents the choice of training methodology for coverage of various inputs on telecommunication for police.

**TABLE 4
METHODOLOGY FOR DEVELOPING KNOWLEDGE AND SKILLS**

STATEMENT	RESPONSE					DESCRIPTIVE STATISTICS	COMMENTS
	Excellent 5	Very good 4	Good 3	Satis- factory 2	Poor 1		
i. Lecture Method	3 (8.3)	9 (25.0)	8 (22.2)	12 (33.3)	4 (11.2)	Mean = 2.861 Mode = 2 S.D. = 1.175 Chi-square= 7.611	Satisfactory
ii) Lecture-cu,-demonstration method	22 (53.7)	14 (34.1)	4 (9.8)	1 (2.4)	-	Mean = 4.390 Mode = 5 S.D. = .771 Chi-square= 27.000	Excellent
iii) Group discussion	7 (20.3)	15 (40.2)	9 (23.7)	6 (15.8)		Mean = 3.553 Mode = 4 S.D. = 1.058 Chi- square=13.579	Very Good
iv) Individual guided practice	12 (32.4)	15 (42.5)	8 (22.3)	1 (2.8)		Mean = 3.973 Mode = 4 S.D.= .957 Chi-square= 21.784	Very Good
5. Films on Telecommunication followed by discussion	15 (41.7)	13 (36.1)	7 (19.4)	1 (2.8)		Mean = 4.111 Mode = 5 S.D. = .820 Chi-square= 26.250	Excellent
6. Field visits to Telecom centers	16 (41.1)	13 (33.3)	7 (17.9)	3 (7.7)	-	Mean = 4.077 Mode = 5 S.D. =.957	Excellent

		Chi-square= 10.538	
7. Simulated exercises on telecom.	19 (47.5) 11 (27.5) 9 (22.5) 1 (2.5) -	Mean = 4.200 Mode = 5 S.D. = .883 Chi-square= 16.400	Excellent
8. Case-studies on Telecom	9 (23.7) 15 (39.5) 8 (21) 5 (13.2) 1 (2.5)	Mean = 3.684 Mode = 4 S.D. = 1.068 Chi-square= 14.105	Very Good

The respondents were of the opinion that following methods will be 'excellent' for imparting training in the Telecommunication to the Police Executives :

- Lecture Method (Mean = 4.488)
- Lecture-cum-demonstration method (Mean = 4.390)
- Simulated exercises on telecom (Mean = 4.200)
- Films on Telecommunication followed by discussion (Mean = 4.111)
- Field visits to Telecom centers (Mean = 4.077)

They were of the opinion that following methods will not be so suitable for imparting training in Telecommunication system :

- Individual guided practice (Mean = 3.973)
- Case-studies on Telecom (Mean = 3.684)
- Group discussion (Mean = 3.553)

Research Question 5 : What should be the most appropriate training aids (audio -visual etc.) for effective imparting of training in telecommunication to the Police Executives?

Response : The respondents views are presented in Table 5.

TABLE 5
EFFECTIVE TRAINING AIDS

STATEMENT	RESPONSE					DESCRIPTIVE STATISTICS	COMMENTS
	Excellent 5	Very good 4	Good 3	Satis- factory 2	Poor 1		
i) Computer Presentations	16 (42.1)	14 (36.8)	8 (21.1)	-	-	Mean = 4.211 Mode = 5 S.D.= .777 Chi-square=2.737	Excellent
ii) Models	9 (23.7)	15 (39.5)	10 (26.3)	4 (10.5)		Mean = 3.763 Mode = 4 S.D. = .943 Chi-square=6.421	Very Good
iii) Through equipment - H.F., V.H.F., G.P.S., Fax., Modem etc.	28 (70.0)	10 (25.0)	2 (5.0)	-	-	Mean = 4.650 Mode = 5 S.D. = .580 Chi-square= 26.600	Excellent

Respondents were of the view that following were the excellent training aids for effective imparting of training in telecommunication to the Police Executives:

- Training through Equipment like
- H.F., V.H.F., G.P.S., Fax, Modem etc. (Mean = 4.650; Mode = 5)
- Computer Presentations (Mean = 4.211; Mode = 5)
- Models (Mean = 3.763; Mode = 4)

Research Question 6 : What kind of training material (books, periodicals, précis etc.) in telecommunication you recommend for telecommunication training to the police executives?

Response : The response was as under :

- Go on experimenting depending on the composition of the class. Generate interest by depicting some Hi-tech fantasy. 'window dressing' may be, but in one year you can only tickle and excite his desire to know more on telecommn. and keep in touch. Please tell what the professional follows,(there are quite a few), he should read to keep abreast with the latest. He should not feel depressed in a typical bureaucratic setup, he can use only 2% of his advance knowledge. 2% is slightly better than 0%.
- Précis
- Use of précis and periodicals, in my view will be best suited for telecom training of police executives along with opportunity to physically operate/handle/at least equipment of telecom.
- Initially for basic knowledge, books are very essential. However subsequently there is a requirements of periodicals to update knowledge in a particular fields.
- In addition to book, periodicals and Precis, user manual in respect of the equipment may be utilized during training
- Very little or no training material on the subject is available in the country, may try foreign training institutes
- Lecture and practicals along with books
- Actual use of equipment and demonstrations
- Some selective books as well as periodicals can be of much help
- Books regarding for basic training which should be represented through periodicals/journals
- Yes please provide brief relevant reading material
- Janes C⁴I.
- Books, periodicals and précis – to some extent may be required initially. However, after a certain stage précis may serve the purpose.
- Characteristics and costs of various telecom devices.
- Directly by practical training and books.

- A hand book on equipment, its characteristics, guide lines for handling, main communication procedures, security of communication and telephone system be given.
- Computers today, Internet (there are many books available), Telecommunication(many books available).
- Books and précis.
- A journal for regular upgraded equipments, latest technology etc., should be published.
- A précis on course topics will be helpful for trainee to learn properly and to refer in future.
- Recommended précis for the beginner and periodicals and books for intensive trainers in telecommunication.
- Periodicals, practical/handling of equipment.
- Books: Basic concept on radio procedure
 - Basic electronics.
 - Basic concept of radio wave propagation.
 - Radio telephony procedure.
 - Communication security.
 - Basic concept of satellite system.
 - Data/digital communication.
- Periodic Magazines:
 - electronic for you.
 - Telematics India.
 - Computer today.
- Usual books prescribed by NIIT etc.
- Précis related to the subject should be produced and distributed. They should also be encouraged to study latest periodicals on telecom which are simple and easy to comprehend.
- For training précis/handout should be suitable covering only related information. Trainees may be encourage to read periodicals to update developments in this field.

Research Question 7 : Any other comments on telecommunication training.

Response: The response was as under :

- Telecommunication systems all over the world have left us much behind. Consequently, one feels that we are groping in the darkness. Computer, to most of us looks like an alien instrument. It is time that all of us realize the importance of computer and communication methodology which is unfailing and is absolutely reliable. Older generation commun., systems like HF etc., need to be given a farewell. In their place, the internet, fax and cellular phones should come up as fast as possible. Computer is so user friendly with the development of the oral software that it should be made compulsory for all new inductees to all police services. The old hands need to be given a week's training so that they could catch up with the basic requirement of the modern technology.
- Marrying a fast developing technology with a inertia bound bureaucracy is the biggest challenge. All cannot do. A few with fire in their heart and Train continue trying. It is impossible to brain anybody in any course to face the technological scenario he will see in the next 3 decades. You can only welcome and usher him to a technology – ambiance. There is no royal path to enrich. So, keep on experimenting. These are matters of nuts and bolts. And can/should be made flexible, depending on the circumstances. One may consider dividing the batch in to 3 or 4 groups depending on their exposure and interest in the subject. Then only the classes would be interesting and productive.
- Basic concept of VHF/HF/UHF/Micro wave, should be clarified with practical examples.
- Functioning of DOT/VSNL/MTNL should be explained.
- Digital commn.,
- The telecommunication and computerization should be brought together under one unit to ensure linkages.
- Theories of telecommunication including digital commn., simultaneously with EDP.

- Latest communication techniques
- Use of current equipment in use by police
- There is a need to break the barrier and everyone should be able to use equipment and integrate telecommunication in normal police duties except for repairs of the equipment and Morse code communication which needs practice etc.
- Emphasis should be on practical training and simple fault diagnostic also.
- In the training, the subjects should also be clarified through experts: -like frequencies regulation to radio. The basic elements of telecommunication can be imparted to all police personnel during their basic training, it becomes necessary during their day to day/routine duties, so as to communicate what is happening in his locality within a quickest possible time. The theory of learning system must be accompanied by the practical means and as handling properly, getting the knowledge of how to repair and maintain etc.,
- It should be part of induction training and periodical refresher course are received for non-technique staff also.
- The complete training, about, use of modems for phones, fax etc., should be trained.
- Need revision keeping in view of recent development in digital radio and line equipment as well as computer related communication.
- Training for trainers course be introduced to telecommunications trainers.
- Police personnel be made tele-friendly.
- It is suggested that as for as possible maximum practical exposure to be given in communication training specially for training staff.
- To be in touch in latest publication on scientific subjects is very important.
- Regular refresher training of the staff and officers specifically assigned to police responsibility is a must. Each officer/staff member should be put through such refresher training atleast at every 5/6 years interval.
- An equipment training to be made to acquaint trainers with various kinds of equipment, their handling and use.
- Please impart practical training.

- The standard of telecom training imparted to police officers should be more or less standardized throughout the country so that the officer can maintain his level of efficiency and be equally useful anywhere.
- For an academy like this, each O T should be issued a walkie talkie set for say 1 month and their conversation should be monitored to inculcate discipline.
- Latest advancements should be conveyed to O T's.
- Visits to advance PCR's should be undertaken.
- Police inspectors/D.S.P's ranks need more training.
- Telecommunications is a command function and its very essential for effective control and passing on orders and taking feed back from subordinate police officers.
- Police executives should be given field visit to telecom centers and repeaters.
- Police executives should be given practical training on handling convoy of (VIP) communication.
- Police executives should be given practical training in maintenance and minor repairs of communication equipments.
- India is poor country and needs optimum utilization of its communication equipment by various public services. The department of telecom charges market rates to other government using its facilities forcing the police, railways, defense and other departments to develop their own infrastructures which duplicate hardware and remain under utilized.
- Telecom department with digitalization should make available dedicated channels to various government agencies. They should be charged on actual costs. Various departments should utilize their dedicated channels by making them secure though their own staff. This will prevent duplication of the infrastructure.
- The operational aspects of different telecom system need to be explained for police executives so that they are able to use the facilities.
- This facility should be made compulsory for all police officers.

CHAPTER 4

VIEWS OF SUPERINTENDENT OF POLICE ON TELECOMMUNICATION TRAINING OF POLICE PERSONNEL

To elicit the views of Superintendents of Police on Telecommunication Training in Police in India, a questionnaire was constructed by the Investigator. This questionnaire had both open and close ended questions. 157 responded to the questionnaire. Systematic analysis of data was done and results are presented below :-

Research Question i) To what extent do you feel that telecommunication training of police personnel is effective?

Response : The results are presented in Table

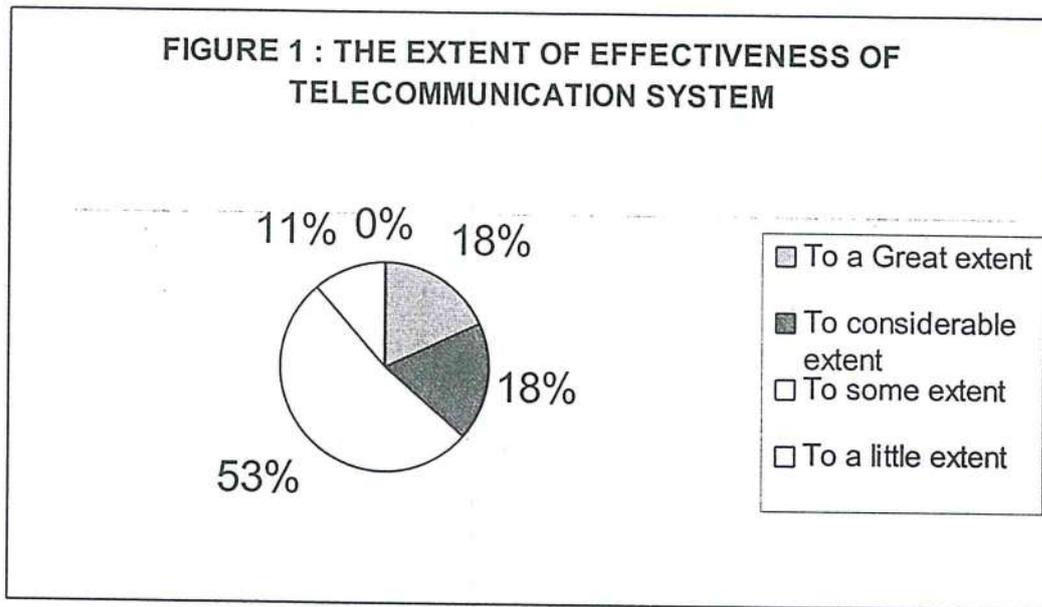
TABLE
EFFECTIVENESS OF TELECOMMUNICATION TRAINING

STATEMENT	Response					Descriptive Statistics	Comments
	To a great extent	To a considerable extent	To some extent	To a little extent	Not at all		
To what extent do you feel that telecommunication training of police personnel is effective?	29 (18.2)	29 (18.2)	82 (52.3)	8 (11.4)	-	Mean = 3.773 Mode = 4 S.D. = .886 Chi-square =18.000	To some extent

From Table it is evident that –

18.2% respondents felt that telecommunication training of police personnel was fully effective and 52.3% of them felt it to be effective to some extent, 18.2% of them felt it to be effective to a considerable extent and 11.3% of them found it to be effective to a little extent. (Mean was found to be 3.773, mode was 3)

FIGURE 1 : THE EXTENT OF EFFECTIVENESS OF TELECOMMUNICATION SYSTEM



They offered the following comments on Telecommunication Training for Police Personnel in India :

- There is no systematic provision for Telecom. Training for DSP and above level officers in U.P All are not given telecommunication training particularly D.S.P's and above.
- If the police personnel are given technical/operational computer/commun., training, it will be useful to police personnel as well as police department. Every police personnel should undergo telecommunication training in operation.
- V.V.I.P./V.I.P. Movements, crowd/traffic control, operations on radios, clearance of route are more effectively done and supervised by the higher police officials, by using a static or mobile telecommunication (wireless) set, preferably by walkie-talkies sets, so easily, with stand by power supply (battery packs), even a meeting is conducted/participated at a far-away place.
- In this age of advanced telecommunication technology and the nature of duties in police where day to day working needs quick response from police where Telecom can play vital role. VIP security and L & O are the duties concern us on priority.

- Telecommunication training both theoretical and practical should be imparted to all G.O's of police department.
- All police personnel must be able to handle hand held wireless sets.
- It may be a new subject for many officers. Instead of imparting perfunctory knowledge, some dedicated trainings should be organized to acquaint the trainee adequately on this subject.
- At present training on HF/VHF, RT equipment is given, which is quite obsolete.

Research Question ii) what specific topics/subjects matter should be covered in telecommunication training for police personnel in consonance with present day requirements.

- To have full knowledge of all the equipment and their use.
- General description and telecommunication facilities available.
- Need for communications.
- Basic mechanism of important communication used in Police department equipment.
- Principles of various radio-telecom system.
- Basic knowledge of telecommunication system in police for lower ranks.
- Advance knowledge of telecommunication systems.
- Some understanding of how they work.
- Modern police telecommunication systems/networks.
- Latest telecommunication know how about equipment handling and operations
- Latest advancements in telecom technology
- Updating their knowledge skills about latest gadgets and techniques in this field.
- Communication systems.
- Working knowledge in respect of the equipment and ability to understand minor repair works if needed.
- To have practical training in order to handle the equipments/communication – system.
- Operating fax machine and telex machine.

- To minimize misuse and peruse of network.
- Utilization of modern instruments and knowledge thereof
- How to integrate them with existing communication system
- More information on H.F communication.
- Proper communication over VHF/UHF equipment.
- Usages in different channels.
- Computer data feeding.
- How to intercept messages.
- Handling of electronic gadgets.
- Use of communication in crowd control, processions, VIP security and natural calamities.
- Handling of computer communication for getting information without any delay on crime and criminals.
- Functioning of mobile phones and procedure and trace the anonymous and pseudonymous names. (calls)
- V-SAT, VOICE LINE.
- Computer, information technology.
- Satellite communication.
- Tapping devices.
- Pager.
- Linking the VHF UHF and MW with DOT.
- Cellular phones and their basic theory.
- Computer Communication System.
- Operation of control room.
- V-SAT equipment (outdoor/indoor)
- Communication systems on ISDN.
- Working of internet/e-mail and are the types of manipulations possible which may lead to serious offences in the future.
- Lecture cum demonstration method on the present equipments being used and the equipment that are likely to be procured in near future for the organization.

- How to use GPS
- Radio trunking system
- Introduction to electronic gadgets.
- Bugging devices, location of transmitting sources, dealing with various cells
- Cipher system, coding, encryption. .Coding messages
- Maintenance of communication security . .Voice scrambler.
- Coding/decoding messages.
- Optimization of instruments with conditions like no power supply and terrain
- Change of Batteries
- Interception, diversification of signals.
- Monitoring operation can be taught to some specialized group.
- Monitoring of enemies communications.
- Interception of enemy communication specially W. T . .Effects of jamming.
- Monitoring and tapping of Voice Communication.
- Pol-net
- Introduction to police telecom
- Wireless communication, manning Police Radio Control Room including needs, managing telephone exchange
- Police control room/CAD system
- Modem police control room including vehicle tracking system for patrol cars
- Basic concept of networking/internet/email workings
- Metal detector Jammu, I.E.D's etc.
- How to write message for wireless communication.
- Computer networking of radio network.
- How to detect and locate exact place from where communications are made.
- Basic knowledge about communication systems and technologies .
- Effective use of channels.

- Regular training inputs and interaction with technical staff.
- Radio discipline, to be short precise and full of content message
- Listen properly before replying or answering.
- Training how to get away with frequency jam.
- Sending message with the wireless system.
- Knowledge of computer in connection to telecom.
- Introduction to electronic gadgets.
- Cyber crime. Working of internet/e-mail and are the types of manipulations possible which may lead to serious offences in the future.
- Bugging devices and their use.
- Case studies where crimes are detected through efficient functioning of wireless and electronic gadgets.

Research question iii) In which specific task of the Police Personnel are to be rained in telecommunication to cope up with the modus operandi of Criminals?

- Brief history of the devices
- Quick disposal of message in case of emergency.
- Proper utilization of radio wireless set. .
- Mobile cellular phones operations.
- Cell phones.
- They should be trained in basic telecommunication and updating their knowledge on the communication equipment being used by the criminals
- Teaching code words or short words for quick and easy conversation accused is within the reach, so that they may not understand the police conversations.
- Potential of misuse of telecommunication by criminals.
- Individual guided practice and exercise on the use of the equipments.
- Specially in wireless sets handlings-
- Radio procedure, handling and operating of HF/VHF sets
- WLL/wireless cell phone technology.
- Knowledge regarding repeaters.

- Wireless net work of the country/town/adjourning town(s).
- Sending photographs on FAX/internet/other available channel.
- Handling of the Communication equipment properly.
- Receiving and transmitting the information effectively.
- Fast and effective communication.
- Knowledge of communication related to investigation
- Intercepting communication between criminals
- How to trap the call-number from investigation point of view.
- Knowledge of tapping the communications and important wireless network.
- Identification of call number of telephone from where call has been made.
- Monitoring cell phones, telephones, pagers and Fax.
- Locating or tracing of wireless messages from naxlites.
- Patrolling, tracking criminals and gangs, on static observation/point, in combing operations.
- Monitoring of other criminals communication system. Interception of criminals telecommunications.
- Receiving and transmitting messages, monitoring calls.
- Handling of electronic gadgets, interception, to counter interception of our telecommunication.
- Asking and furnishing details of crime and criminals information.
- Online system to get information of m.o of criminals from computers wing in the head quarters.
- Data collection, storing and retrieval.
- Use of internet to handle cyber crime.
- Computerization of criminal and their back ground to barcode available for other P.S.
- Computer knowledge to be updated.
- How to make best use of available hardware/software.

- Computer training along with communication training (mobile communication).
- Operating computers.
- GPS and their relevance in locating such hiding groups and trekking of such elements.
- How to jam communications that are unauthorized.
- Police should be trained along with Telephone exchange people or a core group for such in emergencies at state level.
- A reverse frequency channel facility for the use of police station, P.C and P.S.
- One or more “monitoring controls” can be used for watching and handling the information between the officers and men, while combing-up operations or chasing the accused
- Modern telecommunication facilities available to police.
- Efficient command control and operations room.
- Close circuit TV.
- To control procession.
- VIP/VVIP security.
- Communication during natural calamity.
- Different aspects of computer working and its use for teleco mmunications.
- Use of scramblers.
- Communication security.
- Coding and decoding of messages.
- Radio procedure.
- Basic concept of networking and working of Internet/E -mails.
- Internet monitoring.
- Advance telecom equipment.
- Training to identify the voice of criminals by using Speech Recognition System.
- Basic training in handling VHF sets and Fax.

- Use of communication in Counter – insurgency operation.
- Refreshing and updating of Telecommunication after an interval of one year.

Research Question iv) What kind of training (nature and duration) do you recommend for police personnel on various levels of hierarchy?

A) Police Constables/Head Constables

- Operation and maintenance of wireless network for 4 weeks.
- 10 periods
- Operation of wireless set
- Basic training to P.C's for handling electronic gadgets 7 weeks system course or a modules may be added in the basic training. The in-service training will be given continuously for updating their knowledge
- Maintenance of secrecy and operation
- Handling of sets - 2 hours.
- To handle and maintain different equipment one month
- 6 months
- Basic principles of VHF sets
- Familiarization with wireless communication equipments
- Operation of wireless sets and working knowledge of frequencies
- One month
- Handling of sets and methods and ways of passing the messages and use of maps
- 30 days
- Handling of V.H.F and H.F sets for 15 days
- 4 weeks
- Knowledge of basic telecommunications ten days
- Technology adaptation
- Wireless sets

- Field training, handling of arms/legal knowledge should be up -dated
- Field training – arms – and legal knowledge should be updated
- Handling of W.T sets
- 6 months in telecommunication process work.
- Basic knowledge of wireless sets handlings.
- Operational part of the various equipments – 5 weeks
- yes for 3 days.
- Proper communication, talking maintenance of equipment like batteries, chargers etc., attending minor repairs. For 15 days
- Basic knowledge of electro-magnetic waves, H.F.,V.H.F.,U.H.F.,M.W., handling and maintaining the equipments, knowledge of various function in a single set duration ONE MONTH
- Basic knowledge of VHF.
- Computers, cell phones etc for 12 weeks during probation
- Use of available public telecommunication facilities.
- Police VHF sets.
- PCR communication system and communication security (two weeks course)
- Familiarity with common telecommunication devices.
- Practical training for 60 days.
- Lecture cum handling of equipment for 6 months
- Principles of various radio telecom system.
- Satellite communication/V-Sat/Pol-net, personal mobile commn. System – pagers/cell phones,
- Basic concept of networking.
- Working of internet/e-mail each topic for 5 weeks.
- Police control room/CAD system 3 months
- 21 days.
- 30 days.
- General maintenance of equipment one week

- Handling and operating of HF/VHF/sets for 3 weeks
- Working knowledge of cellular phones, pagers, computers, VHF system and their proper application and use
- Police control room/CAD system, communication security
- Data handling.
- 6 months handling of computers and investigation schools.
- One month for both.
- 30 days.
- Technical training on modern communication equipment.

b) Sub inspectors and Inspectors of Police

- 20 Periods
- Operations of wireless
- CIPHERING and deciphering
- One week course
- Secrecy and operation
- Handling of Tele sets of modern types use and application – 2hours
- Use of computers in investigation for 6 months
- More advanced course including legal dimensions – 6 weeks
- 8 weeks.
- Procedure in communication using VHF
- Basic technical knowledge about wireless and other communication systems.
- Other short or capsule courses once in every 5 years by updating the latest developments
- Operation of radio sets, deciphering the cyber crime
- Two weeks
- Identifying communication needs of the area under responsibility

- 15 days
- Handling of V.H.F and H.F sets for one week
- 2 weeks
- Knowledge of basic telecommunications ten days
- Technology adaptation
- Wireless sets/mobile phones/ satellite phones
- Field training, computers, handling of arms/legal knowledge should be up - dated
- Computers knowledge – management knowledge should be updated
- Intercepting of criminals telecommunication
- 3 months
- Handling and communication basic knowledge of various types of W.T sets
- Maintenance and operational – 4 weeks
- For one week
- Proper communication, talking maintenance of equipment like batteries, chargers etc., attending minor repairs. For 15 days
- Basic and advanced knowledge of telecommunication systems in proper way. Duration TWO MONTHS
- Basic knowledge of VHF computers, cell phones etc for 6 months during probation
- Use with some technical details, course may be of one month duration and refresher courses later
- Handling of the devices, knowledge of working
- Practical training for 30 days operation and handling
- Lecture cum demonstration method followed by practical exercise on the use and handling of equipments for a duration of 45 days for Dy.Suptds and S.P and duration of 4 months for the SIS. And Inspectors
- Use of commn. In crowd control, processions, VIP security and during natural calamities etc. for 1 week

- Radio trunking system for 3 months, working of internet/emails 3 months
- 1 month
- 15 days
- Handling and operating of HF/VHF/sets for 2 weeks
- Working knowledge of cellular phones, pagers, computers, VHF system and their proper application and use
- Use of communication in crowd control procession VIP security and networking elements
- Data manipulations.
- 2 weeks.
- 15 days.
- Signal security.
- Technical training on modern communications equipment.
- Wireless and communication at all lines, intercepting and description of signals.

c) Dy.Supts. of Police.

- 25 Periods
- Call identification
- 3 days complete course on latest development on telecommunication
- Secrecy and operation and how to supervise/monitor
- Use of computers in investigation and for communication for 6 months
- Sophisticated equipment technical as well as legal aspects – 1 month
- 1 month
- Procedure in specking over telephone

- Basic technical knowledge about wireless and other communication systems and other short or capsule courses once in every 5 years by updating the latest developments
- Knowledge of e-mails (full knowledge of computer latest modes of communication skills)
- One week
- Management of existing resources at sub division level collection of requirements and feed back
- One week
- They should be trained in handling with computers as well as H.F and V.H.F sets
- Managerial skills and technology advancements, computers use
- Wireless sets/mobile phones/ satellite phones
- Legal knowledge, management knowledge of computer and field knowledge should be up-dated
- Computers and management knowledge should be updated
- Interception of criminals telecommunication
- 1 month
- Handling and communication basic knowledge of various types of W.T sets
- Maintenance and upkeep of the equipment – 3 weeks
- For one week
- Basic and advanced knowledge of telecommunication systems and witnessing the functions at terminals repeaters and radio stations by spending at least TEN days with both technical and operating staff.
Duration 2 -1/2 MONTHS
- Basic knowledge of VHF computers, cell phones etc for 6 months during probation
- Use with some technical details – one month duration initially and refresher courses later

- Handling knowledge of working, interception latest arrivals
- Practical training – 15 days (operation and handling)
- Direct to home TV and its possible impact and CTV, international police wireless network(Interpol), introduction to electronic gadgets, introduction to amateur radio for 1 week
- Executive commn., System 3 months, introduction to CCTV for 3 months
- 1 month.
- One week
- handling and operating of HF/VHF/sets for 1 weeks
- working knowledge of cellular phones, pagers, computers, VHF system and their proper application and use
- Introduction of electronic gadgets, introduction for CCTV
- Special mike for hand free wireless operation while driving motor cycle.
- Satellite telephone system.
- 6 months about computer, I.T, investigation shells, prevailing trends.
- One week.
- 15 days.
- Safety, repairs and maintainances.
- Some technical training and more on manpower utilization.
- Data feeding.

d) Supdts. Of Police

- 20 Periods
- Operations of wireless
- Ciphering and deciphering
- Cellular phone wireless interfere
- 3 days complete course on latest development on telecommunication
- secrecy operation and how to supervise/monitor

- total over view of telecommunication training, application – 2 hours
- use of computer in investigation and for communication
- use of hi-tech equipments – one week to two weeks
- fifteen days
- operating a fax machine, telex machine
- During every in-service training the latest developments in telecommunication should be taught
- Full knowledge of computer and internet latest modes of communication skills
- One week
- Conceptual and management of resources in communication training of subordinates for optimal utilization how to create a core group at dist.level in cases of threats in telecommunications and tracking of messages. Co-ordination with telephone exchange experts and such investigation core group.
- One week
- they should be trained in handling with computers as well as H.F and V.H.F sets.
- managerial skills latest management concepts technology advancements and computers use
- wireless sets/mobile phones/ satellite phones
- leadership development, man management knowledge of computer and legal knowledge should be up-dated. They should also have field knowledge in crowd management, traffic management and handling of sophisticated communication equipment.
- leadership development, man management knowledge of computer and legal knowledge should be up dated traffic management
- interception of criminals telecommunications and safeguarding own telephones and other equipment from interceptory by criminal s/ others
- 15 days

- basic knowledge of transmission interception and tapping including operation and handling of the telecom equipment will be useful to a great extent
- 2 weeks all the required inputs in procurement handling and upkeep of the equipment
- for one week
- nil
- Basic and advanced knowledge of telecommunications systems and spending time for FAMILIARIZATION with the telecommunication equipments (wireless sets, M.W.Exchange, computers etc) at terminals, repeaters communication centers, supervising the functioning's of telecommunication systems in city and districts and inter-districts and providing facilities to technical staff/operating staff by good running medium vehicles and adding the strength by extra supporting staff and materials to meet out the emergencies, replacements, repairing the equipments with spares(as in police telecommunication branch) establishing "MINI CONTROLS" and "SERVICE POINTS" with mobile maintenance units at needed places and find out the extra-channels for types of uses to have DISTRICT TELECOMMUNICATION easy and free channel spaces for elections, VVIP/VIP visits, functions, conferences, L.&O situation as per the TOPOGRAPHY. Duration: 3 MONTHS
- basic knowledge of VHF computers, cell phones etc for 6 months during probation
- use with some technical details – one month duration initially and refresher courses later
- Handling knowledge latest arrivals and concepts
- Practical training 15 days operation and handling system direct to home TV and its possible impact and CTV, international police wireless network(Interpol), introduction to electronic gadgets, introduction to amateur radio for 1 week

- Use of commn. In crowd control procession, VIP security during natural elements 3 months, introduction to amateur radio 3 months, executive commn., system 3 months
- 1 month
- 5 days
- latest trends in telecommunication department and I. S.D.N. system
- handling and operating of HF/VHF/sets for 1 weeks
- working knowledge of cellular phones, pagers, computers, VHF system and their proper application and use (Guidance of experts from line to line should not be ignored)
- international police wireless, introduction of GPS, working of internet/email, executive common system
- networked environment.
- One week.
- 10 days.
- Signal security/safety, net working mobility of communication.
- Some technical overview of systems
- Some aspects of manpower utilization.
- Detailed aspects of manpower development on modem communication equipment and system.
- Fiber optics and related areas.
- Maintenance of operations and analysis.

CHAPTER - 5

MAIN FINDINGS AND RECOMMENDATIONS

In this Chapter the following aspects are being covered:

- 1 Main findings of Study.
- 2 Recommendations for improving the Telecommunication Training for various ranks of police personnel.
- 3 Conclusion.

5.1. Main Findings of the study:

Following are the main findings of the study:

5.1.1. The Police Officers were found to be satisfied to a little extent with the existing state of Telecommunication training to police personnel in our country. To highlight their views, the investigator quotes a few comments which were offered by the respondents:

- Telecommunication Training should be made compulsory for policemen in our country.
- Practically there is no training facility available for Police Executives.
- With the advent of IT, it is imperative that police personnel in the country should be given adequate training in Telecom and Computers to make themselves more efficient in policing.
- Telecommunication Training for Police personnel in our country is not satisfactory. Police personnel should have the basic knowledge of communication.
- Telecommunication Training is imparted more as a formality to be completed than giving priority to police personnel both by the police training institution and telecommunication trainer.
- More practical oriented training to develop the ability to produce innovative ideas in non-standard situations (emergencies) should be provided.

- Present training is centered only around operating/handling of wireless sets and fax. More equipments should be added as it does not cover other advanced areas in Telecommunication.
- Refresher courses are necessary to cope up with the latest developments in the field of Telecommunication.
- The past experience may not be an indication because we are amidst telecommunication revolution. Therefore, Telecommunication & I.T must for Police ranks.
- Officers are not imparted any telecommunication training. It results in network indiscipline while communicating.
- The exposure to the latest and state of the art equipment plus and latest trends in communication should be given in National Police Academy.
- IPS Officers, who are future decision makers, should be vested with Telecom needs.

5.1.2. About the recent advances in Telecommunication, some of the observations of the Respondents (Senior Police Officers and Technical Experts) focused on coverage of the following aspects in telecommunication training: -

- My bottom line answer is a question "Can any aspect of improvisation and advance in police be neglected work?" If you neglect, the criminals would not. So instead of chasing, be a leader in use of "Technology".
- Satellite communication, V-SAT and Computer aided communication.
- Mobile use of VHF communication.
- Use of Fax.
- Computer Networking and Communication using modem.

- Use of secrecy devices both on telephone line and wireless communication.
- Use of speech scramblers over wireless and phone to maintain complete secrecy of police communication.
- Image transmission and Video Conferencing over a large area.
- Use of Global Positioning System in Policing.
- Use of Cellular Phones.
- Art of monitoring of Wireless Network and also Technology in blocking communication and eaves dropping.
- Surveillance technique in respect of Cellular and Satellite Phone.
- Police computer networking for quick sharing of relevant data.
- Satellite link portable telephone sets for use in natural calamities.
- Early implementation of Pol-net.
- Use of electronic gadgets to collect information.
- Provision of use of CCD/Video Cameras on Cable TV on main junctions and TV Sets at control room in cities for monitoring traffic situations and traffic violations.
- Networking of Police Stations with District Head quarters.
- Use of Multi Channel Voice/Video Recorder at the control room.
- Radio paging system to optimize the use of human resources.

Senior Police Officers and technical experts were of the view that Police should be leader in use of technique.

5.1.3 Comments on Training Inputs:

5.1.3.1 Introduction to Telecommunication

Senior Police Officers and Technical Experts communicated that "Introduction to Telecommunication" was important to a great extent (57.5%) and 17.5% viewed its usefulness to a considerable extent. Almost 75% of them recommended its usefulness.

5.1.3.2. Introduction to Police Telecommunication

Only 2.4% respondents viewed it important to a great extent whereas large number (68.3%) found its importance to a little extent. Therefore, this can be dropped from Training curricula as a separate topic, but can be included in the topic "Introduction to Telecommunication" to have continuity of the subject.

5.1.3.3. Radio Procedure

67.5% viewed its importance either to great extent or to a considerable extent. Hence, this can be retained in that Telecommunication Training curriculum.

5.1.3.4. Principles of Various Radio Telecommunication Systems

84.6% Senior Police Officers & Technical experts found this topic useful to a considerable extent, hence, it could be included in the curriculum.

5.1.3.5. Satellite Communication V-SAT / POLNET

52.5% Respondents viewed the importance of the above topic to police to a great extent, whereas 22.5% viewed its importance to a considerable extent. It may be covered in the curricula.

5.1.3.6. Personal Mobile Communication System, Pagers/Cell Phones

94.8% Respondents found it useful either to a great extent or to a considerable extent or some extent. It is recommended for coverage.

5.1.3.7. Basic concept of Networking

29.3%, 34.1% and 24.4% respondents found its utility to great extent, considerable extent and some extent respectively. 87.8% expressed their views for inclusion of this topic in the proposed curricula

5.1.3.8. Working of Internet and E-mail

51.2% respondents were of the opinion regarding its importance as to a great extent, 22% viewed it to considerable extent and 22% to a some extent. Hence, 95.2% recommends its inclusion as training input.

5.1.3.9. Executive Communication System (PC to PC, FAX etc)

33.3% respondents viewed its utility to a great extent, 28.2% to a considerable extent, and 38.5% to some extent; all respondents graded its importance to a higher level(100%). Hence, recommended for coverage.

5.1.3.10. Radio Telephonic Procedure

97.4% graded its importance either to a great extent, (28.9%) to considerable extent (31.6.%) or to some extent 36.8% . Hence, th is may be included as one of the training of telecom input.

5.1.3.11. Use of Communication in Crowd control, processions, VIP Securities and Natural Calamities etc.

55.5% respondents viewed the importance of above topic to a great extent, 32.5% to a considerable extent whereas 7.5% to some extent. Hence, 95.5% respondents recommended its inclusion in telecommunication curricula.

5.1.3.12 Radio Trunking System

As per the views of the respondents the importance of the subject was graded as 30.8% to a great extent, 15.4% to a considerable extent and 35.9% to some extent. Over and above the majority of respondents perceived the usefulness of the topic to considerable extent. Hence, recommended for inclusion as telecom training input.

5.1.3.13. Police control room and Computer aided dispatch system

As per the views of respondents 53.8% graded it to great extent, 28.2% to considerable extent, 12.8% viewed to some extent. The overall grading is to a great extent. Therefore, it is highly recommended as one of the training inputs.

5.1.3.14. Communication Security

The overall grading of the respondents is to a great extent and the perception of the respondents are 52.5%, 27.5%, 17.5%, to a great extent, to a considerable extent, and to a some extent respectively. In the view of majority of respondents (97.5%) it should be covered in the curricula.

5.1.3.15. Introduction to Global Positioning System

The topic was graded for its usefulness percentage wise response to a great extent 30.6% and to considerable extent 25%, and to some extent 33.3%. Hence, it could be included in the training curricula.

5.1.3.16. Introduction to GIS

25.7% Senior Police Officers and Technical Experts agreed to a great extent and equal percentage to a considerable extent, whereas 29.5% to some extent. Total 80.9% agreed for its inclusion. Therefore, recommended for inclusion in the curricula.

5.1.3.17. Introduction to CCTV

85.8% respondents agreed to the importance of the GIS in police training. Therefore, it is recommended for coverage.

5.1.3.18. DTH and its possible impact on Cable T.V

71.8% police officers and technical experts were of the opinion that imparting the knowledge of the subject is useful to a considerable extent. Therefore, this may be included in the curriculum.

5.1.3.19. International Police Wireless Network (INTERPOL)

26.2% respondents viewed that the knowledge of International Police Wireless Network (INTERPOL) is to a great extent and 35.8% viewed to a considerable extent, 22.5% viewed to some extent. Overall view was that the topic is important to police to a considerable extent. Hence, recommended for inclusion in the training curriculum.

5.1.3.20. Introduction to Electronic Gadgets

36.6% respondents viewed that this topic is important for police to a great extent, 26.8% were of the opinion that it is useful to a considerable extent whereas for 24.4% this was important to some extent. Hence, overall usefulness of this topic was to a great extent and may be included as training inputs.

5.1.3.21. Introduction to Amateur Radio

The 5.9% respondents viewed its importance to a great extent, 23.5% to a considerable extent, 35.3% to some extent. Hence importance of topic in police training is graded as to some extent and may be included for training.

5.1.3.22. Secret Communication – Cipher System – Scramblers

52.5% viewed the importance of the above topic to police to a great extent, whereas 22.5% viewed its importance to a considerable extent. Therefore, it may be covered in the training curricula.

5.2. Following areas require training interventions in terms of priority as under:

- Use of communication in crowd control, processions, VIP Security & during natural calamities etc.
- Police Control Room/CAD system.
- Introduction to Police Telecom.
- Working of Internet/e-mail.
- Communication security.
- International Police Wireless Network (INTERPOL).
- Satellite Communication/V-Sat/Pol-net.
- Secret Communication – Cipher System – Scramblers.
- Executive Communication system (PC to PC), Fax.
- Introduction to Electronic Gadgets.
- Basic concept of networking.
- Personal Mobile Communication System pagers/cell phones.
- Radio procedure.
- Introduction to Telecom.
- Principles of various Radio Telecom Systems.
- Introduction to GIS.
- Radio Telephony procedure.

- Introduction to CCTV.
- Radio Trunking System.
- Introduction to Amateur Radio.
- Direct to Home TV and its possible impact and CTV.

5.3. Following methods have been graded as 'excellent', in order of priority for imparting training in the telecommunication to the police executives.

- Lecture cum demonstration method
- Simulated exercises on Telecom
- Films on Telecommunication followed by discussions
- Field visit to Telecom centre

5.3.1. They were of the opinion that the following methods would not be suitable for imparting training in telecommunication system .

- Individual guided practice
- Case studies on Telecom
- Group discussion
- Lecture Method

5.3.2. The respondents graded, as per importance the training aids for effective training in telecommunication as under:

- Training through equipment like HF, VHF, GPS, FAX, Modem etc.
- Through Computer presentations (PowerPoint)

5.3.3. Following training materials (Books, Periodicals, Précis etc.) for Telecommunication training were recommended by the respondents:

- Use of Précis and Periodicals would be best suited for Telecom training of Police executives along

with opportunity to physically operate Telecom equipment. Initially for basic knowledge books are very essential and periodicals are required for updating knowledge in a particular field.

- Generate interest by depicting some hi-tech fantasy's kindle interest and provide platform to enable them to understand the new happening in Telecom field to keep themselves abreast with the latest. Also provide understanding they should not feel depressed in a typical bureaucratic set up, he can use whatever little of his advanced knowledge while on job because little use is better rather than no use.
- Besides books, periodicals, précis the user manual of the equipment are the best materials and can be utilized during training.
- Lecture and practicals along with books.
- Actual use of equipment and demonstrations.
- Provision of brief relevant reading material in the form of précis.
- A précis on course topics would be helpful for trainee to learn properly and to refer in future for guidance.
- The books like basic concept on Radio Procedure, Basic Electronics, Basic Concept of Radio Wave propagation, Radio Telephonic procedure, Communication Security, Data Voice/image communication and periodicals like electronics for you Telematics India, Computer Today are useful.
- Précis related to the subject should be produced and distributed and they should be encouraged to study latest periodicals on telecom, which are simple and easy to comprehend and update their knowledge about developments' in the field of telecommunication. Handouts should cover only the related information.

5.4. In an efforts to know any other comments of the respondents on Telecommunication Training to Police Executives the major response s were as under:

- Telecommunication system all over the world left us behind to such an extent that one feels he is groping in the darkness. Computer, to most of us look like an alien instrument. It is time that all of us realize the importance of Communication and Computer, which is absolutely reliable. Older generation communication systems like HF, VHF, UHF we should add Internet, Fax and Cellular Phones as fast as possible. Computers are becoming user-friendly day-by-day with the development of oral software. The training should be made compulsory for all new inductees to all Police Service.
- Marrying a fast developing technology with inertia bound bureaucracy is the biggest challenge. All cannot do, a few with fire in their heart and brain continue trying, you can only welcome and usher trainees to a technological ambience. There is no royal path to enrich. So, keep on experimenting these are matters of nuts and bolts. And should be made flexible, depending on the circumstances one may consider even dividing the batch into 3 to 4 groups the depending on their exposure and interest in the subject. Then only the classes would be interesting and productive.
- Basic concept of various Communication types (HF, VHF, UHF Microwave) should be clarified with practical examples and also functioning DOT/VSNL/MTNL should be explained.
- The telecommunication and computerization should be brought together under one unit to ensure linkages for better understanding.

- There is a need to break the barrier (specialized people with a specialized job) and everyone should be able to use equipment of telecommunication in normal police duties. There should be a recognized and well-equipped telecom training institution in the each state police organization for regular refresher courses on telecom, which would also be cost effective.
- In the training, the subjects like radio frequency regulation etc. should also be clarified through experts. The basic element of telecommunication should be imparted to all police personnel during their basic training, as it has become necessary during their day-to-day/routine duties. They are required to communicate happenings in their locality within a quickest possible time.
- Telecommunication should be part of induction training and periodical refresher courses are organized for non-technical staff at regular intervals of every five years.
- The course of study needs periodic revision keeping in view of recent developments in the field of communication.
- Training of Trainers course to be introduced to telecommunications trainers also.
- The telecom training imparted to Police Officers should be standardized throughout the country so that the officer can maintain his level of efficiency and be equally useful anywhere and everywhere.
- Each IPS Officer Trainees in NPA should be issued a walkie-talkie set for their use throughout their training or at least for a month and their conversation should be monitored to inculcate discipline.
- Police Inspectors and Deputy Superintendent of Police need more training.

- Telecommunication is a command function and it is very essential for effective control and passing on orders and getting feedback from subordinate police officers.
- Police Executives should be given practical training on handling convoy of VIP communication.
- India is a poor country and needs optimum utilization of its communication equipment by various public services. The department of telecom charges market rates to other government using its facilities forcing the police, railways, defence and other department to develop their own infrastructure, which duplicate hardware and remain under utilized. Therefore, telecom department should make available dedicated channels to various government agencies. They should be charged on actual cost and various departments should utilize their dedicated channels by making them secure through their own staff. This would prevent duplication of the infrastructure.

5.5. To elicit the views of Supdt. Of Police on Telecommunication training in police in India, a questionnaire(chapter 4) was circulated to all Supdt. Of Police in Rajasthan, Tamilnadu, Delhi, Jammu & Kashmir and other officers visiting NPA for attending various in-service courses from all over the country. The findings based on their observations on various questions are as follows:

In response to a question about to what extent they feel that the telecommunication training of police personnel is effective (the results are shown in Table No.1 of Chapter 4). Out of the total respondents 18.2% felt that telecommunication training of police personnel was fully effective and 22.3% of them felt it to be effective to a considerable extent, 18.2% of them felt it to be effective to some extent and 11.3% of them found it to be effective to a little extent. The overall response was that telecom training to police personnel is effective to a considerable extent. In this context, it would be pertinent to mention few of their comments on telecommunication training for police personnel in India.

- There is no systematic provision for telecom training for DSP and above level officers in U.P. All are not given telecommunication training particularly DSP's and above.
- If the police personnel are given communication and computer training, it would be very useful for the department as passing of information's/orders among the police station officers, patrol vehicles, strategic points, check posts are possible and would reduce response time and increase efficiency.
- VVIP and VIP movements, crowd/traffic control, operations on clearance or roots are more effectively done and supervised if Radio Training is given to police personnel.
- In the age of advanced telecommunication technology and the nature of duties in police where day-to-day working needs quick response from police, difficult law and order scenario with increasing threat to VIP security it is undoubtedly must for all ranks of police.
- There is no training and if there is any that is not sufficient. Instead of imparting perfunctory knowledge some dedicated training should be organized to acquaint the police personnel thoroughly.

5.6. In response to what a specific topics/subject matter should be covered in telecommunication training in police personnel in consonance with present day requirement, the important findings are:

- General description of telecommunication facilities available.
- Need for communication and basic knowledge of telecommunication system in police.
- Should know about handling and effective use of telecom equipment and update their knowledge skills about latest gadgets and techniques.
- To have practical training in order to handle the equipment/communication system effectively.
- Should be able to operate fax and telex machines.

- Should be able to talk and communicate over VHF/UHF equipment and its usages in different channels.
- How to intercept messages and communication security.
- Use of communication in crowd control, processions, VIP security and in natural calamities.
- Handling of computer communication for getting information without any delay on crime and criminals.
- Function of mobile phones and procedure to trace the anonymous and pseudonymous calls and tapping device to tap them.
- Should be able to use communication equipment in police control room and mobile patrolling.
- Working of internet/e-mail and the types of manipulations possible, which may lead to cyber crimes.
- Use of GPS in policing.
- Radio trunking system.
- Bugging devices, location of transmitting sources, location of cells in cell phone, encryption, voice scramblers, use of communication equipment in natural calamities with conditions like no power supply and hostile terrain.
- Monitoring operation can be taught to some specialized group to monitor criminals' communications.
- Effects of jamming and how to avoid it.
- Working of telephone exchange and police control room/CAD system.
- Modern police control room with Vehicle Tracking System.
- Metal detector.
- How to write message for wireless.
- Computer networking through radio.

- Cyber crime.
- Some case studies where crimes are detected through efficient functioning of telecommunications.

5.7. The findings in respect of specific tasks the police personnel are to be trained in telecom to cope up with the modus operandi of the criminals, the important findings are:

- Intercepting communication between criminals/ terrorists over telephone, cell phone and wireless.
- They should be trained in basic telecommunication and also about the equipments being used by the criminals.
- Potential of mis-use of telecommunication by criminals.
- Monitoring of cell phone and fax.
- Knowledge of gadgets related to investigation.
- Tap the line and wireless communication to know the call numbers of the telephone.
- Through the use of GPS tracking of criminals and gangs through observation and watching in combing operations.
- To know interception and counter interception of our telecommunication.
- To know furnishing details of crime and criminals information so as to get information of M.O. of criminals through the help of computers.
- Data collection, storing and retrieval.
- GPS and its relevance in locating such hiding groups and trekking of such elements.
- To stop communication.
- Efficient command, control and operations room.
- Close Circuit TV – Use to monitor remotely.

- Training to identify voice of criminals by using speech recognition system.

5.8. To elicit the valuable views of District Supdt and Senior Supdt. of police on nature and duration of training the findings are quite varied one. Important suggestions for duration of telecommunication training to police constables/head constables are as under:

- Operation and maintenance of wireless network -- Four weeks.
- Handling of electronic gadgets -- Three weeks.
- To handle and maintain different Communication Equipment. -- Four weeks
(One month)
- For all training in telecommunication along with basic course -- Six Months.
- Proper communication, talking, Maintenance of equipment like Batteries, charges etc. -- 15 Days.
- Basic knowledge of electromagnetic Waves, handling and maintaining The equipment, knowledge of Various function in a single set -- One Month.
- PCR communication system and Communication security -- Two weeks.
- Practical training for all subjects -- 60 Days.
- Working of Internet e-mail -- Five weeks.
- Police control room and CAD system -- Three Months.

5.9. Contents and duration of course for Sub Inspectors and Inspectors of Police.

- Handling of telecommunication sets and its use and application, use of computers in investigation and also advance course including legal dimensions. -- 7 ½ Months.

- Knowledge of basic communication and computer.
-- Three Months.
- Basic and advanced knowledge of telecommunication system.
-- Two Months.
- Basic knowledge of wireless, computers, cell phone etc during probation.
-- Six Months.
- Practical training on handling and operation of telecommunication equipment.
-- 15 days.
- Basic and advanced knowledge of telecommunication systems.
-- Two Months.
- Minimum and essential Inputs of telecommunication and IT and refresher courses later.
-- 1 Month.
- The initial course can be of one month duration and special and refresher courses later on selected topics to make them truly professional in the field of policing.

5.10. Findings on Duration of Telecommunication Training for Officer Trainees of the Indian Police Service and Deputy Superintendent of State Police Service are as under:

- Sophisticated technical equipment as well as legal aspects.
-- 1 Month.
- Use of Computers in investigation and for communication
-- 6 Months.
- Maintenance of Communication Security and supervision/monitoring of communication equipment.
-- 1 Month.

- They should be trained in handling with computers as well as walkie-talkies.

-- 4 Weeks.
- Managerial skills, technology advancements, computers and communication its legal knowledge, management knowledge and also interception and analysis of communication of criminals.

-- 1 Month.
- Basic and advance knowledge of telecommunication system of repeaters, radio stations by spending at least 10 days with both technical and operational staff.

-- 2 ½ Months.
- Computer, IT, Investigation and other police related technologies.

-- 6 Months.
- Use of Hi-tech equipments

-- 2 Weeks.
- Operation of Fax Machine

-- 2 hrs.
- Conceptual and management of resources in communication training of subordinates for optimal utilization. How to create a core group in cases of threats in telecommunications and tracking of messages, co-ordination with telephone exchange and such investigation core group. During every in-service training, there should be telecommunication input on the latest developments.

-- 1 Week for basic course.

-- 1 day for in-service course.
- Leadership development, man management, knowledge of computer and legal knowledge should be updated. They should also have field knowledge in crowd management, traffic management through handling of sophisticated communication equipment.

-- 1 Month.
- Interception of criminals, telecommunications and safeguarding own telephones and other equipment from interception by criminals.

-- 20 Days.
- The required inputs in procurement, handling and upkeep of the equipment.

-- 2 Weeks.

- Basic and advanced knowledge of telecommunications systems and spending time for FAMILIARIZATION with the telecommunication equipments (wireless sets, M.W Exchange, computers etc.) at terminals, repeaters communication centers, supervising the functioning's of telecommunication systems in city and districts and inter-districts and providing facilities to technical staff/operating staff by good running medium vehicles and adding the strength by extra supporting staff and materials to meet out the emergencies, replacements, repairing the equipments with spares (as in police telecommunication branch) establishing "MINI CONTROLS" and "SERVICE POINTS" with mobile maintenance units at needed places and find out the extra -channels for types of uses to have DISTRICT TELECOMMUNICATION easy and free channel spaces for elections, VVIP/VIP visits, functions, conferences, L & O situation as per the TOPOGRAPHY.
-- 3 Months.
- Basic knowledge of VHF computers, cell phones etc. during probation.
-- 6 Months.
- Use with some technical details initially and refresher courses later.
-- 1 Month.
- Practical training, operation and handling system direct to home TV and its possible impact and CTV, international police wireless network(Interpol), introduction to electronic gadgets, introduction to amateur radio.
-- 1 Week.
- Use of communication in crowd control procession, VIP security during natural calamities.
-- 3 Months.
- Handling and operating of HF/VHF sets.
-- 1 Week.

5.11. Recommendations:

Throughout the 20th Century, improvements and innovations have been made in police transportation, communications, weaponry, forensics and other areas, but these have scarcely kept pace with the pressures generated by denser urban populations, greater sophistication on the part of criminals, social disturbances, natural calamities and new

types of crime made possible by economic and technological developments especially in the field of Computer and Communication. For example Cyber Crimes and Computer frauds using Telecommunication network fraudulently. All these above factors necessitated for the study and thereby changes/incorporation of following recommendations related to telecommunication training to different ranks of police.

5.11.1. Telecommunication Training for Officer Trainees of the Indian Police Service

The recommendations are being made after thorough analysis of the responses through the Questionnaire related to the Telecommunication and extensive discussion/interaction with Senior Police Officers and Police Telecommunication experts associated with Planning and execution of Police Telecommunication in our country.

5.11.2. The Recommendations cover the following areas of Police Training:

- 1) To ensure the higher level of professional competence.
- 2) To ensure maximum familiarization with present and future communication technologies required for better policing.
- 3) To impart necessary knowledge and skills related to telecommunication for the quick exchange of information thereby equipping them to take appropriate decisions in shortest possible time.
- 4) To stimulate critical and innovative thinking for optimum use of human resource to get maximum results in the quickest way. (Reduced Response time)

5.11.3. The main thrust of the recommendations for all rank of police personnel is towards an enlargement in the content of police training enabling them to deal with law and order and crime prevention by using Telecommunication skills. The IPS Officers occupy middle and senior management positions in the police. They have difficult, challenging and stimulating tasks to perform and provide leadership to the police force. Hence, they are required to have proper professional skills and knowledge. The impact of their knowledge and skills results in an overall improvement in the effectiveness of the force.

5.11.4. The objective of the Telecommunication course is to equip them with all such Telecommunication knowledge and skills so as to prepare them for effective performance of their tasks. These Officers have to be thoroughly trained in the modern techniques of Telecommunication in order to guide and supervise the work of their subordinates.

5.11.5. The IPS Officers undergo a four-month foundation course at the Lal Bahadur Sastry National Academy of Administration (LBSNAA) Mussoorie, where they are given training in operating computers. Therefore, while suggesting the Telecommunication Training Syllabi for IPS OT's, it has been presumed that they have operational knowledge of computer.

5.11.6. The Senior Police Officers graded the following topics extremely important for coverage in telecommunication training:

1. Use of Communication in Crowd Control processions VIP Security and during natural calamities (Mean 4.3).
2. Police Control Room and Computer Aided dispatch system (Mean 4.3).
3. Communication Security (Mean 4.275).
4. Introduction to Telecommunication (Mean 4.25).
5. Working of Internet and E-mail (Mean 4.171).
6. Personal Mobile Communication System (Pagers, Cell phones) (Mean 4.103).
7. Satellite Communication/V-SAT/Pol-Net (Mean 4.075).
8. Radio Procedure (Mean 3.850).
9. Introduction to Electronic Gadgets (Mean 3.829).
10. Introduction to Global Positioning System (Mean 3.795).
11. Introduction to CCTV (Mean 3.737).

5.11.7. From Table 3 of Chapter 3 relating to training and non training requirements, it is amply evident that following areas require training interventions in terms of priority:

In order to have ease of teaching and continuity the entire chapters arranged in a logical sequence as under:

1. Introduction to Telecom
2. Introduction to Police Telecom
3. Radio Procedure
4. Principles of various Radio Telecom Systems.
5. Satellite Communication/V-Sat/Pol-net.
6. Personal Mobile Commn. System Pagers/Cell Phones.
7. Basic concept of Networking.

8. Working of INTERNET/E-MAIL.
9. Executive Commn. System (PC to PC), FAX.
10. Radio Telephony Procedure
11. Use of Commn. In crowd control, processions, VIP Security & during natural calamities etc.
12. Radio Trunking System
13. Police Control Room/CAD System
14. Commn. Security
15. Introduction to Global Positioning System
16. Introduction to GIS.
17. Introduction to CCTV
18. Direct to Home TV and its possible impact & CTV
19. International Police Wireless Network (INTERPOL)
20. Introduction to Electronic Gadgets.
21. Introduction to Amateur Radio.
22. Secret Communication – Cipher System – Scramblers.

The details of the contents to be included under various topics are enclosed as appendix I.

5.11.8. SUGGESTED SYLLABI OF TELECOMMUNICATION FOR STATE POLICE OFFICERS

The State Police Officers who do not have computer literacy during their foundational course it is suggested that they should undergo Operational Training in Computers. For this, it is suggested that they should be given the following inputs before attending Telecommunication Training Programme:

- | | |
|--|----------------|
| ➤ Introduction (introduction should cover (Topics as per Annexure 'A') | 4 Sessions. |
| ➤ MS-Office 2000 | |
| a) MS Word 2000 (Topics as per Annexure 'B') | 4 Sessions. |
| b) MS Excel 2000 (Topics as per Annexure 'C') | -- 6 Sessions. |
| c) MS PowerPoint 2000 (Topics as per Annexure 'D') | -- 4 Sessions. |
| ➤ Internet (Topics as per Annexure 'E') | -- 3 Sessions. |

The details of contents with duration to be included under various topics are enclosed as Annexure ABCD and E of Computer Literacy for D.SPs.

5.11.9. As State Police Officers (Dy.S.Ps) has to discharge more or less same function, therefore, the same type (barring few topics) of Telecommunication Training as suggested in the case of IPS Officer Trainees is as under:

The details of contents to be included under various topics are enclosed as appendix II.

1. Introduction to Telecom and State Police Telecom
2. Radio Procedure
3. Principles of various Radio Telecom Systems.
4. Satellite Communication/V-Sat/Pol-net.
5. Personal Mobile Communication System Pagers/Cell Phones.
6. Basic concept of Networking.
7. Working of INTERNET/E-MAIL.
8. Executive Commn. System (PC to PC), FAX.
9. Radio Telephony Procedure
10. Use of Commn. In crowd control, processions, VIP Security & during natural calamities etc.
11. Radio Trunking System
12. Police Control Room/CAD System
13. Commn. Security
14. Introduction to Global Positioning System
15. Introduction to GIS.
16. Introduction to CCTV
17. Direct to Home TV and its possible impact & CTV
18. Introduction to Electronic Gadgets.
19. Introduction to Amateur Radio and INTERPOL.
20. Secret Communication – Cipher System – Scramblers.

5.11.10 SYLLABI OF TELECOMMUNICATION TRAINING FOR SUB-INSPECTOR AND INSPECTOR.

The Post of Sub-Inspector is the most important functional area in the police hierarchy. Most of them are recruited directly and require extensive training inputs in various skills of policing including telecommunication. After completion of training they are made In-charge of the Police Station and also work as main Investigating Officer. They have enormous powers and responsibilities to perform. They are the king pin in the Police Administration and comes into continuous contact with public. They are the first level of Police Supervisor and the Leader in the set-up of Constables and Head Constables.

Therefore, Sub-Inspector has to be professionally competent hence the need of extensive training in all aspects of policing like Legal, Practical, Scientific Aids and other skills in Investigations, Gathering of Intelligence, Adequate knowledge of Forensic Science, Use of Computers and Communication etc. In this area of Law and Order he should be trained in Crowd Control, Regulation of Fairs and Festivals, Large Meeting and Processions. He is required to be prompt

and effective in action. In the management of above events a skill like effective use of telecommunication comes very handy and gives aided advantage to them. They have to be periodically brought upto date in the use of various scientific gadgets and communication equipment to develop his skills. Refresher courses are essential to update their knowledge in various fields.

To gave computer literacy for newly recrited Sub-Insectors sot hey can understand comfortably the telecom Course suggested below at Appendix III. It is recommended for them to undergo computer literacy course prior to commencement of Tele Communication Course. The Course contents, objective and course contents in detail are disclosed at Annexure ABCD and E of computer Literacy for Sub-Inspector.

The telecommunication syllabi recommended for directly recruited Sub Inspector are as under. The details of the contents to be included in the various topics are enclosed as appendix III:

1. Introduction to Telecom and State Police Telecom
2. Radio Procedure
3. Principles of various Radio Telecom Systems.
4. Satellite Communication/V-Sat/Pol-net.
5. Personal Mobile Commn. System Pagers/Cell Phones.
6. Basic concept of Networking.
7. Working of INTERNET/E-MAIL.
8. Executive Commn. System (PC to PC), FAX.
9. Radio Telephony Procedure
10. Use of Commn. In crowd control, processions, VIP Security & during natural calamities etc.
11. Radio Trunking System
12. Police Control Room/CAD System
13. Commn. Security
14. Introduction to Global Positioning System
15. Introduction to GIS.
16. Introduction to CCTV
17. Direct to Home TV and its possible impact & CTV
18. Introduction to Electronic Gadgets.
19. Introduction to Amateur Radio and INTERPOL.
20. Secret Communication – Cipher System – Scramblers.

5.11.11. SYLLABI FOR THE RANK OF INSPECTORS:

There is no fresh recruitment for Inspectors in any state as such there is only refresher courses were organized to update their knowledge as per the requirement of their new assignment as Inspector. It is recommended in these Refresher courses inputs on Telecommunication can be introduced to refresh/update their knowledge in the field of Telecommunication. Since the

duration of special courses of this nature varies from 6 weeks to 12 weeks therefore a capsule course on telecommunication inputs for two week is suggested. In this the entire syllabus suggested for the rank of Sub Inspectors can be covered depending on the specific requirement of the state.

5.11.12. SYLLABI FOR THE RANK OF CONSTABLES:

The Police have been a vital element of the welfare of the people, they are required to execute all lawful orders, collect intelligence, prevent the offences, detect them and bring offenders to justice. The constables form large body of police force and it is they who create permanent impact in the minds of the people by their act. Besides their normal duty they are also called upon in a big way to render assistance in cases of disasters like cyclone, earthquakes, train accidents, floods etc. Thus, the constables in India called upon to perform duties at all hours of the day and night and are justifiably called 24 hours duty. To cope up with these multi-farious and multi-faceted duties they are required to develop their skills through training in various fields of policing including telecommunication.

The committee on police training (1972) in his report has given several recommendations in regard to constables. The committee has visualized, the constables as potential investigating officer, who can, with experience, handle investigational work independently and also envisaged further promotions to the rank of ASI and SI. Hence, it is fit to equip them with sufficient insight in the field of Information Technology, Computer and Communication to accept the future challenges is going to face in the country. Also keeping in view the educational qualifications of newly recruited constables the following telecommunication inputs are recommended. To provide computer literacy to directly recruited constables and also to make use of computer for efficient discharge of duties, besides enabling them to understand the Telecommunication course easily, computer literacy programme is recommended. The objective topics, course contents in detail are described at Annexure ABCD and E of Computer Literacy for Constables. The details of the contents to be included in the various topics are enclosed as appendix IV.

- Introduction to District Police Communication
- Working knowledge of wireless set
- Maintenance of batteries
- How to attend Telephone
- How to take messages over phone for future compliance
- Telephone monitoring
- Brief description of Radio Communication

- Brief description of all the communication systems
- Operation of Fax
- How to speak over Radio effectively
- Working of Internet and E-mail
- Use of Communication in crowd control, processions, VIP security.
- Strategies to be adopted in Communication during natural calamities
- Working of Police Control Room and its communication system
- Communication security
- Brief introduction on use of GPS in policing
- Introduction to cable T.V and its legal implications
- Use of Electronic Gadgets for Intelligence gathering and Telephone monitoring.
- Brief introduction on secret communication – scrambler and cipher system.
- Introduction to Amateur Radio and Interpol.

5.11.13 Faculty in Telecommunication

At present most of the faculty members are drawn from subordinate ranks this practice will not yield good results as their standard of education and orientation is used to be very low. With the incoming of highly professional communication systems, a well-informed faculty with sufficient educational standard would be required for imparting telecommunication training. It is therefore recommended that directly recruited DSP's with required scientific background should be inducted as faculty member. One such gazetted post may be created and filled up at all state police academies to deal with the course contents as envisaged in the proposed syllabi.



BIBLIOGRAPHY

- Avate, Subhash and Sharma, Lokendra, *Control Room Management: project report*. Wakefield: Indian Command Course, 1994.
- Berger, David L, *Industrial Security*. London: Butterworths, 1979.
- English, Jack, *Police communication, Publications, and the Use of Personal Radio(Police Training Manual. 5th ed.* London: McGraw Hill, 1986.
- Ganesh, Satish A, *Project Report on Role of Communication Setup in District Policing*. Hyderabad: SVP National Police Academy, 1997.
- Ghosh, S K and Rustamji, K P, *Principles of VIP Security (Vol.II, Sec. B, Part. V of Encyclopaedia of Police in India)* New Delhi: Ashish Publishing House, 1994.
- Gore, M S (Chairman), *Report of the Committee on Police Training*. New Delhi: Govt. of India (Ministry of Home Affairs) .
- Freeman, Roger L, *Telecommunication Transmission Handbook,3rd ed.* New York: John Wiley and Sons, 1991.
- Joshi, C P, *Report on Police Telecommunications in the United States of America*, 1967.
- Joshi, C P, *Some Personal Observations Regarding the Reorganisation of the Communication System for Delhi Police*, 1957.
- Motto, Carmine J, *Under Cover*. New York: Charles C Thomas , 1971.
- Padukone, N S, *Notes on Wireless Training for Executive Police Officers*. Hyderabad: SVP National Police Academy, 1982.
- Radio Procedure for Executive Police Officers*. Hyderabad: SVP National Police Academy, 1978.
- Rapp, Burt, *Deep Cover: police intelligence operations*. Boulder: Paladin Press, 1989.
- Report on Working of City Control Rooms and Standardisation of Requirements of Control Consoles and Other Accessories*. New Delhi: Police Telecommunications, Directorate of Coordination (Police Wireless), 1978.
- Report on City Police Telecommunication Systems and Standardization of Police Control Rooms in India* submitted by the Sub-Committee appointed by the XIV Police Radio Officers' Conference, Calcutta, 1968.

- Rustamji, K F and Venkataraman, B, *Modern Techniques in Policing: report of a study tour*.
- Sen, Sankar and Saxena, A K, *The Handbook for Trainers: practices and innovations*. Hyderabad: SVP National Police Academy, 1994.
- Senapati, P K and Singh, H, *Police Training System in the United Kingdom and India: a comparative study*. Wakefield: Indian Command Course, 1993.
- Tiwari, Vishwa Mohan and Tewari, Rajnikant, *Electronic Warfare: systems and techniques (Chap. 4 of "High-Tech War of Twentieth Century")*. New Delhi: Vikas Publishing House, 1996.
- Tiwari, Vishwa Mohan and Tewari, Rajnikant, *High Technology Systems (Chap. 5 of "High-Tech War of Twentieth Century")*. New Delhi: Vikas Publishing House, 1996.
- Vira, Dharma (Chairman), *Modernisation of Law Enforcement (Chap. 24, Third Report of the National Police Commission)*. New Delhi: Govt. of India, Ministry of Home Affairs, 1980.
- Vira, Dharma (Chairman), *Investigation (Chap. 27, Fourth Report of the National Police Commission)*. New Delhi: Govt. of India, Ministry of Home Affairs, 1980.
- Vira, Dharma (Chairman), *Recruitment of Constables and Sub-Inspectors (Chap. 35, Fifth Report of the National Police Commission)*. New Delhi: Govt. of India, Ministry of Home Affairs, 1980.
- Vira, Dharma (Chairman), *Training of Personnel in the Civil Police in the Rank of Constables, Sub- Inspectors, Inspectors and Deputy Superintendents of Police with focus on implementation of the committee on Police Training's Report, 1973. (Chap. 36, Fifth Report of the National Police Commission)*. New Delhi: Govt. of India, Ministry of Home Affairs, 1980.
- Vira, Dharma (Chairman), *Police Leadership – the Indian Police Service. (Chap. 44, Sixth Report of the National Police Commission)*. New Delhi: Govt. of India, Ministry of Home Affairs, 1980.

PROPOSED TRAINING PROGRAMME ON TELECOM FOR IPS OFFICER TRAINEES

SL. NO.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODOLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT
1.	Introduction to Telecom	<p>Historical background of telecommunication and an overview of all types of telecom systems available in the country</p> <p>- Need of communication, what is communication, types of transmission, familiarization with the commonly used terms in communication e.g. information, message, signal, modulation & demodulation, modem, analog & digital communication system, band width, real time communication, non-real time, store and forward, AMSS, packet switching, protocols, FDM, EDM, data communication, e-mail, voice mail, cell phones, pager.</p>	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	3 periods
2.	Introduction to Police Telecommunication	<p>Communication requirement of Police & Introduction of Inter state, intra state, inter district police networks and its capability, advantage and limitations. Role of DCPW, ISPW, also brief introduction to communication network of CPOs. and introduction to Interpol communication system.</p>	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	2 periods
3.	Radio procedure	<p>Need, definitions- abbreviated address, address section, addressee, call, call sign, cipher, code, code</p>	Lecture-cum-Hands on	Computer with Multi-media	3 periods

		address, cryptogram, crypto center, cryptography, types of radio stations (fixed transportable and mobile), circuit, network, originator, classified/unclassified message, formal message, informal message, need for security classification, security classification (top secret, secret and confidential), mode of dispatch & acknowledgment of classified messages, guiding instructions for originators (duties and responsibilities) in originating classified messages, general instructions on message writing, use of priorities, drafting of radiograms.	experience	projector (or) Transparency & O.H.P.	
4.	Principles of various radio telecommunication systems	Frequency spectrum, frequency based classification of radio waves, basic principle of radio wave propagation, propagation of ground wave, space wave, and sky wave. Communication ranges and techniques for extension of line of sight coverage, repeaters, composition of HF Radio Stations and Network.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	2 periods
5.	Satellite communication/ V-SAT / Polinet	Its advantage, an extension of LOS, Frequency bands, system description, brief introduction to earth segment and space segment, antennas, INMARSAT, Advantage in communication with low orbiting satellite, services available, service provider, applications, satellite phone, V-Sat . The architecture of proposed POLNET based on V-SAT.	Films on Satellite Telecommunication followed by discussion & lecture	Computer with Multi-media projector	4 periods
6.	Personal Mobile communication system	Pagers, Radio Paging concept and system, types of pagers, system connectivity, system configuration, basic concept of radio paging. Cellular Phone : Brief History, basic principle of cellular radio, signaling, hands off procedure, cell splitting, power adjustment, procedures for call set up from cell phone to cell phone and cell phone to fixed phone or vice – versa. Call tracking and tracing.	Films Cellphone Telecommunication Followed by discussion lecture.	Computer with Multi-media projector	3 periods

7.	Basic concept of networking	Understanding computer systems, hardware and software compatibility, network technologies, LAN, WAN, File server, Node, Client-server model, groupware, network protocol, e-fax, star network, bus network, token passing network, technical expertise and insight for planning of computerization.	Film & Lecture Method	Computer with Multi-media projector	3 periods
8.	Working of internet and e-mail	<p>Internet an overview, a brief history of internet, how to use internet, evolution of internet, services available, requirement of the hardware and software and telecommunication link to work with internet, procedure for getting internet connectivity, service provider, different types of connectivity like conventional dialup/shell account, protocol dialup/TCP/IP account, Interactive communication, www Microsoft networking, internet paging, new trends and techniques.</p> <p>E-mail: What is e-mail, how it works, requirement of hardware, software and other, e-mail basics, guidelines in using e-mail, advantages and limitations of e-mail, bounced mail, privacy of e-mail.</p>	Lecture Method supported video film	Computer with Multi-media projector	3 periods
9.	Executive Communication System	<p>PC to PC communication system, software and hardware requirement, how to establish with dial-up and leased lines, its description and working, line modems and printers.</p> <p>Fax: basic principle related to working of the fax, common problems generally encountered during operation and its remedies, how to install and operate the fax with leased lines and dial-up lines also brief introduction to fax monitoring.</p>	Lecture-cum-demonstration Method & Hands on experience	Computer with Multi-media projector	4 periods

10.	Radio telephonic procedure	Need, types of radio telephony communications, precaution required while speaking over a radio phone, (rhythm, speed, volume and pitch) construction of text, construction of calls, method of calling and answering, establishing communication, working with control, transmission of long messages, use of phonetics and clothed/code language, use of scramblers, voicecoders(vocoders), introduction to cipher system, OTLP (One Time Letter Pad),).	Lecture - cu demonstration Method & Hands experience	Computer with Multi-media projector (or) Transparency & O.H.P.	4 periods
11.	Use of communication in crowd control and VIP Security,	Need assessment, planning and deployment of communication facilities (bandobust as per the blue book), method of allotment of staff for 24 hours operation availability of round the clock power and other logistic supports. Provision of wireless at point of arrival, departure, enroot and at meeting places, contact with control room, traffic police, pilot & squad car.	Lecture Method, film field visit.	Computer with Multi-media projector	4 periods
12.	Trunking System	Brief introduction about working and its advantages over existing communication system.	Lecture Method	Computer with Multi-media projector	2 periods
13.	Command and control operations room	Importance of control room in policing: Glimpse of present situation based on some case studies, their limitations, requirement of model police control room, how to establish it, what should be a model police control room, what is response time and how it decides the effectiveness of the police, lay-out of the control room, operation room, conference room, manpower allocations and duties of In charge Officer, Shift In charge, Radio Operator, Mobile Staff, Radio Maintenance Officer & M.T. Working procedure, Control Room and Mobile Units, Display boards, Close liaison with control rooms of emergency services like fire brigade, army, ambulance, civil	Lecture - cu demo Method, film and field visit	Computer with Multi-media projector	4 periods

		defence, port trust, railways, city, transport etc. zonal control rooms, communication and other equipment required at control room like radios, teleprinters, ambulance van with radio, reserve at the control room, grant of special allowances and facilities for control room. A computer aided dispatch system (CAD), VTIS Vehicle Tackling system with GPS for supervision and effective policing.			
14.	Communication Security	Need of communication security, physical security, radio communication security, line communication security, cryptographic security, transmission security, monitoring of communication, use of voice scramblers and secrophones, precautions, breaches – physical & technical.	Lecture Method	Computer with Multi-media projector	2 periods
15.	G.P.S	Global Positioning System: Historical background, introduction, application, configuration, operation, accuracies, vehicle tracking and information system. Use of GPS in patrolling the unknown routes, supervision of patrol vans and foot patrol through GPS.	Lecture Method	Computer with Multi-media projector	2 periods
16.	GIS	Geographic Information system: Basic concept and its applications in Law enforcement like map reading, data collection and storage at PS level etc.	Lecture Method	Computer with Multi-media projector	1 periods
17	CCTV	Close Circuit TV: Basic principles and its uses as an electronic surveillance/monitoring system to monitor remotely any activity /incidence and also various types of CCTV available, wireless and wired.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods
18.	DTH & CTV	Direct To Home and Cable TV: Introduction to Direct to Home and Cable TV, it's working, monitoring of the Cable TV for its overall impact on Law and order. Legal aspect related to	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods

19.	Introduction to Electronic Gadgets	reception and distribution of entertainment channels. Introduction to basics of Tape Recorders, analog and digital, working of normal, mini and micro tape recorders, VCR, Video Camera, Electronic Surveillance System, Bugging and Wire Tapping, classification of surveillance system, bugs, radio bugs, wired bug, tap, compatible receivers, wired mike, telephone tapping also introduction to architecture of telephone exchange.	Lecture-cum-demo Method	Computer with Multi-media projector	6 periods
20	Introduction to amateur radio and INTERPOL communication	What is an Amateur radio? How to become an amateur radio operator?, Ham Radio licensing procedure. The Indian Wireless telegraph Act and Amendments. Introduction to Interpol Communication.	Lecture -cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods

COMPUTER LITERACY FOR D.Y.S.Ps.

ANNEXURE 'A'

INTRODUCTION

OBJECTIVES OF SESSION – I :-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Explain what a Computer is
- List the application of computers
- Explain the data processing cycle
- Describe the concept of information
- List and describe categories of software
- Identify a PC
- Identify a peripherals of PC

OBJECTIVES OF SESSION – II:-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Explain the concept and logical structure of Computer memory and its different units for measurement
- Explain the concept of operating system
- Describe EDP cycle in detail
- Describe the CPU architecture
- Name the categories of operating systems
- Explain the features of Graphical User Interface (GUI) systems.

OBJECTIVES OF SESSION – III: -

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Manage Desktop and arrange Icons and set time
- Work with explorer and create file and folders
- Cut, copy and paste files, find files, and create shortcuts.

- Invoke programmes and applications
- Set wall papers and screen savers
- Shutting down windows

OBJECTIVES OF SESSION – IV: -

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Name the various Hardware components of the computer
- List the functionality of the various input and output devices
- Name the various data storage devices
- Physically identify the parts of a computer
- Connect the various peripherals to make up the computer system
- List the hardware requirements of a typical PC configuration

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODO LOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMM ENTS IF ANY
1.	Introduction to computers – session - I	INTRODUCTION, TO COMPUTERS What is computer, areas of application , commercial application, educational institutions, broadcasting services, study and fun tool, advanced research work, related concepts of computing, data information and processing , data, information, process. how the computer processes , application software, system software, advantages and disadvantages of computers concept of information, categories of software, application software, system software, Classification of PC and, Peripherals of a PC.	Lecture	Computer and multimedia projector (PowerPoint presentation or Through Transparencies & OHPs)	2 period of 40 mts. each	
2.	Memory and operating	Computer memory , Introduction to operating system, classification of operating	Lecture cum	Computer and	2 period of 40 mts. Each	

system Session - II	<p>single user systems, multi user systems, Graphical user interface (GUI) systems some GUI operating systems, basic components of the GUI systems, eg. Desktop, Windows, Menu Bar, Menu, Menu options, Ellipse, Toggle, Save settings on exit, dialogue boxes, list box, text box, radio buttons, control menu..</p> <p>Working with desktop, creating folder, creating shortcuts, creating text files, finding the files, renaming or deleting the file or folder, working with recycle bin, getting help, setting desktop wallpaper, setting screen savers, shutting down.</p>	<p>multimedia projector (PowerPoint presentation or Through Transparencies & OHPs)</p>	<p>3 periods of 40 mts. each</p>	
3. Working with Windows operating system Session - III	<p>Hardware, input devices, {keyboard, mouse, MICER (Magnetic ink corrector reader) BCR (Bar code reader), OCR (Optical corrector recogniser)}, motherboard, the microprocessor, ports (serial and parallel ports) output devices, printers(dot matrix and LAN, Laser, Inkjet, bubble jet printers), The Monitor (Colour & B/W), power supply unit, memory implementation primary memory (RAM, ROM) secondary memory (Hard Disk, the floppy disk), PC configuration.</p>	<p>Computer with Multimedia projector or Through instructions to each and every trainee</p>	<p>3 periods of 40 mts. Each</p>	
4. Computer hardware Session - IV	<p>Hands on experience</p>	<p>Lecture cum demonstration</p>	<p>3 periods of 40 mts. Each</p>	

INTRODUCTION TO MS OFFICE

SESSION – I WORD BASICS - I

OBJECTIVES OF SESSION – ONE ARE-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Edit a Word document using cut, copy, and paste
- Use the various formatting features e.g. modify font, paragraph alignment, indenting and line spacing, drop cap tabs, numbers and bullets
- Create page breaks and section breaks
- Create headers and footers
- Use text and language tools such as Auto correct, auto text, change case, spelling and grammar Thesaurus, find and replace text.

SESSION – II WORD BASICS - II

OBJECTIVES OF SESSION – TWO ARE-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open A word document,
- Move around in Word
- Cut and paste the text
- Modify the text font
- Align the text in the document
- Indent paragraph and modify the line spacing
- Set and modify tabs
- Insert numbers and bullets
- Insert breaks

SESSION – III SOME ADVANCED FEATURES - I

OBJECTIVES OF SESSION – THREE ARE:

AT THE END OF THE SESSION THE TRAINEES SHOULD BE ABLE TO :

- Work in different parts of document simultaneously, using split windows, arrange windows
- Create multiple column documents
- Save and protect documents
- Printing and print options
- Work with tables – create and modify tables, format, add calculations
- Merge documents – creating the main document, data source, and merging the documents

SESSION – IV SOME ADVANCED FEATURES - II

OBJECTIVES OF SESSION – FOUR ARE:

AT THE END OF THE SESSION THE TRAINEES SHOULD BE ABLE TO :

- Split a document into panes
- View two documents at the same time
- Create a multi-column document and save
- Protect documents with password
- Set print option using page set up
- Create tables
- Format text in tables
- Modify table structures
- Change column, cell width and row height
- Add calculation to tables
- Mail merger the documents

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMEN T	COM MEN TS IF ANY
1.	Word basics - I : Session - I	INTRODUCTION, WORD PROCESSORS, CREATING A DOCUMENT, EDITING A DOCUMENT, FORMATTING TEXT AND PARAGRAPHS, modify font, title - letter spacing, paragraph alignment, indenting and line spacing, drop cap, tabs, numbers and bullets, SECTION BREAKS AND PAGE BREAKS, HEADERS AND FOOTERS, LANGUAGE TOOLS AND auto correct, auto text, spelling and Grammar, thesaurus, find and replace text.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	6 periods of 40 mts. Each	
2.	Word basics - II - Session - II	STARTING WORD, CREATING DOCUMENT, opening a word document, CUTTING, COPYING AND PASTING TEXT, MODIFYING FONT, ALIGNING TEXT, INDENTING PARAGRAPHS AND MODIFY LINE SPACING, SETTING AND MODIFYING TABS, INSERTING NUMBERS AND BULLETS IN THE WORD DOCUMENT, inserting bullets INSERTING HEADERS AND FOOTERS TO THE DOCUMENT, CREATING PAGE BREAKS, USING AUTO CORRECT, SETTING AUTO TEXT, SPELLING CHECK AND GRAMMER TOOL, changing default setting, thesaurus, FIND TEXT, find and replace text, CLOSING THE DOCUMENT.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	6 periods of 40 mts. Each	
3.	Advanced features - I : Session - III	INTRODUCTION, VIEWING DOCUMENT WINDOWS, split windows, arranging windows, WORKING WITH COLUMNS, SAVE AND PROTECT DOCUMENTS, PRINTING AND PRINT OPTIONS, WORKING WITH TABLES, creating and modifying the tables, formatting tables, adding calculations, MERGE DOCUMENTS, creating the main documents, creating the_data_source. merging the documents.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	8 periods of 40 mts. Each	

4.	Advanced Features - II : Session - IV	creating the data source, merging the documents. SPLITTING WINDOWS arranging windows, WORKING WITH COLUMNS, SAVING AND PROTECTING THE DOCUMENT , protecting the documents with password, PRINTING DOCUMENTS, CREATING TABLE , adding columns and rows to the table, deleting columns or rows from the table, splitting and merging cells, text alignment within tables, changing text orientation, adding calculations, CREATING MAIN DOCUMENT , creating data source.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	8 periods of 40 mts. Each	
----	--	---	--------------------	--	---------------------------	--

INTRODUCTION TO MS EXCEL

SESSION – I SPREAD SHEET BASIC - I

OBJECTIVES OF SESSION – ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create workbooks and worksheets
- Work with numbers
- Modify the worksheet layout
- Print from worksheets

SESSION – II SPREAD SHEET BASIC - II

OBJECTIVES OF SESSION – TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open a worksheet
- Enter and edit text and numbers
- Select multiple cells
- Write a simple formula
- Use the formula palette
- Write a complex formula
- Fill formulae
- Total columns and rows
- Edit formulae
- Apply format features to numbers
- Format the worksheet by changing column width, row height and inserting and deleting rows, columns and cells also moving and copying cell contents, transferring data between worksheets and workbooks.
- Print the worksheet

SESSION – III MANAGING DATA- I

OBJECTIVES OF SESSION – ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create references of different type
- Use functions
- Use Excel for data base management
- Use data forms

SESSION – IV MANAGING DATA- II

OBJECTIVES OF SESSION – TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Name a range
- Use as names as references
- Use and work with some Excel functions
- Create absolute cell references
- Create mixed cell references
- Use common statistical functions
- Sort data
- Filter data using auto filter, custom filter
- Extract subtotals
- Save custom views
- Use data forms

SESSION – V ENHANCED WORKSHEET FEATURES - I

OBJECTIVES OF THE SUB SESSION ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Use different chart types ----- Pie, Line, Column and Bar, SpECIALITY
- Create various charts, using the chart wizard
- Edit and format charts

- Use Excel's in-built formatting features
- Create styles
- Use conditional formatting
- Create custom format with codes

SESSION --VI ENHANCED WORKSHEET FEATURES - II

OBJECTIVES OF THE SUB SESSION TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create different charts
- Use of chart wizard
- Edit a chart like move, size and print a chart
- Add and delete data series
- Format charts
- Insert and format titles in a chart
- Use auto formats
- Create styles
- Use conditional formatting
- Use cell references in conditions
- Custom formats - like using codes for numbers
- Coding for dates and time and coding for text

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	Spread sheet basic - I : Session - I	INTRODUCTION, WORKBOOKS AND WORKSHEETS, worksheet components, entering and editing data, WORKING WITH NUMBERS, creating and editing formula, formatting numbers, MODIFYING THE WORKSHEET LAYOUT, column width and row, insert and delete columns, rows and cells , moving and copying cell contents,	Hands on computers	Computer with Multimedia projector or Through instructions to each and	6 periods of 40 mts. Each	

2.	Spread sheet basic - II :- Session - II	<p>PRINTING FROM WORKSHEETS, previewing of the layout, changing page and sheet settings, print settings,</p> <p>GETTING STARTED WITH MS EXCEL, CREATING A NEW WORKBOOK, ENTERING TEXT, ENTERING NUMBERS, FORMATTING THE TEXT, increasing the font type, changing the font type, changing the font format, setting alignments of text, SELECTING MULTIPLE CELLS, WRITING SIMPLE FORMULA, WRITING COMPLEX FORMULA, COPYING FORMULAE IN REST OF THE CELLS, HOW TO EDIT FORMULAE, APPLYING FORMATTING FEATURES TO NUMBERS, PREVIEWING THE WORKSHEET, SAVING THE WORKSHEET, FORMATTING THE TEXT, changing the column width, CHANGING THE ROW HEIGHT, INSERTING AND DELETING ROWS, deleting a row, INSERTING AND DELETING COLUMNS, MOVING AND COPYING CELL CONTENTS, TRANSFERRING DATA BETWEEN WORKSHEETS, TRANSFERRING DATE BETWEEN WORKBOOKS, CHECKING SPELLING MISTAKES, PRINTING THE WORKSHEETS, previewing the lay out, changing the page and sheet settings, setting the print area.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	10 periods of 40 mts. Each
3.	Managing data- Session - III	<p>INTRODUCTION, CREATING REFERENCES, cell references, named references, USING FUNCTIONS, financial functions, USING EXCEL FOR DATABASE MANAGEMENT, database concepts, sorting data, filtering data, data forms.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	4 periods of 40 mts. Each

4.	Managing data- Session - IV	<p>START EXCEL AS DONE IN SESSION - I once the Excel worksheet is opened perform the following steps: CREATING A WORKSHEET ON "QUARTERLY SALES FIGURE", RELATIVE REFERENCES, ABSOLUTE REFERENCES, CREATING A RANGE, using define name dialog box, creating names from a row or a column, USING EXCEL FUNCTIONS, SAVING THE WORKSHEET, USING COMMON STATISTICAL FUNCTIONS, PREVIEWING THE WORKSHEET, SAVING THE WORKSHEET, CREATING A WORKSHEET, SORTING DATA, sorting the last name list and then the first name list, sort by city, sort by numeric data, FILTERING DATA, using auto filter, using custom filter, using advanced filters and data forms.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	10 periods of 40 mts. Each	
5.	Enhanced worksheet features - I : Session - V	<p>INTRODUCTION TO CHARTS, parts of a chart, DIFFERENT CHART TYPES, pie chart, line chart, column and bar charts, other charts(special charts), CREATING CHARTS USING THE CHART WIZARD, EDITING AND FORMATTING CHARTS, moving, sizing and printing, adding and deleting data series, formatting charts, USING EXCEL'S INBUILT FORMATTING FEATURES, CREATING STYLES, CONDITIONAL FORMATTING OF CELLS, CREATING CUSTOM FORMATS WITH CODES,</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	6 periods of 40 mts. Each	
6.	Enhanced worksheet features - II : Session - VI	<p>STARING EXCEL, CREATING CHARTS, creating column charts, USING A CHART WIZARD, specialty charts, stock charts, EDITING AND FORMATTING CHARTS, to move a chart, to modify the size of the chart, TO PRINT THE GRAPH, TO ADD DATA SERIES, DELETING DATA SERIES, FORMATTING THE CHARTS, USING THE CHART DIALOGUE BOX, INSERTING AND</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	10 periods of 40 mts. Each	

AN INTRODUCTION TO MS-POWERPOINT

SESSION – I : OBJECTIVES OF SUB -SESSION - ONE

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a presentation slide using :-
 - 1) Auto content wizard
 - 2) Design templates and blank presentations
 - 3) Existing presentations

- Use the different views of a slide: -
 - 1) Normal view
 - 2) Outline view
 - 3) Slide view
 - 4) Slide sorter view

- Work with the text in a slide - Arrange text in different levels,
- Work with the slide master :-
 - 1) Format the slide design
 - 2) Format text in a slide

SESSION – II OBJECTIVES OF SUB-SESSION - TWO

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a blank presentation

- Working with different layout
- Create presentation using Auto Content Wizard
- Design templates
- Work with different views of slide
- Work with slide master
- Format the text on the slide
- View the Slide Master
- Working with slides master
- Modify text

THE FINAL PRESENTATION – I

SESSION – III

OBJECTIVES OF THE SESSION - I:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Modify the visual impact of slides by: -
 - 1) Adding objects
 - 2) Creating graphical bullets
 - 3) Adding transitions and animations
- Make handouts and notes
- Print in power point
- Give the final touches to the presentation
 - 1) Set slide timings
 - 2) Customizing
 - 3) Recording narration
 - 4) Drawings on slides

THE FINAL PRESENTATION – II

SESSION – IV

OBJECTIVES OF THE SESSION - II:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Make a handout
- Make notes
- Print slides
- Set slide timings
- Save presentation
- Set the transitions
- Set the animation
- Set the rehearsal time
- Run the presentation

SL.NO	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	An introduction to PowerPoint – I – session – I	INTRODUCTION , What is PowerPoint, presentation basics, CREATING A PRESENTATION SLIDE , the auto content wizard, design templates and blank presentations, using existing slide, USING THE DIFFERENT VIEWS OF A SLIDE , normal view, outline view, slide view, slide sorter view, WORKING WITH THE TEXT IN A SLIDE , arranging text in different levels, WORK WITH THE SLIDE MASTER , formatting the slide design,	Lecture cum demonstration	Computer with Multimedia projector or transparencies through OHP	3 periods of 40 mts. Each	

2	An introduction to PowerPoint –II – session – II	formatting text in slides. STARTING POWERPOINT, CREATING PRESENTATION USING BLANK PRESENTATION, saving the presentation, CREATING A PRESENTATION USING AUTO CONTENT WIZARD, USING DESIGN TEMPLATES, DIFFERENT VIEWS OF SLIDE, VIEWING SLIDE MASTER, customizing background of slide master, modify text, adding footer to slide.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	6 periods of 40 mts. Each	
3	The Final Presentation – I : Session – III	INTRODUCTION, MODIFYING THE IMPACT OF SLIDES, adding objects, creating graphical bullets, adding transitions and animations, MAKING HANDOUTS AND NOTES, PRINTING IN POWERPOINT, GIVING THE FINAL TOUCH, setting the slide timings, recording narration, drawing on slides, customizing a presentation.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	8 periods of 40 mts. Each	
4	The Final Presentation – II : Session – IV	Making handouts, making notes, PRINTING SLIDES, SETTING THE SLIDE TIMINGS, DRAWING ON SLIDES, CUSTOMIZING A PRESENTATION, WORKING WITH GRAPHICS, INSERT OBJECTS AND GRAPHICS, ADDING TRANSITION TO THE SLIDE, ADDING SLIDE ANIMATION, MODIFY SLIDE BACKGROUND COLOUR AND FILL PATTERN, SAVING PRESENTATION.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	8 periods of 40 mts. Each	

INTRODUCTION TO THE INTERNET

SESSION – I : OBJECTIVES OF SESSION

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Define what is an Internet
- Define the application area's of the Internet
- Explain what is world wide web and define its working
- Explain what is file transfer protocol (FTP)
- Use e-mail - The Internet as a postman
- Understand the requirements for Internet connection

SESSION – II OFFICE 2000 AND INTERNET - I

OBJECTIVES:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a web page in Word
- Create a web page in Excel
- Create an Online presentation

SESSION – III OFFICE 2000 AND INTERNET - II

OBJECTIVES:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open Web page wizard fore creating web pages in Word

- Give a title and location of the Web page
- Select the navigation type for the page
- Add a new page to the existing page
- Rename the pages and change its relative order
- Apply themes to the Web Page
- Insert hyperlinks
- Send e-mail using Word 2000 and Outlook Express
- Publish Excel documents on the Web
- Create Online presentation with PowerPoint

SL.NO	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	An introduction to the Internet : Session - I	INTRODUCTION, APPLICATION AREAS OF INTERNET, THE WORLD WIDE WEB (www), how does the www work, FILE TRANSFER PROTOCOL, E-MAIL -- THE INTERNET AS A POSTMAN, the e-mail address, advantages and disadvantages of e-mail, CONNECTING THE PIECES TOGETHER (SUMMARY OF INTERNET), tcp/ip, internet service provider, internet addresses, REQUIREMENTS OF AN INTERNET CONNECTION, computers, modems..	Lecture cum demonstration	Computer with Multimedia projector or Through transparencies and OHP	4 periods of 40 mts. Each	
2.	Office 2000 and Internet - I : Session - II	INTRODUCTION, USING WORD TO CREATE WEB PAGES AND E-MAIL MESSAGES, creating web pages, creating and sending e-mail messages in Word, CREATING WEB PAGES WITH EXCEL, CREATING ONLINE PRESENTATION WITH POWERPOINT, WHAT'S NEW IN OFFICE 2000, cutting and pasting multiple items, personalized menu and tool bars,	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	8 periods of 40 mts. Each	

3	Office 2000 and Internet - II: Session - III	improved ClipArt gallery, world wide usage, integration with the web. OPENING THE WEB PAGE WIZARD, GIVING TITLE AND SAVING LOCATION OF THE WEB PAGE, SELECTING THE NAVIGATION TYPE, ADDING PAGES, adding a blank page to your web, adding a template page, adding existing document, ORGANIZING THE LINKS, APPLYING THEMES, END OF WEB PAGE WIZARD, EXPLORING YOUR WEB, INSERTING HYPERLINK, ADDING CONTENTS TO A WEB PAGE, SAVING A WEB PAGE, REOPENING OF A WEB PAGE, INSERTING GRAPHICS TO THE WEB PAGE, EDITING THE INSERTED PHOTOGRAPH, SENDING E-MAIL MESSAGES USING WORD, SENDING E-MAILS, opening Outlook Express, Composing a message, writing and sending the e-mail, sending a document through e-mail, PUBLISHING EXCEL DOCUMENTS ON THE WEB, saving and publishing non interactive HTML document, saving and publishing interactive HTML document, CREATING ONLINE PRESENTATION WITH POWERPOINT, previewing the presentation, saving a presentation as a web page, publishing a web presentation.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	10 periods of 40 mts. Each
---	--	---	--------------------	--	----------------------------

There should be one Computer and multimedia projector for the instructor and for each trainee or grouping of two students.

** Note: 1) The topics shown in Bold letters indicate Main Headings and remaining a s sub headings of the Main Haedngs..

PROPOSED TRAINING PROGRAMME ON TELECOM FOR Dy.SUPDTS .OF POLICE

SL. NO.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODOLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT
1.	Introduction to Telecom	History of Telecom development – over view, with a special reference to a state of communication in their respective States. - Need of communication, what is communication, types of transmission, familiarization with the commonly used terms in communication e.g. information, message, signal, modulation & demodulation, modem, analog & digital communication system, band width, real time communication, non-real time, store and forward, AMSS, packet switching, protocalls, FDM, EDM, data communication, e-mail, voice mail, cell phones, pager.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	3 periods
2.	Introduction to Police Telecommunication	Need of Police Communication, Inter State Communication Network, merits & demerits with proposed future development. Brief introduction to role of DCPW, ISPW.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	2 periods
3.	Radio procedure	Need, definitions- abbreviated address, address section, addressee, call, call sign, cipher, code, code address, cryptogram, crypto center, cryptography, types of radio stations (fixed transportable and mobile), circuit, network, originator, classified/unclassified message, formal message, informal message, need for security classification, security classification (top secret, secret and confidential),	Lecture-cum-Hands on experience	Computer with Multi-media projector (or) Transparency & O.H.P.	3 periods

		mode of dispatch & acknowledgment of classified messages, guiding instructions for originators (duties and responsibilities) in originating classified messages, general instructions on message writing, use of priorities, drafting of radiograms.			
4.	Principles of various radio telecommunication systems	Frequency spectrum, frequency based classification of radio waves, basic principle of radio wave propagation, propagation of ground wave, space wave, and sky wave. Communication ranges and techniques for extension of line of sight coverage, repeaters, composition of HF Radio Stations and Network.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	4 periods
5.	Satellite communication/ V-SAT / Polnet	Its advantage, an extension of LOS, Frequency bands, system description, brief introduction to earth segment and space segment, antennas, INMARSAT, Advantage in communication with low orbiting satellite, services available, service provider, applications, satellite phone, V-Sat . The architecture of proposed POLNET based on V-SAT.	Films on Satellite Telecommunication followed by discussion & lecture	Computer with Multi-media projector	4 periods
6.	Personal Mobile communication system	Pagers, Radio Paging concept and system, types of pagers, system connectivity, system configuration, basic concept of radio paging. Cellular Phone : Brief History, basic principle of cellular radio, signaling, hands off procedure, cell splitting, power adjustment, procedures for call set up from cell phone to cell phone and cell phone to fixed phone or vice – versa. Call tracking and tracing.	Films Cellphone Telecommunication Followed by discussion lecture.	Computer with Multi-media projector	3 periods
7.	Basic concept of networking	Understanding computer systems, hardware and software compatibility, network technologies, LAN, WAN, File server, Node, Client-server model, groupware, network protocol, e-fax, star network, bus network, token passing network, technical expertise and insight for planning of computerization.	Film & Lecture Method	Computer with Multi-media projector	3 periods

8.	Working of internet and e-mail	<p>Internet an overview, a brief history of internet, how to use internet, evolution of internet, services available, requirement of the hardware and software and telecommunication link to work with internet, procedure for getting internet connectivity, service provider, different types of connectivity like conventional dialup/shell account, protocol dialup/TCP/IP account, Interactive communication, www Microsoft networking, internet paging, new trends and techniques.</p> <p>E-mail: What is e-mail, how it works, requirement of hardware, software and other, e-mail basics, guidelines in using e-mail, advantages and limitations of e-mail, bounced mail, privacy of e-mail.</p>	Lecture Method supported video film	Computer with Multi-media projector	3 periods
9.	Executive Communication System	<p>PC to PC communication system, software and hardware requirement, how to establish with dial-up and leased lines, its description and working, line modems and printers.</p> <p>Fax: basic principle related to working of the fax, common problems generally encountered during operation and its remedies, how to install and operate the fax with leased lines and dial-up lines also brief introduction to fax monitoring.</p>	Lecture-cum-demonstration Method & Hands on experience	Computer with Multi-media projector	4 periods
10.	Radio telephonic procedure	Need, types of radio telephony communications, precaution required while speaking over a radio phone, (rhythm, speed, volume and pitch) construction of text, construction of calls, method of calling and answering, establishing communication, working with control, transmission of long messages, use of	Lecture -cu demonstration Method & Hands experience	Computer with Multi-media projector (or) Transparency & O.H.P.	4 periods

11,	Use of communication in crowd control and VIP Security,	phonetics and clothed/code language, use of scramblers, voicecoders(vocoders), introduction to cipher system, OTLP (One Time Letter Pad), Need assessment, planning and deployment of communication facilities (bandobust as per the blue book), method of allotment of staff for 24 hours operation availability of round the clock power and other logistic supports. Provision of wireless at point of arrival, departure, enroot and at meeting places, contact with control room, traffic police, pilot & squad car. Brief introduction about working and its advantages over existing communication system.	Lecture Method, film field visit.	Computer with Multi-media projector	4 periods
12.	Trunking System		Lecture Method	Computer with Multi-media projector	2 periods
13.	Command and control operations room	Importance of control room in policing: Glimpse of present situation based on some case studies, their limitations, requirement of model police control room, how to establish it, what should be a model police control room, what is response time and how it decides the effectiveness of the police, lay-out of the control room, operation room, conference room, manpower allocations and duties of In charge Officer, Shift In charge, Radio Operator, Mobile Staff, Radio Maintenance Officer & M.T. Working procedure, Control Room and Mobile Units, Display boards, Close liaison with control rooms of emergency services like fire brigade, army, ambulance, civil defence, port trust, railways, city, transport etc. zonal control rooms, communication and other equipment required at control room like radios, teleprinters, ambulance van with radio, reserve at the control room, grant of special allowances and facilities for control room. A computer aided dispatch system (CAD),	Lecture - demo Method, film and field visit	Computer with Multi-media projector	4 periods

			VTIS Vehicle Tackling system with GPS for supervision and effective policing.				
14.	Communication Security		Need of communication security, physical security, radio communication & line communication security, cryptographic security, transmission security, monitoring of communications, use of voice scramblers and scrophones, precautions, breaches – physical & technical.	Lecture Method	Computer with Multi-media projector	2 periods	
15.	G.P.S		Global Positioning System: Historical background, introduction, application, configuration, operation, accuracies, vehicle tracking and information system. Use of GPS in patrolling the unknown routes, supervision of patrol vans and foot patrol through GPS.	Lecture Method	Computer with Multi-media projector	2 periods	
16.	GIS		Geographic Information System: Basic concept and its applications in Law enforcement like map reading, data collection and storage at PS level etc.	Lecture Method	Computer with Multi-media projector	2 periods	
17	CCTV		Close Circuit TV: Basic principles and its uses as an electronic surveillance/monitoring system to monitor remotely any activity /incidence and also various types of CCTV available, wireless and wired.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods	
18.	DTH & CTV		Direct To Home and Cable TV: Introduction to Direct to Home and Cable TV, it's working, monitoring of the Cable TV for its overall impact on Law and order. Legal aspect related to reception and distribution of entertainment channels.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods	
19.	Introduction to Electronic Gadgets		Introduction to basics of Tape Recorders, analog and digitals, working of normal, mini and micro tape recorders, VCR, Video Camera, Electronic Surveillance System, Bugging and Wire Tapping, classification of surveillance system, bugs, radio bugs,	Lecture-cum demo Method	Computer with Multi-media projector	4 periods	

20	Introduction to amateur radio and INTERPOL communication.	wired bug, tap, compatible receivers, wired mike, telephone tapping also introduction to architecture of telephone exchange, metal detectors, HHMD and DFMDs – its working principle, sensitivity, maintenance and precautions required during storage and method of deployment. What is an Amateur radio? How to become an amateur radio operator? Ham Radio licensing procedure. The Indian Wireless telegraph Act and Amendments. Introduction to Interpol Communication.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods
----	---	--	---	-------------------------------------	-----------

COMPUTER LITERACY FOR SUB INSPECTORS

ANNEXURE 'A'

INTRODUCTION

OBJECTIVES OF SESSION – I :-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Explain what a Computer is
- List the application of computers
- Explain the data processing cycle
- Describe the concept of information
- List and describe categories of software
- Identify a PC
- Identify a peripherals of PC

OBJECTIVES OF SESSION – II: -

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Explain the concept and logical structure of Computer memory and its different units for measurement
- Explain the concept of operating system
- Describe EDP cycle in detail
- Describe the CPU architecture
- Name the categories of operating systems
- Explain the features of Graphical User Interface (GUI) systems.

OBJECTIVES OF SESSION – III: -

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Manage Desktop and arrange Icons and set time
- Work with explorer and create file and folders
- Cut, copy and paste files, find files, and create shortcuts.
- Invoke programmes and applications

- Set wall papers and screen savers
- Shutting down windows

OBJECTIVES OF SESSION – IV: -

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Name the various Hardware components of the computer
- List the functionality of the various input and output devices
- Name the various data storage devices
- Physically identify the parts of a computer
- Connect the various peripherals to make up the computer system
- List the hardware requirements of a typical PC configuration

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODOLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	Introduction to computers – session - I	INTRODUCTION TO COMPUTERS What is computer, areas of application , commercial application, educational institutions, broadcasting services, study and fun tool, advanced research work, related concepts of computing, data information and processing , data, information, process. how the computer processes , application software, system software, advantages and disadvantages of computers concept of information, categories of software, application software, system software, Classification of PC and Peripherals of a PC.	Lecture	Computer and multimedia projector (PowerPoint presentation or Through Transparencies & OHPs)	3 period of 40 mts. each	
2.	Memory and operating system – Session - II	Computer memory , Introduction to operating system, classification of operating systems single user systems, multi user systems, Graphical user interface (GUI) systems some GUI operating systems, basic components of the GUI systems, eg. Desktop,	Lecture cum demonstration	Computer and multimedia projector (PowerPoint presentation	3 period of 40 mts. Each	

3.	Working with Windows operating system - Session - III	Windows, Menu Bar, Menu, Menu options, Ellipse, Toggle, Save settings on exit, dialogue boxes, list box, text box, radio buttons, control menu. Working with desktop, creating folder, creating shortcuts, creating text files, finding the files, renaming or deleting the file or folder, working with recycle bin, getting help, setting desktop wallpaper, setting screen savers, shutting down.	Hands on experience	Computer with Multimedia projector or Through instructions to each and every trainee	4 periods of 40 mts. each	
4.	Computer hardware - Session - IV	Hardware, input devices, {keyboard, mouse, MICER (Magnetic ink corrector reader) BCR (Bar code reader), OCR (Optical corrector recogniser)}, motherboard, the microprocessor, ports (serial and parallel ports) <u>output devices</u>, printers(dot matrix and LAN, Laser, Inkjet, bubble jet printers), The Monitor (Colour & B/W), power supply unit, memory implementation primary memory (RAM, ROM) secondary memory (Hard Disk, the floppy disk), PC configuration.	Lecture cum demonstration	Computer with Multimedia projector	4 periods of 40 mts. Each	

INTRODUCTION TO MS OFFICE

SESSION – I WORD BASICS - I

OBJECTIVES OF SESSION – ONE ARE-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Edit a Word document using cut, copy, and paste
- Use the various formatting features e.g. modify font, paragraph alignment, indenting and line spacing, drop cap tabs, numbers and bullets
- Create page breaks and section breaks
- Create headers and footers
- Use text and language tools such as Auto correct, auto text, change case, spelling and grammar Thesaurus, find and replace text.

SESSION – II WORD BASICS - II

OBJECTIVES OF SESSION – TWO ARE-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open A word document,
- Move around in Word
- Cut and paste the text
- Modify the text font
- Align the text in the document
- Indent paragraph and modify the line spacing
- Set and modify tabs
- Insert numbers and bullets
- Insert breaks

SESSION – III SOME ADVANCED FEATURES - I

OBJECTIVES OF SESSION – THREE ARE:

THE OF SESSION THE TRAINEES SHOULD BE ABLE TO :

- Work in different parts of document simultaneously, using split windows, arrange windows
- Create multiple column documents
- Save and protect documents
- Printing and print options
- Work with tables – create and modify tables, format, add calculations
- Merge documents – creating the main document, data source, and merging the documents

SESSION – IV SOME ADVANCED FEATURES - II

OBJECTIVES OF SESSION – FOUR ARE:

AT THE END OF THE SESSION THE TRAINEES SHOULD BE ABLE TO :

- Split a document into panes
- View two documents at the same time
- Create a multi-column document and save
- Protect documents with password
- Set print option using page set up
- Create tables
- Format text in tables
- Modify table structures
- Change column, cell width and row height
- Add calculation to tables
- Mail merger the documents

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COM MEN TS IF ANY
1.	Word basics – I : Session – I	INTRODUCTION, WORD PROCESSORS, CREATING A DOCUMENT, EDITING A DOCUMENT, FORMATTING TEXT AND PARAGRAPHS, modify font, title – letter spacing, paragraph alignment, indenting and line spacing, drop cap, tabs, numbers and bullets, SECTION BREAKS AND PAGE BREAKS, HEADERS AND FOOTERS, LANGUAGE	Hands on computers	Computer with Multimedia projector or Through instructions to each and	8 Periods of 40 mts. Each	

2.	Word basics - II - Session - II	<p>TOOLS AND auto correct, auto text, spelling and Grammar, thesaurus, find and replace text.</p> <p>STARTING WORD, CREATING DOCUMENT, opening a word document, CUTTING, COPYING AND PASTING TEXT, MODIFYING FONT, ALIGNING TEXT, INDENTING PARAGRAPHS AND MODIFY LINE SPACING, SETTING AND MODIFYING TABS, INSERTING NUMBERS AND BULLETS IN THE WORD DOCUMENT, inserting bullets INSERTING HEADERS AND FOOTERS TO THE DOCUMENT, CREATING PAGE BREAKS, USING AUTO CORRECT, SETTING AUTO TEXT, SPELLING CHECK AND GRAMMER TOOL, changing default setting, thesaurus, FIND TEXT, find and replace text, CLOSING THE DOCUMENT.</p>	Hands on computers	every trainee	8 periods of 40 mts. Each	
3.	Advanced features - I : Session - III	<p>INTRODUCTION, VIEWING DOCUMENT WINDOWS, split windows, arranging windows, WORKING WITH COLUMNS, SAVE AND PROTECT DOCUMENTS, PRINTING AND PRINT OPTIONS, WORKING WITH TABLES, creating and modifying the tables, formatting tables, adding calculations, MERGE DOCUMENTS, creating the main documents, creating the data source, merging the documents.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each	
4.	Advanced Features - II : Session - IV	<p>SPLITTING WINDOWS arranging windows, WORKING WITH COLUMNS, SAVING AND PROTECTING THE DOCUMENT, protecting the documents with password, PRINTING DOCUMENTS, CREATING TABLE, adding columns and rows to the table, deleting columns or rows from the table, splitting and merging cells, text alignment within tables, changing text orientation, adding calculations, CREATING MAIN DOCUMENT, creating data source.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each	

INTRODUCTION TO MS EXCEL

SESSION – I SPREAD SHEET BASIC - I

OBJECTIVES OF SESSION – ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create workbooks and worksheets
- Work with numbers
- Modify the worksheet layout
- Print from worksheets

SESSION – II SPREAD SHEET BASIC - II

OBJECTIVES OF SESSION – TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open a worksheet
- Enter and edit text and numbers
- Select multiple cells
- Write a simple formula
- Use the formula palette
- Write a complex formula
- Fill formulae
- Total columns and rows
- Edit formulae
- Apply format features to numbers
- Format the worksheet by changing column width, row height and inserting and deleting rows, columns and cells also moving and copying cell contents, transferring data between worksheets and workbooks.
- Print the worksheet

SESSION – III MANAGING DATA- I

OBJECTIVES OF SESSION – ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create references of different type
- Use functions
- Use Excel for data base management
- Use data forms

SESSION – IV MANAGING DATA- II

OBJECTIVES OF SESSION – TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Name a range
- Use as names as references
- Use and work with some Excel functions
- Create absolute cell references
- Create mixed cell references
- Use common statistical functions
- Sort data
- Filter data using auto filter, custom filter
- Extract subtotals
- Save custom views
- Use data forms

SESSION – V ENHANCED WORKSHEET FEATURES - I

OBJECTIVES OF THE SUB SESSION ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Use different chart types ----- Pie, Line, Column and Bar, Spicility
- Create various charts, using the chart wizard
- Edit and format charts
- Use Excel's in-built formatting features
- Create styles
- Use conditional formatting
- Create custom format with codes

SESSION – VI ENHANCED WORKSHEET FEATURES - II

OBJECTIVES OF THE SUB SESSION TWO:-

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create different charts
- Use of chart wizard
- Edit a chart like move, size and print a chart
- Add and delete data series
- Format charts
- Insert and format titles in a chart
- Use auto formats
- Create styles
- Use conditional formatting
- Use cell references in conditions
- Custom formats - like using codes for numbers
- Coding for dates and time and coding for text

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMEN T	COM MEN TS IF ANY
1.	Spread sheet basic – I : Session - I	INTRODUCTION, AND WORKSHEETS, CREATING WORKBOOKS AND WORKSHEETS, worksheet components, entering and editing data, WORKING WITH NUMBERS, creating and editing formula, formatting numbers, MODIFYING THE WORKSHEET LAYOUT, column width and row, insert and delete columns, rows and cells, moving and copying cell contents, PRINTING FROM WORKSHEETS, previewing of the layout, changing page and sheet settings, print settings,	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each	
2.	Spread sheet basic – II :- Session - II	GETTING STARTED WITH MS EXCEL, CREATING A NEW WORKBOOK, ENTERING TEXT, ENTERING NUMBERS, FORMATTING THE TEXT, increasing the font type, changing the font type, changing the font	Hands on computers	Computer with Multimedia projector or	18 periods of 40 mts. Each	

		format, setting alignments of text, SELECTING MULTIPLE CELLS, WRITING SIMPLE FORMULA, WRITING COMPLEX FORMULA, COPYING FORMULAE IN REST OF THE CELLS, HOW TO EDIT FORMULAE, APPLYING FORMATTING FEATURES TO NUMBERS, PREVIEWING THE WORKSHEET, SAVING THE WORKSHEET, FORMATTING THE TEXT, changing the column width, CHANGING THE ROW HEIGHT, INSERTING AND DELETING ROWS, deleting a row, INSERTING AND DELETING COLUMNS, MOVING AND COPYING CELL CONTENTS, TRANSFERRING DATA BETWEEN WORKSHEETS, TRANSFERRING DATE BETWEEN WORKBOOKS, CHECKING SPELLING MISTAKES, PRINTING THE WORKSHEETS, previewing the lay out, changing the page and sheet settings, setting the print area.			Through instructions to each and every trainee	
3.	Managing data- Session - III	INTRODUCTION, CREATING REFERENCES, cell references, named references, USING FUNCTIONS, financial functions, USING EXCEL FOR DATABASE MANAGEMENT, database concepts, sorting data, filtering data, data forms.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	8 periods of 40 mts. Each	
4.	Managing data- Session - IV	START EXCEL AS DONE IN SESSION - I once the Excel worksheet is opened perform the following steps: CREATING A WORKSHEET ON "QUARTERLY SALES FIGURE", RELATIVE REFERENCES, ABSOLUTE REFERENCES, CREATING A RANGE, using define name dialogue box, creating names from a row or a column, USING EXCEL FUNCTIONS, SAVING THE WORKSHEET, USING COMMON STATISTICAL FUNCTIONS, PREVIEWING THE WORKSHEET, SAVING	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	18 periods of 40 mts. Each	

5.	Enhanced worksheet features - I : Session - V	<p>THE WORKSHEET, CREATING A WORKSHEET, SORTING DATA, sorting the last name list and then the first name list, sort by city, sort by numeric data, FILTERING DATA, using auto filter, using custom filter, using advanced filters and data forms.</p> <p>INTRODUCTION TO CHARTS, parts of a chart, DIFFERENT CHART TYPES, pie chart, line chart, column and bar charts, other charts(special charts), CREATING CHARTS USING THE CHART WIZARD, EDITING AND FORMATTING CHARTS, moving, sizing and printing, adding and deleting data series, formatting charts, USING EXCEL'S INBUILT FORMATTING FEATURES, CREATING STYLES, CONDITIONAL FORMATTING OF CELLS, CREATING CUSTOM FORMATS WITH CODES,</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	10 periods of 40 mts. Each	
6.	Enhanced worksheet features - II : Session - VI	<p>STARING EXCEL, CREATING CHARTS, creating column charts, USING A CHART WIZARD, specialty charts, stock charts, EDITING AND FORMATTING CHARTS, to move a chart, to modify the size of the chart, TO PRINT THE GRAPH, TO ADD DATA SERIES, DELETING DATA SERIES, FORMATTING THE CHARTS, USING THE CHART DIALOGUE BOX, INSERTING AND FORMATTING THE TITLES IN THE CHART, USING AUTOFORMATS, CREATING STYLES, CONDITIONAL FORMATTING, USING CELL REFERENCES IN CONDITIONS, USING FORMULAE IN CONDITIONS, CUSTOM FORMATS, PREVIEW THE WORKSHEET, SAVE THE WORKBOOK</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	16 periods of 40 mts. Each	

AN INTRODUCTION TO MS-POWERPOINT

SESSION – I : OBJECTIVES OF SUB -SESSION - ONE

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a presentation slide using :-
 - 1) Auto content wizard
 - 2) Design templates and blank presentations
 - 3) Existing presentations

- Use the different views of a slide :-
 - 1) Normal view
 - 2) Outline view
 - 3) Slide view
 - 4) Slide sorter view

- Work with the text in a slide - Arrange text in different levels,
- Work with the slide master :-
 - 1) Format the slide design
 - 2) Format text in a slide

SESSION – II OBJECTIVES OF SUB-SESSION - TWO

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a blank presentation
- Working with different layout
- Create presentation using Auto Content Wizard
- Design templates
- Work with different views of slide
- Work with slide master
- Format the text on the slide
- View the Slide Master
- Working with slides master
- Modify text

THE FINAL PRESENTATION – I

SESSION – III

OBJECTIVES OF THE SESSION - I:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Modify the visual impact of slides by:-
 - 1) Adding objects
 - 2) Creating graphical bullets
 - 3) Adding transitions and animations
- Make handouts and notes
- Print in power point
- Give the final touches to the presentation
 - 1) Set slide timings
 - 2) Customizing
 - 3) Recording narration
 - 4) Drawings on slides

THE FINAL PRESENTATION - II

SESSION - IV

OBJECTIVES OF THE SESSION - II:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Make a handout
- Make notes
- Print slides
- Set slide timings
- Save presentation
- Set the transitions
- Set the animation
- Set the rehearsal time
- Run the presentation

SL.NO	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	An introduction to PowerPoint - I - session - I	INTRODUCTION , What is PowerPoint, presentation basics, CREATING A PRESENTATION SLIDE , the auto content wizard, design templates and blank presentations, using existing slide, USING THE DIFFERENT VIEWS OF A SLIDE , normal view, outline view, slide view, slide sorter view, WORKING WITH THE TEXT IN A SLIDE , arranging text in different levels, WORK WITH THE SLIDE MASTER , formatting the slide design, formatting text in slides.	Lecture cum demonstration	Computer with Multimedia projector or transparencies through OHP	6 periods of 40 mts. Each	
2	An introduction to	STARTING POWERPOINT, CREATING	Hands on	Computer with	10 periods of	

	PowerPoint -I - session - II	<p>PRESENTATION USING BLANK PRESENTATION, saving the presentation, CREATING A PRESENTATION USING AUTO CONTENT WIZARD, USING DESIGN TEMPLATES, DIFFERENT VIEWS OF SLIDE, VIEWING SLIDE MASTER, customizing background of slide master, modify text, adding footer to slide.</p>	computers	Multimedia or projector Through instructions to each and every trainee	40 mts. Each	
3	The Final Presentation - I : Session - III	<p>INTRODUCTION, MODIFYING THE IMPACT OF SLIDES, adding objects, creating graphical bullets, adding transitions and animations, MAKING HANDOUTS AND NOTES, PRINTING IN POWERPOINT, GIVING THE FINAL TOUCH, setting the slide timings, recording narration, drawing on slides, customizing a presentation.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each	
4	The Final Presentation - II : Session - IV	<p>Making handouts, making notes, PRINTING SLIDES, SETTING THE SLIDE TIMINGS, DRAWING ON SLIDES, CUSTOMIZING A PRESENTATION, WORKING WITH GRAPHS, INSERT OBJECTS AND GRAPHICS, ADDING TRANSITION TO THE SLIDE, ADDING SLIDE ANIMATION, MODIFY SLIDE BACKGROUND COLOUR AND FILL PATTERN, SAVING PRESENTATION.</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each	

INTRODUCTION TO THE INTERNET

SESSION – I : OBJECTIVES OF SESSION

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Define what is an Internet
- Define the application area's of the Internet
- Explain what is world wide web and define its working
- Explain what is file transfer protocol (FTP)
- Use e-mail - The Internet as a postman
- Understand the requirements for Internet connection

SESSION – II OFFICE 2000 AND INTERNET - I

OBJECTIVES:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a web page in Word
- Create a web page in Excel
- Create an Online presentation

SESSION – III OFFICE 2000 AND INTERNET - II

OBJECTIVES:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open Web page wizard for creating web pages in Word
- Give a title and location of the Web page
- Select the navigation type for the page
- Add a new page to the existing page
- Rename the pages and change its relative order
- Apply themes to the Web Page
- Insert hyperlinks
- Send e-mail using Word 2000 and Outlook Express
- Publish Excel documents on the Web
- Create Online presentation with PowerPoint

SL.NO	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	An introduction to the Internet : Session - I	INTRODUCTION, APPLICATION AREAS OF INTERNET, THE WORLD WIDE WEB (www), how does the www work, FILE TRANSFER PROTOCOL, E-MAIL -- THE INTERNET AS A POSTMAN, the e-mail address, advantages and disadvantages of e-mail, CONNECTING THE PIECES TOGETHER (SUMMARY OF INTERNET), tcp/ip, internet service provider, internet addresses, REQUIREMENTS OF AN INTERNET CONNECTION, computers, modems..	Lecture cum demonstration	Computer with Multimedia projector or Through transparencies and OHP	6 periods of 40 mts. Each	
2.	Office 2000 and Internet - I :	INTRODUCTION, USING WORD TO CREATE WEB PAGES AND E-MAIL	Hands on computers	Computer with	12 periods of 40 mts. Each	

3	Session – II Office 2000 and Internet – II: Session – III	<p>MESSAGES, creating web pages, creating and sending e-mail messages in Word, CREATING WEB PAGES WITH EXCEL, CREATING ONLINE PRESENTATION WITH POWERPOINT, WHAT'S NEW IN OFFICE 2000, cutting and pasting multiple items, personalized menu and tool bars, improved ClipArt gallery, world wide usage, integration with the web.</p> <p>OPENING THE WEB PAGE WIZARD, GIVING TITLE AND SAVING LOCATION OF THE WEB PAGE, SELECTING THE NAVIGATION TYPE, ADDING PAGES, adding a blank page to your web, adding a template page, adding existing document, ORGANIZING THE LINKS, APPLYING THEMES, END OF WEB PAGE WIZARD, EXPLORING YOUR WEB, INSERTING HYPERLINK, ADDING CONTENTS TO A WEB PAGE, SAVING A WEB PAGE, REOPENING OF A WEB PAGE, INSERTING GRAPHICS TO THE WEB PAGE, EDITING THE INSERTED PHOTOGRAPH, SENDING E-MAIL MESSAGES USING WORD, SENDING E-MAILS, opening Outlook Express, Composing a message, writing and sending the e-mail, sending a document through e-mail, PUBLISHING EXCEL DOCUMENTS ON THE WEB, saving and publishing non interactive HTML document, saving and publishing interactive HTML document, CREATING ONLINE PRESENTATION WITH POWERPOINT, previewing the presentation, saving a presentation as a web page, publishing a web presentation.</p>	Hands on computers	Multimedia projector or Through instructions to each and every trainee	15 periods of 40 mts. Each
---	---	--	--------------------	--	----------------------------

Each Trainee should be provided one computer during Computer course

** Note: 1) The topics shown in Bold letters indicate Main Headings and remaining as sub headings of the Main Headings..

PROPOSED TRAINING PROGRAMME ON TELECOM FOR SUB INSPECTORS OF POLICE

SL. NO.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODOLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT
1.	Introduction to Telecom	History of Telecom development – over view, with a special reference to a state of communication in their respective States. - Need of communication, what is communication, types of transmission, familiarization with the commonly used terms in communication e.g. information, message, signal, modulation & demodulation, modem, analog & digital communication system, band width, real time communication, non-real time, store and forward, AMSS, packet switching, protocols, FDM, EDM, data communication, e-mail, voice mail, cell phones, pager.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	6 periods
2.	Introduction to Police Telecommunication	Need of Police Communication, Inter State Communication Network, merits & demerits with proposed future development. Brief introduction to role of DCPW, ISPW.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	4 periods
3.	Radio procedure	Need, definitions- abbreviated address, address section, addressee, call, call sign, cipher, code, code address, cryptogram, crypto center, cryptography, types of radio stations (fixed transportable and	Lecture-cum-Hands on experience	Computer with Multi-media projector (or) Transparency	8 periods

		mobile), circuit, network, originator, classified/unclassified message, formal message, informal message, need for security classification, security classification (top secret, secret and confidential), mode of dispatch & acknowledgment of classified messages, guiding instructions for originators (duties and responsibilities) in originating classified messages, general instructions on message writing, use of priorities, drafting of radiograms.		& O.H.P.	
4.	Principles of various radio telecommunication systems	Frequency spectrum, frequency based classification of radio waves, basic principle of radio wave propagation, propagation of ground wave, space wave, and sky wave. Communication ranges and techniques for extension of line of sight coverage, repeaters, composition of HF Radio Stations and Network.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	4 periods
5.	Satellite communication/ V-SAT / Polinet	Its advantage, an extension of LOS, Frequency bands, system description, brief introduction to earth segment and space segment, antennas, INMARSAT, Advantage in communication with low orbiting satellite, services available, service provider, applications, satellite phone, V-Sat . The architecture of proposed POLNET based on V-SAT.	Films on Satellite Telecommunication followed by discussion & lecture	Computer with Multi-media projector	4 periods
6.	Personal Mobile communication system	Pagers, Radio Paging concept and system, types of pagers, system connectivity, system configuration, basic concept of radio paging. Cellular Phone : Brief History, basic principle of cellular radio, signaling, hands off procedure, cell splitting, power adjustment, procedures for call set up from cell phone to cell phone and cell phone to fixed phone or vice – versa. Call tracking and tracing.	Films Cellphone Telecommunication Followed by discussion lecture.	Computer with Multi-media projector	5 periods
7.	Basic concept of	Understanding computer systems, hardware and software compatibility, network technologies, LAN,	Film & Lecture	Computer with Multi-media	6 periods

	networking	WAN, File server, Node, Client-server model,, groupware, network protocol, e-fax, star network, bus network, token passing network, technical expertise and insight for planning of computerization.	Method	projector	
8.	Working of internet and e-mail	Internet an overview, a brief history of internet, how to use internet, evolution of internet, services available, requirement of the hardware and software and telecommunication link to work with internet, procedure for getting internet connectivity, service provider, different types of connectivity like conventional dialup/shell account, protocol dialup/TCP/IP account, Interactive communication, www Microsoft networking, internet paging, new trends and techniques. E-mail: What is e-mail, how it works, requirement of hardware, software and other, e-mail basics, guidelines in using e-mail, advantages and limitations of e-mail, bounced mail, privacy of e-mail.	Lecture Method supported video film	Computer with Multi-media projector	8 periods
9.	Executive Communication System	PC to PC communication system, software and hardware requirement, how to establish with dial-up and leased lines, its description and working, line modems and printers. Fax: basic principle related to working of the fax, common problems generally encountered during operation and its remedies, how to install and operate the fax with leased lines and dial-up lines also brief introduction to fax monitoring.	Lecture-cum-demonstration Method & Hands on experience	Computer with Multi-media projector	4 periods
10.	Radio telephonic	Need, types of radio telephony communications, precaution required while speaking over a radio	Lecture -cu demonstration	Computer with Multi-media	8 periods

	procedure	phone, (rhythm, speed, volume and pitch) construction of text, construction of calls, method of calling and answering, establishing communication, working with control, transmission of long messages, use of phonetics and clothed/code language, use of scramblers, voicecoders(vocoders), introduction to cipher system, OTLP (One Time Letter Pad),.	Method & Hands experience	projector (or) Transparency & O.H.P.	
11,	Use of communication in crowd control and VIP Security,	Need assessment, planning and deployment of communication facilities (bandobust as per the blue book), method of allotment of staff for 24 hours operation availability of round the clock power and other logistic supports. Provision of wireless at point of arrival, departure, enroot and at meeting places, contact with control room, traffic police, pilot & squad car.	Lecture Method, film field visit.	Computer with Multi-media projector	8 periods
12.	Trunking System	Brief introduction about working and its advantages over existing communication system.	Lecture Method	Computer with Multi-media projector	2 periods
13.	Command and control operations room	Importance of control room in policing: Glimpse of present situation based on some case studies, their limitations, requirement of model police control room, how to establish it, what should be a model police control room, what is response time and how it decides the effectiveness of the police, lay-out of the control room, operation room, conference room, manpower allocations and duties of In charge Officer, Shift In charge, Radio Operator, Mobile Staff, Radio Maintenance Officer & M.T. Working procedure, Control Room and Mobile Units, Display boards, Close liaison with control rooms of emergency services like fire brigade, army, ambulance, civil defence, port trust, railways, city, transport etc. zonal control rooms, communication and other equipment	Lecture - demo Method, film and field visit	Computer with Multi-media projector	8 periods

		required at control room like radios, teleprinters, ambulance van with radio, reserve at the control room, grant of special allowances and facilities for control room. A computer aided dispatch system (CAD), VTIS Vehicle Tackling system with GPS for supervision and effective policing.			
14.	Communication Security	Need of communication security, physical security, radio communication & line communication security, cryptographic security, transmission security, monitoring of communications, use of voice scramblers and microphones, precautions, breaches – physical & technical.	Lecture Method	Computer with Multi-media projector	4 periods
15.	G.P.S	Global Positioning System: Historical background, introduction, application, configuration, operation, accuracies, vehicle tracking and information system. Use of GPS in patrolling the unknown routes, supervision of patrol vans and foot patrol through GPS.	Lecture Method	Computer with Multi-media projector	2 periods
16.	GIS	Geographic Information System: Basic concept and its applications in Law enforcement like map reading, data collection and storage at PS level etc.	Lecture Method	Computer with Multi-media projector	2 periods
17.	CCTV	Close Circuit TV: Basic principles and its uses as an electronic surveillance/monitoring system to monitor remotely any activity /incidence and also various types of CCTV available, wireless and wired.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	4 periods
18.	DTH & CTV	Direct To Home and Cable TV: Introduction to Direct to Home and Cable TV, it's working, monitoring of the Cable TV for its overall impact on Law and order. Legal aspect related to reception and distribution of entertainment channels.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	4 periods
19.	Introduction	Introduction to basics of Tape Recorders, analog and	Lecture–cum-	Computer with	8 periods

	to Electronic Gadgets	digitals, working of normal, mini and micro tape recorders, VCR, Video Camera, Electronic Surveillance System, Bugging and Wire Tapping, classification of surveillance system, bugs, radio bugs, wired bug, tap, compatible receivers, wired mike, telephone tapping also introduction to architecture of telephone exchange, metal detectors, HHMD and DFMDs – its working principle, sensitivity, maintenance and precautions required during storage and method of deployment.	demo Method	Multi-media projector	
20	Introduction to amateur radio	What is an Amateur radio? How to become an amateur radio operator? Ham Radio licensing procedure.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods

INTRODUCTION

OBJECTIVES OF SESSION – I :-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Explain what a Computer is
- List the application of computers
- Explain the data processing cycle
- Describe the concept of information
- List and describe categories of software
- Identify a PC
- Identify a peripherals of PC

OBJECTIVES OF SESSION – II:-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Explain the concept and logical structure of Computer memory and its different units for measurement
- Explain the concept of operating system
- Describe EDP cycle in detail
- Describe the CPU architecture
- Name the categories of operating systems
- Explain the features of Graphical User Interface (GUI) systems.

OBJECTIVES OF SESSION – III:-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Manage Desktop and arrange Icons and set time
- Work with explorer and create file and folders
- Cut, copy and paste files, find files, and create shortcuts.
- Invoke programmes and applications
- Set wall papers and screen savers
- Shutting down windows

OBJECTIVES OF SESSION – IV: -

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Name the various Hardware components of the computer
- List the functionality of the various input and output devices
- Name the various data storage devices
- Physically identify the parts of a computer
- Connect the various peripherals to make up the computer system
- List the hardware requirements of a typical PC configuration

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODOLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	Introduction to computers – session - I	INTRODUCTION, TO COMPUTERS What is computer, areas of application, commercial application, educational institutions, broadcasting services, study and fun tool, advanced research work, related concepts of computing, data information and processing, data, information, process. how the computer processes, application software, system software, advantages and disadvantages of computers concept of information, categories of software, application software, system software, Classification of PC and, Peripherals of a PC.	Lecture	Computer and multimedia projector (PowerPoint presentation or Through Transparencies & OHPs)	4 period of 40 mts. each	
2.	Memory and operating system – Session - II	Computer memory , Introduction to operating system, classification of operating systems single user systems, multi user systems, Graphical user interface (GUI) systems some GUI operating systems, basic components of the GUI systems, eg. Desktop, Windows, Menu Bar, Menu, Menu options, Ellipse, Toggle, Save settings on exit,	Lecture cum demonstration	Computer and multimedia projector (PowerPoint presentation or Through Transparencies & OHPs)	4 period of 40 mts. Each	

		dialogue boxes, list box, text box, radio buttons, control menu..			es & OHPs)	6 periods of 40 mts. each	
3.	Working with Windows operating system - Session - III	Working with desktop, creating folder, creating shortcuts, creating text files, finding the files, renaming or deleting the file or folder, working with recycle bin, getting help, setting desktop wallpaper, setting screen savers, shutting down.	Hands on experience	Computer with Multimedia projector or Through instructions to each and every trainee	Computer with Multimedia projector	6 periods of 40 mts. Each	
4.	Computer hardware - Session - IV	Hardware, input devices, {keyboard, mouse, MICER (Magnetic ink corrector reader) BCR (Bar code reader), OCR (Optical corrector recogniser)}, motherboard, the microprocessor, ports (serial and parallel ports) <u>output devices</u>, printers(dot matrix and LAN, Laser, Inkjet, bubble jet printers), The Monitor (Colour & B/W), power supply unit, memory implementation primary memory (RAM, ROM) secondary memory (Hard Disk, the floppy disk), PC configuration.	Lecture cum demonstration				

INTRODUCTION TO MS OFFICE

SESSION – I WORD BASICS - I

OBJECTIVES OF SESSION – ONE ARE-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Edit a Word document using cut, copy, and paste
- Use the various formatting features e.g. modify font, paragraph alignment, indenting and line spacing, drop cap tabs, numbers and bullets
- Create page breaks and section breaks
- Create headers and footers
- Use text and language tools such as Auto correct, auto text, change case, spelling and grammar Thesaurus, find and replace text.

SESSION – II WORD BASICS - II

OBJECTIVES OF SESSION – TWO ARE-

AT THE END OF THE SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open A word document,
- Move around in Word
- Cut and paste the text
- Modify the text font
- Align the text in the document
- Indent paragraph and modify the line spacing
- Set and modify tabs
- Insert numbers and bullets
- Insert breaks

SESSION – III SOME ADVANCED FEATURES -I

OBJECTIVES OF SESSION – THREE ARE:

AT THE END OF THE SESSION THE TRAINEES SHOULD BE ABLE TO :

- Work in different parts of document simultaneously, using split windows, arrange windows
- Create multiple column documents
- Save and protect documents
- Printing and print options
- Work with tables – create and modify tables, format, add calculations
- Merge documents – creating the main document, data source, and merging the documents

SESSION – IV SOME ADVANCED FEATURES - II

OBJECTIVES OF SESSION – FOUR ARE:

AT THE END OF THE SESSION THE TRAINEES SHOULD BE ABLE TO :

- Split a document into panes
- View two documents at the same time
- Create a multi-column document and save
- Protect documents with password
- Set print option using page set up
- Create tables
- Format text in tables
- Modify table structures
- Change column, cell width and row height
- Add calculation to tables
- Mail merger the documents

SLN O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	Word basics – I : Session – I	INTRODUCTION, WORD PROCESSORS, CREATING A DOCUMENT, EDITING A DOCUMENT, FORMATTING TEXT AND PARAGRAPHS, modify font, title – letter	Hands on computers	Computer with Multimedia projector or	10 periods of 40 mts. Each	

	<p>spacing, paragraph alignment, indenting and line spacing, drop cap, tabs, numbers and bullets, SECTION BREAKS AND PAGE BREAKS, HEADERS AND FOOTERS, LANGUAGE TOOLS AND auto correct, auto text, spelling and Grammar, thesaurus, find and replace text.</p>	<p>STARTING WORD, CREATING DOCUMENT, opening a word document, CUTTING, COPYING AND PASTING TEXT, MODIFYING FONT, ALIGNING TEXT, INDENTING PARAGRAPHS AND MODIFY LINE SPACING, SETTING AND MODIFYING TABS, INSERTING NUMBERS AND BULLETS IN THE WORD DOCUMENT, inserting bullets INSERTING HEADERS AND FOOTERS TO THE DOCUMENT, CREATING PAGE BREAKS, USING AUTO CORRECT, SETTING AUTO-TEXT, SPELLING CHECK AND GRAMMER TOOL, changing default setting, thesaurus, FIND TEXT, find and replace text, CLOSING THE DOCUMENT.</p>	<p>Hands on computers</p>	<p>projector or Through instructions to each and every trainee</p>	<p>10 periods of 40 mts. Each</p>	
<p>2.</p>	<p>Word basics - II - Session - II</p>			<p>Computer with Multimedia projector or Through instructions to each and every trainee</p>	<p>16 periods of 40 mts. Each</p>	
<p>3.</p>	<p>Advanced features - I : Session - III</p>	<p>INTRODUCTION, VIEWING DOCUMENT WINDOWS, split windows, arranging windows, WORKING WITH COLUMNS, SAVE AND PROTECT DOCUMENTS, PRINTING AND PRINT OPTIONS, WORKING WITH TABLES, creating and modifying the tables, formatting tables, adding calculations, MERGE DOCUMENTS, creating the main documents, creating the data source, merging the documents.</p>	<p>Hands on computers</p>	<p>Computer with Multimedia projector or Through instructions to each and every trainee</p>	<p>16 periods of 40 mts. Each</p>	
<p>4.</p>	<p>Advanced Features - II : Session - IV</p>	<p>SPLITTING WINDOWS arranging windows, WORKING WITH COLUMNS, SAVING AND PROTECTING THE DOCUMENT, protecting the documents with password, PRINTING DOCUMENTS, CREATING TABLE, adding columns and rows to the table, deleting columns or rows from the table, splitting and merging cells, text alignment within tables, changing text orientation, adding calculations, CREATING MAIN DOCUMENT, creating data source.</p>	<p>Hands on computers</p>	<p>Computer with Multimedia projector or Through instructions to each and every trainee</p>	<p>16 periods of 40 mts. Each</p>	

INTRODUCTION TO MS EXCEL

SESSION – I SPREAD SHEET BASIC - I

OBJECTIVES OF SESSION – ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create workbooks and worksheets
- Work with numbers
- Modify the worksheet layout
- Print from worksheets

SESSION – II SPREAD SHEET BASIC - II

OBJECTIVES OF SESSION – TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open a worksheet
- Enter and edit text and numbers
- Select multiple cells
- Write a simple formula
- Use the formula palette
- Write a complex formula
- Fill formulae
- Total columns and rows
- Edit formulae
- Apply format features to numbers
- Format the worksheet by changing column width, row height and inserting and deleting rows, columns and cells also moving and copying cell contents, transferring data between worksheets and workbooks.
- Print the worksheet

OBJECTIVES OF SESSION – ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create references of different type
- Use functions
- Use Excel for data base management
- Use data forms

SESSION – IV MANAGING DATA- II

OBJECTIVES OF SESSION – TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Name a range
- Use as names as references
- Use and work with some Excel functions
- Create absolute cell references
- Create mixed cell references
- Use common statistical functions
- Sort data
- Filter data using auto filter, custom filter
- Extract subtotals
- Save custom views
- Use data forms

SESSION – V ENHANCED WORKSHEET FEATURES - I

OBJECTIVES OF THE SUB SESSION ONE: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Use different chart types ----- Pie, Line, Column and Bar, Speicility
- Create various charts, using the chart wizard
- Edit and format charts
- Use Excel's in-built formatting features
- Create styles
- Use conditional formatting
- Create custom format with codes

SESSION – VI ENHANCED WORKSHEET FEATURES - II

OBJECTIVES OF THE SUB SESSION TWO: -

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create different charts
- Use of chart wizard
- Edit a chart like move, size and print a chart
- Add and delete data series
- Format charts
- Insert and format titles in a chart
- Use auto formats
- Create styles
- Use conditional formatting
- Use cell references in conditions
- Custom formats - like using codes for numbers
- Coding for dates and time and coding for text

SL.N O.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	Spread sheet basic - I : Session - I	INTRODUCTION, AND WORKSHEETS, worksheet components, entering and editing data, WORKING WITH NUMBERS, creating and editing formula, formatting numbers, MODIFYING THE WORKSHEET LAYOUT, column width and row, insert and delete columns, rows and cells , moving and copying cell contents, PRINTING FROM WORKSHEETS, previewing of the layout, changing page and sheet settings, print settings,	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	10 periods of 40 mts. Each	
2.	Spread sheet basic - II :- Session - II	GETTING STARTED WITH MS EXCEL, CREATING A NEW WORKBOOK, ENTERING TEXT, ENTERING NUMBERS, FORMATTING THE TEXT, increasing the font type, changing the font type, changing the font	Hands on computers	Computer with Multimedia projector or Through	16 periods of 40 mts. Each	

		format, setting alignments of text, SELECTING MULTIPLE CELLS, WRITING SIMPLE FORMULA, WRITING COMPLEX FORMULA, COPYING FORMULAE IN REST OF THE CELLS, HOW TO EDIT FORMULAE, APPLYING FORMATTING FEATURES TO NUMBERS, PREVIEWING THE WORKSHEET, SAVING THE WORKSHEET, FORMATTING THE TEXT, changing the column width, CHANGING THE ROW HEIGHT, INSERTING AND DELETING ROWS, deleting a row, INSERTING AND DELETING COLUMNS, MOVING AND COPYING CELL CONTENTS, TRANSFERRING DATA BETWEEN WORKSHEETS, TRANSFERRING DATE BETWEEN WORKBOOKS, CHECKING SPELLING MISTAKES, PRINTING THE WORKSHEETS, previewing the lay out, changing the page and sheet settings, setting the print area.			Through instructions to each and every trainee	
3.	Managing data-Session - III	INTRODUCTION, CREATING REFERENCES, cell references, named references, USING FUNCTIONS, financial functions, USING EXCEL FOR DATABASE MANAGEMENT, database concepts, sorting data, filtering data, data forms.	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	6 periods of 40 mts. Each	
4.	Managing data-Session - IV	START EXCEL AS DONE IN SESSION - I once the Excel worksheet is opened perform the following steps: CREATING A WORKSHEET ON "QUARTERLY SALES FIGURE", RELATIVE REFERENCES, ABSOLUTE REFERENCES, CREATING A RANGE, using define name dialogue box, creating names from a row or a column, USING EXCEL FUNCTIONS, SAVING THE WORKSHEET, USING COMMON STATISTICAL FUNCTIONS, PREVIEWING THE WORKSHEET, SAVING	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	16 periods of 40 mts. Each	

5.	Enhanced worksheet features - I : Session - V	<p>THE WORKSHEET, CREATING A WORKSHEET, SORTING DATA, sorting the last name list and then the first name list, sort by city, sort by numeric data, FILTERING DATA, using auto filter, using custom filter, using advanced filters and data forms.</p> <p>INTRODUCTION TO CHARTS, parts of a chart, DIFFERENT CHART TYPES, pie chart, line chart, column and bar charts, other charts(special charts), CREATING CHARTS USING THE CHART WIZARD, EDITING AND FORMATTING CHARTS, moving , sizing and printing, adding and deleting data series, formatting charts, USING EXCEL'S INBUILT FORMATTING FEATURES, CREATING STYLES, CONDITIONAL FORMATTING OF CELLS, CREATING CUSTOM FORMATS WITH CODES,</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each	
6.	Enhanced worksheet features - II : Session - VI	<p>STARING EXCEL, CREATING CHARTS, creating column charts, USING A CHART WIZARD, specialty charts, stock charts, EDITING AND FORMATTING CHARTS, to move a chart, to modify the size of the chart, TO PRINT THE GRAPH, TO ADD DATA SERIES, DELETING DATA SERIES, FORMATTING THE CHARTS, USING THE CHART DIALOGUE BOX, INSERTING AND FORMATTING THE TITLES IN THE CHART, USING AUTOFORMATS, CREATING STYLES, CONDITIONAL FORMATTING, USING CELL REFERENCES IN CONDITIONS, USING FORMULAE IN CONDITIONS, CUSTOM FORMATS, PREVIEW THE WORKSHEET, SAVE THE WORKBOOK</p>	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	18 periods of 40 mts. Each	

AN INTRODUCTION TO MS-POWERPOINT

SESSION - I : OBJECTIVES OF SUB -SESSION - ONE

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a presentation slide using :-
 - 1) Auto content wizard
 - 2) Design templates and blank presentations
 - 3) Existing presentations

- Use the different views of a slide:-
 - 1) Normal view
 - 2) Outline view
 - 3) Slide view
 - 4) Slide sorter view

- Work with the text in a slide - Arrange text in different levels,
- Work with the slide master :-
 - 1) Format the slide design
 - 2) Format text in a slide

SESSION – II OBJECTIVES OF SUB-SESSION - TWO

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a blank presentation
- Working with different layout
- Create presentation using Auto Content Wizard
- Design templates
- Work with different views of slide
- Work with slide master
- Format the text on the slide
- View the Slide Master
- Working with slides master
- Modify text

THE FINAL PRESENTATION – I

SESSION – III

OBJECTIVES OF THE SESSION - I:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Modify the visual impact of slides by:-
 - 1) Adding objects
 - 2) Creating graphical bullets
 - 3) Adding transitions and animations

- Make handouts and notes
 - Print in power point
 - Give the final touches to the presentation
- 1) Set slide timings
 - 2) Customizing
 - 3) Recording narration
 - 4) Drawings on slides

THE FINAL PRESENTATION – II

SESSION – IV

OBJECTIVES OF THE SESSION - II:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Make a handout
- Make notes
- Print slides
- Set slide timings
- Save presentation
- Set the transitions
- Set the animation
- Set the rehearsal time
- Run the presentation

SL.NO	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	An introduction to	INTRODUCTION, What is PowerPoint,	Lecture	Computer with	6 periods of 40	

Powerpoint - I - session - I	presentation basics, CREATING A PRESENTATION SLIDE , the auto content wizard, design templates and blank presentations, using existing slide, USING THE DIFFERENT VIEWS OF A SLIDE , normal view, outline view, slide view, slide sorter view, WORKING WITH THE TEXT IN A SLIDE , arranging text in different levels, WORK WITH THE SLIDE MASTER , formatting the slide design, formatting text in slides.	cum demonstration	Multimedia projector or transparencies through OHP	mts. Each
2	An introduction to PowerPoint -II - session - II	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	12 periods of 40 mts. Each.
3	The Final Presentation - I : Session - III	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	16 periods of 40 mts. Each
4	The Final Presentation - II : Session - IV	Hands on computers	Computer with Multimedia projector or Through instructions to each and every trainee	16 periods of 40 mts. Each

INTRODUCTION TO THE INTERNET

SESSION – I : OBJECTIVES OF SESSION

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Define what is an Internet
- Define the application area's of the Internet
- Explain what is world wide web and define its working
- Explain what is file transfer protocol (FTP)
- Use e-mail - The Internet as a postman
- Understand the requirements for Internet connection

SESSION – II OFFICE 2000 AND INTERNET -I

OBJECTIVES:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Create a web page in Word
- Create a web page in Excel
- Create an Online presentation

SESSION – III OFFICE 2000 AND INTERNET - II

OBJECTIVES:

AT THE END OF THIS SESSION THE TRAINEE SHOULD BE ABLE TO :

- Open Web page wizard for creating web pages in Word
- Give a title and location of the Web page
- Select the navigation type for the page
- Add a new page to the existing page
- Rename the pages and change its relative order
- Apply themes to the Web Page
- Insert hyperlinks
- Send e-mail using Word 2000 and Outlook Express
- Publish Excel documents on the Web
- Create Online presentation with PowerPoint

SL.NO	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHOD OLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT	COMMENTS IF ANY
1.	An introduction to the Internet : Session - I	INTRODUCTION, APPLICATION AREAS OF INTERNET, THE WORLD WIDE WEB (www), how does the www work, FILE TRANSFER PROTOCOL, E-MAIL -- THE INTERNET AS A POSTMAN, the e-mail address, advantages and disadvantages of e-mail, CONNECTING THE PIECES TOGETHER (SUMMARY OF INTERNET), tcp/ip, internet service provider, internet addresses, REQUIREMENTS OF AN INTERNET CONNECTION, computers, modems,.	Lecture cum demonstration	Computer with Multimedia projector or Through transparencies and OHP	6 periods of 40 mts. Each	
2.	Office 2000 and Internet – I : Session – II	INTRODUCTION, USING WORD TO CREATE WEB PAGES AND E-MAIL MESSAGES, creating web pages, creating and sending e-mail messages in Word,	Hands on computers	Computer with Multimedia projector or	16 periods of 40 mts. Each	

3	Office 2000 and Internet – II: Session – III	<p>CREATING WEB PAGES WITH EXCEL, CREATING ONLINE PRESENTATION WITH POWERPOINT, WHAT'S NEW IN OFFICE 2000, cutting and pasting multiple items, personalized menu and tool bars, improved ClipArt gallery, world wide usage, integration with the web.</p> <p>OPENING THE WEB PAGE WIZARD, GIVING TITLE AND SAVING LOCATION OF THE WEB PAGE, SELECTING THE NAVIGATION TYPE, ADDING PAGES, adding a blank page to your web, adding a template page, adding existing document, ORGANIZING THE LINKS, APPLYING THEMES, END OF WEB PAGE WIZARD, EXPLORING YOUR WEB, INSERTING HYPERLINK, ADDING CONTENTS TO A WEB PAGE, SAVING A WEB PAGE, REOPENING OF A WEB PAGE, INSERTING GRAPHICS TO THE WEB PAGE, EDITING THE INSERTED PHOTOGRAPH, SENDING E-MAIL MESSAGES USING WORD, SENDING E-MAILS, opening Outlook Express, Composing a message, writing and sending the e-mail, sending a document through e-mail, PUBLISHING EXCEL DOCUMENTS ON THE WEB, saving and publishing non interactive HTML document, saving and publishing interactive HTML document, CREATING ONLINE PRESENTATION WITH POWERPOINT, previewing the presentation, saving a presentation as a web page, publishing a web presentation.</p>	Hands on computers	Through instructions to each and every trainee	18 periods of 40 mts. Each
---	--	--	--------------------	--	----------------------------

Each Trainee should be provided one computer during Computer course

** Note: 1) The topics shown in Bold letters indicate Main Headings and remaining as sub headings of the Ma in Haedings..

PROPOSED TRAINING PROGRAMME ON TELECOM FOR POLICE CONSTABLES

SL. NO.	TOPIC	SUBJECT MATTER COVERAGE	TRAINING METHODOLOGY	A.V AND OTHER TRAINING RESOURCES	TIME REQUIREMENT
1.	Introduction to District Police Telecommunication.	Brief history of Telecom development – over view, with a special reference to a state of communication in their respective States. - Need of communication, what is communication, types of transmission, familiarization with the commonly used terms in communication e.g. information, message, signal, modulation & demodulation, modem, analog & digital communication system, band width, real time communication, non-real time, store and forward, TP communication packet switching, protocols, FDM, EDM, data communication, e-mail, voice mail, cell phones, pager.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	10 periods
2.	Description of all the communication systems.	Introduction to Telephone, HF, VHF, UHF, Microwave satellite communication system. Its architecture working in brief.	Lecture-cum-film show.	Computer with Multi-media projector (or) Transparency & O.H.P.	4 periods
3.	Radio procedure	Need, definitions- abbreviated address, address section, addressee, call, call sign, cipher, code, code address, cryptogram, crypto center, cryptography, types of radio stations (fixed transportable and	Lecture-cum-Hands on experience	Computer with Multi-media projector (or) Transparency	12 periods

		mobile), originator, classified/un-classified message, formal message, informal message, need for security classification, security classification (top secret, secret and confidential), mode of dispatch & acknowledgment of classified messages, guiding instructions for originators (duties and responsibilities) in originating classified messages, general instructions on message writing, use of priorities, drafting of radiograms.		& O.H.P.	
4.	Brief description of Radio communication	Frequency spectrum, frequency based classification of radio waves, basic principle of radio wave propagation, propagation of ground wave, space wave, and sky wave. Communication ranges and techniques for extension of line of sight coverage, repeaters, composition of HF Radio Stations and Network, Satellite phone, V-SAT, POLNET.	Lecture Method	Computer with Multi-media projector (or) Transparency & O.H.P.	8 periods
5.	How to attend Telephones	Introduction to telephone instrument. Brief knowledge of circuitary, use of telephones, procedure for attending outgoing and incoming telephones, maintaining the record of the calls received, precautions required in using in radio telephone and telephone. Cell phones- Brief history, principle of its working, procedure for call setup from cell phone to cell phone and cell phone to fixed phone or vice versa. Call tracking and tracing.	Lecture-cum-demonstration	Computer with Multi-media projector	4 periods
6.	Maintenance of Batteries	Types of Batteries, primary and secondary chargeable and rechargeable, alkaline batteries, Ni-Cd batteries, Lithium-ion batteries, their storage life, charging process and other details related to its effective use like how to charge? How to store? Etc. Charging of Lead-Acid batteries, its maintenance and	Lecture-cum-demonstration	Computer with Multi-media projector	8 periods

7.	Working of Internet and e-mail	use. Precautions to be taken during transportation. Understanding computer systems, hardware and software compatibility, networking . Internet – An over view, a brief history of internet, how to use internet, services available, requirement of the hardware and software and telecommunication link, to work with internet in multimedia environment. e-mail - What is e-mail, how it works, requirement of hardware, software and other, e-mail basics, guidelines in using e-mail, advantages and limitations of e-mail, bounced mail, privacy of e-mail.	Lecture Method supported by Video film	Computer with Multi-media projector	6 periods
8.	FAX Communication	Application, advantages and disadvantages, basic FAX operation, types of FAX machines used, thermal paper and plain paper. Common problems generally encountered during operation and its remedies, how to install and operate the FAX with leased lines and dial-up lines.	Lecture-cum-demonstration Method & Extensive hands on experience	Computer with Multi-media projector	6 periods
9.	How to speak over radio telephone effectively	Need, types of radio telephony communications, precaution required while speaking over a radio phone, (rhythm, speed, volume and pitch) construction of text, construction of calls, method of calling and answering, establishing communication, working with control, transmission of long messages, use of phonetics and clothed/code language, use of scramblers, voicecoders(vocoders), introduction to cipher system, OTLP (One Time Letter Pad),.	Lecture -cum-demonstration Method & Hands on experience	Computer with Multi-media projector (or) Transparency & O.H.P.	12 periods
10,	Use of communication in crowd control, processions and VIP	Through knowledge of installation of mobile VHP/UHF communication facilities during crowd control, VVIP/VIP situations. Availability of sufficient s/by batteries for round the clock operation or during bandobust. What one should look for during bandobust, how to communicate with control	Lecture Method/field visit Film show	Computer with Multi-media projector	8 periods

	Security,	effectively during emergencies and in difficult communication conditions and situations. A brief introduction about the communication arrangements required during the VVIP/VIP visit and for their security like provision of wireless at point of arrival, departure, en-route and at meeting places, communication with control room, traffic police, pilot and escort car.			
11.	Working of Police Control Room and its Communication System.	<p>Importance of control room in policing: Glimpse of present situation based on some case studies, their limitations, requirement of model police control room, how to establish it, what should be a model police control room, what is response time and how it decides the effectiveness of the police, lay-out of the control room, operation room, conference room, manpower allocations and duties of In charge Officer, Shift In charge, Radio Operator, Mobile Staff, Radio Maintenance Officer & M.T. Working procedure, Control Room and Mobile Units, Display boards, Close liaison with control rooms of emergency services like fire brigade, army, ambulance, civil defence, port trust, railways, city, transport etc. zonal control rooms, communication and other equipment required at control room like radios, teleprinters, ambulance van with radio, reserve at the control room, grant of special allowances and facilities for control room. A computer aided dispatch system (CAD), VTIS Vehicle Tackling system with GPS for supervision and effective policing.</p>	Lecture - cum- demo Method, film and visit to city police control room.	Computer with Multi-media projector	12 periods
12.	Communication Security	Introduction , definition of communication security, need of communication security measures, interception, channels of communications, radio land lines, use of telephone speech scramblers, use of	Lecture Method	Computer with Multi-media projector	8 periods

			cipher, operating procedures and their effect on security, type of information not to be transmitted in plain language.			
13.	G.P.S & GIS	Introduction, Application, Use of GPS in patrolling in unknown roots, supervision of patrol vans and food patrols, Vehicle Tracking and Information System.	Lecture Method	Computer with Multi-media projector	4 periods	
14.	CCTV	Close Circuit TV: Basic principles and its uses as an electronic surveillance/monitoring system to monitor remotely any activity /incidence and also various types of CCTV available, wireless and wired, its legal implications.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	4 periods	
15.	Introduction to Electronic Gadgets	Introduction to basics of Tape Recorders, analog and digital, working of normal, mini and micro tape recorders, VCR, Video Camera, Electronic Surveillance System, Bugging and Wire Tapping, classification of surveillance system, bugs, radio bugs, wired bug, tap, compatible receivers, wired mike, telephone tapping also introduction to architecture of telephone exchange, metal detectors, HHMD and DFMDs – its working principle, sensitivity, maintenance and precautions required during storage and method of deployment.	Lecture–cum-demo Method	Computer with Multi-media projector	12 periods	
16	Introduction to amateur radio	What is an Amateur radio? How to become an amateur radio operator? Ham Radio licensing procedure.	Lecture –cum demonstration Method (or) Video film	Computer with Multi-media projector	2 periods	
17.	Introduction to Secret Communication.	Need , availability cipher systems.	Lecture demonstration	Computer with Multi-media projector	4 periods	

I. VIEWS ON TELECOMMUNICATION TRAINING IN POLICE

(External Experts/Sr. Police Officers)

1. To what extent you are satisfied with the telecommunication training to the police personnel in our country?

Fully (5)	To a considerable Extent (4)	To some extent (3)	To a little extent (2)	Not at all (1)
--------------	------------------------------------	--------------------------	------------------------------	-------------------

Comments, if any

2. What are the recent advances in telecommunication which can benefit the Police in improving their effectiveness in terms of response time?

- i) _____
- ii) _____
- iii) _____
- iv) _____

3. In your view what is the importance of various topics related to Telecommunication for Police? Please encircle your response by considering the following scale:

- | | | | |
|---|----------------------------|---|----------------------|
| 5 | - To a great extent | 2 | - To a little extent |
| 4 | - To a considerable extent | 1 | - Not at all |
| 3 | - To some extent | | |

<u>Perceived Importance On Job</u>					<u>Topic</u>	<u>Training Requirement</u>
5	4	3	2	1	1. Introduction to Telecom.	Yes/No
5	4	3	2	1	2. Introduction to Police Telecom.	Yes/No
5	4	3	2	1	3. Radio Procedure	Yes/No
5	4	3	2	1	4. Principles of various Radio Telecom. Systems	Yes/No
5	4	3	2	1	5. Satellite Communication/V-Sat/Pol-net	Yes/No
5	4	3	2	1	6. Personal Mobile Commn. System -Pagers/Cell phones	Yes/No
5	4	3	2	1	7. Basic Concept of Networking	Yes/No
5	4	3	2	1	8. Working of INTERNET/E-MAIL	Yes/No
5	4	3	2	1	9. Executive Commn.System (PC to PC), FAX.	Yes/No
5	4	3	2	1	10. Radio Telephony Procedure	Yes/No
5	4	3	2	1	11. Use of Commn.in crowd control, processions, VIP Security & during natural calamities etc.	Yes/No
5	4	3	2	1	12. Radio Trunking System	Yes/No
5	4	3	2	1	13. Police Control Room/CAD System	Yes/No
5	4	3	2	1	14. Commn.Security	Yes/No
5	4	3	2	1	15. Introduction to Global Positioning System	Yes/No
5	4	3	2	1	16. Introduction to GIS	Yes/No
5	4	3	2	1	17. Introduction to CCTV	Yes/No
5	4	3	2	1	18. Direct to Home TV and its possible impact & CTV.	Yes/No
5	4	3	2	1	19. International Police Wireless Network (INTERPOL)	Yes/No
5	4	3	2	1	20. Introduction to Electronic Gadgets	Yes/No
5	4	3	2	1	21. Introduction to Amateur Radio	Yes/No
5	4	3	2	1	21. <u>Secret Commn.</u>	Yes/No
5	4	3	2	1	22. <u>Cipher System</u>	Yes/No
5	4	3	2	1	23. <u>Scramblers</u>	Yes/No

4. What should be the methodology for developing knowledge and skills in telecommunication area for Police Executives?

<u>Excellent</u>	<u>Very Good</u>	<u>Good</u>	<u>Satisfactory</u>	<u>Poor</u>	
5	4	3	2	1	(i) Lecture Method
5	4	3	2	1	(ii) Lecture-cum-Demonstration Method
5	4	3	2	1	(iii) Group Discussion
5	4	3	2	1	(iv) Individual guided practice.
5	4	3	2	1	(v) Films on Telecommunication followed by discussion.
5	4	3	2	1	(vi) Field visits to Telecom Centres.
5	4	3	2	1	(vii) Simulated Exercises on Telecom.
5	4	3	2	1	(viii) Case-studies on Telecom.

5. What should be the most appropriate training aids (audio-visual etc.) for effective imparting of training in telecommunication to the Police Executives?

<u>Excellent</u>	<u>Very Good</u>	<u>Good</u>	<u>Satisfactory</u>	<u>Poor</u>	
5	4	3	2	1	(i) Computer Presentations.
5	4	3	2	1	(ii) Models.
5	4	3	2	1	(iii) Through Equipment
					- H.F.
					- V.H.F.
					- G.P.S.
					- FAX
					- Modem etc.

6. What kind of training material (Books, Periodicals, Precis etc.) in telecommunication you recommend for telecommunication training to the police executives?

7. Any other comments on telecommunication training.

Acc: No. 06271

For Research

(TELECOMMUNICATION TRAINING IN POLICE)

II. RESOURCES EVALUATION QUESTIONNAIRE

1. For effective telecommunication training following equipment is required:

Please check (√) the equipment available in training centre :

- _____ 1. Function Generator with headphone.
- _____ 2. Telephone Instrument, Cordless phone and Answering Machine.
- _____ 3. HF Trans-receivers.
- _____ 4. VHF/UHF Walkie-Talkies.
- _____ 5. Demo Model for Satellite Communication.
- _____ 6. Demo Model for Cellular and Paging Systems.
- _____ 7. Fax (Facsimile) Machine.
- _____ 8. Personal Computer with Modem.
- _____ 9. Internet & E-mail.
- _____ 10. Operational HAM Club.
- _____ 11. Audio Tape Recorders (different sizes).
- _____ 12. V.C.Rs.
- _____ 13. Cordless Public Address System.
- _____ 14. Megaphone.
- _____ 15. Global Positioning System Receiver (GPSR)

Any other:-

2. What are your plans for acquiring/purchasing modern equipment for telecommunication training?

3. What kind of training material is available for imparting training?

(Please attach the lists of available training material in your Institution)

a) Books

b) Journals/Magazines available

c) Periodicals

d) Precis/Notes

e) Films

f) Video Cassettes

g) _____

h) _____

i) _____

j) _____

4. Faculty Resources in Telecommunication Training:

<u>Name</u>	<u>Qualifi - Cations</u>	<u>Yrs.of experience</u>	<u>Specialized Courses attended</u>	<u>Any other Information</u>
1.				
2.				
3.				

5. What is duration of Telecommunication Training in your Organisation for different ranks of Police Officers:

Rank	Duration		Remarks if any
	Basic Training	In Service	
Dy. S.P			
SI			
ASI			

6. What are the topics covered during Police Communication Training (Please tick the topic covered out of the list enclosed). Additional topics covered can be added at the bottom of the list.

7. Any other Comments:-

For Research

III. OPINIONNAIRE TELECOMMUNICATION TRAINING IN POLICE
(to be filled up by District S.Ps. and Sr.Supts. of Police)

i) To what extent do you feel that telecommunication training of police personnel is effective?

Fully (5)	To a considerable Extent (4)	To some extent (3)	To a little extent (2)	Not at all (1)
--------------	------------------------------------	--------------------------	------------------------------	-------------------

Comments, if any.

ii) What specific topics/subject matter should be covered in telecommunication training for police personnel in consonance with present day requirements.

a)

b)

c)

d)

e)

iii) In which specific task the police personnel are to be trained in telecommunication to cope up with the Modus Operandi of Criminals?

a)

b)

c)

d)

e)

iv) What kind of training (Nature and duration) do you recommend for police personnel on various levels of hierarchy?

a) Police Constables/Head Constables.

b) Sub Inspectors and Inspectors of Police

c) Dy.Supdts. of Police.

d) Supdts. Of Police.

From Caveman to Astronaut, the spirit of inquiry and invention has brought communication a long way. Call it desire to communicate or communication, it is something inherent in human nature. By habitually acquiring and utilizing new knowledge in telecommunication, mankind has shaped the destiny of this planet i.e. concept of global village.