DESIGN AND IMPLEMENTATION OF FAULT REPAIR SERVICE TELEPHONE EXCHANGE, CHANDIGARH

A PROJECT REPORT

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT
FOR THE DEGREE OF

MASTER OF COMPUTER APPLICATIONS

BY:

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(DEEMED UNIVERSITY)

1993

FAULT

REPAIR

SERVICE

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PUNJAB COMMUNICATIONS LIMITED

(A Government Undertaking)

Ref. No. PCL/VT-28/111

Date : 20th May 199

PERFORMANCE CERTIFICATE

Shri Rakesh, student of IIIrd year Master of Computer Applications, T.I.E.T, Patiala underwent four months Industrial Training at PUNJAB COMMUNICATIONS LIMITED (A Govt.Undertaking) S.A.S. Nagar.

He was associated with Systems Division. He took keen interest in the work and has successfully completed his training in the communication field.

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C E R T I F I C A T E

This is to certify that the project report entitled ' DESIGN & IMPLEMENTATION OF FAULT REPAIR SERVICE , TELEPHONE EXCHANGE , CHANDIGARH contains the work done by Mr. Rakesh under the guidance of Sh. G.B.S. Bindra , Information Systems Manager and Sh. Prabhinder Singh ,System Analyst , PCL , S.A.S Nagar , Mohali during the period starting from Jan 19,1993 to May 19 ,1993.

This work has not been submitted to any other Institution / University for the award of any degree.

ORGANISATION SUPERVISOR.

ACKNOWLEDGEMENT

I express my sincerest thanks to **Sh. G.B.S. Bindra**, INFORMATION SYSTEM MANAGER , PCL , for assigning me this interesting and useful project.

I am thankful to my project guide **Mr. Prabhinder Singh** , System Analyst (PCL), for showing his keen interest in the design and development of this project. His able guidance helped in giving this project the present form.

I appreciate the keen interest shown by **Sh. A.P.Goel**,Asstt. Engineer (Phones), Telecom Deptt., who despite his busy schedule spared his valuable time for providing an overview for the proposed system module.

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I am also thankful to Mr.Bobby, who made the photostat copies of the project report.

(RAKESH)

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INTRODUCTION

TO

THE

ORGANISATION

PUNJAB COMMUNICATIONS LIMITED, MOHALI.

INFRASTRUCTURE & OTHER RESOURCES

Punjab Communications Limited was incorporated in June, 1981 as a wholly owned subsidiary of Punjab State Electronics Development and Production Corporation Limited, Chandigarh .It has an independent board of directors.

PCL has been manufacturing Telecom Products like large Telephone Exchanges, Switching Equipment, Digital Radio and Multiplexers, and diversified into Information Management couple of years ago. PCL has three plants with covered area of 15700 square metres, located at the Electronics Park at Mohali, outside Chandigarh, and offices in various cities of India. The Electronics Park at Mohali is also to get a satellite hook-up shortly for Software Exports.

Within a short span of twelve years, PCL has achieved a national status and has been recognised as a competent andreliable manufacturer of sophisticated professional grade telecommunication equipment . PCL is today in the forefront for producing indigeneously designed and developed products.

PRODUCT MIX

PCL has now established a full fledged capacity for offering to its customers a total system packages consisting of one or more of the following equipments :

-- Direct to line multiplexing equipment (DTL-MUX).

-- Group modem equipment,through Group filter and super through group filter, 3/4 way branching network.

-- 30 Channel Pulse code Modulated Multiplexing equipment (PCM-MUX).

-- Trans-Multiplexer (TRANS-MUX).

-- Voice frequency Telegraph Equipment (VFT).

-- Electronic Private Automatic Branch Exchange (EPABX).

-- 128P Rural Automatic Exchange (RAX).

-- Medium Size Digital Switching System.

-- Digital UHF Radio .

-- Digital Microwave radio for 8/34 Mbit capacity.

-- Subscriber Carrier System .

The various divisions of the company are:

1.Marketing

2.Production

3.Quality Assuarance

4.Information Systems Group

5.Materials Management

6.Finance and Administration

The Information Systems Group (ISG) of PCL manufactures packaged software, develops customised application software, takes up turnkey projects (including procurement of hardware etc.) and also offers facilities management (equip, staff, run, maintain and upgrade the computer centers/EDP cells of customers).

Another very relevant point to be noted is that, PCL besides offering the best financial remuneration to its employees, also creates and maintains the best possible working conditions. The facility, needless to say is completely centrally airconditioned and aesthetically landscaped. There is even a day care centre for the infants of the women employees.Thus a congenial work enviroment is

created and maintained, leading to high productivity low manpower turnover.

ISG has, besides around 70 IBM PC compatibles, a twin-CPU 68030 based minicomputer with more than 40 terminals. ISG also has a 80486 based minicomputer with about 20 terminals. As for RISC based minis, ISG has one HP 9000/817 and is in the process of purchasing a SUN SPARC Business Server. ISG is also purchasing an IBM RS/6000 or AS/400 shortly. Further hardware can be purchased at very short notice , depending on the size and potential of the business ISG's expertise lies in the field of DOS based, UNIX based, networking and other communication software, because of the overwhelming presence of DOS and UNIX operating systems. As for RDBMS, ORACLE and SYBASE are already being used by ISG, with access to INGRES and UNIFY. INFORMIX can also be installed, if required. CASE Tools like Turbo Analyst are also available, while HP Soft Bench is being purchased. Open View and Motif enviroments are also available.

ISG is also developing packages for the Financial Institutions. Besides banking software, we are also developing other loans & advances accounting systems.

The Versatile Multiplexer (VMUX) is a hardware and software based product developed by ISG. The VMUX is a very critical component in the telecom sector. Similarly, ISG has developed AMCOS, a PC based Data Acquisition System useful typically in the medium scale process industries.

SYSTEM ANALYSIS AND DESIGN

PROBLEM DEFINITION

PROBLEM DEFINITION

All the work is done manually in the existing **FAULT REPAIR SERVICE** system. The project requirements were to computerise each section of the existing system , ie. data entry , editing and report generation should be done by the system.

The following list defines the requirements from the proposed system : -

a).The system should be easy to use and maintain.

b).Data Entry should be easy and fast , ie time required to enter the data should be minimum.

c).Accessing a particular record or file should be time saving.

d).The user should be provided with the facility of Entering data , Modifying data and Generating reports.

e).The system should be capable of handling user queries at a faster speed.

f).The system should be able to resolve redundant data.

g).Reports should be generated automatically at regular intervals.

EXISTING SYSTEM

1. INTRODUCTION

Faults in a local telephone system are normally observed and reported by the subscribers or by the staff employed in different Engineering and Traffic Wings of the department, viz. Trunk Exchanges , Local Assistance Positions, Auto Exchanges , Patrol Maintenance Sections and Routine Testing Points . Subscribers may also make oral and written complaints about telephone faults either to the Heads of Telephone Administrations or to the Local Maintenance Officers . All these reports ultimately reach the appropriate test points for localisation and clearance in the shortest possible time. Proper maintenance of statistics of faults and preparation of certain statements are also absolutely essential for a proper control and direction of maintenance efforts. The objective of these instructions is to stream line the procedure for handling fault cases.

2. FAULT REPORTING

a). Subscribers get access to 'Fault Repair Service ' positions by dialling the code '198' for reporting faults. Fault Repair Service (FRS) on 198 is a centralised non-metered service in all single and multi exchange areas.

b). Staff employed in the Maintenance and Traffic Wings of

the Department, viz.,Trunk exchange,Local assistance positions , Auto exchanges ,Test positions and Patrol maintenance sections reports the telephone faults over a special telephone number ending in 1980 (----------1980) which are adjacent to 198 position. These faults are not reported to 'Docket Receiving Positions'of the respective exchanges.

c).Officers receiving written or oral complaints directly from the subscribers also book the faults on the same number or in urgent cases with the Test Desk Monitors of the respective exchanges.

3.FAULT REPAIR SERVICE POSITIONS

a).These are standard cordless positions or call queue position with facilities for answering incoming calls from subscribers.

b).Where more than 4 positions are justified , these positions are provided with Call Queue Facility.

4.OPERATING PROCEDURE

a).TIME TO ANSWER

95% of the calls to these positions are answered within

10 seconds.

b).**SALUTATION**

Incoming calls on these positions are answered --- 'Fault Repair ---- Position number.....'

I).**RECORDING**

Faults reported on these positions are noted in a Fault Docket.After the details have been recorded,the subscriber is informed of the docket number saying "your docket number is....."

II).If any authoritative information about a cable fault affecting the subscriber's telephone and the likely delay in restoration is available with the F.R.S.operator, the subscriber may be informed of it saying " I have noted your complaint; but i am sorry there may be some delay in rectifying your telephone because of a major cable fault . Your docket number is....."

III).The subscribers may also enquire on these positions about the progress of clearance of a fault reported earlier. A docket is prepared for such enquiries with a tick in the appropriate grid to indicate that it is an enquiry docket. The

subscriber should then be told "You will be rung back shortly after investigation."

IV).The dockets are then transferred from the FRS positions to the "Docket Despatch" positions.

5.DOCKET DESPATCH POSITION

a).This is a cordless position with order wire lines to the individual exchanges.This position is located close to the '198' positions.

b).All dockets except enquiry dockets are booked with the respective exchange over the order wire lines and docket numbers exchanged.

c).The enquiry dockets are handed over to the Monitor who investigates the progress of clearance and inform the subscriber suitably . When the telephone number reported against is in the list of telephone numbers disconnected for non payment of bills as per the daily check sheet maintained by the Test Desk monitors at the respective exchanges , the reporting subscribers are only told either that "the number is a non-working connection " or that " the number is temporarily disconnected " without giving the reasons for such disconnection. If the subscriber

insists on getting further information regarding the reasons for such a disconnection, he is requested to contact the concerned officer in the Telephone Revenue Accounts branch .

Action taken by the monitor is noted in the docket .

6.MOVEMENTS OF DOCKETS AND INFORMATION

The movements of dockets and information are shown in the flow chart as shown on the next page .

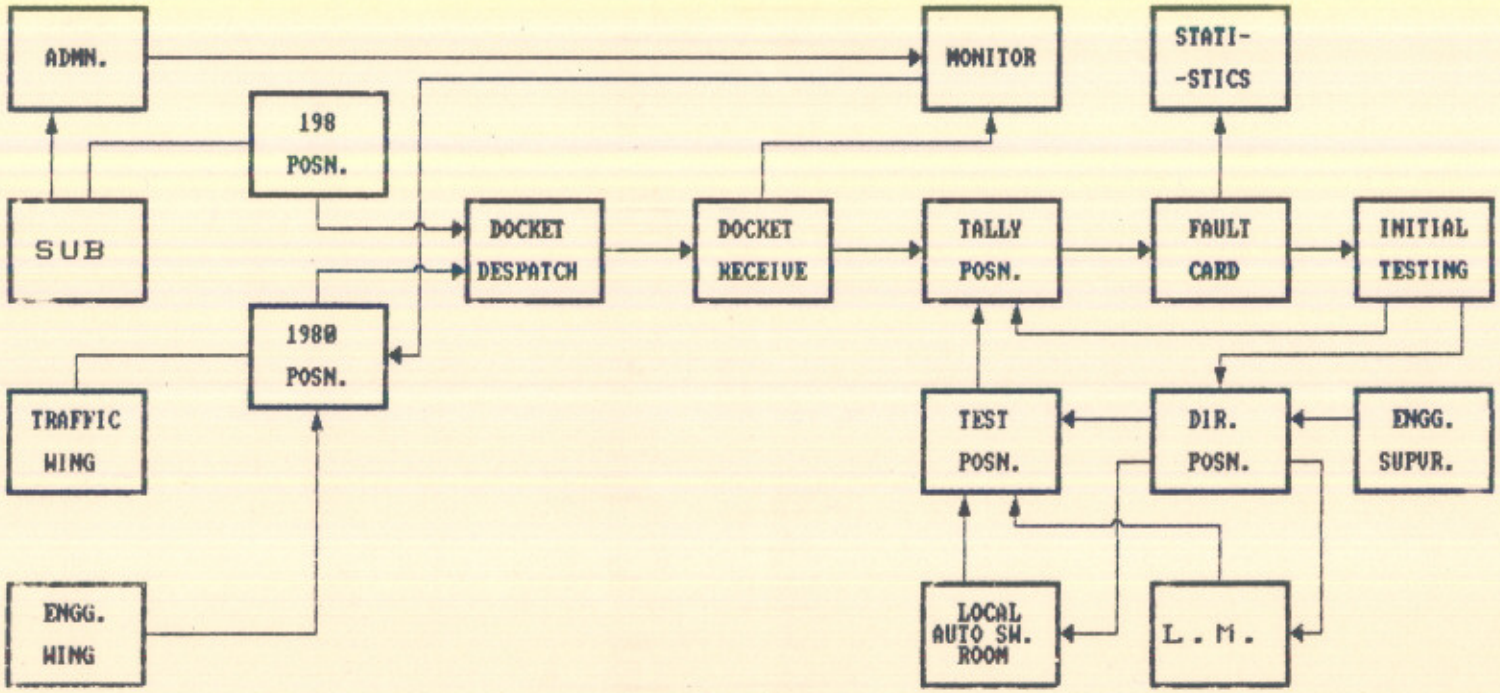
It includes :

a).'DOCKET RECEIVE ' AND 'TALLY ' POSITIONS

I).'Docket Receive ' position consists of a cord less board on which one order Wire from 'Docket Despatch ' position and one direct exchange number ending in (1980) is terminated.

II).Faults reported on the order wire from despatch positions and on telephone ----- 1980 from Engineering and Traffic Wings are noted in a Fault Docket.

III).Faults reported to the Test Desk Monitor by the officers of the Administration are also booked



F A U L T R E P A I R S E R V I C E

F L O W C H A R T

E X I S T I N G S Y S T E M

on a similar docket with a suitable entry to indicate whether a clearance report has been called for.

IV).Tally position is located adjacent to the 'Docket Receive' position.

V).At Tally position there is a tally sheet. Every telephone number reported aginst is noted in the tally sheet against the particular period of occurrence. In case of repeated reports about the same telephone number, action is taken as follows:

i).If a clearance report has not been indicated in the tally sheet for the fault reported earlier,the docket is endorsed as 'duplicate' and the telephone number noted in the tally sheet is encircled. The duplicate docket is sent to the Monitor who investigates the progress of clearance and then attaches the duplicate docket to the Fault Card along with the earlier docket.

ii).If an earlier fault on a particular number has been indicated as cleared in the tally sheet, the new docket is endorsed as a 'Repeat' fault and routed in the normal way.

All dockets except duplicate ones are passed on to the 'Fault Card ' position.

b).FAULT CARD POSITION

I).At this position, a separate fault card is maintained for each telephone.

II).On receipt of a fault docket, the operator at the Fault Card position removes the relevant fault card and makes an entry of the date and time of fault reported.

III).The docket with the Fault Card clipped to it is then forwarded to the 'Initial Testing' position.

c).INITIAL TESTING POSITION

I).Initial Testing for localisation of faults is done on these positions.

II).The results of the tests are indicated on the docket in the appropriate grid and the dockets are passed on to the appropriate Directing position.

d).DIRECTING POSITION

I).These positions are provided with the following

terminations:-

i).One order wire to the switch room of the local auto exchange.

ii).Adequate number of incoming lines of a code. Individual code is alloted for each Directing Position.

II).One position caters to 2 or 3 sections of the External Plant maintenance (depending upon the load) under the charge of Engineering Supervisors.One of the positions may be earmarked wherever necessary, for making over 'Exchange ' faults.

III).The Operators at the 'Directing ' position maintains a 'Tell Tale ' sheet giving all details of movements of the Line Staff and progress of clearance of faults. One sheet is maintained for each section.

IV).The line-men get access to a particular Directing position by dialling the code alloted for it. They will report their attendance to these positions at the commencement of their duty period and subsequently thereafter they report every half-an-hour or immediately after clearing a fault for taking over the next fault from the Directing position

operator .The operator records the attendance of each lineman and the faults made over to him in the appropriate space in the Tell Tale sheet each time the lineman contacts the Directing position.

V).The Sectional Supervisor has to or keep in touch with the exchange for exercising proper control and supervision of their linemen . For this purpose , they examine the Tell Tale sheets and whenever necessary will advise the Directing position operator regarding distribution of faults amongst the Line staff.

VI).After making over the faults to the Line-man, the Fault Card and docket are then forwarded to the Testing position.

e).**TESTING POSITION**

I).These positions are identical to the 'Initial Test ' positions in all respects except for the additional facility for terminating a few incoming lines of a code.

II).The Linemen gets access to these positions by dialling a code (say 192) for testing the faulty telephones.

The operator on the position obtains the relevant docket and the Fault Card and give the prescribed tests to the line staff. After the faults have been removed ,he then speaks to the subscriber to ensure that the telephone has been set right to the latter's satisfaction.A suitable entry is then nade in the docket thus " spoken to subscriber, satisfied " (abbreviated as SSS).

III).The operator also ascertains the actual fault observed and rectified and enters those details in the docket .

IV).Where the Line - man is unable to rectify the fault to the satisfaction of the subscriber,the relevant docket along with the Fault Card is returned to the Directing position after suitable endorsement.The Directing position operator then reports the matter to the Sectional Supervisor for further action.

V).When a Line - man reports his inability to restore the telephone due to the existence of a cable fault or some other fault outside his jurisdiction, the Test position operator forwards the Fault Card along with the Fault Docket,suitably endorsed to the Directing position. The Directing position

should immediately report this case to the Sectional Supervisor and seek his advice for further action. Similar procedure will be followed whenever there is a dispute regarding the location of a fault.

VI).When reports of Linestaff indicate that repeated attempts to gain access to the faulty telephone have failed due to subsriber's premises remaining closed during the working hours shown in the Fault Card,the docket along with the Fault card,should be returned to the Directing Position operator with suitable endorsements.The Directing Position operator then informs the Asstt. Engineer who after verification of the correctness of the report,will address a letter to the subsriber. Till such time as a reply is received from the subscriber, the telephone is be tested once daily and the test report recorded in the docket.

VII).After clearance,the docket along with the Fault Card is sent to the Tally position.

f).At the tally position, the telephone numbers which have been rectified are stored off in the tally sheet. The docket and Fault Card are then sent to the Fault Card position.

g).

I).The fault card operator now enters the details of the faults, time at which faults were cleared and the total duration of interruption in the Fault card.

II).Every fault reported including 'R.W.T.', 'F.N.F.'and 'Repeat' cases makes an entry in the Fault card.

III).Fault card operators also notes down all cases of repeat faults, long duration faults (more than 24 hrs.) and 'Right When Tested / Fault Not Found' cases in a separate register.

IV).The docket is now detached from the Fault Card and sent to the Statistics position.

7.<u>STATISTICS</u>

I).Dockets on which clearance reports have been called for by the administration are handed over to the Monitor for furnishing the report.

II).All the dockets pertaining to the previous day are analysed here for preparation of various statements.

III).A monthly summary of recurring faults, long duration faults and R.W.T./F.N.F. cases is prepared from the register maintained at the Fault card position.

The summary which indicates the total number of such cases reported and cleared during the month , is then forwarded to the Divisional Engineer after scrutiny by the Asstt. Engineer.

8.EXPLANATION OF TERMS AND EXPRESSIONS

I).Right When Tested (R.W.T.) cases:-

If on the initial testing of a telephone number, no fault is found, it is treated as a R.W.T. case.

II).Fault Not Found (F.N.F.) cases:-

These are cases where on initial testing , a fault was observed,but at the final testing no fault could be detected.

III).F.R.S.:-

Abbreviation F.R.S. , wherever it occurs, stands for Fault Repair Service.

9.NORMS FOR MOVEMENTS OF DOCKETS

A fault reported at '198 ' should reach line staff within maximum time of 30 mins.of its booking. For this purpose, the following norms are prescribed for the movements of dockets:

---

198 position to Docket Despatch position - - - 1 min.

Docket Despatch position to respective exchange - - - 5 min.

Docket Receive position to Tally position]
] - - - - 2 min.
Tally position to fault card position]

Fault card position to Initial Test position - - - - 5 min.

Initial test position to Directing position - - - - 15 min.

FAULT DOCKETS

1. INTRODUCTION

a). Fault Docket is used for recording complaints reported on 'Fault Repair Service' positions (198), 'Docket Receive ' positions and 'Monitors' desks.

2. INSTRUCTION FOR USE

a). The abbreviations standardised for use in this docket are explained in Annexure B as shown on the next page. Fault reports, test results and other particulars not confirming to any of the abbreviated categories in the docket are recorded in the blank space provided.

b). Date and Time when the complaint was reported is noted by the F.R.S. Operator. Docket Serial no. is printed initially, prefixed by the alphabetical/numerical code of the station whenever considered necessary. Dockets used at the Docket Receive positions of the respective local exchanges are not numbered initially at the time of printing. In such dockets, the original docket serial numbers given by the Fault Repair Service are noted and serial numbers from from local number slips exchanged.

c). The telephone number or private wire or Non exchange line to which the complaint relates is noted under 'Faulty

number/cct.'. In the column 'Reported by ', thr F.R.S. Operator notes the telephone number or designation (in ccase of reports from officials of the Department) of the person who reports the condition of a telephone/circuit.

d). Complaints relating to any of the abbreviated categories in the grids is indicated by a tick mark in the appropriate grid.

e). If the complaint does not confirm to any of the abbreviated categories in the docket, the blabk space below 'other complaints / particulars ' may be used. Details of parts damaged can also be shown in the blank space.

f). Any enquiry about a telephone complaint reported earlier is indicated by a tick in the grid 'ENQ '. The telephone number from which the query originated is noted below this grid so that the report on the progress of clearance can be intimated to the subscribers after investigation by the Monitor.

g). The officers of the Administration while reporting a complaint may, sometime, ask for a clearance report. In such cases, the Monitor will note the telephone number or designation of the officer who is to be intimated of the clearance in the blank provided below 'Clearance Report

To '.

h).Complaints are first received at the 'Fault Repair Service (F.R.S.) Operator or the Monitor.These complaints are checked with the Tally Sheet by the 'Tally Operator '. At the test rooms of the respective local exchanges, the report received from the Fault Repair Service are noted by the Docket Receive (DR.) Operator in a similar docket. After noting all the particulars, the concerned operator or Monitor puts their initials or staff number at the appropriate place in the docket.

i).The 'Docket Despatch ' operator notes the name of the exchange, serial number (L.N.), after booking the fault with the respective exchange, at the respective exchange and the time at which booked, in the respective columns and put his / her initials or staff number in the columns under 'D.D. Opr '.

j).Results of the initial test are shown against 'Details ' by the 'Initial Testing Operator ' who will also put his / her initials / staff number.

k).After initial test, the fault is given out either to the local exchange apparatus room or to the lineman by the Directing Postion Operator (DIR.OPR). The operator shall

note the details as to when and to whom the fault case is made over and enter his / her staff number in column 'DIR.OPR ', as and when the case is made over to the various officials.

l).Under the column 'Progress Of Clearance ', the testing operator notes down all the details of tests given, localisation and clearance details. The testing operator, after rectification of the line, ring up the particular telephone number and speak to the subscriber so as to confirm that the telephone has been set right to the satisfaction of the subscriber. This is to be indicated in the docket by putting the staff number of the testing operator in the grid provided beside 'SSS '.

m).A blank sheet of the same size as the docket may be attached in case of additional entries.

n).The test operator gives the details of the actual fault and total duration of the interruption in the columns 'Actual Fault ' and 'Duration '.

o).Details relating to the clearance of faults are entered in the Fault Card by the Fault Card Operator. The initials / staff number of the Fault Card Operator is also entered.

p). Analysis of the faults is done at the Statistics position. 'Faults cleared ' and 'No Fault Found ' cases are categorised as pertaining to Exchange Equipment (E), subscriber's Apparatus (A), overhead lines (L) or cables (C). The categorisation is indicated by a tick in the appropriate grid. 'Right When Tested ' or Right On Test (RWT / ROT) and Repeat (RPT) cases are also indicated in the same manner.

FAULT CARDS AND INFORMATION CARDS

1. INTRODUCTION

a). Fault cards to forms PHF-1005, PHF-1006, PHF-1007 are used in the test rooms of local exchanges for recording particulars of subscriber's telephone installations and details of faults which are prescribed in Telephone Service Instruction No. PHF / A-0001.

b). These forms are used as follows:

PHF - 1005	For all direct exchange lines and extensions from PBX / PABXs.
PHF - 1006	As information cards for all PBXs.
PHF -1007	For all Private Wires, non -exchange lines ,local junctions and local leads of long distance circuits.

2. INSTRUCTIONS FOR USE

a). Basic information as detailed below is entered in the cards at the time of commissioning a circuit / telephone number:-

I). **PHF - 1005**

i).Name of the subscriber.

ii).Address of the premises where the telephone is situated.

iii).Working hours ie. the normal period when the premises will be accessible to the technical maintenance staff for repairs or inspection.

iv).Section, of the external maintenance, which is responsible for the maintenance of the telephone.

v).Telephone mumber.

vi).O.B. / Advice Note under which the installation was ordered by the commercial branch.

vii).Date of installation.

viii).Loop resistance (in ohms) of the line.

ix).Type and colour of apparatus ie. whether CB, Magneto ,Auto etc. with Plan number and additional facilities.

x).Principal number which is normally the first number of the PBX group.

xi).Details of Cable pairs at M.D.F., Cabinet and Pillar.

xii).Distribution Point details with number of the D.P. and tag number of the pair used.

xiii).Number of overhead spans used, if any.

II).PHF - 1006

In addition to the items of information prescribed above for PHF - 1005, the following items are entered in the PBX information cards:

i).Telephone number for which Night service facility is provided.

ii).Type of Switch Board (types not applicable to be scored off in the card).

iii).Capacity of the Switch Board expressed as the number of exchange lines and total number of extensions.

iv).Number of extensions working as external extensions and as internal extensions separately.

III).PHF - 1007

i).Items of information on the same lines as for PHF - 1005 is given for both terminals of the Private wires, local junctions or non-exchange lines. In

the case of long distance circuits, only the name of the distant station and details of cable pairs upto the carrier / VFT rooms are noted against Terminal B.

ii).Where the line is built up at more than one M.D.F., details of the cable pairs at each M.D.F., is noted under 'Further Build Up '.

iii).In the case of Private lines and local junctions, the type and the number of the relay set used in the exchange is noted against 'Exchange Termination '. When no relay sets are used (as in the case of non-exchange lines), 'through at M.D.F.' is written against 'Exchange Termination '.

iv).Fault cards are serially numbered.

b).Cards to form PHF - 1005 are maintained for all working telephone lines and extensions of PBX / PABX. In addition, one information card to form PHF - 1006 is maintained for every PBX number. These cards are kept serially according to telephone numbers. Fault cards to form PHF - 1007 are kept separately according to serial number of the cards.

c).As and when a Fault Docket is received at the Fault Card

position, the details of complaints reported are reported in the appropriate columns of the Fault Card before forwarding to the 'Initial Test ' position.

d).On receipt of cleared dockets from the 'Tally posiitions ' the fault card operator enters the details of the faults cleared,date and time of clearance, and initials / staff no. of the lineman and test operator in the respective columns.

e).Every complaint reported, including RWT / ROT and F.N.F. cases must be entered in the fault card.

f).Reports on the routine and special inspections of the installations carried out by the telephone inspectors, engg. supervisors, asstt. engineers etc. are entered in the fault card in red ink.

g).Any alterations made in the installations at subscriber's premises or in the external plant are also noted in red ink and the basic information amended suitably.

h).While replacing the old cards by a new issue, the last entry of fault in the old issue is carried over to the new issue along with the basic information, as amended.

i).Only standard abbreviations as prescribed in the Annexure are used in the Fault cards.

NORMS FOR COMPLAINTS,FAULTS AND DURATION

The following 'Norms ' are prescribed :

1.COMPLAINTS AND FAULTS

	Complaints per 100 telephones per month	Faults per 100 telephones per month
a).Areas mostly served by UG Cables	25	15
b).Areas where there is a predominance of UG Cables with a few spans of OH line also for individual connections.	40	25
c).Areas where there is a predominance of OH lines . . .	50	35

2.DURATION OF FAULTS

a).85 % of the total faults should be cleared within 2 hours.

b).95 % of the total faults should be cleared within 4 hours.

c).Overall average duration per fault should be less than 2.5 hours.

d).Faults carried over to the next day should not exceed 2 % of the net complaints.

3.The procedure for submitting the statements is as follows:

a).Officer - in - charge of each exchange will maintain the data in proforma at Annexures 3 and 4 as attached.

b).In the first week of the subsequent month the officer - in - charge will send the data as per proforma at Annexure 1 to the D.E. in - charge and Head of Circle / District. A copy should be sent to the PHM section of the Directorate by all exchanges with capacities of 1000 lines.

c).Faults detected in the switch room routine testing patrolling etc. are not included in these statistics. These figures are mainly to reflect the performance based

on complaints and routine tests of the subscriber's lines from the test desks etc. The fault detected in the exchange during routine tests and patrolling is shown separately as indicated in Annexure 1.

DEPARTMENT OF TELECOMMUNICATION

PHF 1004
(OBVERSE)

Fault Docket

DATE	TIME	Dkt. Sl. No.

FLTY NUMBER	REPORTED BY	Clearance Report To	No. FROM

O	WN OG	WN IC	Disc. IC	No. IC	No. - IC		
OO	No. Dgs	No. ICR	RT ICS	No. RT	NDT		
CC	BZR	Extn.	SW BD	BL	Parts Demaged	Informed Supervisor	

Other Complaint Particulars

Fte D. R. Operator Telly Opt. Suprevisor

Booked with	Sl. No.	TIME	D.D,T. Opr.

Result of Initial Test

Details :-

Initial Testing Opr.

T. S. I. No. PHF/A-0003
ANNEXURE A

PHE - 1005
(OBVERSE)

FAULT CARD

NAME OF SUBSCRIBER
ADDRESS

WORKING HOURS

SECTION	
TELEPHONE No.	
TYPE & COLOUR OF APP.	
O. B./A. N. No.	
DATE OF INSTN . . .	
LOOP RES	
PRINCIPAL No	
(IN CASE OF PBX)	
AMENDMENTS	DATE

DETAILS OF CABLE PAIRS			D. P.		NO. OF
M. D. F.	CABINET	PILLAR	NO.	TAG	O. H. SPANS

REPORTED				CLEARED					
DATE	TIME	DKT. No.	COMPLAINT	DATE	TIME	ACTUAL FAULT	DURATION	CLEARED BY	TESTED BY

PHF—1005
(REVERSE)

REPORTED				CLEARED					
DATE	TIME	DKT. No.	COMPLAINT	DATE	TIME	ACTUAL FAULT	DURATION	CLEARED BY	TESTED BY

PHF-1006
(OBVERSE)

PBX INFORMATION CARD

SECTION

NAME OF SUBSCRIBER
ADDRESS

PRINCIPAL TELE No.
TYPE
| AUTO | CB | MAG | CORDLESS
CAPACITY.....

WORKING HOURS
TELEPHONE NO. WITH NIGHT SERVICE FACILITY

NO. OF EXCH. LINES
NO. OF EXTNS :
EXT.
INT.

EXCH. NO. & EXT. EXTN.	O.B / A.N NO.	DATE OF INSTN.	LOOP RES.	CABLE PAIRS			D.P		O.H. SPANS
				MDF.	CABINET	PILLAR	NO.	TAG.	

PHF-1006

(REVERSE)

EXCH-NO. / EXT. EXTN	O. B. / A. N NO.	DATE OF INST.	LOOP RES.	CABLE PAIRS			D. P.		O. H. SPANS
							NO.	TAG	

PHF—1007
(OBVERSE)

FAULT CARD

SECTION: A | B

	A	B
NAME		
ADDRESS		
WORKING HOURS		

FAULT CARD No.
OB/AN. No.
DATE OF INST.
EXCH TERMN

TERMINAL	LOOP RES	TYPE OF APPARATUS	OH SPANS	D.P NO	D.P TAG.	CABLE PAIRS PILLAR	CABINET	M. D. F.	FURTHER BUILD UP
A									
B									

REPORTED DATE	TIME	D & T NO	COMPLAINT	CLEARED DATE	TIME	ACTUAL FAULT	DURATION	CLEARED BY	TESTED BY

T. S. I NO. PHF/A-0

ANNEXURE-F

PHF—1007
(REVERSE)

REPORTED			CLEARED					
DATE	TIME	COMPLAINT	DATE	TIME	ACTUAL FAULT	DURATION	CLEARED BY	TESTED B

ANNEXURE 'D' To TSI NO PH'/A—0001

(Obverse)

Form No. PHF — 1002

INDIAN POSTS AND TELEGRAPHS DEPARTMENT

No Postage stamp required

To

The Assistant Engineer.... .....

.....Exchange,

.....

.....

Fold here

.....

PHT

Subject :—Fault report on telephone No.....

at.....

Ref :— Docket No..... Dt.....

Dear Sir/Sirs/Madam,

In response to a complaint, attempts were made by our technical staff to inspect your telephone, but the premises were found closed. On your return, kindly intimate us a convenient time between 9 A.M. and 5 P.M. when the telephone instrument can be made accessible for tests. The information may be conveyed to us either on telephone number.....or through the attached reply card which may be detached and posted to us after filling up details.

Yours faithfully,

ANNEXURE D

(Reverse)

INDIAN POSTS AND TELEGRAPHS DEPARTMENT

From

Assistant Engineer .....

.....Exchange,

.....

To

.....

.....

.....

.....

(Reply)

Ref :— Telephone No :

and Docket No : ..... dt. .....

The telephone can be inspected between.....hours and.....hours on.....

Signature.

20—3 DGP & T/ND/74

ANNEXURE 1

.....EXCHANGE

Analysis of faults for the month of.....

Sl. No.	Description	Figures	Immediate targets
1.	No. of telephones working (on the last day of the month)		..
2.	Net complaints during the month		..
3.	Net complaints per 100 telephones for the month		*
4.	Total faults during the month		*
5.	Faults per 100 telephones for the month		*
6.	Duration of faults		
	Faults cleared within		
	(a) 0—2 hours as percentage of total faults		85%
	(b) 0—4 hours as percentage of total faults		95%
	(c) beyond 4 hours as percentage of total faults		
	(d) Average no. of faults carried over per day		
	(e) Overall average duration per fault-in hours		2.5 hrs
7.	Distribution of faults per 100 telephones		
	(a) Exchange faults		
	(b) MDF faults		
	(c) Cable pair faults		
	(d) Cabinet, pillar & DP faults		
	(e) Aerial line faults		
	(f) Faults in house-wiring and subs. apparatus		
	(g) No faults found		
8.	Cable failures—descritption and duration to be given cable-wise.		
	(a) Junction cables		
	(b) Primary and secondary Cables		
	(c) Distribution cables.		
9.	Exchange Faults :		
	(a) Faults cleared on complaints.....		
	(b) Faults cleared on routines.....		
	(c) Faults cleared on patrolling etc.....		
	Total exchange faults :		

Signature of Officer-in-charge .....

Note 1: 4 copies of this statement are to be made every month by every exchange on or before the 5th of the succeeding month for distribution as follows:—

(i) Office copy.

(ii) Copy to the Divisional Engineer.

(iii) Copy to the Heads of Circles/District.

(iv) Copy to the PHM Section of the Directorate till further orders—only by exchanges having 1000 working telephones or more.

Note 2: No of telephones—Direct exchanges lines + internal and external extensions on subscribers' lines + Extensions on PBXs and PABXs plus telephones used on private wires.

Note 3: Net complaints—Will include complaints received on 198 or 98 or any other complaints booking position + complaint dockets prepared on 199 or 99 or any other asst. position + letter complaints received regarding the local telephone service + complaints made directly to officers or test rooms or to exchanges + dockets prepared by Test desks while routine testing subs. lines and will exclude:

(i) Repeat complaints.

(ii) Complaints in respect of numbers being continuously busy but which are tested really busy or free and tested O.K.

(iii) Complaints against numbers which are tested O.K. but no reply, receiver off etc.

Note 4: Faults—Total faults will include.

(i) Faults detected and cleared on the above mentioned complaints.

(ii) Faults not found.

(iii) Faults found during routine testing of subs' lines + faults detected on testing PGs and will not include:

(i) Faults found during routine testing of exchange equipment.

(ii) Faults found during patrolling in the exchange etc. except PGs.

Note 5: Immediate targets will depend upon the type of external plant as indicated in the Circular. Each Exchange should show the immediate targets it has to achieve.

Note 6: Items 6a and 6b—percentages are to based on total faults cleared and *not* on complai

Note 7: Item 7c—Cable pair faults—work lines which are restored even by crossing faulty ca pairs with good spare cable pairs without actu removing the fault also come under this head.

Note 8: Item 8. Under 'Description' it is quired to give the size and capacity of the ca effected, the number of separate cable faults wh there have been multiple faults and the numbe working lines affected and duration of each ca fault.

Note 9: Item 9. Faults cleared in *all* the change equipment on subscribers' complaints, trolling, routing etc. are to be given under the he ing provided.

ANNEXURE 2

.....EXCHANGE

Analysis of complaints for the month of.....

Date	Brought forward	Booked on 198 or 199 service	Dockets prepared by Test Desk on routine testing PGS etc.	Letter complaints	Direct complaints through Officers etc.	Total complaints (2+3+4+5+6)	Repeat complaints	Tested busy	Connection not working	Receiver Off/No reply	Complaints 7—(8+9+10+11)	Number of telephones
1	2	3	4	5	6	7	8	9	10	11	12	13
1												
2												
3												
4												
5												
.												
30												
31												
Total for the month												

Complaints per 100 telephones during the month.....

NOTES : (i) Complaints per 100 telephones during the month = Total of net complaints (Col. 12) × 100 No. of telephones (Col. 13) on last day of the month.

(ii) Column 2 is provided for complaints brought forward from the previous day which have not been tested. This is because c plaints is a round the clock service while testing is not so.

(iii) Column 8—complaints and faults on numbers involved in cable break downs may be excluded. These complaints mad 198 (or 98) or 199 (or 99) may be shown as repeated complaints under this column

ANNEXURE 3

.....EXCHANGE

Analysis of faults for the month of.....

Dated	Faults brought forward (Carried over from previous day)	Net complaints	Right on test	Faults	Exchange faults	MDF faults	Cable pair faults	Cabinet pillar faults	Aerial line faults	House wiring & subs apparatus faults	Faults not found	Carried over faults	Exchange Routine testing	faults patrolling etc.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.														
2.														
3.														
4.														
Total for the month														

Faults per 100 telephones during the month =.....

Notes : 1. Faults/100 telephone during the month = $\frac{\text{Total of faults (Col. 5)}}{\text{No. of telephones on the last day of the month}} \times \frac{100}{1}$ (Totals of Col. 2 and 13 need not be accounted as they will balance out each other)

2. Net complaints (Col. 3) = Net complaint (Col. 12) of Annexure 2.

3. Right on test (Col. 4) is the number of complaints found right on initial testing soon after complaint is received, but which cannot be categorised under various headings in Annexure 2.

4. Faults (Col. 5) = Total of (Col. 2 + Col. 3) — (Col. 4).

5. Col. 5 = Total of columns 6, 7, 8, 9, 10, 11 and 12.

ANNEXURE 4

.....EXCHANGE

Analysis of duration of faults for the month of.....

Date	Total faults	Faults cleared within			Faults carried over	Total duration of all faults cleared
		0—2 hours	2—4 hrs.	Beyond 4 hrs.		
1	2	3	4	5	6	7
1.						
2.						
3.						
30.						
31.						
Total for the month						

(a) Percentage of faults cleared within 0—2 hrs. =

(b) Do. Do. 0—4 hrs. =

(c) Do. Do. Beyond 4 hrs. =

(d) Average duration per fault =

(e) Average number of carried over faults per day =

PROPOSED SYSTEM

1.FAULT REPORTING

All the faults will be reported at FRS position on telephone number **198** or at some other number as provided by the Exchange. However the operator can also book faults at some other position say **198B** as shown in the flow chart if it is so desired by the authorities in case when arrival time of faults is greater than the recording time .

Staff employed in the Maintenance and Traffic Wings of the Department,viz.,Trunk exchange,Local assistance positions , Auto exchanges ,Test positions and Patrol maintenance sections will report telephone faults over a special telephone number ending in 1980 (--------1980),adjacent to 198 position.

Officers receiving written or oral complaints directly from the subscribers will also book the faults on the same number or in urgent cases with the Test Desk Monitors of the respective exchanges. The Monitor , in turn will book the fault at FRS position,as this will be only position for recording faults.

2.OPERATING PROCEDURE

a).RECORDING

Faults reported on these positions will be noted in the Fault Docket.After the details have been recorded, the subscriber will be informed of the docket number saying "your docket number is.....".The entry in the Fault Docket will be through the screen.The operator will only enter the faulty number in the Fault Docket as there is no need to enter the date and time since they are already displayed on the screen.The time to enter the number will be only 2 seconds.After each number is entered the operator will move on to next FAULT DOCKET at the press of a key.However the operator can also quit from the system if he / she so desires.

b).Each Exchange has its own code of Docket Serial Number.Initially this code will be set by the respective exchange.Each time a faulty number is entered,the docket serial number will be increased by one automatically. Thus each time, when a fault is reported, there is no need to enter the Docket Serial No.

c).The subscribers can enquire on these positions about the progress of clearance of a fault reported earlier. A

docket will be prepared for such enquiries with a Logical True in the appropriate grid to indicate that it is an enquiry docket. All these dockets will be checked by the Monitor.

3.MOVEMENTS OF DOCKETS AND INFORMATION

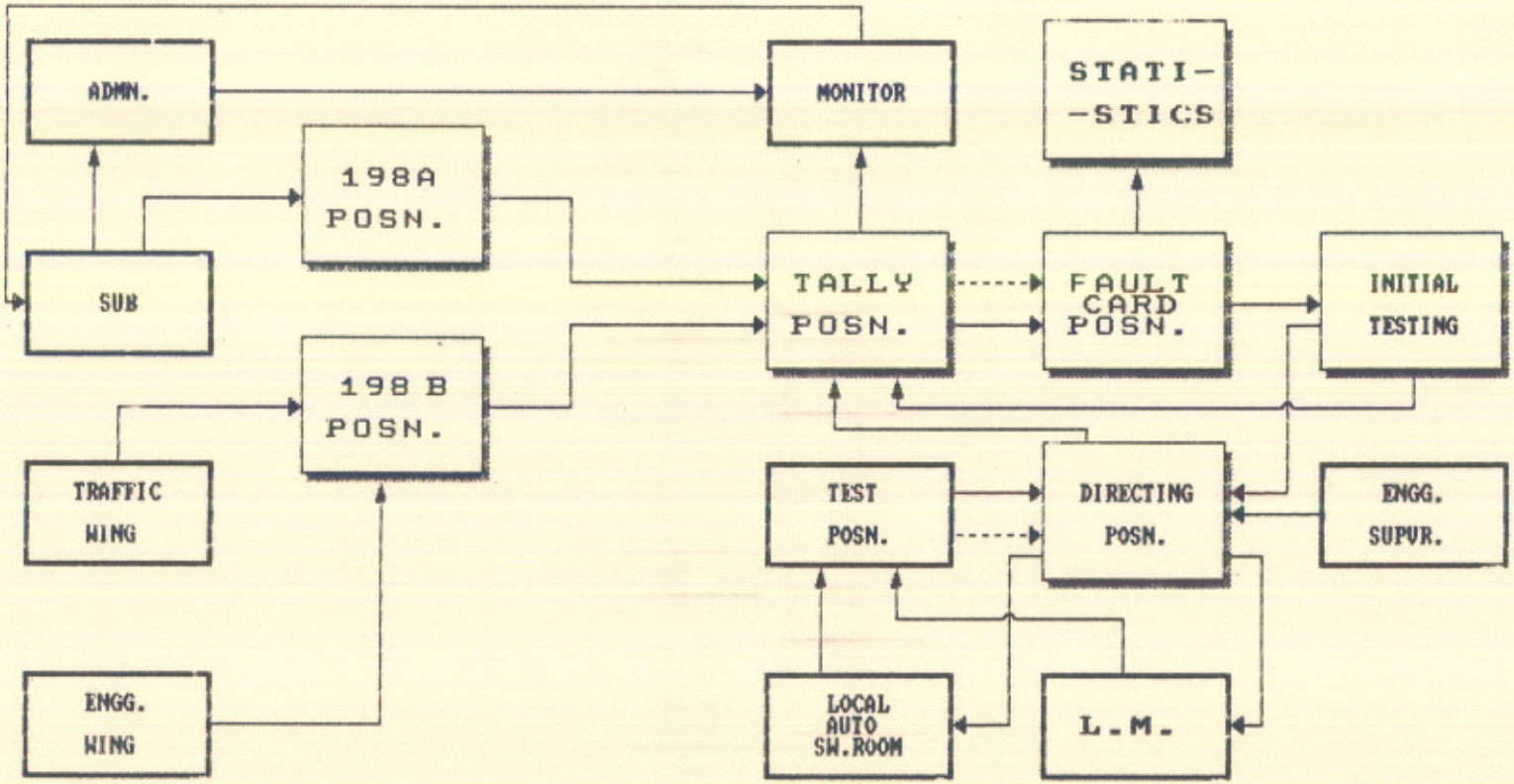
The movements of dockets and information are shown in the flow chart on the next page. There will be no physical movement of Fault Dockets or other cards , so the operators at all the positions will have to access these cards from the database.After making suitable entries the operators at all positions will save the cards in the database.

It includes :

a).'TALLY' POSITION

I).At Tally position there will be a tally sheet. Every telephone number reported against will be noted in the tally sheet against the particular period of occurrence by the operator who will access the Tally sheet from the main program file. After filling details , it will be saved in the database.

II).If an earlier fault on a particular number has been



F A U L T R E P A I R S E R V I C E

F L O W C H A R T

P R O P O S E D S Y S T E M

indicated as cleared in the tally sheet, the new docket will be endorsed as a 'Repeat' fault and routed in the normal way.

All dockets except duplicate ones will be passed on to the 'Fault Card' position.

b).FAULT CARD POSITION

I).At this position , a separate fault card will be maintained for each telephone .This fault card will be accessed from the database which will contain all the fields as are listed in the fault card of each subscriber ,except that recording of faults will be done in a separate card which is known as 'COMPLAINT BOOK '.It will contain date,time,docket serial no.,details of actual fault,and details of fault clearance.There is no need to enter details in the Fault Card of each subscriber.However,the total number of faults reported by a subscriber can be deduced from the 'COMPLAINT BOOK ' for that particular telephone during a month.

c).INITIAL TESTING POSITION

I).The operator will receive the Fault Dockets from the database one by one.The dockets will be received in increasing time order, ie the Faults which were reported first will be served first.In this way the faults will be rectified on a First Come First Served (FCFS) basis.The results of the tests will be indicated on the docket in the appropriate grid.

d).DIRECTING POSITION

I).The Operators at the 'Directing ' position will maintain a ' Tele-Tale ' sheet giving all details of movements of the Line Staff and progress of clearance of faults. Tele-Tale sheets will be accessed from the database.

II).After making over the faults to the Line-man, the operator will record the attendance of each lineman and the faults made over to him in the appropriate space in the Tele - Tale sheet ,each time the lineman contacts the Directing position.

e).TESTING POSITION

I).The operator on the position will obtain the relevant

docket and the Fault Card from the database and give the prescribed tests to the line staff. After the faults have been removed , he should speak to the subscriber to ensure that the telephone has been set right to the latter's satisfaction.A suitable entry will then be made in the docket thus " spoken to subscriber , satisfied " (abbreviated as SSS) and rectified and enters those details in the docket .

II).Where the Line - man is unable to rectify the fault to the satisfaction of the subscriber,the relevant docket along with the Fault Card will be returned to the Directing position after suitable endorsement.The Directing position operator should report the matter to the Sectional Supervisor for further action.

III).When a Line - man reports his inability to restore the telephone due to the existence of a cable fault or some other fault outside his jurisdiction, the Test position operator should forward the Fault Card along with the Fault Docket,suitably endorsed to the Directing position. The Directing position should immediately report this case to the Sectional Supervisor and seek his advice for further action.

Similar procedure will be followed whenever there is a dispute regarding the location of a fault.

VI). When reports of Linestaff indicate that repeated attempts to gain access to the faulty telephone have failed due to subsriber's premises remaining closed during the working hours shown in the Fault Card, the docket along with the Fault card, should be returned to the Directing Position operator with suitable endorsements. The Directing Position operator then informs the Asstt. Engineer who after verification of the correctness of the report, will address a letter to the subsriber. Till such time as a reply is received from the subscriber, the telephone will be tested once daily and the test report recorded in the docket.

The Letter to be addressed to the subscriber is generated by the system itself. The operator only requires to enter the Telephone number of the subscriber.

f). At the tally position, the telephone numbers which have been rectified are scored off in the tally

sheet . The docket and Fault Card are then stored in the database, which then will be accessed at the Fault Card position.

g).

I).The fault card operator will now enter the details of the faults , time at which faults were cleared and the total duration of interruption in the Fault Card.

II).Fault card operator will also note down all cases of repeat faults, long duration faults (more than 24 hrs.) and 'Right When Tested /Fault Not Found' cases in a separate register.

III).The docket will now be detached from the Fault Card and sent to the Statistics position, ie the operator at the statistics position will now only access the Fault Docket.

4.STATISTICS

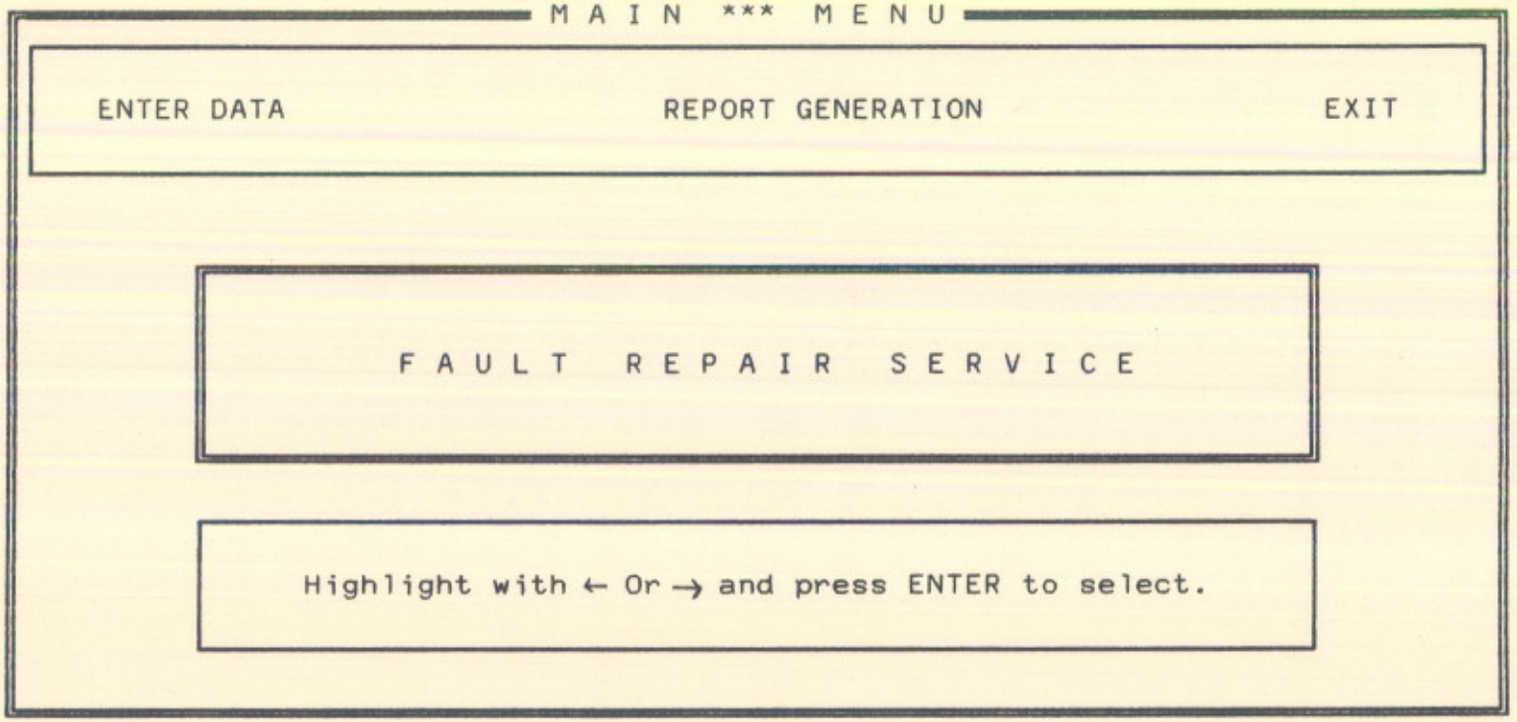
I).Dockets on which clearance reports have been called for by the administration will be handed over to the Monitor for furnishing the report. The transfer will be similar to as other transfers.

II).All the dockets pertaining to the previous day will be analysed here for preparation of various statements.

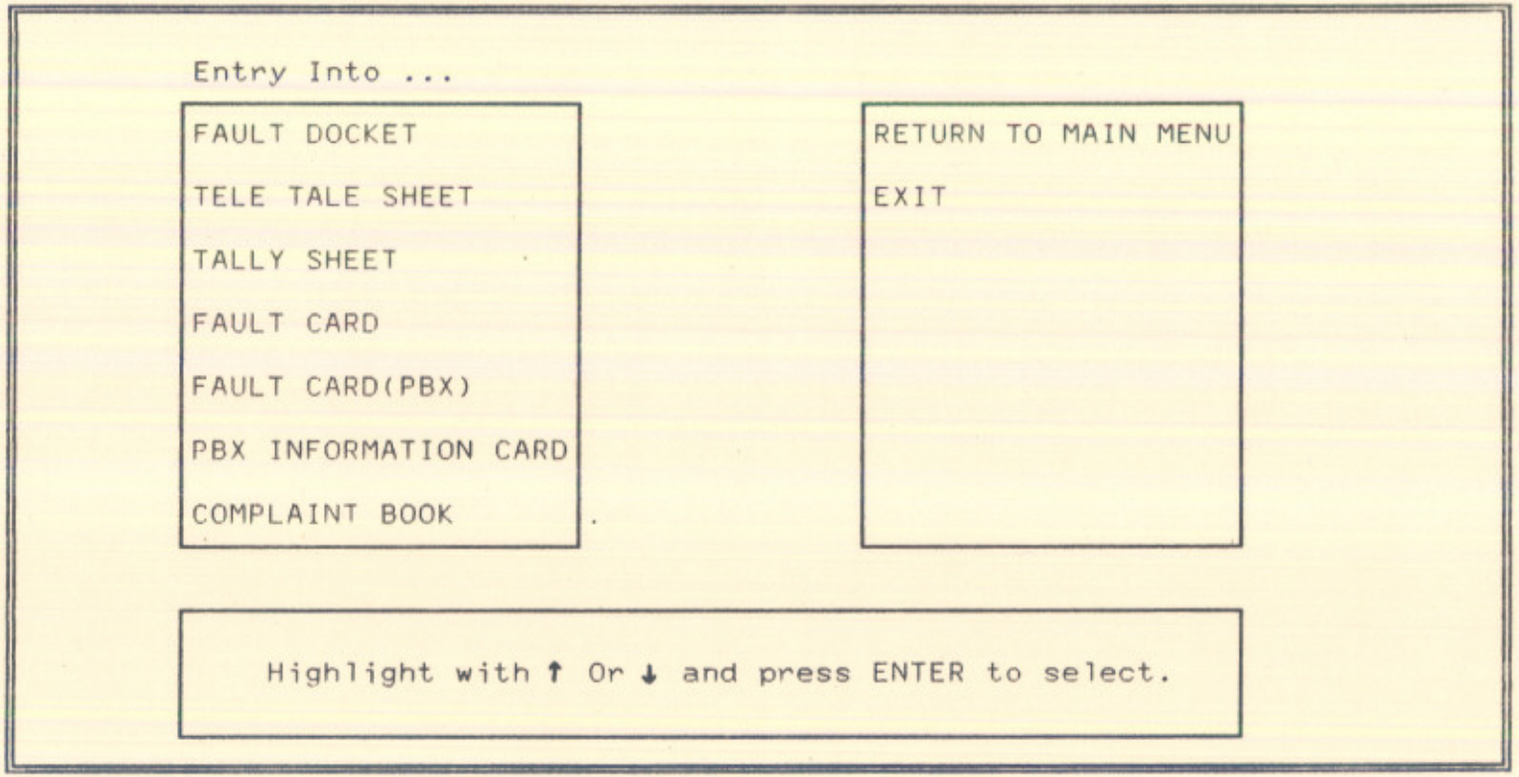
III).A monthly summary of recurring faults, long duration faults and R.W.T./F.N.F. cases will be prepared from the database maintained at the Fault card position. The summary which will indicate the total number of such cases reported and cleared during the month , should be forwarded to the Divisional Engineer after scrutiny by the Asstt. Engineer.

IV).Also the reports regarding Listing of Telephone numbers rectified , total number of faults reported can be produced daily , weekly , or monthly as desired . These reports will prove helpful in analysing the efficiency of the system .

INPUT SCREENS



Enter Data Into Various Cards & Sheets


Entry Into ...
FAULT DOCKET
TELE TALE SHEET
TALLY SHEET
FAULT CARD
FAULT CARD(PBX)
PBX INFORMATION CARD
COMPLAINT BOOK
RETURN TO MAIN MENU
EXIT
Highlight with ↑ Or ↓ and press ENTER to select.

DEPARTMENT OF TELECOMMUNICATIONS

FAULT DOCKET

DATE	TIME	DKT.SL NO.
01/01/80	00:04:35	0

FAULTY NO./CCT	REPORTED BY

CLEARANCE REPORT TO

ENQUIRY FROM

ENTER NEXT RECORD ? <Y/N> <Q To Save & Exit>

DEPARTMENT OF TELECOMMUNICATIONS

TELE - TALE SHEET

DATE: 01/01/80 DIVISION:

SUB DIVISION: LINEMAN:

FAULT PARTICULARS

TELEPHONE NUMBER	TIME		REMARKS
	GIVEN OUT	CLEARED	
123	: :	: :	

FAULTS CLEARED

F.O.K.	C.L.D.	R.C.	NOT ATTENDED
0	0	0	0

Is data entered correctly ? T

DIRECTING CLERK

TIME		STAFF NO.	SIGNATURE
FROM	TO		
: :	: :	0	
: :	: :	0	
: :	: :	0	
: :	: :	0	

REMARKS:

TALLY SHEET

FOR: DATE: 01/01/80

	00 - 06	06 - 10	10 - 14	14 - 18	18 - 22
Phone No.:	0	0	0	0	0

FAULT POSITIONS

	10 - HRS	12 - HRS	14 - HRS	16 - HRS	18 - HRS	22 - HRS
TOTAL FAULTS:	0	0	0	0	0	0
CLEARED :	0	0	0	0	0	0
PENDING :	0	0	0	0	0	0

ENTER NEXT RECORD ? <Q to quit> <Y/N>

F A U L T C A R D

NAME OF SUBSCRIBER

ADDRESS: HOUSE NO:
SECTOR:
CITY:
PIN: 0

WORKING HOURS:From 00:12:06 To 00:12:06

SECTION :

TELEPHONE NO. 0
TYPE
COLOR OF APP.
O.B/A.N.No. .
DATE OF INSTN. 01/01/80
LOOP RES. . . 0
PRINCIPAL NO. 0
(In case of PBX)

DETAILS OF CABLE PAIRS		D.P.	
M.D.F.	CABINET	PILLAR	NO. 0 TAG 0
NO. OF O. H. SPANS			0

AMENDMENTS	DATE
	01/01/80
	01/01/80
	01/01/80

Press any key to continue...

F A U L T C A R D

NAME:

ADDRESS: HOUSE NO:
SECTOR:
CITY:
PIN: 0

WORKING HOURS:From 00:40:49 To 00:40:50

SECTION

A	ö	B
	ö	

FAULT CARD NO.:
O.B/A.N.No.: 0
DATE OF INSTN.: 01/01/80
EXCH.TERMN.:

TERMINAL	LOOP RES.	TYPE OF APPARATUS	OH SPANS	CABLE PAIRS M.D.F.	CABINET	PILLAR
A	0		0			
B	0		0			

TERMINAL	D.P. NO.	D.P. TAG	FURTHER BUILD UP
A	0	0	
B	0	0	

Do you wish to change data ? Y

C O M P L A I N T B O O K

REPORTED

DATE:	01/01/80	TIME:	00:40:50
COMPLAINT:		DKT.NO.:	

CLEARED

DATE:	01/01/80		TIME:	00:40:50
DURATION:	DAYS:0	HRS:0	MINS:0	SECS:0
			CLEARED BY:	0
ACTUAL FAULT:			TESTED BY:	

Is data entered correctly ? <Y/N> Y

P B X I N F O R M A T I O N C A R D

NAME OF SUBSCRIBER

ADDRESS: HOUSE NO:
SECTOR:
CITY:
PIN: 0

WORKING HOURS:From 00:09:28 To 00:09:28

TELEPHONE NO. WITH NIGHT SERVICE FACILITY :- 0

Do you want to change data ? <Y/N> T

SECTION :

PRINCIPAL TELE No. 0

TYPE

AUTO	CB	MAG	CORDLESS
F	F	F	F

CAPACITY: 0

NO.OF EXCH. LINES: 0

NO. OF EXTNS.

EXT.	INT.
0	0

EXCH.NO.& EXT.EXTN.:			O.B/A.N.No.:		
DATE OF INSTN.: 01/01/80			LOOP RES.: 0		
CABLE PAIRS			D.P.		O.H.SPANS
M.D.F.	CABINET	PILLAR	NO.	TAG	
			0	0	0

Are you done ? <Y/N> T

C O M P L A I N T S R E C O R D

REPORTED

DATE: 01/01/80 DET. NO.:

TIME: 02:36:25 TELEPHONE NUMBER :

COMPLAINT:

CLEARED

DATE: 01/01/80 TIME: 02:36:25

DURATION: DAYS:0 HRS:0 MINS:0 SECS:0

ACTUAL FAULT: CLEARED BY:

TESTED BY:

Is data entered correctly .. ? Y

Each Exchange can set it's own Docket Serial Number.
The Docket Serial Number field has a width of 10
characters. All the characters must be numeric.

Enter Docket Serial Number: 0

DO YOU WANT TO CHANGE ? <Y/N> Y

DEPARTMENT OF TELECOMMUNICATIONS

FAULT DOCKET

DATE	TIME	DKT.SL NO.
01/01/80	03:25:06	0

FAULTY NO./CCT	REPORTED BY

CLEARANCE REPORT TO

ENQUIRY FROM

TYPE OF FAULT

D	F	NOOG	F	RTIC	F	BZR	F
WNOG	F	NOIC	F	NORT	F	EXTN	F
WNIC	F	OD	F	NDT	F	SWBD	F
DISCOG	F	NOOGS	F	NSY	F	BL	F
DISCIC	F	NOICS	F	CC	F	PARTS DAMAGED	F

INFORMED MONITOR

OTHER COMPLAINTS/PARTICULARS : -	
FRS D.R.	OPERATOR
TALLY OPR.	MONITOR
BOOKED WITH	SL.NO.
TIME 03:25:06	D.D.OPR.
RESULTS OF INITIAL TESTS	
DETAILS :-	
INITIAL TESTING OPERATOR	

FAULT GIVEN OUT TO
LOC. EXCH.
LM/CJ
E.S.
TIME 03:25:06 DIR. OPR
PROGRESS OF CLEARANCE TESTING OPR

SSS

ACTUAL FAULT

DURATION : DAYS:0 HOURS:0 MINS:0 SECS:0

NOTED IN F.CARD BY	ANALYSIS	MISC	RWT(ROT)	RPT
			F	F

FAULT	E	A	L	C	N.F.F.	E	A	L	C
	F	F	F	F		F	F	F	F

IF DATA ENTERED CORRECTLY ? Y

L I S T I N G

A. Listing By Date.

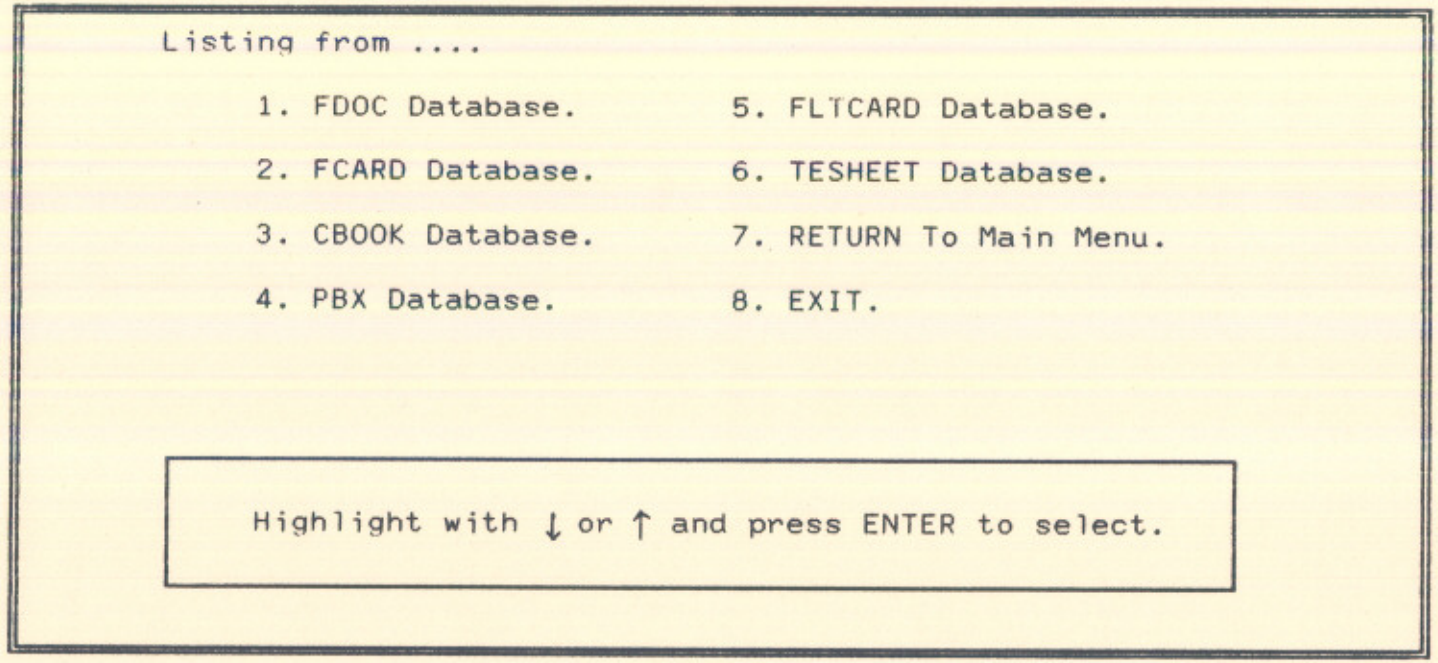
B. Listing By Docket Serial Number.

C. Listing By Telephone Number.

D. Exit.

Highlight with ↓ or ↑ and press ENTER to select.

Uses Various database..


Listing from ....
1. FDOC Database.
2. FCARD Database.
3. CBOOK Database.
4. PBX Database.
5. FLTCARD Database.
6. TESHEET Database.
7. RETURN To Main Menu.
8. EXIT.
Highlight with ↓ or ↑ and press ENTER to select.

L I S T I N G B Y D A T E S

Enter Initial Date(DD/MM/YY): / /

Enter Last Date(DD/MM/YY) : / /

Are The Dates Entered Correctly ? <Y/N> Y

Send Data to print ? <Y/N> Y

L I S T I N G B Y D K T_S L_N O

Enter Starting No.:

Enter Last No.:

Are The Nos. Entered Correctly ? <Y/N> Y

L I S T I N G B Y T E L E P H O N E - N U M B E R S

Enter First Number: 0

Enter Last Number : 0

Are The Numbers Entered Correctly ? <Y/N> Y

Send Data to print ? <Y/N> Y

PSEUDO

CODE

File Name : MAIN.prg

```
**********************************************************************
Clear Screen
Set Foxbase Parameters
Display Menu Of Options
  Select Menu Format
        1.Enter Data
        2.Report Generation
        3.Exit (Return To Dot Prompt)
Get User's Menu Choice
If Option 1 Selected
        Run MAIN1.prg File
If Option 2 Selected
        Run LIST.prg File
If Option 3 Requested
        Return to Dot Prompt
Reset Foxbase Parameters                    &&    END OF FILE.
**********************************************************************
```

```
File Name : MAIN1.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Display Menu Of Options
  Select Menu Format
        1.FAULT DOCKET
        2.TELE - TALE SHEET
        3.TALY SHEET
        4.FAULT CARD
        5.FAULT CARD (PBX)
        6.PBX INFORMATION CARD
        7.COMPLAINT BOOK
        8.RETURN TO MAIN MENU
        9.EXIT (RETURN TO DOT PROMPT)
Get User's Menu Choice
If Option 1 Selected
        Run IFDOKT.prg File
If Option 2 Selected
        Run TESHEET.prg File
If Option 3 Requested
        Run TYSHEET.prg File
If Option 4 Requested
        Run FCARD.prg File
If Option 5 Requested
```

```
        Run FLTCARD.prg File
If Option 6 Requested
        Run PBXIC.prg File
If Option 7 Requested
        Run CBOOK.prg File
If Option 8 Requested
        Run MAIN.prg File
If Option 9 Requested
        Return To Dot Prompt

Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************
```

```
File Name : IFDOKT.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FDOKT Database with index file FDOKT.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt

            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit

Get User's Choice                    .
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                        &&    END OF FILE.
*****************************************************************
```

File Name : FDOKT.prg

```
**********************************************************************
Clear Screen
Set Foxbase Parameters
Use FDOC Database with index file FDOC.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
**********************************************************************
```

File Name : TESHEET.prg

```
**********************************************************************
Clear Screen
Set Foxbase Parameters
Use TESHEET Database with index file TESHEET.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
**********************************************************************
```

File Name : TYSHEET.prg

```
**********************************************************************
Clear Screen
Set Foxbase Parameters
Use TYSHEET Database with index file TYSHEET.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
**********************************************************************
```

File Name : FCARD.prg

```
**************************************************************************
Clear Screen
Set Foxbase Parameters
Use FCARD Database with index file FCARD.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
**************************************************************************
```

```
File Name : FLTCARD.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FLTCARD Database with index file FLTCARD.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
          'Y' To Enter Next Record
          'N' To Change Data
          'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
*****************************************************************
```

```
File Name : PBXIC.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use PBX Database with index file PBX.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
*****************************************************************
```

File Name : CBOOK.prg

```
**********************************************************************
Clear Screen
Set Foxbase Parameters
Use CBOOK Database with index file CBOOK.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Enter Next Record
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Save Data and Append
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
**********************************************************************
```

File Name : CODE.prg

```
**********************************************************************
Clear Screen
Set Foxbase Parameters
Use FDOC Database with index file FDOC.ndx
Display Field To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Change Number
            'N' To Save And Quit
Get User's Choice
If Option 'Y' Selected
       Loop
If Option 'N' Selected
       Save Data And Return to Dot Prompt
Close Database
Reset Foxbase Parameters                    &&    END OF FILE.
**********************************************************************
```

```
File Name : LIST.prg
*****************************************************************

Clear Screen

Set Foxbase Parameters

Display Menu Of Options

  Select Menu Format

        1.Listing By Date

        2.Listing By Docket Serial Number

        3.Listing By Telephone Number

        4.EXIT (RETURN TO DOT PROMPT)

Get User's Menu Choice

If Option 1 Selected

        Run LISTDATE.prg File

If Option 2 Selected

        Run DKTNO.prg File

If Option 3 Requested

        Run TELLIST.prg File

If Option 4 Requested

        Return To Dot Prompt

Reset Foxbase Parameters                    &&     END OF FILE.

*****************************************************************
```

```
File Name : LISTDATE.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Display Menu Options
  Select Format For Options
            1.FDOC Database
            2.FCARD Database
            3.CBOOK Database
            4.PBX Database
            5.FLTCARD Database
            6.TESHEET Database
            7.Return To Main Menu
            8.Exit (Return To Dot Prompt)
Get User's Choice
If Option 1 Requested
       Run Date1.prg File
If Option 2 Requested
       Run Date2.prg File
If Option 3 Requested
       Run Date3.prg File
If Option 4 Requested
       Run Date4.prg File
If Option 5 Requested
       Run Date5.prg File
```

```
If Option 6 Requested
        Run Date6.prg File
If Option 7 Requested
        Run Listdate.prg
If Option 7 Requested
        Return To Dot Prompt
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************
```

```
File Name : DATE1.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FDOC Database with index file FDOC.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************************
```

```
File Name : DATE2.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FCARD Database with index file FCARD.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************
```

```
File Name : DATE3.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use CBOOK Database with index file CBOOK.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

Reset Foxbase Parameters && END OF FILE.

****

```
File Name : DATE4.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use PBX Database with index file PBX.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************************
```

```
File Name : DATE5.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FLTCARD Database with index file FLTCARD.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************
```

```
File Name : DATE6.prg
*************************************************************************
Clear Screen
Set Foxbase Parameters
Use TESHEET Database with index file TESHEET.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
          'Y' To Confirm
          'N' To Change Data
          'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************
```

```
File Name : DKTNO.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FDOC Database with index file FDOC.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************
```

```
File Name : TELLIST.prg
*****************************************************************
Clear Screen
Set Foxbase Parameters
Use FDOC Database with index file FDOC.ndx
Display Fields To Enter Data
Input Data From The User
Display Prompt
  Select Format For Prompt
            'Y' To Confirm
            'N' To Change Data
            'Q' To Quit
Get User's Choice
If Option 'Y' Selected
       Ask about printer
       If printer selected
            Send data to print
            Run Listdate.prg File
       otherwise
            Run Listdate.prg file
If Option 'N' Selected
       Loop Through The Program
If Option 'Q' Requested
       Return to Dot Prompt
Close Database
```

```
Reset Foxbase Parameters                    &&    END OF FILE.
*************************************************************************
```

WORKING ENVIRONMENT

SYSTEM CONFIGURATION

OPERATING SYSTEM	UNIX	
PACKAGE USED	FOXBASE + (VERSION 2.0)	
HARDWARE REQUIREMENTS	1.RAM	32 MB
	2.HDISK	300 MB
	3.DATASPACE	70 MB
	4.FOXBASE +	20 MB
	5.TERMINALS	5
	6.PRINTERS	1 LINE PRINTER

SOURCE CODE

PROBLEMAS

File name : MAIN.prg

Function : This file describes the main menu for the system.

```
**********************************************************************
clear
set talk off
set date british
set score off
set stat off
set message to 24

set colo to +/w
@ 0,0 to 22,79 double
@ 1,1 to 5,78
@ 8,10 to 13,69 double
@ 17,10 to 21,69
set colo to

set colo to w
@ 19,16 say "Highlight with "
??chr(27)
@ 19,31 say "Or "
??chr(26)
@ 19,36 say "and press ENTER to select."
set colo to

@ 3,5 prompt "ENTER DATA" message "Enter  Data  Into  Various
                                   Cards  &  Sheets"
```

```
@ 3,45 prompt "REPORT GENERATION" message "Generate Daily,;
Weekly,Or Monthly Report"
@ 3,70 prompt "EXIT" message "Return To Dot Prompt"

menu to ch

do case
    case ch = 1
        do MAIN1.prg

    case ch = 2
        do LIST.prg

    case ch = 3
        set score on
        set stat on
        return
endcase                                    &&      END OF PROGRAM.
*************************************************************************
```

```
File name :MAIN1.prg
Function  : This program shows various Data Entry Screens.
*****************************************************************

clear
set talk off
set score off
set stat off
set date british

set colo to +/w
@ 0,0 to 24,79 double
set colo to
set colo to +/w
@ 3,9 to 17,29
@ 19,9 to 23,65
set colo to
set colo to w
@ 21,12 say "Highlight with "
?? chr(24)
@ 21,29 say "Or "
?? chr(25)
@ 21,34 say "and press ENTER to select."
set colo to

@ 2,10 say "Entry Into ..."
@ 4,10 prompt "FAULT DOCKET        "
```

```
@ 6,10 prompt "TELE TALE SHEET     "
@ 8,10 prompt "TALLY SHEET         "
@ 10,10 prompt "FAULT CARD          "
@ 12,10 prompt "FAULT CARD(PBX)     "
@ 14,10 prompt "RETURN TO MAIN MENU"
@ 16,10 prompt "EXIT                "

menu to ch
do case
    case ch = 1
        do FDOKT.prg

    case ch = 2
        do TESHEET.prg

    case ch = 3
        do TYSHEET.prg

    case ch = 4
        do FCARD.prg

    case ch = 5
        do PBXIC.prg

    case ch = 6
        do MAIN.prg

    case ch = 7
```

```
        clear
        set stat on
        set score on
        return
endcase                                          &&     END OF PROGRAM.
*************************************************************************
```

```
File Name : ABBRV.prg
Function  : This program shows the abbreviations to be used in
            the  FAULT DOCKET CARD.
*****************************************************************
clear
set talk off
uline = replicate("-",72)
do while .T.
@ 2,2 to 22,77 double
@ 4,18 say "ABBREVIATIONS TO BE USED IN FAULT DOCKETS "
@ 6,4 say uline
@ 8,10 say "D        ------ Dead. "
@ 10,10 say "WN_OG   ------ Getting  Wrong Number On  Outgoing
                            Calls. "
@ 12,10 say "WN_IC   ------ Getting  Wrong Number On  Incoming
                            Calls. "

@  14,10  say  "Disc_OG ------  Getting   Disconnected   While
                               Making  Outgoing Calls. "

@  16,10 say "Disc_IC ------ Getting    Disconnected     While
                             Receiving  Calls."

@ 18,10 say "NO_OG   ------ Not Able To Make Outgoing Calls."

@ 20,10 say "NO_IC   ------ Not Able To Receive Calls."
?
```

```
wait "    Press ENTER to continue ..... "

clear
@ 2,2 to 22,77 double
@ 4,22 say "ABBREVIATIONS TO BE USED IN FAULT DOCKET "
@ 6,4 say uline
@ 8,10 say "OD       ------ Telephone Is Often Dead."
@ 10,10 say "NO_OGS  ------ Outgoing Speech Not Possible."
@ 12,10 say "NO_ICS  ------ Incoming Speech Not Audible."
@  14,10  say "RT_IC   ------ On  Incoming  Calls  Ring  Trips
                              Before  answering."

@  16,10  say  "NO_RT     ------ Ring    Does    Not    Trip    On
                                Answering Incoming Calls."

@ 18,10 say "NDT      ------ No Dial Tone."
@ 20,10 say "NSY      ------ Telephone Noisy."
?
?
wait "    Press ENTER to continue ..... "

clear
@ 4,2 to 20,77 double
@ 6,22 say " ABBREVITAIONS TO BE USED IN FAULT DOCKET "
@ 8,4 say uline
@  10,10  say " CC    ------  Getting  Cross  Connection  With
                              Other Telephones."
```

```
@ 12,10 say " BZR    ------ Buzzer Not Working."
@ 14,10 say " EXTN   ------ Extension Telephone Not Working."
@ 16,10 say " SWBD   ------ Switch Board Of The PBX Faulty."
@ 18,10 say " BL     ------ Bell Not Functioning."

store space(1) to ans
@ 22,10 say " Have you read the abbreviations <y/n>?" get ans
read
ans = lower(ans)
do while ans = "n"
  loop
enddo
enddo
return                                          &&   END OF PROGRAM.
*************************************************************************
```

```
File name : ABBRV2.prg
Function  : This program lists the abbreviations to be used in
            the FAULT CARD.
*****************************************************************
clear
set talk off
uline = replicate("-",72)
do while .T.
@ 2,2 to 20,77  double
@ 4,18 say " ABBREVIATIONS TO BE USED IN FAULT CARDS "
@ 6,4 say uline
@ 8,10 say " A      ------ Apparatus(Subscriber's). "
@ 10,10 say " BK    ------ Break. "
@ 12,10 say " BZR   ------ Buzzer Not Working. "
@ 14,10 say " BL    ------ Bell Not Working. "
@ 16,10 say " C     ------ Cables. "
@ 18,10 say " CC    ------ Getting Cross Connections. "
?
?
wait "   Press ENTER to continue ..... "
clear
@ 2,2 to 20,77 double
@ 4,18 say " ABBREVIATIONS TO BE USED IN FAULT CARDS "
@ 6,4 say uline
@ 8,10 say "CF      ------ Cable Fault. "
```

```
@ 10,10 say "D        ------ Dead. "
@  12,10  say  "Disc_OG ------ Getting   Disconnected    While
                              Making  Outgoing Calls."
@  14,10 say "Disc_IC ------ Getting    Disconnected     While
                             Receiving   Calls."
@ 16,10 say "DJ       ------ Dry Joint. "
@ 18,10 say "E        ------ Exchange Equipment. "
?
?
wait "   Press ENTER to continue ..... "
clear
@ 2,2 to 20,77 double
@ 4,18 say " ABBREVIATIONS TO BE USED IN FAULT CARDS "
@ 6,4 say uline
@ 8,10 say "Eth      ------ Earth. "
@ 10,10 say "N.F.F.  ------ No Fault Found. "
@ 12,10 say "Inst.   ------ Instrument. "
@ 14,10 say "L        ------ Overhead Lines. "
@ 16,10 say "No_OG   ------ Not Able To Make Outgoing Calls. "
@ 18,10 say "No_IC   ------ Not Able To Receive Calls. "
?
?
wait "   Press ENTER to continue ....."
```

```
clear
@ 2,2 to 20,77 double
@ 4,18 say " ABBREVIATIONS TO BE USED IN FAULT CARDS "
@ 6,4 say uline
@ 8,10 say "No_OGS  ------ Outgoing Speech Not Possible. "
@ 10,10 say "No_ICS  ------ Incoming Speech Not Possible. "
@  12,10  say  "No_RT     ------ Ring   Does   Not   Trip    On
                                  Answering  Incoming Calls."

@ 14,10 say "NDT      ------ No Dial Tone. "
@ 16,10 say "NSY      ------ Noisy. "
@ 18,10 say "NSN      ------ Insulation. "
?
?
wait "   Press ENTER to continue ......"

clear
@ 4,2 to 18,77 double
@ 6,18 say " ABBREVIATIONS TO BE USED IN FAULT CARDS "
@ 8,4 say uline
@ 10,10 say "OD       ------ Often Dead. "
@ 12,10 say "RWT      ------ Right When Tested. "
@  14,10  say  "RT_IC   ------  Ring   Trips   On    Answering
                                  Incoming  Calls."

@ 16,10 say "SW_BD   ------ Switch Board."
?
```

```
?
wait "   Press ENTER to continue ....."

clear
@ 4,2 to 18,77 double
@ 6,18 say " ABBREVIATIONS TO BE USED IN FAULT CARDS "
@ 8,4 say uline
@ 10,10 say "T          ------ Contact Or Short Circuit. "
@ 12,10 say "TF         ------ Contact With Foreign Potential. "
@  14,10  say  "WN_OG     ------ Getting   Wrong   Number    On
                                Outgoing   Calls. "

@  16,10  say  "WN_IC     ------ Getting   Wrong   Number    On
                                Incoming  Calls. "

store space(1) to ans
@ 20,10 say " Have you read the abbreviations <y/n>? " get ans
read
ans = lower(ans)
do while ans = "n"
        loop
enddo
enddo
return                                          &&     END OF PROGRAM.
*****************************************************************
```

File name : CODE.prg

function : This file presents the user with the facility of entering the Docket Serial Number according to his choice.

```
**********************************************************************
clear
set talk off
set stat off
@ 5,12
text
        Each Exchange can set it's own Docket Serial Number.
        The Docket Serial Number field has a width of 5
        characters.All characters must be numeric.
endtext

@ 2,2 to 20,74 double
use fdoc
SCATTER TO record
@ 18,8 say "Enter Docket Serial Number:  " get record (3) ;
   pict "@!"
read
GATHER FROM record
set stat on
return                                          &&     END OF PROGRAM.
**********************************************************************
```

```
File name : IFDOKT.prg
Function : This file shows the initial FAULT DOCKET.
*************************************************************************
clear
set talk off
set stat off
set score off
set date british

*******************--Replaces and initializes database fields.

mdate = DATE()
mdktno = 0
mtime = TIME()
mrportedby =space(20)
mclrepto = space(30)
menq = space(30)
mfaultyno = 0

*********************---------- Main program.
do while .T.
set colo to +/w
@ 0,0 to 18,75 double
set colo to
set colo to w/+
@ 0,15 say "I N D I A N  P O S T S  A N D  T E L E G R A P H;
  S"
```

```
set colo to
@ 3,28 say "F A U L T  D O C K E T"

@ 5,3 TO 5,74 double
@ 6,25 to 10,25 double
@ 6,45 to 10,45 double
@ 10,3 to 10,74 double
@ 11,30 to 14,30 double
@ 14,3 to 14,74 double

@ 7,10 say "DATE"
@ 8,8 get mdate
@ 7,32 say "TIME"
@ 8,30 get mtime pict "99:99:99"
@ 7,56 say "DKT.SL NO."
@ 8,56 get mdktno pict "99999"
read
@ 11,8 say "FAULTY NO./CCT"
@ 12,10 get mfaultyno pict "@Z"
@ 11,45 say "REPORTED BY "
@ 12,40 get mrportedby pict "@!"
read

@ 15,5 say " CLEARANCE REPORT TO " get mclrepto pict "@!"
@ 17,5 say " ENQUIRY FROM        " get menq pict "@!"
read
```

```
ans = " "
do while .NOT. upper(ans) $ "YNQ"

set colo to +/w
@ 20,10 to 24,70
set colo to

set colo to w/+
@ 22,17 say "ENTER NEXT RECORD ? <Y/N> <Q To Save & Exit>" ;
  get ans pict "!"
read
set colo to
enddo

do case
    case ans = "Y"
      use FDOKT index FDOKT    && INDEX IS ON TIME.
      append blank
      replace DATE with mdate
      replace DKT_SL_NO with mdktno
      replace TIME with mtime
      replace RPORTED_BY with mrportedby
      replace CL_REP_TO with mclrepto
      replace ENQ_FROM with menq
      replace FAULTY_NO with mfaultyno
    case ans = "N"
```

```
        clear
        loop

      case ans = "Q"
        use FDOKT
        append blank
        replace DATE with mdate
        replace DKT_SL_NO with mdktno
        replace TIME with mtime
        replace RPORTED_BY with mrportedby
        replace CL_REP_TO with mclrepto
        replace ENQ_FROM with menq
        replace FAULTY_NO with mfaultyno
        exit
endcase
enddo
set stat on
return                                          && END OF PROGRAM.
*****************************************************************
```

```
* File name : fbook1.prg
Function : This file shows the fault docket.
*************************************************************************
clear
set talk off
set stat off
set date british

*******************--Replaces and initializes database fields.
mdate = DATE()
mdktno = 0
mtime = TIME()
store 0 to mday,mhrs,mmins,t4
mrportedby =space(20)
mclrepto = space(30)
menq = space(30)
mfaultyno = 0
md3 = 0
md4 = space(9)
md = .N.
mwnog = .N.
mwnic = .N.
mdiscog = .N.
mdiscic = .N.
mnoog = .N.
mnoic = .N.
```

```
mod = .N.
mnoogs = .N.
mnoics = .N.
mrtic = .N.
mnort = .N.
mndt = .N.
mnsy = .N.
mcc = .N.
mbzr = .N.
mextn = .N.
mswbd = .N.
mbl = .N.
mpardmg = .N.
minfmonitor = space(15)
mocp = space(70)
mfrsdr = space(15)
moperator = space(15)
mtallyopr = space(15)
mmonitor = space(15)
mbook = space(15)
mslno = space(10)
mb = time()
mddopr = space(15)
mdetails = space(69)
mitopr = space(15)
```

```
mlocxchange = space(69)
mlmcj = space(69)
mes = space(69)
mf = time()
mdiropr = space(15)
mproc1 = space(69)
mproc2 = space(69)
mproc3 = space(69)
mtestingopr = space(15)
msss = space(15)
mactlfault = space(55)
mntdfcby = space(15)
manalysis = space(15)
mmisc = space(10)
mrwt = .N.
mrpt = .N.
me = .N.
ma = .N.
ml = .N.
mc = .N.
me1 = .N.
ma1 = .N.
ml1 = .N.
mc1 = .N.
```

```
**********-------------- Main program.
do while .1.
@ 1,2 to 20,75 double

set colo to w/+
@ 3,15 say "D E P A R T M E N T  O F  T E L E C O M M U N I ;
C A T I O N S"
set colo to

@ 5,28 say "F A U L T  D O C K E T"

@ 7,3 TO 7,74 double
@ 8,25 to 12,25 double
@ 8,45 to 12,45 double
@ 12,3 to 12,74 double
@ 13,30 to 16,30 double
@ 16,3 to 16,74 double

@ 9,10 say "DATE"
@ 10,8 get mdate
@ 9,32 say "TIME"
@ 10,30 get mtime pict "99:99:99"
clear gets

@ 9,56 say "DKT.SL NO."
@ 10,56 get mdktno pict "99999"
read
```

```
@ 13,8 say "FAULTY NO./CCT"
@ 14,10 get mfaultyno pict "@Z"
@ 13,45 say "REPORTED BY "
@ 14,40 get mrportedby pict "@!"
read

@ 17,5 say " CLEARANCE REPORT TO " get mclrepto pict "@!"
@ 19,5 say " ENQUIRY FROM        " get menq pict "@!"
read

**************************
clear
@ 1,2 to 20,75

set colo to +/w
@ 4,30 say "TYPE OF FAULT"
set colo to

@ 6,3 to 6,74 double
@ 8,18 to 16,18 double
@ 8,34 to 16,34 double
@ 8,50 to 16,50 double

@ 8,4 say "D      " get md pict "L"
@ 10,4 say "WNOG   " get mwnog pict "L"
@ 12,4 say "WNIC   " get mwnic pict "L"
@ 14,4 say "DISCOG" get mdiscog pict "L"
```

```
@ 16,4 say "DISCIC" get mdiscic pict "L"
@ 8,20 say "NOOG  " get mnoog pict "L"
@ 10,20 say "NOIC  " get mnoic pict "L"
@ 12,20 say "OD    " get mod pict "L"
@ 14,20 say "NOOGS " get mnoogs pict "L"
@ 16,20 say "NOICS " get mnoics pict "L"
@ 8,36 say "RTIC  " get mrtic pict "L"
@ 10,36 say "NORT  " get mnort pict "L"
@ 12,36 say "NDT   " get mndt pict "L"
@ 14,36 say "NSY   " get mnsy pict "L"
@ 16,36 say "CC    " get mcc pict "L"
@ 8,52 say "BZR    " get mbzr pict "L"
@ 10,52 say "EXTN   " get mextn pict "L"
@ 12,52 say "SWBD   " get mswbd pict "L"
@ 14,52 say "BL     " get mbl pict "L"
@ 16,52 say "PARTS DAMAGED" get mpardmg pict "L"
@ 19,4 say "INFORMED MONITOR" get minfmonitor pict "@!"
read

**************************************************

clear

@ 1,2 to 20,75 double
@ 13,3 to 13,74 double
@ 15,3 to 15,74 double
@ 5,3 to 5,74 double
```

```
@ 18,3 to 18,74 double
@ 2,4 say "OTHER COMPLAINTS/PARTICULARS : - "
@ 4,4 get mocp pict "@!"
@ 6,5 say "FRS D.R.     " get mfrsdr
@ 6,42 say "OPERATOR    " get moperator
@ 8,5 say "TALLY OPR.   " get mtallyopr
@ 8,42 say "MONITOR     " get mmonitor
@ 10,5 say "BOOKED WITH " get mbook
@ 10,42 say "SL.NO.      " get mslno
@ 12,5 say "TIME         " get mb pict "99:99:99"
@ 12,42 say "D.D.OPR.    " get mddopr
read

@ 14,4 say "RESULTS OF INITIAL TESTS"
@ 16,4 say "DETAILS :-"
@ 17,4 get mdetails
@ 19,4 say "INITIAL TESTING OPERATOR " get mitopr
read

**************************************************
clear

@ 1,2 to 21,75 double
@ 3,3 to 3,74 double
@ 6,3 to 6,74 double
@ 9,3 to 9,74 double
```

```
@ 12,3 to 12,74 double
@ 14,3 to 14,74 double

@ 2,3 say "FAULT GIVEN OUT TO"
@ 4,4 say "LOC. EXCH."
@ 5,4 get mlocxchange
@ 7,4 say "LM/CJ"
@ 8,4 get mlmcj
@ 10,4 say "E.S."
@ 11,4 get mes
@ 13,4 say "TIME" get mf pict "99:99:99"
@ 13,30 say "DIR. OPR" get mdiropr
@ 15,4 say "PROGRESS OF CLEARANCE"
@ 16,4 get mproc1
@ 17,4 get mproc2
@ 18,4 get mproc3
@ 20,45 say "TESTING OPR " get mtestingopr
read

**********************************************
clear

@ 2,2 to 20,75 double
@ 4,3 to 4,74 double
@ 9,3 to 9,74 double
@ 12,3 to 12,74 double
```

```
@ 16,3 to 16,74 double
@ 13,12 to 15,12 double
@ 13,35 to 15,35 double
@ 13,48 to 15,48 double
@ 13,36 to 15,36 double
@ 10,23 to 11,23 double
@ 10,43 to 11,43 double
@ 10,44 to 11,44 double
@ 10,54 to 11,54 double
@ 10,68 to 11,68 double

@ 3,4 say "SSS" get msss
@ 6,4 say "ACTUAL FAULT" get mactlfault

@ 8,4 say "DURATION "
t1 = ((val(mf)*3600)+(val(substr(mf,4,2))*60) ;
+val(right(mf,2)))

t2 = ((val(mb)*3600)+(val(substr(mb,4,2))*60) :
+val(right(mb,2)))

t3 = t1 - t2
@ 8,4 say "DURATION :"
t4 = int(mod(t3,60))
mmins = int(t3/60)
if mmins >= 60
    mhrs = int(mmins/60)
```

```
     mmins = mod(mmins,60)
endif
if mhrs >= 24
   mday = int(mhrs/24)
   mhrs = mod(mhrs,60)
endif
@ 8,17 say "DAYS:"
?? ltrim(str(mday))
@ 8,33 say "HOURS:"
?? ltrim(str(mhrs))
@ 8,49 say "MINS:"
?? ltrim(str(mmins))
@ 8,65 say "SECS:"
?? ltrim(str(t4))

@ 10,4 say "NOTED IN F.CARD BY "
@ 11,5 get mntdfcby
@ 10,30 say "ANALYSIS"
@ 11,26 get manalysis
@ 10,48 say "MISC"
@ 10,57 say "RWT(ROT)"
@ 11,60 get mrwt pict "L"
@ 10,70 say "RPT"
@ 11,71 get mrpt pict "L"
@ 14,4 say "FAULT"
```

```
@ 13,15 say "E    A    L    C "
@ 15,15 get me
@ 15,20 get ma
@ 15,25 get ml
@ 15,30 get mc
@ 14,40 say "N.F.F."
@ 13,56 say "E    A    L    C"
@ 15,56 get me1
@ 15,61 get ma1
@ 15,66 get ml1
@ 15,71 get mc1
read
*****************************************
ans = .Y.
@ 18,8 say "IF DATA ENTERED CORRECTLY ? " get ans pict "Y"
read

if ans
  use FDOC index FDOC     && INDEX IS ON TIME
  append blank
  replace DATE with mdate
  replace DKT_SL_NO with mdktno
  replace TIME with mtime
  replace RPORTED_BY with mrportedby
  replace CL_REP_TO with mclrepto
```

```
replace ENQ_FROM with menq
replace FAULTY_NO with mfaultyno
replace D with md
replace WN_OG with mwnog
replace WN_IC with mwnic
replace DISC_OG with mdiscog
replace DISC_IC with mdiscic
replace NO_OG with mnoog
replace NO_IC with mnoic
replace OD with mod
replace NO_OG_S with mnoogs
replace NO_IC_S with mnoics
replace RT_IC with mrtic
replace NO_RT with mnort
replace NDT with mndt
replace NSY with mnsy
replace CC with mcc
replace BZR with mbzr
replace EXTN with mextn
replace SWBD with mswbd
replace BL with mbl
replace PARTS_DMGD with mpardmg
replace INFMONITOR with minfmonitor
replace O_COMPLNTS with mocp
replace FRS_DR with mfrsdr
```

```
replace OPERTOR with moperator
replace TALLY_OPR with mtallyopr
replace MONITOR with mmonitor
replace BOOKEDWITH with mbook
replace SL_NO with mslno
replace BOOK_TIME with mb
replace DD_OPR with mddopr
replace DETAILS with mdetails
replace IT_OPR with mitopr
replace LOC_XCHNGE with mlocxchange
replace LM_CJ with mlmcj
replace ES with mes
replace F_TIME with mf
replace DIR_OPR with mdiropr
replace PROCLRNCE1 with mproc1
replace PROCLRNCE2 with mproc2
replace PROCLRNCE3 with mproc3
replace TESTNG_OPR with mtestingopr
replace SSS with msss
replace ACTL_FAULT with mactlfault
replace D_DAYS with mday
replace D_HRS with mhrs
replace D_MINS with mmins
replace D_SECS with t4
replace NTD_FC_BY with mntdfcby
```

```
   replace ANALYSIS with manalysis
   replace MISC with mmisc
   replace RWT with mrwt
   replace RPT with mrpt
   replace E with me
   replace A with ma
   replace L with ml
   replace C with mc
   replace E1 with me1
   replace A1 with ma1
   replace L1 with ml1
   replace C1 with mc1
   use
    mdktno = mdktno + 1
   clear
   loop
else
   clear
   loop
enddo
RETURN                                    &&   END OF PROGRAM.
*************************************************************************
```

File Name : TYSHEET.prg

Function : This file shows the TALLY SHEET which records the Telephone No.s which have been rectified.

```
**********************************************************************
clear
set talk off
set stat off
set date british

do while .T.
@ 1,1 to 24,79 double
@ 5,2 to 5,78
@ 8,25 to 8,74
@ 7,33 to 9,33
@ 7,44 to 9,44
@ 7,55 to 9,55
@ 7,66 to 9,66
@ 11,2 to 11,78
@ 14,20 to 14,75
@ 13,28 to 19,28
@ 13,38 to 19,38
@ 13,48 to 19,48
@ 13,58 to 19,58
@ 13,68 to 19,68
set colo to w/+
@ 1,28 say " T A L L Y   S H E E T "
```

```
set colo to

use TYSHEET index TYSHEET
scatter to ty

md = date()

@ 3,3 say "FOR              :"
@ 3,21 get ty(2) pict "@!"
@ 3,61 say "DATE: " get md
clear gets
@ 7,3 say "Time             :"
@ 9,3 say "Phone No.        :"
@ 7,25 say "00 - 06"
@ 9,25 get ty(3) pict "999999"
@ 7,36 say "06 - 10"
@ 9,36 get ty(4) pict "999999"
@ 7,47 say "10 - 14"
@ 9,47 get ty(5) pict "999999"
@ 7,58 say "14 - 18"
@ 9,58 get ty(6) pict "999999"
@ 7,69 say "18 - 22"
@ 9,69 get ty(7) pict "999999"
set colo to w
@ 13,3 say "FAULT POSNS.OF:"
set colo to
```

```
@ 13,19 say " 10-HRS"
@ 13,29 say " 12-HRS"
@ 13,39 say " 14-HRS"
@ 13,49 say " 16-HRS"
@ 13,59 say " 18-HRS"
@ 13,69 say " 22-HRS"
@ 15,3 say "TOTAL FAULTS  :"
@ 17,3 say "CLEARED       :"
@ 19,3 say "PENDING       :"
@ 15,21 get ty(8) pict "99999"
@ 17,21 get ty(9) pict "99999"
@ 19,21 get ty(10) pict "99999"
@ 15,31 get ty(11) pict "99999"
@ 17,31 get ty(12) pict "99999"
@ 19,31 get ty(13) pict "99999"
@ 15,41 get ty(14) pict "99999"
@ 17,41 get ty(15) pict "99999"
@ 19,41 get ty(16) pict "99999"
@ 15,51 get ty(17) pict "99999"
@ 17,51 get ty(18) pict "99999"
@ 19,51 get ty(19) pict "99999"
@ 15,61 get ty(20) pict "99999"
@ 17,61 get ty(21) pict "99999"
@ 19,61 get ty(22) pict "99999"
@ 15,71 get ty(23) pict "99999"
```

```
@ 17,71 get ty(24) pict "99999"
@ 19,71 get ty(25) pict "99999"
read

**********************************************
ans = " "
do while .NOT. ans $ "YNS"

set colo to +/w
@ 21,5 to 23,75
set colo to

@  22,8  say "ENTER NEXT RECORD ? <Y/N> <S to Save & Exit>, ;
  <N  to change Data>" get ans pict "!"
read
enddo
Do case
   case ans = "Y"
     clear
     append blank
     gather from ty
     replace DATE with md
     use

   case ans = "N"
     clear
     loop
```

```
    case ans = "S"
      clear
      append blank
      gather from ty
      replace DATE with md
      use
      exit
endcase
enddo
clear
set stat on
return                                          && END OF PROGRAM.
*****************************************************************
```

```
File Name : FCARD.prg
Function  : This file shows the fault card for each individual
            subscriber.
*****************************************************************
clear
set talk off
set stat off
set date british
uline = replicate("-",48)

mt1 = time()
mt2 = time()
minsdate = date()
md1 = date()
md2 = date()
md3 = date()
store space(12) to ma1,ma2,ma3
minsd = ctod("  /  /  ")

********************************* Main program
do while .T.
@ 1,1 to 21,79 double
@ 2,50 to 20,50 double
@ 4,51 say "--------------------------"
@ 13,2 to 13,49 double
@ 14,33 to 17,33 double
```

```
@ 15,51 say "----------------------------"
@ 14,66 to 20,66 double
@ 13,51 say "----------------------------"
@ 15,2 say uline
@ 18,2 say uline
@ 17,51 say "---------------"
@ 19,51 say "---------------"
@ 17,67 say "------------"
@ 19,67 say "------------"
@ 2,63 say "¦"
@ 3,63 say "¦"

set colo to /w
@ 3,20 say "F A U L T   C A R D"
set colo to

use FCARD
scatter to ra
@ 5,3 say "NAME OF SUBSCRIBER" get ra(1) pict "@!"
@ 7,3 say "ADDRESS:"
@ 7,12 say "HOUSE NO:" get ra(2) pict "!X999"
@ 8,12 say "SECTOR:   " get ra(3) pict "99!"
@ 9,12 say "CITY:     " get ra(4) pict "@!"
@ 10,12 say "PIN:      " get ra(5) pict "999999"
@ 12,3 say "WORKING HOURS:From           To "
@ 12,22 get mt1 pict "99:99:99"
```

```
@ 12,35 get mt2 pict "99:99:99"
@ 3,53 say "SECTION"
@ 3,68 get ra(8) pict"@!"
@ 5,52 say "TELEPHONE NO.   " get ra(9) pict "999999"
@ 6,52 say "TYPE            " get ra(13)
@ 7,52 say "COLOR OF APP.   " get ra(14)
@ 8,52 say "O.B/A.N.No. .   " get ra(10)
@ 9,52 say "DATE OF INSTN. " get minsdate
@ 10,52 say "LOOP RES. . .  " get ra(12)
@ 11,52 say "PRINCIPAL NO.  " get ra(15)
@ 12,52 say "(In case of PBX)"
read

@ 14,54 say "AMENDMENTS"
@ 14,70 say "DATE"
@ 16,53 get ra(16)
@ 18,53 get ra(17)
@ 20,53 get ra(18)
@ 16,69 get md1
@ 18,69 get md2
@ 20,69 get md3
@ 14,5 say "DETAILS OF CABLE PAIRS"
@ 16,4 say "M.D.F.   CABINET    PILLAR"
@ 17,2 get ra(22)
@ 17,12 get ra(23)
```

```
@ 17,22 get ra(24)
@ 14,40 say "D.P."
@ 16,38 say "NO."
@ 17,35 get ra(25) pict "999999"
@ 16,45 say "TAG"
@ 17,43 get ra(26) pict "999999"
@ 20,10 say  "NO. OF O. H. SPANS" get ra(27)
read

**********************************************
wait
clear
@ 1,1 to 21,79 double
gather from ra
  replace INS_DATE with minsdate
  replace D1 with md1
  replace D2 with md2
  replace D3 with md3
  replace T1 with mt1
  replace T2 with mt1
  use
  set stat on
return                                    && END OF PROGRAM.
*************************************************************************
```

```
File name : CBOOK.prg
Function  : This file shows the complaint book in which
            details of fault reporting and clearance will
            be entered.
*****************************************************************
clear
set talk off
set stat off
set date british
uline = replicate("-",77)
mdate = date()
mcdate = date()
mt1 = time()
mt2 = time()
store 0 to mdays,mhrs,mmins,t4

do while .T.

@ 1,1 to 23,79 double
@ 11,2 to 11,78
@ 3,2 to 3,78
@ 4,2 to 4,78

set colo to +/w
@ 2,20 say "C O M P L A I N T S   R E C O R D"
set colo to
use CBOOK
```

```
scatter to cb
set colo to /w
@ 4,34 say "REPORTED"
@ 11,34 say "CLEARED"
set colo to

@ 5,3 say "DATE:      " get mdate
@ 5,49 say "DKT. NO.:          " get cb(3)
@ 7,3 say "TIME:      " get mt1 pict "99:99:99"

t1=((val(mt1)*3600)+(val(substr(mt1,4,2))*60) ;
   +val(right(mt1,2)))

@ 7,49 say "TELEPHONE NUMBER :" get cb(4) pict"@Z"
@ 9,3 say "COMPLAINT:" get cb(5)
read

**************************************************

@ 12,3 say "DATE:          " get mcdate
@ 12,60 say "TIME:     " get mt2 pict "99:99:99"
read

t2=((val(mt2)*3600)+(val(substr(mt2,4,2))*60);
   +val(right(mt2,2)))

t3 = t2 - t1
t4 = int(mod(t3,60))
mmins = int(t3/60)
```

```
if mmins >= 60
    mhrs = int(mmins/60)
    mmins = mod(mmins,60)
endif

if mhrs >= 24
    mdays = int(mhrs/24)
    mhrs = mod(mhrs,60)
endif

@ 14,3 say "DURATION:"
@ 14,17 say "DAYS:"
?? ltrim(str(mdays))
@ 14,34 say "HRS:"
?? ltrim(str(mhrs))
@ 14,46 say "MINS:"
?? ltrim(str(mmins))
@ 14,60 say "SECS:"
?? ltrim(str(t4))
@ 16,46 say "CLEARED BY:" get cb(13) pict "@!"
@ 16,3 say "ACTUAL FAULT:" get cb(8)
@ 18,46 say "TESTED BY: " get cb(14) pict "@!"
read
**************************
ans = .Y.
set colo to +/w
```

```
@ 18,8 to 22,43
set colo to
set colo to w/+
@ 20,10 say "Is data entered correctly .. ?" get ans pict "Y"
set colo to
read
if ans
  append blank
  gather from cb
  replace DATE with mdate
  replace TIME with mt1
  replace C_TIME with mt2
  replace C_DATE with mcdate
  replace D_DAYS with mdays
  replace D_HRS with mhrs
  replace D_MINS with mmins
  replace D_SECS with t4
  use
  set stat on
else
  clear
  loop
enddo
return                                    && END OF PROGRAM.
*************************************************************
```

File Name : PBXIC.prg

Function : This file shows the PBX INFORMATION CARD for each individual subscriber.

```
**********************************************************************
clear
set stat off
set talk off
set date british

mt1 = time()
mt2 = time()
minsdate = date()

********************************* Main program
ans1 = .T.
do while ans1
@ 1,1 to 21,79 double
@ 2,47 to 20,47
@ 4,48 to 4,78
@ 15,2 to 15,46
@ 2,63 say "¦"
@ 3,63 say "¦"

set colo to */w
@ 1,20 say "P B X   I N F O R M A T I O N   C A R D"
set colo to
```

```
use PBX index PBX
scatter to ra
@ 3,3 say "NAME OF SUBSCRIBER" get ra(1) pict "@!"
@ 5,3 say "ADDRESS:"
@ 5,12 say "HOUSE NO:" get ra(2) pict "!X999"
@ 6,12 say "SECTOR:   " get ra(3) pict "99!"
@ 7,12 say "CITY:     " get ra(4) pict "@!"
@ 8,12 say "PIN:      " get ra(5) pict "999999"
@ 10,3 say "WORKING HOURS:From          To "
@ 10,22 get mt1 pict "99:99:99"
@ 10,35 get mt2 pict "99:99:99"
@ 12,3 say "TELEPHONE NO. WITH )"
@ 13,3 say "NIGHT SERVICE      ) :-"
@ 14,3 say "FACILITY           )"
@ 13,30 get ra(9) pict "999999"

@ 6,48 to 6,78
@ 8,50 say "----------------------------"
@ 9,49 to 10,49
@ 9,56 say "¦"
@ 9,61 say "¦"
@ 9,67 say "¦"
@ 10,56 say "¦"
@ 10,61 say "¦"
@ 10,67 say "¦"
```

```
@ 9,78 to 10,78
@ 11,50 say "----------------------------"
@ 12,48 to 12,78
@ 14,48 to 14,78
@ 16,48 to 16,78
@ 18,48 say "------------------------------"
@ 19,64 say "¦"
@ 20,64 say "¦"

@ 3,54 say "SECTION"
@ 3,68 get ra(8) pict"@!"
@ 5,49 say "PRINCIPAL TELE No." get ra(18)
@ 7,60 say "TYPE"
@ 9,51 say "AUTO"
@ 9,58 say "CB"
@ 9,63 say "MAG"
@ 9,69 say "CORDLESS"

@ 10,52 get ra(10)
@ 10,58 get ra(11)
@ 10,64 get ra(12)
@ 10,72 get ra(13)

@ 13,49 say "CAPACITY:          " get ra(14)
@ 15,49 say "NO.OF EXCH. LINES:" get ra(15)
@ 17,58 say "NO. OF EXTNS."
```

```
@ 19,55 say "EXT."
@ 19,70 say "INT."
@ 20,51 get ra(16)
@ 20,67 get ra(17)
read
*************************************************************
set colo to +/w
@ 16,3 to 20,45
set colo to

set colo to w/+
@ 18,5 say "Do you want to change data ? <Y/N>" get ans1 ;
  pict " Y "
set colo to
read

if ans1
    clear
    loop
else
  use pbx index pbx
  wait
  clear
*************************************************************
ans2 = .T.
```

```
do while ans2
@ 1,1 to 21,79 double
@ 2,40 to 5,40
@ 5,2 to 5,78
@ 6,40 to 9,40
@ 7,2 say "----------------------------------------"
@ 7,41 say "----------------------"
@ 6,64 to 9,64
@ 7,65 say "--------------"
@ 8,13 say "¦"
@ 8,26 say "¦"
@ 8,52 say "¦"
@ 9,13 say "¦"
@ 9,26 say "¦"
@ 9,52 say "¦"
@ 10,2 to 10,78

@ 2,3 say "EXCH.NO.& EXT.EXTN.:" get ra(19)
@ 2,50 say "O.B/A.N.No.:  " get ra(20)
@ 4,3 say "DATE OF INSTN.:      " get minsdate pict "  /  /  "
@ 4,50 say "LOOP RES.:    " get ra(22)

set colo to +/gr
@ 6,13 say "CABLE PAIRS"
set colo to
@ 8,5 say "M.D.F."
```

```
@ 8,16 say "CABINET"
@ 8,30 say "PILLAR"
@ 9,3 get ra(23)
@ 9,15 get ra(24)
@ 9,28 get ra(25)

set colo to +/gr
@ 6,51 say "D.P."
set colo to

@ 8,45 say "NO."
@ 9,43 get ra(26) pict "999999"
@ 8,56 say "TAG"
@ 9,55 get ra(27) pict "999999"
set colo to +/gr
@ 6,67 say  "O.H.SPANS"
set colo to

@ 9,67 get ra(28)
read
*********************************************
set colo to +/w
@ 12,4 to 16,40
set colo to
set colo to w
@ 14,10 say "Are you done ? <Y/N>" get ans2 pict " Y  "
```

```
set colo to
read
if ans2
  use pbx index pbx
  gather from ra
  replace INS_DATE with minsdate
  replace T1 with mt1
  replace T2 with mt2
  use
  set stat on
  return
else
  clear
  loop
  enddo
enddo
return                                          && END OF PROGRAM.
*****************************************************************
```

```
File Name : FLTCARD.prg
 Function : This file shows the fault card for each individual
            subscriber.
*****************************************************************
clear
set talk off
set stat off
set date british
uline = replicate("-",78)

mt1 = time()
mt2 = time()
minsdate = date()
mdate = date()
mcdate = date()
mta = time()
mtb = time()
store 0 to mdays,mhrs,mmins,t4

********************************* Main program
do while .T.

@ 1,0 to 24,79 double
@ 2,50 to 11,50
@ 3,51 say "--------------------------"
@ 4,66 say "¦"
@ 5,66 say "¦"
```

```
@ 6,66 say "¦"
@ 5,51 say "----------------"
@ 5,67 say "------------"
@ 7,51 to 7,78
@ 12,1 to 12,78 double
@ 13,6 to 17,6
@ 13,19 to 17,19
@ 13,30 to 17,30
@ 13,44 say "-----------------------------------"
@ 13,43 to 17,43
@ 14,55 to 17,55
@ 14,67 to 17,67
@ 15,1 say uline
@ 18,1 to 18,78
@ 19,6 to 23,6
@ 19,7 say "------------------"
@ 20,15 to 23,15
@ 19,24 to 23,24
@ 19,40 to 23,40
@ 21,1 say replicate("-",39)

set colo to +*/w
@ 1,30 say "F A U L T   C A R D"
set colo to

use FLTCARD
```

```
scatter to ra
@ 3,3 say "NAME:                " get ra(1) pict "@!"
@ 5,3 say "ADDRESS:"
@ 5,12 say "HOUSE NO:" get ra(2) pict "!X999"
@ 6,12 say "SECTOR:   " get ra(3) pict "99!"
@ 7,12 say "CITY:     " get ra(4) pict "@!"
@ 8,12 say "PIN:      " get ra(5) pict "999999"
@ 10,3 say "WORKING HOURS:From              To "

@ 10,22 get mt1 pict "99:99:99"
@ 10,35 get mt2 pict "99:99:99"

@ 2,63 say "SECTION"
@ 4,60 say "A"
@ 4,72 say "B"

@ 6,55 get ra(8) pict"@!"
@ 6,68 get ra(9) pict "@!"

@ 8,52 say "FAULT CARD NO.:"
@ 8,68 get ra(9) pict "999999"

@ 9,52 say "O.B/A.N.No.:    " get ra(10)
@ 10,52 say "DATE OF INSTN.:" get minsdate
@ 11,52 say "EXCH.TERMN.:    " get ra(13)
@ 13,2 say "TERM"
@ 14,2 say "INAL"
```

```
@ 16,3 say "A"
@ 17,3 say "B"
@ 13,11 say "LOOP"
@ 14,11 say "RES."

@ 16,8 get ra(14)
@ 17,8 get ra(15)

@ 13,21 say "TYPE OF"
@ 14,21 say "APPARATUS"

@ 16,21 get ra(16)
@ 17,21 get ra(17)

@ 13,34 say " OH "
@ 14,34 say "SPANS"

@ 16,32 get ra(18)
@ 17,32 get ra(19)

set colo to +/gr
@ 13,56 say "CABLE PAIRS"
set colo to

@ 14,47 say "M.D.F."
@ 14,58 say "CABINET"
@ 14,71 say "PILLAR"

@ 16,45 get ra(20)
```

```
@ 17,45 get ra(21)
@ 16,57 get ra(22)
@ 17,57 get ra(23)
@ 16,69 get ra(24)
@ 17,69 get ra(25)

@ 19,2 say "TERM"
@ 20,2 say "INAL"
@ 22,3 say "A"
@ 23,3 say "B"

set colo to +/gr
@ 19,14 say "D.P."
set colo to

@ 20,10 say "NO."

@ 22,8 get ra(26) pict "999999"
@ 23,8 get ra(27) pict "999999"

@ 20,19 say "TAG"

@ 22,17 get ra(28) pict "999999"
@ 23,17 get ra(29) pict "999999"

@ 19,26 say "FURTHER BUILD"
@ 20,26 say "      UP         "

@ 22,27 get ra(30)
```

```
@ 23,27 get ra(31)
read
*********************************************
ans = .Y.
set colo to +/w
@ 19,43 to 23,77
set colo to

set colo to w
@ 21,45 say "Do you wish to change data ?" get ans pict "Y"
set colo to
read

if ans
    clear
    loop
else
    use fltcard
    gather from ra
    replace INS_DATE with minsdate
    replace T1 with mt1
    replace T2 with mt1
wait
clear
********************************* Second Data Entry Screen.
do while .T.
```

```
@ 1,1 to 24,79 double
@ 10,2 to 10,78
@ 3,2 to 3,78
@ 4,2 to 4,78
@ 18,2 to 18,78

set colo to /*w
@ 2,25 say "C O M P L A I N T   B O O K"
set colo to

set colo to /w
@ 4,34 say "REPORTED"
@ 10,34 say "CLEARED"
set colo to

@ 5,3 say "DATE:          " get mdate
@ 5,47 say "TIME:       " get mta pict "99:99:99"

tc=((val(mta)*3600)+(val(substr(mta,4,2))*60) ;
 +val(right(mta,2)))
@ 7,47 say "DKT.NO.:   " get ra(34)
@ 7,3 say "COMPLAINT:    " get ra(35)
read
*****************
@ 11,3 say "DATE:          " get mcdate
@ 11,46 say "TIME:         " get mtb pict "99:99:99"
read
```

```
td=((val(mtb)*3600)+(val(substr(mtb,4,2))*60) :
  +val(right(mtb,2)))
t3 = td - tc
t4 = int(mod(t3,60))
mmins = int(t3/60)
if mmins >= 60
    mhrs = int(mmins/60)
    mmins = mod(mmins,60)
endif
if mhrs >= 24
    mdays = int(mhrs/24)
    mhrs = mod(mhrs,24)
endif

@ 13,3 say "DURATION:"
@ 13,17 say "DAYS:"
?? ltrim(str(mdays))
@ 13,32 say "HRS:"
?? ltrim(str(mhrs))
@ 13,46 say "MINS:"
?? ltrim(str(mmins))
@ 13,59 say "SECS:"
?? ltrim(str(t4))
read

@ 15,46 say "CLEARED BY: " get ra(42) pict "@!"
```

```
@ 16,3 say "ACTUAL FAULT:" get ra(43)
@ 17,46 say "TESTED BY:   " get ra(44) pict "@!"
read
**************************
ans1 = .Y.
set colo to +/w
@ 19,13 to 23,52
set colo to

set colo to w
@ 21,15 say "Is data entered correctly ? <Y/N>" get ans1 ;
 pict "Y"
set colo to
read

if ans1
    use fltcard index fltcard
    append blank
    gather from ra
    replace INS_DATE with minsdate
    replace T1 with mt1
    replace T2 with mt2
    replace DATE with mdate
    replace TIME with mta
    replace C_TIME with mtb
    replace C_DATE with mcdate
```

```
        replace D_DAYS with mdays
        replace D_HRS with mhrs
        replace D_MINS with mmins
        replace D_SECS with msecs
        use
        set stat on
    else
        clear
        loop
    enddo
enddo
return                                          &&   END OF PROGRAM.
*************************************************************************
```

File name : TESHEET.prg

Function : This file shows the Tell Tele sheet to be maintained at the Directing Position.

```
**********************************************************************
clear
set talk off
set stat off
set date british
do while .T.

@ 1,0 to 24,80 double
@ 3,1 to 3,78
@ 6,1 to 6,78
@ 8,1 to 8,78
@ 9,1 say repl("-",78)
@ 10,21 to 13,21
@ 11,22 say "-----------------------------------"
@ 12,38 to 13,38
@ 10,58 to 13,58
@ 12,4 say "----------------"
@ 12,66 say "-------"
@ 14,1 to 14,78 double
@ 15,1 say repl("-",34)
@ 15,35 to 23,35 double
@ 15,36 say repl("-",43)
@ 17,2 say "------"
```

```
@ 17,10 say "------"
@ 17,18 say "----"
@ 16,8 to 21,8
@ 16,16 to 21,16
@ 16,24 to 21,24
@ 16,36 say "------------------"
@ 18,1 say repl("-",34)
@ 17,45 to 21,45
@ 16,54 to 21,54
@ 16,60 to 21,60
@ 17,65 say "---------"
@ 22,1 to 22,34 double
@ 22,36 to 22,78

mdate = date()

set colo to */w
@ 1,10 say "D E P A R T M E N T  O F  T E L E C O M M U N I;
  C A T I O N S"
set colo to
set colo to /w
@ 3,30 say " TELL - TELE  SHEET "
set colo to

use TESHEET index TESHEET

scatter to ts
```

```
@ 5,2 say "DATE:          " get mdate
@ 5,47 say "DIVISION:" get ts(2)
@ 7,2 say "SUB DIVISION:" get ts(3)
@ 7,47 say "LINEMAN: " get ts(4) pict "@!A"

set colo to /w
@ 9,30 say "FAULT PARTICULARS"
set colo to

@ 11,4 say "TELEPHONE NUMBER"
@ 13,7 get ts(5) pict "@Z"

set colo to /w
@ 11,36 say " TIME "
set colo to

@ 12,25 say "GIVEN OUT"
@ 13,25 get ts(6) pict "99:99:99"
@ 12,44 say "CLEARED"
@ 13,44 get ts(7) pict "99:99:99"
@ 11,66 say "REMARKS"
@ 13,64 get ts(8) pict "@!A"

**************************************
set colo to /w
@ 15,11 say "FAULTS CLEARED"
@ 15,51 say "DIRECTING CLERK"
```

```
set colo to

@ 16,2 say "F.O.K."
@ 19,2 get ts(10) pict "99999"
@ 16,10 say "C.L.D."
@ 19,10 get ts(11) pict "99999"
@ 16,18 say "R.C."
@ 19,18 get ts(12) pict "99999"
@ 16,28 say "NOT"
@ 17,26 say "ATTENDED"
@ 19,27 get ts(13) pict "99999"
@ 16,44 say "TIME"
@ 17,39 say "FROM"
@ 18,37 get ts(14) pict "99:99:99"
@ 19,37 get ts(15) pict "99:99:99"
@ 20,37 get ts(16) pict "99:99:99"
@ 21,37 get ts(17) pict "99:99:99"
@ 17,49 say "TO"
@ 18,46 get ts(18) pict "99:99:99"
@ 19,46 get ts(19) pict "99:99:99"
@ 20,46 get ts(20) pict "99:99:99"
@ 21,46 get ts(21) pict "99:99:99"
@ 16,55 say "STAFF"
@ 17,56 say "NO."
@ 18,55 get ts(22) pict "99999"
```

```
@ 19,55 get ts(23) pict "99999"
@ 20,55 get ts(24) pict "99999"
@ 21,55 get ts(25) pict "99999"
@ 16,65 say "SIGNATURE"
@ 18,61 get ts(26) pict "@!A"
@ 19,61 get ts(27) pict "@!A"
@ 20,61 get ts(28) pict "@!A"
@ 21,61 get ts(29) pict "@!A"
@ 23,37 say "REMARKS:    " get ts(9) pict "@!A"

************************************
ans = .T.
@ 23,4 say "Is data entered correctly ?" get ans pict " Y"
read

if ans
  append blank
  gather from ts
  replace DATE with mdate
  set stat on
  return
else
    clear
    loop
enddo
RETURN                                          && END OF PROGRAM.
*************************************************************************
```

```
File Name: LIST.prg

Function  : This file produces Listing from various dbf files.

*****************************************************************

clear

set talk off

set stat off

set message to 23

@ 2,2 to 21,76 double

set colo to */w

@ 2,33 say "L I S T I N G"

set colo to

set colo to +/w

@ 15,10 to 19,65 double

set colo to

set colo to w

@ 17,14 say "Highlight with "

??chr(24)

@ 17,31 say "or "

??chr(25)

@ 17,36 say "and press ENTER to select."

set colo to

@ 5,20 prompt "A. Listing By Date." message;

 space(20) + "Uses Various database.."

@ 7,20 prompt "B. Listing By Docket Serial Number."

@ 9,20 prompt "C. Listing By Telephone Number." message;
```

```
 space(20) + "Uses CBOOK database.."
@ 11,20 prompt "D. Exit." message;
 space(20) + "Return to dot prompt"
menu to ans
do case
    case ans = 1
        do listdate.prg
        return
    case ans = 2
        do dktno.prg
    case ans = 3
        do tellist.prg
    case ans = 0 .or. ans = 4
    set stat on
    return
endcase
return                                          &&    END OF PROGRAM.
*************************************************************************
```

```
File name : LISTDATE.prg
Function  : This file produces listing from all databases with
            indexing on Date field.
*****************************************************************
clear
set talk off
set stat off
set message to 24
@ 2,2 to 22,76 double
@ 3,10 say "Listing from ...."
@ 5,15 prompt "1. FDOC Database."
@ 7,15 prompt "2. FCARD Database."
@ 9,15 prompt "3. CBOOK Database."
@ 11,15 prompt "4. PBX Database."
@ 5,40 prompt "5. FLTCARD Database."
@ 7,40 prompt "6. TESHEET Database."
@ 9,40 prompt "7. RETURN to Main Menu."
@ 11,40 prompt "8. EXIT."
set colo to +/w
@ 16,10 to 20,66
set colo to
set colo to +w
@ 18,15 say "Highlight with "
?? chr(24)
@ 18,32 say "or "
```

```
?? chr(25)
@ 18,37 say "and press ENTER to select."
set colo to
menu to ch
do case
    case ch = 1
        clear
        do DATE1.prg
    case ch = 2
        clear
        do DATE2.prg
    case ch = 3
        clear
        do DATE3.prg
    case ch = 4
        clear
        do DATE4.prg
    case ch = 5
        clear
        do DATE5.prg
    case ch = 6
        clear
        do DATE6.prg
    case ch = 7
        clear
```

```
        do list.prg
    case ch = 8
        clear
        set stat on
        return
endcase
return                                          &&    END OF PROGRAM.
*************************************************************************
```

File name : TELLIST.prg

Function : This file produces listing of reports from FCARD database with indexing on Telephone numbers.

```
**********************************************************************
clear
set talk off
set date british
set stat off

use FCARD index FCARD
store 0 to Initial,Last
do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,10 say "L I S T I N G   B Y   T E L E P H O N E - N U M;
  B E R S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter First Number: " get Initial pict "999999"
@ 12,15 say "Enter Last Number : " get Last pict "999999"
read

********************
ans = .Y.
@  15,15  say "Are The Numbers Entered Correctly ? <Y/N>" get;
```

```
 ans pict "!"
read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,19 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST TO PRINT WHILE TEL_NUMBER < Last
    use
    wait
    do LIST.prg
    else
    LIST WHILE TEL_NUMBER < Last
    use
    wait
    clear
    do LIST.prg
    endif
else
```

```
    clear
    loop
enddo
 return                                          &&      END OF PROGRAM.
*************************************************************************
```

```
File name : DKTNO.prg
Function  : This  file provides listing of records  by  Docket
            Serial Number from FDOC database.
*****************************************************************
clear
set talk off
set echo off

use fdoc index DKT_SL_NO
store space(10) to Initial,Last
do while .T.
@ 3,3 to 19,74 double
set colo to */W
set bell on
@ 5,20 say "L I S T I N G    B Y    D K T_S L_N O"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Starting No.: " get Initial pict "@!"
@ 12,15 say "Enter Last No.:     " get Last pict "@!"
read
***************
ans = .Y.
@  17,15 say "Are The Nos. Entered Correctly ? <Y/N>" get ans;
  pict "Y"
read
IF ans
```

```
   SEEK Initial
   list dkt_sl_no
   wait
   do list.prg
else
   clear
   loop
enddo
do list.prg
return                                          &&   END OF PROGRAM.
*************************************************************************
```

```
File name : DATE1.prg
function  : This  file  produces  listing of reports from FDOC
            database  with indexing on Date.
*****************************************************************
clear
set talk off
set date british
set stat off
use FDOC index DATE
store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)
do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "   /   /  "
@ 12,15 say "Enter Last Date(DD/MM/YY)    : " get Last ;
  pict "   /   /  "
read
ans = .Y.
```

```
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans;
  pict "Y"
read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    wait
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
      use
      wait
      do LISTDATE.prg
    endif
```

```
else
  clear
  loop
enddo
clear
return                                          &&    END OF PROGRAM.
*****************************************************************************
```

```
File name : DATE2.prg
Function  : This  file  produces listing of reports from FCARD
            database with indexing on Date.
*************************************************************************
clear
set talk off
set date british
set stat off

use FCARD index FCARD

store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)
**********************
do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "   /  /  "
@ 12,15 say "Enter Last Date(DD/MM/YY)   : " get Last ;
  pict "  /   /  "
```

```
read
ans = .Y.
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans ;
  pict "Y"

read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
      use
      wait
      do LISTDATE.prg
```

```
    endif
else
  clear
  loop
enddo
return                                          && END OF PROGRAM.
*****************************************************************
```

```
File name : DATE3.prg
Function  : This  file  produces listing of reports from CBOOK
            database with indexing on Date.
*****************************************************************
clear
set talk off
set date british
set stat off

use CBOOK index CBOOK
store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)

do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "   /  /  "

@ 12,15 say "Enter Last Date(DD/MM/YY)    : " get Last ;
  pict "  /   /  "
read
```

```
ans = .Y.
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans;
  pict "Y"

read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
      use
      wait
      do LISTDATE.prg
   endif
```

```
else
  clear
  loop
enddo
return                                          &&   END OF PROGRAM.
*****************************************************************
```

```
Function  : This  file  produces listing of reports  from  PBX
            database with indexing on Date.
*****************************************************************
clear
set talk off
set date british
set stat off

use PBX index PBX
store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)

do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "   /  /  "
@ 12,15 say "Enter Last Date(DD/MM/YY)   :     " get Last ;
  pict "   /  /  "
read
```

```
ans = .Y.
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans;
  pict "Y"

read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
      use
      wait
      do LISTDATE.prg
    endif
```

```
else
  clear
  loop
enddo
return                                          && END OF PROGRAM.
*****************************************************************
```

```
File name : DATE5.prg
Function  : This  file  produces  listing  of  reports  from
            FLTCARD database with indexing on Date.
*****************************************************************
clear
set talk off
set date british
set stat off

use FLTCARD index FLTCARD
store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)

do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "   /  /  "
@ 12,15 say "Enter Last Date(DD/MM/YY)    : " get Last ;
  pict "  /   /  "
read
```

```
ans = .Y.
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans;
  pict "Y"

read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
      use
      wait
      do LISTDATE.prg
    endif
```

```
else
  clear
  loop
enddo
return                                          &&    END OF PROGRAM.
*****************************************************************************
```

```
File name : DATE6.prg
Function  : This file produces listing of reports from TESHEET
            database with indexing on Date.
*****************************************************************
clear
set talk off
set date british
set stat off

use TESHEET index TESHEET
store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)

do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "   /  /  "
@ 12,15 say "Enter Last Date(DD/MM/YY)    : " get Last ;
  pict "   /  /  "
read
```

```
ans = .Y.
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans;
  pict "Y"

read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
      use
      wait
      do LISTDATE.prg
  endif
```

```
else
  clear
  loop
enddo
return                                          && END OF PROGRAM.
*****************************************************************
```

File name : DATE7.prg

Function : This file produces listing of reports from TYSHEET database with indexing on Date.

```
**********************************************************************
clear
set talk off
set date british
set stat off

use TYSHEET index TYSHEET
store "        " to Initial,Last
Initial = CTOD(Initial)
Last = CTOD(Last)

do while .T.
@ 3,3 to 23,74 double
set colo to */W
set bell on
@ 5,23 say "L I S T I N G    B Y    D A T E S"
set colo to
@ 7,4 to 7,73 double
@ 10,15 say "Enter Initial Date(DD/MM/YY): " get Initial ;
  pict "  /  /  "
@ 12,15 say "Enter Last Date(DD/MM/YY)    : " get Last ;
  pict "  /  /  "
read
```

```
ans = .Y.
@ 15,15 say "Are The Dates Entered Correctly ? <Y/N>" get ans;
  pict "Y"

read
IF ans
    yn = .T.
    set colo to +/w
    @ 18,15 to 22,50
    set colo to
    set colo to w
    @ 20,18 say "Send Data to print ? <Y/N>" get yn pict "Y"
    set colo to
    read
    if yn
    SEEK Initial
    LIST date To PRINT WHILE DATE < Last
    use
    do LISTDATE.prg
    else
      list date WHILE DATE < Last
     use
     wait
     do LISTDATE.prg
   endif
```

```
else
  clear
  loop
enddo
return                                          && END OF PROGRAM.
*****************************************************************
```

File name: LETTER.prg

Function : This program shows the letter to be sent to the subscriber when his/her premises was found to be closed during the working hours during which the fault can be eliminated.

```
**************************************************************
clear
set talk off
set date british
uline = replicate("-",76)

store space(36) to AE
store space(49) to EXC
store space(59) to ASC,BSC

@ 3,19 say "INDIAN POSTS AND TELEGRAPHS DEPARTMENT"
@ 5,55 say "--------------------"
@ 6,57 say "No Postage Stamp"
@ 7,60 say "Required"
@ 6,54 say "¦"
@ 7,54 say "¦"
@ 6,74 say "¦"
@ 7,74 say "¦"
@ 8,55 say "--------------------"
@ 9,5 say "To"
@ 11,10 say "The Assistant Engineer" get AE
```

```
@ 13,8 say " " get EXC
@ 13,60 say "Exchange,"
@ 15,7 say "  " get ASC
@ 17,7 say "  " get BSC
read
@ 20,1 say uline
?
wait "   Press space bar to see more information ..... "
*****************************
clear
Tel_No=space(6)
Dkt_No=space(10)
ATT=space(45)
DATE1 = CTOD("  /  /  ")
NAME = space(20)
@ 4,3 say "Subject :-  Fault report on Telephone No." get :
  Tel_No

@ 6,3 say "At" get ATT
@ 8,3 say "Ref :- Docket No." get Dkt_No
@ 8,51 say "Date(dd/mm/yy) :" get DATE1
read
@ 10,3 say "Dear Sir/Sirs/Madam,"
@  12,15 say "In response to a complaint,attempts were made ;
  by  our technical"
```

```
@  13,3 say "staff to inspect your telephone,but the premises;
    were found closed.On your "
@  14,3 say "return,kindly intimate us a convenient time ;
  between  9 A.M. and;
 5 P.M. when "
@  15,3  say "the telephone instrument can be made  accessible
             for tests. The;
information"
@ 16,3 say "can be conveyed to us either on telephone number "
@ 16,52 say " " get Tel_No
read
@ 16,63 say "or through the"
@ 17,3 say "attached   reply card  which may be  detached  and
           posted to us ;
after filling "
@ 18,3 say "up details."
@ 19,60 say "Yours faithfully,"
@ 22,55 say " " get NAME
read

wait "   Press space bar to see more information ..... "
*****************************************
clear
AE = space(20)
```

```
EXC = space(30)
SPC = space(40)
@ 4,19 say "INDIAN POSTS AND TELEGRAPHS DEPARTMENT "
@ 8,1 say "From "
@ 10,1 say "Assistant Engineer " get AE
@ 12,0 say "" get EXC
@ 12,33 say "Exchange,"
@ 14,0 say "" get SPC
read
store space(27) to A1,A2,A3,A4
@ 8,50 say "To"
@ 10,48 say " " get A1
@ 12,48 say " " get A2
@ 14,48 say " " get A3
@ 16,48 say " " get A4
read
@ 18,1 say uline
?
?
?
wait
*********************************************
clear
Tel_No = space(6)
DKT_No = space(10)
```

```
T1 = CTOD("  /  /  ")
T2 = CTOD("  /  /  ")
DAY = space(9)
NAME = space(20)
@ 4,39 say "(Reply)"
@ 7,2 say "Ref :- Telephone No:" get Tel_No
@ 9,2 say "        Docket No    :" get DKT_No
@ 9,50 say "Date (dd/mm/yy) : " get DATE1
read
@ 12,3 say "The telephone can be inspected between " get T1
@ 12,52 say " (hh/mm/ss) and " get T2
@ 13,3 say "(hh/mm/ss) on " get DAY
@ 13,28 say "."
@ 16,60 say "Signature."
@ 18,52 say "NAME" get NAME
read
return                                          &&      END OF PROGRAM.
*****************************************************************************
```

DATA BASES

Structure for database: FDOKT.DBF

Function : This database displays the fields which records data from the initial FAULT DOCKET.

Field	Field Name	Type	Width
1	DATE	Date	8
2	TIME	Character	8
3	DKT_SL_NO	Numeric	5
4	FAULTY_NO	Numeric	6
5	RPORTED_BY	Character	20
6	CL_REP_TO	Character	15
7	ENQ_FROM	Character	15
	** Total **		78

Structure for database: FDOC.DBF

Function : This database records complete details of FAULT DOCKET.

****

Field	Field Name	Type	Width
1	DATE	Date	8
2	TIME	Character	8
3	DKT_SL_NO	Character	10
4	FAULTY_NO	Numeric	6
5	RPORTED_BY	Character	20
6	CL_REP_TO	Character	15
7	ENQ_FROM	Character	15
8	D	Logical	1
9	WN_OG	Logical	1
10	WN_IC	Logical	1
11	DISC_OG	Logical	1
12	DISC_IC	Logical	1
13	NO_OG	Logical	1
14	NO_IC	Logical	1
15	OD	Logical	1
16	NO_OG_S	Logical	1
17	NO_IC_S	Logical	1
18	RT_IC	Logical	1
19	NO_RT	Logical	1
20	NDT	Logical	1
21	NSY	Logical	1

22	CC	Logical	1
23	BZR	Logical	1
24	EXTN	Logical	1
25	SWBD	Logical	1
26	BL	Logical	1
27	PARTS_DMGD	Logical	1
28	INFMONITOR	Character	15
29	O_COMPLNTS	Character	69
30	FRS_DR	Character	15
31	OPERTOR	Character	15
32	TALLY_OPR	Character	15
33	MONITOR	Character	15
34	BOOKEDWITH	Character	15
35	SL_NO	Character	10
36	BOOK_TIME	Character	8
37	DD_OPR	Character	15
38	DETAILS	Character	69
39	IT_OPR	Character	15
40	LOC_XCHNGE	Character	69
41	LM_CJ	Character	69
42	ES	Character	69
43	F_TIME	Character	8
44	DIR_OPR	Character	15
45	PROCLRNCE1	Character	69
46	PROCLRNCE2	Character	69

47	PROCLRNCE3	Character	69
48	TESTNG_OPR	Character	15
49	SSS	Character	15
50	ACTL_FAULT	Character	55
51	D_DAYS	Numeric	2
52	D_HRS	Numeric	2
53	D_MINS	Numeric	2
54	D_SECS	Numeric	2
55	NTD_FC_BY	Character	15
56	ANALYSIS	Character	15
57	MISC	Character	10
58	RWT	Logical	1
59	RPT	Logical	1
60	E	Logical	1
61	A	Logical	1
62	L	Logical	1
63	C	Logical	1
64	E1	Logical	1
65	A1	Logical	1
66	L1	Logical	1
67	C1	Logical	1
	** Total **		959

****

Structure for database: TYSHEET.DBF

Function : This database records data from the TALLY SHEET.

****

Field	Field Name	Type	Width
1	DATE	Date	8
2	FOR	Character	10
3	OO_06	Numeric	6
4	O6_10	Numeric	6
5	IO_14	Numeric	6
6	I4_18	Numeric	6
7	I8_22	Numeric	6
8	TF_10_HRS	Numeric	5
9	CLD_10_HRS	Numeric	5
10	PDG_10_HRS	Numeric	5
11	TF_12_HRS	Numeric	5
12	CLD_12_HRS	Numeric	5
13	PDG_12_HRS	Numeric	5
14	TF_14_HRS	Numeric	5
15	CLD_14_HRS	Numeric	5
16	PDG_14_HRS	Numeric	5
17	TF_16_HRS	Numeric	5
18	CLD_16_HRS	Numeric	5
19	PDG_16_HRS	Numeric	5
20	TF_18_HRS	Numeric	5
21	CLD_18_HRS	Numeric	5

22	PDG_18_HRS	Numeric	5
23	TF_22_HRS	Numeric	5
24	CLD_22_HRS	Numeric	5
25	PDG_22_HRS	Numeric	5
	** Total **		139

****

Structure for database: FCARD.DBF

Function : This database displays fields which records data from FAULT CARD.

****

Field	Field Name	Type	Width
1	NAME	Character	20
2	HOUSE_NO	Character	5
3	SECTOR	Character	4
4	CITY	Character	15
5	PIN	Numeric	6
6	T1	Character	8
7	T2	Character	8
8	SECTION	Character	10
9	TEL_NUMBER	Numeric	6
10	OB_AN	Character	10
11	INS_DATE	Date	8
12	LOOP_RES	Numeric	5
13	TYPE	Character	8
14	COLOR	Character	6
15	P_NUMBER	Numeric	6
16	A1	Character	12
17	A2	Character	12
18	A3	Character	12
19	D1	Date	8
20	D2	Date	8

21	D3	Date	8
22	MDF	Character	9
23	CABINET	Character	9
24	PILLAR	Character	9
25	DP_NUMBER	Numeric	6
26	TAG_NUMBER	Numeric	6
27	OH_SPANS	Numeric	10
	** Total **		235

****

Structure for database: CBOOK.DBF

Function : This database records data from the COMPLAINT BOOK.

****

Field	Field Name	Type	Width
1	DATE	Date	8
2	TIME	Character	8
3	DKT_NO	Character	10
4	TEL_NO	Numeric	6
5	COMPLAINT	Character	25
6	C_DATE	Date	8
7	C_TIME	Character	8
8	C_ACTL_FLT	Character	25
9	D_DAYS	Numeric	2
10	D_HRS	Numeric	2
11	D_MINS	Numeric	2
12	D_SECS	Numeric	2
13	C_CLRDBY	Character	20
14	C_TESTEDBY	Character	20
	** Total **		147

****

Structure for database: PBX.DBF

Function : This database records data from the PBX INFORMATIO CARD.

****

Field	Field Name	Type	Width
1	NAME	Character	20
2	HOUSE_NO	Character	5
3	SECTOR	Character	4
4	CITY	Character	15
5	PIN	Numeric	6
6	T1	Character	8
7	T2	Character	8
8	SECTION	Character	10
9	TEL_NUMBER	Numeric	6
10	AUTO	Logical	1
11	CB	Logical	1
12	MAG	Logical	1
13	CORDLESS	Logical	1
14	CAPACITY	Numeric	7
15	NEXLINES	Numeric	7
16	EXT	Numeric	7
17	INT	Numeric	7
18	P_NUMBER	Numeric	6
19	EXCH_EXTNO	Character	10
20	OB_AN	Character	10

21	INS_DATE	Date	8
22	LOOP_RES	Numeric	5
23	MDF	Character	9
24	CABINET	Character	9
25	PILLAR	Character	9
26	DP_NUMBER	Numeric	6
27	TAG_NUMBER	Numeric	6
28	OH_SPANS	Numeric	10
	** Total **		203

****

Structure for database: FLTCARD.DBF

Function : This database records data in detail from the PBX INFORMATION CARD for each individual subscriber.

****

Field	Field Name	Type	Width
1	NAME	Character	20
2	HOUSE_NO	Character	5
3	SECTOR	Character	4
4	CITY	Character	15
5	PIN	Numeric	6
6	T1	Character	8
7	T2	Character	8
8	SECTION_A	Character	10
9	SECTION_B	Character	10
10	FALTCRD_NO	Numeric	10
11	OB_AN	Character	10
12	INS_DATE	Date	8
13	EXCH_TERMN	Character	10
14	LOOP_RES_A	Numeric	5
15	LOOP_RES_B	Numeric	5
16	TYPE_A	Character	8
17	TYPE_B	Character	8
18	OH_SPANS_A	Numeric	10
19	OH_SPANS_B	Numeric	10
20	MDF_A	Character	9

21	MDF_B	Character	9
22	CABINET_A	Character	9
23	CABINET_B	Character	9
24	PILLAR_A	Character	9
25	PILLAR_B	Character	9
26	DP_NO_A	Numeric	6
27	DP_NO_B	Numeric	6
28	TAG_NO_A	Numeric	6
29	TAG_NO_B	Numeric	6
30	FBUP_A	Character	10
31	FBUP_B	Character	10
32	DATE	Date	8
33	TIME	Character	8
34	DKT_NO	Character	10
35	COMPLAINT	Character	25
36	C_DATE	Date	8
37	C_TIME	Character	8
38	C_ACTL_FLT	Character	25
39	D_DAYS	Numeric	2
40	D_HRS	Numeric	2
41	D_MINS	Numeric	2
42	D_SECS	Numeric	2
43	C_CLRDBY	Character	20
44	C_TESTEDBY	Character	20
	** Total **		409

****

Structure for database: TESHEET.DBF

Function : This database records data from TELL - TELE SHEET.

****

Field	Field Name	Type	Width
1	DATE	Date	8
2	DIVISION	Character	10
3	SUB_DIVN	Character	10
4	LINEMAN	Character	20
5	TEL_NUMBER	Numeric	6
6	TIME_GIVEN	Character	8
7	TIME_CLRD	Character	8
8	REMARKS_1	Character	11
9	REMARKS_2	Character	20
10	F_O_K	Numeric	5
11	C_L_D	Numeric	5
12	R_C	Numeric	5
13	NOT_ATENDD	Numeric	5
14	TIME_FROM1	Character	8
15	TIME_FROM2	Character	8
16	TIME_FROM3	Character	8
17	TIME_FROM4	Character	8
18	TIME_TO1	Character	8
19	TIME_TO2	Character	8
20	TIME_TO3	Character	8
21	TIME_TO4	Character	8

22	STAFF_NO1	Numeric	5
23	STAFF_NO2	Numeric	5
24	STAFF_NO3	Numeric	5
25	STAFF_NO4	Numeric	5
26	SIGNATURE1	Character	18
27	SIGNATURE2	Character	18
28	SIGNATURE3	Character	18
29	SIGNATURE4	Character	18
	** Total **		278

****