HANDITRAN

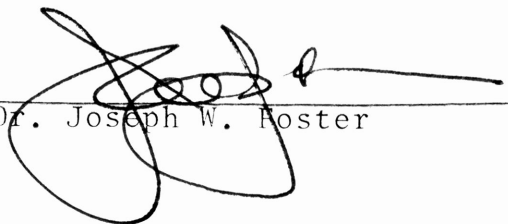COMPUTERIZED TRANSPORTATION FOR THE HANDICAPPED

by

Cynthia L. Carpenter

Industrial Engineering

Submitted in Partial Fulfillment of the Requirements of the
University Undergraduate Fellows Program

1983-1984

Approved by:

Dr. Joseph W. Foster

April 1984

PROPOSAL FOR THE

TEXAS A&M UNIVERSITY

UNDERGRADUATE FELLOWS PROGRAM

Written by:

Cynthia L. Carpenter

Submitted:

July 27, 1983

CITY OF ARLINGTON

WORK ORDER SYSTEM

The city of Arlington is one of ten cities in the United
States currently designing, testing, and using a work order
system. The City Service System is a generalized work order
system which will eventually be used in many departments city-
wide. The functions of the computer system are:

** Record and route, to the appropriate department,
   all requests for schedule;

** Schedule, by date, all services that are author-
   ized to be performed;

** Automatically schedule services that are known to
   occur on a given set of dates;

** Schedule preventive maintenance, using data housed
   in the Equipment Management System;

** Output emergency or variant work orders immediately
   to the appropriate department;

** Track all service being provided by city depart-
   ments and allow for examination of that progress
   by any city department;

** Generate detail reports on the services being
   provided;

** Facilitate determining who is responsible for
   equipment or a service.

Already in use in the Arlington work order system is

HANDITRAN, a transportation system for the elderly or incapacitated.

This summer I began a study of the Water Department, the next department in line for the work order system. In the study, I charted the flow of information through-out a department, determined how the work order system would impact this flow, and made recommendations to improve the efficiency within the department.

This fall I would like to continue this study. Much of the system design work is handled through the Industrial Engineering Department at Texas A&M and I would like to continue this progress. Design specifications are being drawn up and programming for the computer system should begin as soon as October for those departments I completed this summer. The next step in the work order system will be another departmental study.

The ideas associated with this new management technique are not new, but the extent to which they have developed, and will continue to develop, in Arlington are unprecedented.

ACKNOWLEDGEMENTS

This paper is dedicated to

my parents,

Thomas M. and Kathleen L. Carpenter,

with all of my love.

TABLE OF CONTENTS

LIST OF FIGURES

HANDITRAN

COMPUTERIZED TRANSPORTATION FOR THE HANDICAPPED

INTRODUCTION

The initial goal of this research was to develop design specifications for one section of Arlington's generalized work order system, the City Service System. However, during November of 1983 the city planners decided to contract the work to an outside software group. Since my design specifications did not complement those decided upon, the purpose of my research took another direction. I took the initial prototype for the City Service System, HANDITRAN, and redesigned a small part of it for use on an IBM Personal Computer.

Currently in use in Arlington, HANDITRAN schedules services and dispatches work orders, as well as generating detail reports for the user departments. This system is being run on an IBM system 3200, a large and somewhat outdated mainframe.

The resulting research is a much-reduced system which, due to time constraints, has only a small fraction of the capabilities of the system in operation in Arlington.

This paper follows the format of the AIIE Proceedings from the summer conference.

LITERATURE REVIEW

A 1978 study of the transportation needs of elderly and handicapped persons indicated that there are 7.44 million persons living in the United States who, due to age or physical impairment, are handicapped in the use of public transportation systems.[1] Only recently has the plight of the handicapped citizen been recognized and studied. In the past ten years a number of statutes have been passed by the Congress specifically addressing the transportation needs of this portion of the population. Section 16 of the Urban Mass Transportation Act of 1964, as amended in 1970, states that:

> ". . . elderly and handicapped persons have the same
> right as other persons to utilize mass transportation
> facilities and services; that special efforts shall
> be made in the planning and design of mass transpor-
> tation facilities and services so that the availability
> to elderly and handicapped persons of mass transpor-
> tation which they can effectively utilize will be
> assured; and that all Federal programs offering assis-
> tance in the field of mass transportaiton . . . should
> contain provisions implementing this policy."[2]

Section 16 also authorizes grants to assist both public agencies and non-profit organizations in providing these special transportation needs.

A transportation-handicapped person lives in one out of eight households in urban areas of the United States. In comparison to the general population they:

** are older
** have less formal education and lower incomes
** are predominantly female
** have physical impairments making it impossible for them to use conventional transportation systems.[3]

Transportation-handicapped persons take twenty-five percent more medical- or therapy-related trips than do non-transportation-handicapped persons. They use taxis nearly three times as often, subways one-half as often, and buses with equal fequency as non-transportation-handicapped persons.[4] From these statistics it is easy to see the necessity of a transportation system which is accessible to the elderly and handicapped population.

Many regulations have been passed by the Federal Highway Administration and the Urban Mass Transportation Administration. With help from the Department of Transportation, these regulatory agencies have developed programs and established design specifications for those vehicles used in public transportation, making them more easily accessible to the handicapped.[5]

Once in operation, one of the most important parts of a transportation system is evaluation. Reports provide the data necessary to measure the relative effectiveness of the

system. Questions such as "Is the system operating effi-
ciently with respect to both cost and manpower?" and "Which
areas could be improved?" need to be asked with numeric data
to support the conclusions. All of this would seem to imply
a great deal of data gathering, storage, and manipulation.
The logical method for the reporting process is to computer-
ize the transportation system. This is precisely what has
come to pass in Arlington, Texas, and is the basis for this
research. [6]

REPORT ON RESEARCH:

HANDITRAN

Arlington's City Service System is a largely complex one including such capabilities as feasibility checks for entered fields; a geographical data base to check addresses, intersections, locations, city zones, etc.; file browsing; work crew information and scheduling; code and abbreviation definitions and checks; and a print sequence which will print out a series of work orders for any given period of time. The version of HANDITRAN which I designed this spring is a generalized storage and retrieval system used to account for all transportation requests to be scheduled during a given period of time.

This program will enable the user to add, retrieve, change, or delete a record from any of three data files: 1) the Service Request Information file, 2) the Authorized Service Information file, and 4) the Work Order Information file. It will also give the user the option of printing a tabulated listing of file information onto the screen or to the printer for a history record. This option is explained in Appendix B.

The first two screens are information screens requiring only the entry of a Julian date to initialize the system on a

daily basis (see figures 1 and 2). The third screen is the main selection screen, or primary menu (see figure 3). There are three program options available to the user:

1. Service Request Information,
2. Authorized Service Information, and
3. Work Order Information.

Only in option number one, the service request subprogram, can a service request be added to the system. From there it must be authorized for service before being added to the Authorized Service Information file. Once in the Authorized Service file, a work order number is assigned to the service and the entire record is placed concurrently in the Work Order Information file.

To give a more cohesive understanding of how the system will work, the following is an example of the sequence of steps through the computer system:

1. A customer phones in a service request to the telephone operator. The operator enters the information into the Service Request Information file via option number one's screen (see figure 4).

2. Once the service is authorized for entry to the HANDITRAN system, the record is written to the Authorized Service Information file via option number two's screen (see figure 5). This record will also remain in the Service Information file unless it is deleted.

3. Once authorized, the program transfers directly to the Work Order Information subprogram. Additional

Figure 1

```
*******************************************
*                                         *
* COMPUTERIZED TRANSPORTATION FOR THE HANDICAPPED *
*                                         *
*                   HANDITRAN             *
*                                         *
*                     BY                  *
*          CYNTHIA L. CARPENTER           *
*         INDUSTRIAL ENGINEERING          *
*         TEXAS A&M UNIVERSITY            *
*                                         *
*             SUBMITTED TO                *
*          DR. JOSEPH W. FOSTER           *
*                                         *
*              SPRING 1984                *
*                                         *
*******************************************

          PLEASE PRESS 'RETURN' TO CONTINUE ▯
```

Figure 2

CITY SERVICE SYSTEM
ARLINGTON, TEXAS

TO INITIALIZE THIS DAYS' WORK, PLEASE ENTER
THE JULIAN DATE:

PLEASE PRESS 'RETURN' TO CONTINUE

Figure 3

```
CITY SERVICE SYSTEM

        **********
        *        *
        * HANDITRAN *
        *        *
        **********

        PRIMARY MENU


1.  SERVICE REQUEST INFORMATION
2.  AUTHORIZED SERVICE INFORMATION
3.  WORK ORDER INFORMATION


        ENTER SELECTION: □
```

Figure 4

HANDITRAN
SERVICE REQUEST INFORMATION

SERVICE NO: _____   DEPT: ___   TAKEN BY: _____

DESCRIPTION: _____

SERVICE:

NAME: _____   AREA CODE: ___   PHONE: ___

ADDRESS: _____   ZIP: ___   ZONE: ___

SERVICE INTERSECTION:

FROM: _____ AND _____

TO: _____ AND _____

REQUESTED BY:

NAME: _____   AREA CODE: ___   PHONE: ___

ADDRESS: _____

CALL BACK? ___   MADE: ___   CALLER: _____

ROUTE TO DEPT: ___   ROUTED BY: ___   ROUTED THRU: ___

AUTHORIZED FOR SERVICE? ___ CLOSE OUT? ___ REASON: ___ DATE: ___

MESSAGE: _____

Figure 5

HANDITRAN
AUTHORIZED SERVICE INFORMATION

SERVICE NO: _____   DEPT: _____   TAKEN BY: _____
DESCRIPTION: _____

SERVICE:
    NAME: _____   AREA CODE: _____ PHONE: _____
    ADDRESS: _____   ZIP: _____ ZONE: _____
SERVICE INTERSECTION: _____
    FROM: _____ AND _____
    TO: _____ AND _____
REQUESTED BY:
    NAME: _____   AREA CODE: _____ PHONE: _____
    ADDRESS: _____
CALL BACK? _____   MADE: _____   CALLER: _____
ROUTE TO DEPT: _____ ROUTED BY: _____ ROUTED THRU: _____
AUTHORIZED FOR SERVICE? _____ CLOSE OUT? _____ REASON: _____ DATE: _____
MESSAGE: _____

and more specific information pertaining to the requested service is entered at this point and added to the Work Order file (see figure 6).

4. Once in the Work Order file, the service can be scheduled for completion.

Figure 6

HANDITRAN
WORK ORDER INFORMATION

DEPT: _____   WORK ORDER NUMBER: _____   NAME: _____

ACTIVITY: _____   CREW: __ __   GROUP: __   WORK ORDER ID: _____
SERVICE DATE: __ __ __   INTERVAL: __   PRIORITY: __   EST JOB TIME: __ __ MIN
                                        TIME   ZONE

ORIGIN: _____
DESTINATION: _____
SERVICE INTERSECTION:
    FROM: _____ AND _____
    TO: _____ AND _____
INSTRUCTIONS: _____
_____
_____

STATUS: __   DATE: __ __ __   NEXT PAGE? __

PROGRAM OPTION #1:

SERVICE REQUEST INFORMATION

This portion of the HANDITRAN program will add, retrieve, change, or delete a record from the Service Information file. This is the only way a service request can enter the system.

ADDING

   ** The service number is automatically entered by the program--it is a combination of the Julian date and an incremental counter.

   ** The user enters the service information.

   ** If the person requesting the service is different from the person to receive the service, the requesting person's name, phone number, and address will be entered; otherwise, these fields will automatically default to the service name, phone number, and address.

   ** The record is written to the Service Information file and program control is transferred back to the primary menu.

RETRIEVING

   ** The user must enter either the service name or the service number he wishes to retrieve. If this information is not known, a listing of the data file can be made (see Appendix B).

   ** The Service Information file is searched in order to find the desired record. If it is found, it

will be printed on the screen. If it is not found, the user will receive a message saying the record was not found and program control will transfer back to the primary menu.

CHANGING

** Again, the user must enter either the service name or the service number to be searched for and subsequently changed.

** The cursor will be moved from field to field in a sequential manner. Unless a field is to be changed, the "RETURN" key should be depressed. This will keep the existing information in the field.

** Once the change is completed, the record is re-written to the Service Information file and program control transfers to the primary menu.

DELETING

** The service name or number is entered and the record is retrieved from the data file.

** The program erases all fields and rewrites the empty record to the Service Information file.

** Program control transfers to the primary menu.

A listing of the Service Information fields and a brief description of each can be found on the following page.

SERVICE INFORMATION FIELD DESCRIPTIONS

NAME	TYPE	SIZE	DESCRIPTION
Service Number	N	9	System generated; a combination of the Julian date and an incremental counter.
Department	N	3	Three-digit department number.
Taken By	A	16	Person taking the phone call.
Description	A	72	Free-form description of the service being requested.
Service Name	A	18	The name of the person who will receive the service.
Service Area Code	N	3	The area code of the person who will receive the service.
Service Phone	N	7	The phone number of the person who will receive the service.
Service Address	A/N	30	The address of the person who will receive the service.
Service Zip	N	5	The zip code of the person who will receive the service.
Service Zone	N	4	System-generated city zone; not used currently.
Service Intersection	A	80	The intersection closest to where the service will be be performed; north/south streets to be entered first.
Request Name	N	18	The name of the person who is requesting the service, if different from the service name.
Request Area Code	N	3	The area code of the person requesting the service, if different from the service customer.
Request Phone	N	7	The phone number of the person requesting the service.
Request Address	A/N	30	The address of the person requesting the service.
Call Back?	A	1	Y or N to indicate if the person requesting the service is to be called back; if "Y" then MADE must be filled, along with CLOSE OUT.

SERVICE INFORMATION FIELD DESCRIPTIONS

NAME	TYPE	SIZE	DESCRIPTION
Route to Dept.	N	3	The department number to which the service is to be routed, if necessary.
Routed By	A	16	The name of the person routing the service data.
Routed Thru	N	3	The department number from which the service is to be routed.
Authorized for Service?	A	1	Y or N indicating whether or not the record is to entered into the Authorized Service file.
Close Out?	A	1	Y or N indicating whether or not work orders may be created for the service; if "Y" then REASON must be filled.
Reason	A	8	Reason code for closing out the service request.
Date	N	6	The date the request was closed out.

PROGRAM OPTION #2:

AUTHORIZED SERVICE INFORMATION

This portion of the program will retrieve, change, or delete a record from the Authorized Service Information file. A record is initially entered to both the Authorized Service file and the Work Order file through program option number one, once the service request has been authorized.

The steps for retrieving, changing, or deleting a record are identical to those for the Service Request Information screen (program option number one). The field descriptions are also identical and can be found on the preceeding pages.

PROGRAM OPTION #3:

WORK ORDER INFORMATION

This portion of the program will retrieve, change, or delete a record from the Work Order Information file. In order to clear this file for more recent records, a hardcopy of the file can be made for history records (see Appendix B).

As in program option number two, the steps for retrieving, changing, or deleting a record are identical to those for the Service Request Information screen.

A listing of the Work Order Information fields and a brief description or each can be found on the following pages.

WORK ORDER INFORMATION FIELD DESCRIPTIONS

NAME	TYPE	SIZE	DESCRIPTION
Department	N	3	Three-digit department number.
Work Order Nubmer	N	12	System-generated; the first nine digits are the corresponding service number, the last three are sequentially generated and incremented by one.
Name	A	18	The name of the person to receive the service; carried over from the authorized service file.
Activity	N	5	Five-digit code identifying the type of work to be done.
Crew	N	5	Five-digit code identifying the crew to complete the work.
Group	N	8	Eight-digit numeric code identifying the type of report required by the department.
Work Order ID	N	16	Identification number which may be used to link with another system; not currently used.
Service Date	N	6	Date service is scheduled to be performed.
Interval	N	3	For service performed repeatedly; the number of days between services.
Priority	N	2	The priority code for the service.
Est Job Time	N	5	Estimated time to complete service (in hours and minutes)
Origin	A/N	30	Address of the service origin; carried over from authorized service file.
Origin Time	N	4	Requested pick-up time.
Origin Zone	N	4	System-generated; not currently in use.
Destination	A/N	30	Address of the service destination; carried over from authorized service file.

WORK ORDER INFORMATION FIELD DESCRIPTIONS

NAME	TYPE	SIZE	DESCRIPTION
Destination Time	N	4	Requested drop-off time.
Destination Zone	N	4	System-generated; not currently in use.
Service Intersection:			
From	A	40	Street intersection service begins at; carried over from authorized service file.
To	A	40	Street intersection service ends at; carried over from authorized service file.
Instructions	A/N	144	Free-form, detailed instructions pertaining to service.
Status	A	1	A or I indicating whether the service is active or inactive.
Date	N	6	Date of the status.
Next Page?	A	1	Y or N; default is N.

CONCLUSION

Research projects which have a potential benefit to mankind are particularly rewarding to the researcher. The basic premise of HANDITRAN--providing an efficient and convenient means of transportation to the elderly and handicapped with the aid of a computer--gave me the opportunity to achieve this reward. This research, while fulfilling my need for a technically challenging project, also allowed me to implement my findings and results in a way that could be of service in the development and achievement of a humanitarian endeavor.

This research project is in no way a complete documentation of HANDITRAN. As I mentioned before, the city of Arlington has greatly expanded the capabilities of this, their initial prototype; and will continue to do so. HANDITRAN is, therefore, a dynamic system; due not only to the continuing design process, but also to the ever-changing state-of-the-art in computer technology. This project has presented a great challenge to me which will remain with me for the rest of my life, and I am grateful to have had the chance to participate in it.

ENDNOTES

[1]Elderly and Handicapped Transportation, Chief Executive's Summary, U.S. Department of Transportation, Urban Mass Transportation Administration, Office of the Secretary, 400 7th Street S.W., Washington, D.C. 20590, Sept. 1979.

[2]The Urban Mass Transportation Act of 1964, Planning and Design of Mass Transportation Facilities to Meet Special Needs of the Elderly and the Handicapped, U.S. Department of Transportation, Urban Mass Transportation Administration, 400 7th Street S.W., Washington, D.C. 20590, as amended Dec. 1978.

[3]Elderly and Handicapped Transportation, Chief Executive's Summary, Sept. 1979.

[4]Ibid.

[5]Elderly and Handicapped Transportation, Planning Checklist, U.S. Department of Transportation, Urban Mass Transportation Administration, Office of the Secretary, 400 7th Street S.W., Washington, D.C. 20590, Sept. 1979.

[6]"System Specifications for the City of Arlington's City Service System--HANDITRAN," Software Associates, Inc., Apogee System, Inc., Arlington, Texas 76011, Nov. 1983.

R E F E R E N C E S

Elderly and Handicapped Transportation, Chief Executive's
     Summary, U.S. Department of Transportation, Urban Mass
     Transportation Administration, Offic e of the Secretary,
     400 7th Street S.W., Washington, D.C. 20590, Sept. 1979.

Elderly and Handicapped Transportation, Planning Checklist,
     U.S. Department of Transportation, Urban Mass Transpor-
     tation Administration, Office of the Secretary, 400 7th
     Street S.W., Washington, D.C. 20590, Sept. 1979.

"System Specifications for the City of Arlington's City
     Service System--HANDITRAN," Software Associates, Inc.,
     Apogee System, Inc., Arlington, Texas 76011, Nov. 1983.

The Urban Mass Transportation Act of 1964, Planning and Design
     of Mass Transportation Facilities to Meet Special Needs
     of the Elderly and the Handicapped, U.S. Department of
     Transportation, Urban Mass Transportation Administration,
     400 7th Street S.W., Washington, D.C. 20590, as amended
     December 1978.

APPENDIX   A

At the beginning of each day, HANDITRAN must be initialized. The following steps should be completed:

1. Place the DOS (Disk Operating System) disk into disk drive "A".

2. Turn the computer on.

3. When the following prompt appears, BASIC needs to be loaded: A

4. To load BASIC:
       A B (RETURN)
       B A:BASIC/S:395 (RETURN)
   The "/S:395" simply specifies the record length desired for any random files.

5. To load HANDITRAN:
       LOAD "B:ARLPROJ" (RETURN)
       RUN (RETURN)

A listing of the computer program is given on the succeeding pages.

```
0**0  REM----------THIS PROGRAM WILL ALLOW THE USER TO ADD,
5   REM----------RETRIEVE, CHANGE, OR DELETE A RECORD FROM
10  REM----------ANY OF THREE RANDOM FILES.
11  NCOUNT=0:ICOUNT=0
25  PRINT:PRINT:PRINT:PRINT
30  PRINT"           *******************************************************"
35  PRINT"           *                    HANDITRAN                        *"
40  PRINT"           * COMPUTERIZED TRANSPORTATION FOR THE HANDICAPPED      *"
45  PRINT"           *                                                     *"
50  PRINT"           *                       BY                            *"
55  PRINT"           *             CYNTHIA L. CARPENTER                     *"
60  PRINT"           *             INDUSTRIAL ENGINEERING                   *"
65  PRINT"           *             TEXAS A&M UNIVERSITY                     *"
70  PRINT"           *                                                     *"
75  PRINT"           *                  SUBMITTED TO                        *"
80  PRINT"           *             DR. JOSEPH W. FOSTER                     *"
85  PRINT"           *                                                     *"
90  PRINT"           *                  SPRING 1984                         *"
95  PRINT":           *******************************************************":PR
:PRINT:PRINT:PRINT:PRINT
100 GOSUB 9000
105 CLS
120 REM----------THIS SCREEN INITIALIZES THE FIRST FIVE DIGITS
125 REM----------OF THE SERVICE ORDER NUMBER.  IT ALSO SETS THE
130 REM----------COUNTER FOR THE SERVICE REQUESTS OF ONE DAY.
150 PRINT:PRINT:PRINT:PRINT:PRINT
155 PRINT"                    CITY SERVICE SYSTEM"
160 PRINT"                    ARLINGTON, TEXAS":PRINT:PRINT:PRINT
165 PRINT"          TO INITIALIZE THIS DAYS' WORK, PLEASE ENTER"
170 PRINT"                  THE JULIAN DATE. ":JD$=" ":PRINT
172 PRINT"                  _____":PRINT
175 LOCATE 14,35,1,0,31:INPUT " ";JD$
180 IF LEN(JD$)<>5 THEN GOTO 175
185 PRINT:PRINT:PRINT:NCOUNT%=0
190 GOSUB 9000
195 CLS
215 REM----------THIS IS THE PRIMARY MENU PROGRAM.  THE FILES ASSOCIATED WITH
220 REM----------         EACH OF THE SCREENS ARE.
225 REM----------    1.  SERVICE REQUEST INFO---:SERVICE MASTER FILE (SMF)
230 REM----------    2.  AUTHORIZED SERVICE INFO---:AUTH. SERVICE FILE (ASF)
235 REM----------    3.  WORK ORDER INFO---:WORK ORDER FILE (WOF)
250 PRINT:PRINT:PRINT
```

```
255 PRINT"                                               CITY SERVICE SYSTEM":PRINT
260 PRINT"                                               **********"
265 PRINT"                                               *             *"
270 PRINT"                                               * HANDITRAN *"
275 PRINT"                                               *             *"
280 PRINT"                                               **********":PRINT
285 PRINT"                                             PRIMARY MENU":PRINT:PRINT
290 PRINT"                             1.  SERVICE REQUEST INFORMATION"
295 PRINT"                             2.  AUTHORIZED SERVICE INFORMATION"
300 PRINT"                             3.  WORK ORDER INFORMATION":PRINT:PRINT
305 PRINT"                                             ENTER SELECTION. "
310 LOCATE 20,49, ,0,31:INPUT PM%
315 IF PM%<1 OR PM%>3 THEN GOTO 310
320 CLS:PRINT"INSERT THE DATA FILES INTO DISK DRIVE 'A'":GOSUB 9000
325 ON PM% GOTO 1000,2000,3000
1000 REM----------THIS PART OF THE SERVICE REQUEST PROGRAM GIVES THE USER
1001 REM          THE CHOICE OF ADDING, RETRIEVING, CHANGING, OR DELETING
1002 REM          A RECORD;  OR TERMINATING AND RETURNING TO THE PRIMARY
1003 REM          MENU.
1010 CLS:PRINT:PRINT:PRINT:PRINT
1012 PRINT"INSERT DISK #2 INTO DRIVE 'A' IF IT IS NOT ALREADY THERE."
1014 GOSUB 9000
1016 OPEN"R",#1,"A:SMF001.DAT",385
1020 FIELD#1,9 AS A2$,3 AS B2$,16 AS C2$,70 AS D2$,19 AS E2$,7 AS F2$,16 AS G
,5 AS H21$,20 AS H22$,5 AS H23$,5 AS I2$,4 AS J2$,20 AS K21$,20 AS K22$,20 AS
L21$,20 AS L22
1035 PRINT:PRINT:PRINT:PRINT:PRINT
1040 PRINT"                              *****************************"
1045 PRINT"                              * SERVICE REQUEST INFORMATION *"
1050 PRINT"                              *           MENU              *"
1055 PRINT"                              *****************************":PRINT:PRINT
1060 PRINT"                                   1.  ADD A RECORD"
1065 PRINT"                                   2.  RETRIEVE A RECORD"
1070 PRINT"                                   3.  CHANGE A RECORD"
1075 PRINT"                                   4.  DELETE A RECORD"
1080 PRINT"                                   5.  TERMINATE":PRINT:PRINT
1085 PRINT"                         PLEASE SELECT ONE OF THE ABOVE OPTIONS. "
1090 PRINT:PRINT:PRINT:PRINT:PRINT
1095 LOCATE 18,62:INPUT A1%
1100 IF A1%<1 OR A1%>5 THEN GOTO 1095 ELSE GOTO 1120
1120 PRINT:PRINT"                                     HANDITRAN"
1130 PRINT"                              SERVICE REQUEST INFORMATION":PRINT
```

```
1135 PRINT" SERVICE NO. _____      DEPT. ___     TAKEN BY: _____"
1138 PRINT" DESCRIPTION:"
1140 PRINT"        _____
_____"
1142 PRINT" SERVICE:"
1146 PRINT"        NAME: _____      AREA CODE: ___    PHONE: _____"
1148 PRINT"        ADDRESS: _____ _____ ____      ZIP: _____   ZONE
__"
1150 PRINT" SERVICE INTERSECTION:"
1152 PRINT"        FROM: _____      AND _____"
1156 PRINT"        TO: _____      AND _____"
1160 PRINT" REQUESTED BY:"
1164 PRINT"        NAME: _____      AREA CODE: ___    PHONE: _____"
1168 PRINT"        ADDRESS: _____ _____ _____"
1172 PRINT" CALL BACK? _    MADE: __ __ __    CALLER: _____"
1176 PRINT" ROUTE TO DEPT: ___    ROUTED BY: _____    ROUTED THRU: __
1180 PRINT" AUTHORIZED FOR SERVICE? _    CLOSE OUT? _    REASON: _____    DATE
__ __ __"
1182 PRINT" MESSAGE:"
1184 PRINT"        _____
_____":PRINT:PRINT
1185 RETURN
1190 ON A1% GOTO 1200,1300,1400,1500,1195
1195 CLOSE:END
1200 NCOUNT=NCOUNT + 1
1205 C=LOF(1)+1
1206 NCOUNT$=STR$(NCOUNT)
1207 IF LEN(NCOUNT$)=1 THEN SNF2$="000"+NCOUNT$ ELSE IF LEN(NCOUNT$)=2 THEN SN
$="00"+NCOUNT$ ELSE IF LEN(NCOUNT$)=3 THEN SNF2$="0"-NCOUNT$ ELSE SNF2$=NCOUNT
1208 SN$=JD$+SNF2$
1209 CLS:GOSUB 1123
1210 GOSUB 5000:GOSUB 5005:GOSUB 5010:GOSUB 5015:GOSUB 5020
1215 GOSUB 5025:GOSUB 5030:GOSUB 5035:GOSUB 5040:GOSUB 5045
1220 GOSUB 5050:GOSUB 5055:GOSUB 5060:GOSUB 5065:GOSUB 5070
1225 GOSUB 5075:GOSUB 5080:GOSUB 5085:GOSUB 5090:GOSUB 5095
1230 GOSUB 5100:GOSUB 5105:GOSUB 5110:GOSUB 5115:GOSUB 5120
1235 GOSUB 5125:GOSUB 5130:GOSUB 5135:GOSUB 5140:GOSUB 5145
1240 GOSUB 5150:GOSUB 5155:GOSUB 5160:GOSUB 5165:GOSUB 5170
1241 GOSUB 1245
1243 IF AFS1$="Y" THEN GOTO 6600
1244 GOTO 1290
```

```
1245 LSET A2$=SN$:LSET B2$=DP1$:LSET C2$=NM1$:LSET D2$=DES1$
1250 LSET E2$=SVN1$:LSET F2$=PN1$:LSET G2$=ID1$:LSET H21$=SA11$
1255 LSET H22$=SA12$:LSET H23$=SA13$:LSET I2$=ZP1$:LSET J2$=ZN1$
1260 LSET K21$=FM11$:LSET K22$=FM12$:LSET L21$=TO11$:LSET L22$=TO12$
1265 LSET M2$=RGN1$:LSET N2$=AC1$:LSET O2$=RQP1$:LSET P21$=RA11$
1270 LSET P22$=RA12$:LSET P23$=RA13$:LSET Q2$=CB1$:LSET R21$=CM11$
1275 LSET R22$=CM12$:LSET R23$=CM13$:LSET S2$=CLR1$:LSET T2$=RTO1$
1280 LSET U2$=RB1$:LSET V2$=RT1$:LSET W2$=AFB1$:LSET X2$=CO1$
1285 LSET Y2$=REA1$:LSET Z21$=CD11$:LSET Z22$=CD12$:LSET Z23$=CD13$
1286 RETURN
1290 PUT#1,C
1295 GOTO 1035
1300 REM----------RETRIEVING A RECORD
1305 CLS:PRINT:PRINT:PRINT
1310 PRINT"TO RETRIEVE A RECORD YOU NEED TO KNOW EITHER"
1312 PRINT"THE SERVICE ORDER NUMBER OR THE SERVICE NAME":PRINT
1315 PRINT"PLEASE CHOOSE EITHER: (1) SERVICE ORDER NUMBER"
1316 PRINT"                                      OR"
1317 PRINT"                         (2) SERVICE NAME":PRINT
1318 PRINT"ENTER SELECTION: "
1320 LOCATE 11,18:INPUT BR%:IF BR%<1 OR BR%>2 THEN GOTO 1320
1322 ON BR% GOTO 5200,5300
1400 CLS:PRINT:PRINT:PRINT:PRINT
1405 PRINT"TO CHANGE A RECORD ENTER EITHER: (1) SERVICE ORDER NUMBER"
1406 PRINT"                                      OR"
1407 PRINT"                         (2) SERVICE NAME":PRINT
1408 PRINT"ENTER SELECTION: "
1410 LOCATE 9,18:INPUT BR1%:IF BR1%<1 OR BR1%>2 THEN GOTO 1410
1415 ON BR1% GOTO 5600,5800
1500 CLS:PRINT:PRINT:PRINT:PRINT
1505 PRINT"TO DELETE A RECORD ENTER EITHER: (1) SERVICE ORDER NUMBER"
1506 PRINT"                                      OR"
1507 PRINT"                         (2) SERVICE NAME":PRINT
1508 PRINT"ENTER SELECTION: "
1510 LOCATE 9,18:INPUT BR2%:IF BR2%<1 OR BR2%>2 THEN GOTO 1510
1515 ON BR2% GOTO 6000,6200
1600 REM----------RETRIEVING A RECORD
1605 CLS:PRINT:PRINT:PRINT
1610 PRINT"TO RETRIEVE A RECORD YOU NEED TO KNOW EITHER"
1615 PRINT"THE SERVICE ORDER NUMBER OR THE SERVICE NAME":PRINT
1620 PRINT"PLEASE CHOOSE EITHER: (1) SERVICE ORDER NUMBER"
1625 PRINT"                                      OR"
```

```
1630 PRINT"                                    (2) SERVICE NAME.":PRINT
1635 PRINT"ENTER SELECTION: "
1640 LOCATE 11,18:INPUT" ";BR4%:IF BR4%<1 OR BR4%>2 THEN GOTO 1640
1645 ON BR4% GOTO 4000,4100
1700 CLS:PRINT:PRINT:PRINT:PRINT
1705 PRINT"TO CHANGE A RECORD ENTER EITHER:   (1) SERVICE ORDER NUMBER"
1710 PRINT"                                        OR"
1715 PRINT"                                    (2) SERVICE NUMBER.":PRINT
1720 PRINT"ENTER SELECTION: "
1725 LOCATE 9,18:INPUT" ";BC%:IF BC%<1 OR BC%>2 THEN GOTO 1725
1730 ON BC% GOTO 4200,4325
1800 CLS:PRINT:PRINT:PRINT:PRINT
1805 PRINT"TO DELETE A RECORD ENTER EITHER:   (1) SERVICE ORDER NUMBER"
1810 PRINT"                                        OR"
1815 PRINT"                                    (2) SERVICE NAME.":PRINT
1820 PRINT"ENTER SELECTION: "
1825 LOCATE 9,18:INPUT" ";BC1%:IF BC1%<1 OR BC1%>2 THEN GOTO 1825
1830 ON BC1% GOTO 4400,4500
2000 REM----------THIS PART OF THE PROGRAM GIVES THE USER THE CHOICE OF
2001 REM           RETRIEVING, CHANGING, OR DELETING A RECORD IN THE
2002 REM           AUTHORIZED SERVICE INFORMATION FILE.  IT ALSO RETURNS
2003 REM           TO THE PRIMARY MENU WHEN FINISHED.
2010 CLS:PRINT:PRINT:PRINT:PRINT:PRINT
2011 PRINT"INSERT DISK #2 INTO DRIVE 'A' IF IT IS NOT ALREADY THERE"
2012 GOSUB 9000
2020 OPEN"R",#2,"A:ASFILE   .DAT",385
2025 FIELD#2,9 AS A3$,3 AS B3$,16 AS C3$,72 AS D3$,18 AS E3$,7 AS F3$,16 AS G3$
5 AS H31$,20 AS H32$,5 AS H33$,5 AS I3$,4 AS J3$,20 AS K01$,20 AS K02$,20 AS
$,20 AS L32$,18 AS M3$,3 AS N3$,7 AS O3$,5 AS P31$,20 AS ;32$,5 AS P33$,1 AS
,2 AS R31$
2035 CLS:PRINT:PRINT:PRINT:PRINT:PRINT
2040 PRINT"                   *******************************"
2045 PRINT"                   * AUTHORIZED SERVICE INFORMATION *"
2050 PRINT"                   *              MENU               *"
2055 PRINT"                   *******************************":PRINT:PRINT
2065 PRINT"                        1.  RETRIEVE A RECORD"
2070 PRINT"                        2.  CHANGE A RECORD"
2075 PRINT"                        3.  DELETE A RECORD"
2080 PRINT"                        4.  TERMINATE":PRINT:PRINT
2085 PRINT"               PLEASE SELECT ONE OF THE ABOVE OPTIONS. "
2090 PRINT:PRINT:PRINT:PRINT:PRINT
2095 LOCATE 18,60:INPUT" ";A2%
```

```
2100 IF A2%<1 OR A2%>2 THEN GOTO 2095
2105 ON A2% GOTO 1600,1700,1900,2110
2110 CLOSE:END
4000 CLS:PRINT:PRINT:PRINT:PRINT
4005 INPUT"SERVICE ORDER NUMBER: ",SN$
4010 C=0:FL=0
4015 C=C+1
4020 IF C>LOF(2) THEN GOTO 4040
4025 GET#2,C
4030 IF A3$=SN$ THEN GOTO 4050
4035 GOTO 4015
4040 PRINT SN$;" NOT FOUND"
4045 FL=1: GOTO 4055
4050 GOSUB 6800:GOSUB 4800
4055 GOSUB 9000
4060 GOTO 2035
4100 CLS:PRINT:PRINT:PRINT:PRINT
4105 INPUT"SERVICE NAME: ",SVN1$
4110 C=0:FL=0
4115 C=C+1
4120 IF C>LOF(2) THEN GOTO 4140
4125 GET#2,C
4130 IF E3$=SVN1$ THEN GOTO 4150
4135 GOTO 4115
4140 PRINT SVN1$;" NOT FOUND"
4145 FL=1:GOTO 4155
4150 GOSUB 6800:GOSUB 4800
4155 GOSUB 9000
4160 GOTO 2035
4200 CLS:PRINT:PRINT:PRINT:PRINT
4205 INPUT"SERVICE ORDER NUMBER: ",SN$
4210 C=0:FL=0
4215 C=C+1
4220 IF C>LOF(2) THEN GOTO 4240
4225 GET#2,C
4230 IF A3$=SN$ THEN GOTO 4245
4235 GOTO 4215
4240 PRINT SN$;" NOT FOUND":FL=1:GOTO 4250
4245 GOSUB 6800:GOSUB 4800:GOTO 4260
4250 GOSUB 9000
4255 GOTO 2035
4260 LOCATE 23,3:PRINT"ENTER NEW INFORMATION IN THE DESIRED FIELD:"
```

```
4265 GOSUB 5000:GOSUB 5005.GOSUB 5010.GOSUB 5015:GOSUB 5020
4270 GOSUB 5025.GOSUB 5030:GOSUB 5035.GOSUB 5040.GOSUB 5045
4275 GOSUB 5050:GOSUB 5055:GOSUB 5060.GOSUB 5065:GOSUB 5070
4280 GOSUB 5075:GOSUB 5080:GOSUB 5085.GOSUB 5090:GOSUB 5095
4285 GOSUB 5100:GOSUB 5105:GOSUB 5110:GOSUB 5115:GOSUB 5120
4290 GOSUB 5125:GOSUB 5130:GOSUB 5135:GOSUB 5140:GOSUB 5145
4295 GOSUB 5150:GOSUB 5155.GOSUB 5160:GOSUB 5165:GOSUB 5170
4300 GOSUB 1245
4305 PUT#2,C
4310 GOTO 4250
4325 CLS:PRINT.PRINT:PRINT:PRINT
4330 INPUT"SERVICE NAME: ";SVN1$
4335 C=0:FL=0
4340 C=C+1
4345 IF C>LOF(2) THEN GOTO 4365
4350 GET#2,C
4355 IF E3$=SVN1$ THEN GOTO 4375
4360 GOTO 4340
4365 PRINT SVN1$;" NOT FOUND":FL=1
4370 GOTO 4380
4375 GOSUB 6800:GOSUB 4800
4380 GOSUB 9000
4385 GOTO 2035
4400 CLS:PRINT:PRINT:PRINT:PRINT
4405 INPUT"SERVICE ORDER NUMBER: ";SN$
4410 C=0:FL=0
4415 C=C+1
4420 IF C>LOF(2) THEN GOTO 4440
4425 GET#2,C
4430 IF A3$=SN$ THEN GOTO 4445
4435 GOTO 4415
4440 PRINT SN$;" NOT FOUND"
4445 GOTO 4455
4450 GOSUB 6550:GOTO 4465
4455 GOSUB 9000
4460 GOTO 2035
4465 GOSUB 6700
4470 PUT#2,C
4475 GOTO 4455
4500 CLS:PRINT:PRINT:PRINT:PRINT
4505 INPUT"SERVICE NAME: ";SVN1$
4510 C=0:FL=0
```

```
4515 C=C+1
4520 IF C>LOF(2) THEN 4540
4525 GET#2,C
4530 IF E$=SVN1$ THEN GOTO 4550
4535 GOTO 4515
4540 PRINT SVN1$;" NOT FOUND".FL=1
4545 GOTO 4555
4550 GOSUB 6550:GOTO 4565
4555 GOSUB 9000
4560 GOTO 2035
4565 GOSUB 6700
4570 PUT#2,C
4575 GOTO 4555
5000 LOCATE 5,14:PRINT SN$
5001 RETURN
5005 LOCATE 5,32:LINE INPUT DP1$:IF LEN(DP1$)>3 THEN GOTO 5005
5006 RETURN
5010 LOCATE 5,48:LINE INPUT NM1$:IF LEN(NM1$)>16 THEN GOTO 5010
5011 RETURN
5015 LOCATE 7,5.LINE INPUT DES1$:IF LEN(DES1$)>72 THEN 5015
5016 RETURN
5020 LOCATE 9,13:LINE INPUT SVN1$.IF LEN(SVN1$)>13 THEN 5020
5021 RETURN
5025 LOCATE 9,45:LINE INPUT ID1$:IF LEN(ID1$)>6 THEN 5025
5026 RETURN
5030 LOCATE 9,58:LINE INPUT FN1$:IF LEN(FN1$)>7 THEN 5030
5031 RETURN
5035 LOCATE 10,16:LINE INPUT SA11$:IF LEN(SA11$)>5 THEN 5035
5036 RETURN
5040 LOCATE 10,22.LINE INPUT SA12$:IF LEN(SA12$)>20 THEN 5040
5041 RETURN
5045 LOCATE 10,43:LINE INPUT SA13$:IF LEN(SA13$)>5 THEN 5045
5046 RETURN
5050 LOCATE 10,56:LINE INPUT ZP1$:IF LEN(ZP1$)>5 THEN 5050
5051 RETURN
5055 LOCATE 12,13:LINE INPUT FM11$:IF LEN(FM11$)>20 THEN 5055
5056 RETURN
5060 LOCATE 12,38.LINE INPUT FM12$:IF LEN(FM12$)>20 THEN 5060
5061 RETURN
5065 LOCATE 13,13.LINE INPUT TO11$:IF LEN(TO11$)>20 THEN 5065
5066 RETURN
5070 LOCATE 13,38:LINE INPUT TO12$:IF LEN(TO12$)>20 THEN 5070
```

```
5071 RETURN
5075 LOCATE 15,13:LINE INPUT RQN1$:IF LEN(RQN1$)>13 THEN 5075
5076 RETURN
5080 LOCATE 15,45:LINE INPUT AC1$:IF LEN(AC1$)>3 THEN 5080
5081 RETURN
5085 LOCATE 15,58:LINE INPUT RQP1$:IF LEN(RQP1$)>7 THEN 5085
5086 RETURN
5090 LOCATE 16,16:LINE INPUT RA11$:IF LEN(RA11$)>5 THEN 5090
5091 RETURN
5095 LOCATE 16,22:LINE INPUT RA12$:IF LEN(RA12$)>20 THEN 5095
5096 RETURN
5100 LOCATE 16,43:LINE INPUT RA13$:IF LEN(RA13$)>5 THEN 5100
5101 RETURN
5105 LOCATE 17,13:LINE INPUT CB1$:IF LEN(CB1$)>1 THEN 5105
5106 RETURN
5110 LOCATE 17,23:LINE INPUT CM11$:IF CM11$>"12" THEN 5110
5111 RETURN
5115 LOCATE 17,26:LINE INPUT CM12$:IF CM12$>"31" THEN 5115
5116 RETURN
5120 LOCATE 17,29:LINE INPUT CM13$:IF CM13$>"99" THEN 5120
5121 RETURN
5125 LOCATE 17,42:LINE INPUT CLR1$:IF LEN(CLR1$)>16 THEN 5125
5126 RETURN
5130 LOCATE 18,17:LINE INPUT RTD1$:IF LEN(RTD1$)>3 THEN 5130
5131 RETURN
5135 LOCATE 18,34:LINE INPUT RB1$:IF LEN(RB1$)>16 THEN 5135
5136 RETURN
5140 LOCATE 18,66:LINE INPUT RT1$:IF LEN(RT1$)>3 THEN 5140
5141 RETURN
5145 LOCATE 19,26:LINE INPUT AFS1$:IF LEN(AFS1$)>1 THEN 5145
5146 IF AFS1$="Y" THEN GOTO 5147 ELSE IF AFS1$="N" THEN GOTO 5148
5147 LOCATE 21,4:PRINT"THIS RECORD WILL BE ENTERED INTO THE AUTHORIZED
ILE":GOTO 6600
5148 RETURN
5150 LOCATE 19,41:LINE INPUT CO1$:IF LEN(CO1$)>1 THEN 5150
5151 RETURN
5155 LOCATE 19,53:LINE INPUT REA1$:IF LEN(REA1$)>3 THEN 5155
5156 RETURN
5160 LOCATE 19,70:LINE INPUT CD11$:IF CD11$>"12" THEN 5160
5161 RETURN
5165 LOCATE 19,73:LINE INPUT CD12$:IF CD12$>"31" THEN 5165
5166 RETURN
```

```
5170 LOCATE 19,76:LINE INPUT CD13$:IF CD13$>"99" THEN 5170
5171 RETURN
5200 CLS:PRINT:PRINT:PRINT:PRINT
5201 INPUT"SERVICE ORDER NUMBER? ";SN$
5202 C=0:FL=0
5205 C=C+1
5210 IF C>LOF(1) THEN GOTO 5230
5215 GET#1,C
5220 IF A2$=SN$ THEN GOTO 5235
5225 GOTO 5205
5230 PRINT SN$," NOT FOUND":FL=1:GOTO 5245
5235 GOSUB 5400
5245 GOSUB 9000
5250 GOTO 1035
5300 CLS:PRINT:PRINT:PRINT:PRINT
5301 INPUT"SERVICE NAME? ";SVN1$
5302 C=0:FL=0
5305 C=C+1
5310 IF C>LOF(1) THEN GOTO 5330
5315 GET#1,C
5320 IF E2$=SVN1$ THEN GOTO 5335
5325 GOTO 5305
5330 PRINT SVN1$;" NOT FOUND":FL=1:GOTO 5340
5335 GOSUB 5400
5340 GOSUB 9000
5345 GOTO 1035
5400 CLS:GOSUB 1120
5405 LOCATE 5,14:PRINT A2$:LOCATE 5,32:PRINT B2$
5410 LOCATE 5,48:PRINT C2$:LOCATE 7,5:PRINT D2$
5415 LOCATE 9,13:PRINT E2$:LOCATE 9,41:PRINT F2$
5420 LOCATE 9,55:PRINT G2$:LOCATE 10,13:PRINT H21$
5425 LOCATE 10,22:PRINT H22$:LOCATE 10,40:PRINT H23$
5430 LOCATE 10,56:PRINT I2$:LOCATE 12,13:PRINT K21$
5435 LOCATE 12,38:PRINT K22$:LOCATE 13,13:PRINT L21$
5440 LOCATE 13,38:PRINT L22$:LOCATE 15,13:PRINT M2$
5445 LOCATE 15,45:PRINT N2$:LOCATE 15,58:PRINT O2$
5450 LOCATE 16,16:PRINT P21$:LOCATE 16,22:PRINT P22$
5455 LOCATE 16,43:PRINT P23$:LOCATE 17,13:PRINT Q2$
5460 LOCATE 17,23:PRINT R21$:LOCATE 17,26:PRINT R22$
5465 LOCATE 17,29:PRINT R23$:LOCATE 17,40:PRINT S2$
5470 LOCATE 18,17:PRINT T2$:LOCATE 18,34:PRINT U2$
5475 LOCATE 18,66:PRINT V2$:LOCATE 19,24:PRINT W2$
```

```
5480 LOCATE 19,41:PRINT X2$:LOCATE 19,50:PRINT Y2$
5485 LOCATE 19,70:PRINT Z21$:LOCATE 19,73:PRINT Z22$
5490 LOCATE 19,76:PRINT Z23$
5495 RETURN
5600 CLS:PRINT:PRINT:PRINT:PRINT
5602 INPUT"SERVICE ORDER NUMBER: ",SN$
5604 C=0:FL=0
5608 C=C+1
5610 IF C>LOF(1) THEN GOTO 5630
5615 GET#1,C
5620 IF A2$=SN$ THEN GOTO 5635
5625 GOTO 5608
5630 PRINT SN$;" NOT FOUND":FL=1:GOTO 5640
5635 GOSUB 5400:GOTO 5660
5640 GOSUB 9000
5645 GOTO 1035
5660 LOCATE 23,3:PRINT"ENTER NEW INFORMATION IN THE DESIRED FIELD(S)
5665 GOSUB 5000:GOSUB 5005:GOSUB 5010:GOSUB 5015:GOSUB 5020
5670 GOSUB 5025:GOSUB 5030:GOSUB 5035:GOSUB 5040:GOSUB 5045
5675 GOSUB 5050:GOSUB 5055:GOSUB 5060:GOSUB 5065:GOSUB 5070
5680 GOSUB 5075:GOSUB 5080:GOSUB 5085:GOSUB 5090:GOSUB 5095
5685 GOSUB 5100:GOSUB 5105:GOSUB 5110:GOSUB 5115:GOSUB 5120
5690 GOSUB 5125:GOSUB 5130:GOSUB 5135:GOSUB 5140:GOSUB 5145
5695 GOSUB 5150:GOSUB 5155:GOSUB 5160:GOSUB 5165:GOSUB 5170
5700 GOSUB 1245
5705 GOTO 1290
5800 CLS:PRINT:PRINT:PRINT:PRINT
5805 INPUT"SERVICE NAME: ",SVN1$
5810 C=0:FL=0
5815 C=C+1
5820 IF C>LOF(1) THEN GOTO 5840
5825 GET#1,C
5830 IF E2$=SVN1$ THEN GOTO 5845
5835 GOTO 5815
5840 PRINT SVN1$;" NOT FOUND":FL=1:GOTO 5850
5845 GOSUB 5400:GOTO 5660
5850 GOSUB 9000
5855 GOTO 1035
6000 CLS:PRINT:PRINT:PRINT:PRINT
6005 INPUT"SERVICE ORDER NUMBER: ",SN$
6010 C=0:FL=0
6015 C=C+1
```

```
6020 IF C>LOF(1) THEN GOTO 6040
6025 GET#1,C
6030 IF A2$=SN$ THEN GOTO 6045
6035 GOTO 6015
6040 PRINT SN$;" NOT FOUND":FL=1:GOTO 6050
6045 GOSUB 6500:GOTO 6070
6050 GOSUB 9000
6055 GOTO 1035
6070 GOSUB 1245
6075 PUT#1,C
6080 GOTO 1035
6200 CLS:PRINT:PRINT:PRINT:PRINT
6205 INPUT"SERVICE NAME: ",SVN1$
6210 C=0:FL=0
6215 C=C+1
6220 IF C>LOF(1) THEN GOTO 6240
6225 GET#1,C
6230 IF E2$=SVN1$ THEN GOTO 6245
6235 GOTO 6215
6240 PRINT SVN1$;" NOT FOUND":FL=1:GOTO 6250
6245 GOSUB 6500:GOTO 6070
6250 GOSUB 9000
6255 GOTO 1035
6500 SN$=" ":DP1$=" ":NM1$=" ":DES1$=" ":SVN1$=" ":PN1$=" ":ID1$=" "
6505 SA11$=" ":SA12$=" ":SA13$=" ":ZP1$=" ":ZN1$=" ":FM11$=" ":FM12$=" "
6510 TO11$=" ":TO12$=" ":RQN1$=" ":AC1$=" ":RQP1$=" ":RA11$=" ":RA12$=" "
6515 RA13$=" ":CB1$=" ":CM11$=" ":CM12$=" ":CM13$=" ":CLR1$=" "
6520 RTD1$=" ":RB1$=" ":RT1$=" ":AFS1$=" ":CO1$=" ":REA1$=" "
6525 CD11$=" ":CD12$=" ":CD13$=" "
6527 RETURN
6550 SN$=" ":DP1$=" ":NM2$=" ":DES2$=" ":SVN1$=" "
6555 PN2$=" ":ID2$=" ":SA21$=" ":SA22$=" ":SA23$=" "
6560 ZP2$=" ":ZN2$=" ":FM11$=" ":FM12$=" ":TO11$=" "
6565 TO12$=" ":RQN2$=" ":AC2$=" ":RQP2$=" ":RA21$=" "
6570 RA22$=" ":RA23$=" ":CB2$=" ":CM21$=" ":CM22$=" "
6575 CM23$=" ":CLR2$=" ":RTD2$=" ":RB2$=" ":RT2$=" "
6580 AFS2$=" ":CO2$=" ":REA2$=" ":CD21$=" ":CD22$=" "
6585 CD23$=" "
6590 RETURN
6600 OPEN"R",#2,"A:ASFILE   .DAT",385
6605 FIELD#2,9 AS A3$,3 AS B3$,16 AS C3$,72 AS D3$,18 AS E3$,7 AS F3$,16 AS
5 AS H31$,20 AS H32$,5 AS H33$,5 AS I3$,4 AS J3$,20 AS K31$,20 AS K32$,20 A
$,20 AS L32$,18 AS M3$,3 AS N3$,7 AS O3$,5 AS P31$,20 AS P32$,5 AS P33$,1 A
,2 AS R31$,2 AS R32
```

```
6610 C=LOF(2)+1
6615 LSET A3$=SN$:LSET B3$=DP1$:LSET C3$=NM1$:LSET D3$=DES1$
6620 LSET E3$=SVN1$:LSET F3$=PN1$:LSET G3$=ID1$:LSET H31$=SA11$
6625 LSET H32$=SA12$:LSET H33$=SA13$:LSET I3$=ZP1$:LSET J3$=ZN1$
6630 LSET K31$=FM11$:LSET K32$=FM12$:LSET L31$=TO11$:LSET L32$=TO12
6635 LSET M3$=RQN1$:LSET N3$=AC1$:LSET O3$=RQF1$:LSET P31$=RA11$
6640 LSET P32$=RA12$:LSET P33$=RA13$:LSET Q3$=CB1$:LSET R31$=CM11$
6645 LSET R32$=CM12$:LSET R33$=CM13$:LSET S3$=CLR1$:LSET T3$=RTD1$
6650 LSET U3$=RB1$:LSET V3$=RT1$:LSET W3$=AFS1$:LSET X3$=CO1$
6655 LSET Y3$=REA1$:LSET Z31$=CD11$:LSET Z32$=CD12$:LSET Z33$=CD13$
6660 PUT#2,C
6665 CLOSE#2
6670 GOTO 1035
6700 LSET A3$=SN$:LSET B3%=DP1$:LSET C3%=NM2$:LSET D3$=DES2$
6705 LSET E3$=SVN1$:LSET F3$=PN2$:LSET G3%=ID2$:LSET H31$=SA21$
6710 LSET H32$=SA22$:LSET H33$=SA23$:LSET I3$=ZP2$:LSET J3$=ZN2$
6715 LSET K31$=FM11$:LSET K32$=FM12$:LSET L31$=TO11$:LSET L32$=TO12
6720 LSET M3$=RQN2$:LSET N3$=AC2$:LSET O3$=RQF2$:LSET P31$=RA21$
6725 LSET P32$=RA22$:LSET P33$=RA23$:LSET Q3$=CB2$:LSET R31$=CM21$
6730 LSET R32$=CM22$:LSET R33$=CM23$:LSET S3$=CLR2$:LSET T3$=RTD2$
6735 LSET U3$=RB2$:LSET V3$=RT2$:LSET W3$=AFS2$:LSET X3$=CO2$
6740 LSET Y3$=REA2$:LSET Z31$=CD21$:LSET Z32$=CD22$:LSET Z33$=CD23$
6745 RETURN
9000 INPUT "      PLEASE PRESS 'RETURN' TO CONTINUE";R$
9005 RETURN
```

APPENDIX B

In everyday use, the computer operator is not going to know the service names and service numbers of all of the file records. In this instance, a series of small programs can be loaded in order to find the specific record name or number needed to gain access to one of the data files. These programs are stored under the name of "PRINTREC". To load this program, follow the proceeding steps:

1. LOAD "B:PRINTREC" (RETURN)
2. RUN (RETURN)

The user will be required to enter the particular data file to be listed. The service names and numbers will be listed, one screen at a time, in the following format:

1	08284004	Anderson
2	09584013	Taylor
3	09584014	Williams
'	'	'
'	'	'
'	'	'

A listing of this program can be found on the following pages.

```
5 REM----------THIS PROGRAM WILL PROVIDE THE MEANS OF LISTING THE CONTENTS
10 REM          OF A DATA FILE.
15 CLS:PRINT:PRINT:PRINT:PRINT
20 PRINT"WHICH FILE WOULD YOU LIKE LISTED?"
25 PRINT:PRINT"  1.  SERVICE REQUEST INFORMATION FILE"
30 PRINT"  2.  AUTHORIZED SERVICE INFORMATION FILE"
35 PRINT"  3.  WORK ORDER INFORMATION FILE"
37 PRINT"  4.  NONE OF THE ABOVE":PRINT:PRINT
40 INPUT"PLEASE ENTER SELECTION: ";DFL%
45 IF DFL%<1 OR DFL%>3 THEN GOTO 40
50 ON DFL% GOTO 100,200,300,55
55 END
100 CLS:PRINT:PRINT:PRINT
105 PRINT"CHECK THAT THE DATA FILE IS IN DRIVE 'A'":PRINT:PRINT:PRINT:GOSUB 900

110 OPEN"R",#1,"A:SMFILE  .DAT",385
115 FIELD#1,9 AS A2$,3 AS B2$,16 AS C2$,72 AS D2$,18 AS E2$,7 AS F2$,16 AS G2$,
 AS H21$,20 AS H22$,5 AS H23$,5 AS I2$,4 AS J2$,20 AS K21$,20 AS K22$,20 AS L21
,20 AS L22$
120 COUNT=1
125   CLS
130   FOR I=1 TO 21
135     GET#1
140     PRINT COUNT;A2$;E2$
145     COUNT=COUNT+1
150   NEXT I
155 INPUT"TYPE 'C' TO CONTINUE, 'S' TO STOP",H$
160 IF H$="C" THEN GOTO 125
165 PRINT"LISTING TERMINATED"
170 CLOSE#1:END
175 GOSUB 9000
180 GOTO 1035
200 CLS:PRINT:PRINT:PRINT
205 PRINT"CHECK THAT THE DATA FILE IS IN DRIVE 'A'":PRINT:PRINT:PRINT:GOSUB 900

210 OPEN"R",#2,"A:ASFILE  .DAT",385
215 FIELD#2,9 AS A3$,3 AS B3$,16 AS C3$,72 AS D3$,18 AS E3$,7 AS F3$,16 AS G3$,
 AS H31$,20 AS H32$,20 AS H33$,5 AS I3$,4 AS J3$,20 AS K31$,20 AS K32$,20 AS L3
,20 AS L32$
220 COUNT=1
225   CLS
230   FOR I=1 TO 21
235     GET#2
240     PRINT COUNT;A3$;E3$
245     COUNT=COUNT+1
250   NEXT I
255 INPUT"TYPE 'C' TO CONTINUE, 'S' TO STOP",H$
260 IF H$="C" THEN GOTO 225
265 PRINT"LISTING TERMINATED"
270 CLOSE#2:END
275 GOSUB 9000
280 GOTO 1035
300 CLS:PRINT:PRINT:PRINT
305 PRINT"CHECK THAT THE DATA FILE IS IN DRIVE 'A'":PRINT:PRINT:PRINT:GOSUB 900
```

```
310 OPEN"R",#3,"A:WOFILE   .DAT",395
315 FIELD#3,3 AS A4$,12 AS B4$,18 AS C4$,5 AS D4$,5 AS E4$,8 AS F4$,16 AS G4$
AS H41$,2 AS H42$,2 AS H43$,3 AS I4$,2 AS J4$,3 AS K41$,2 AS K42$,5 AS L41$,2
5 L42$,5 AS L43$
320 COUNT=1
325    CLS
330    FOR I=1 TO 21
335       GET#3
340       PRINT COUNT,B4$,C4$
345       COUNT=COUNT+1
350    NEXT I
355 INPUT"TYPE 'C' TO CONTINUE, 'S' TO STOP",H$
360 IF H$="C" THEN GOTO 325
365 PRINT"LISTING TERMINATED"
370 CLOSE#3.END
375 GOSUB 9000
380 GOTO 1035
```