SHRP Archival Database B User's Manual Version 2.0

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Acknowledgments

Contents

Abstract

This report contains instructions for the use of the SHRP Asphalt Research Program Archival Database. The report provides detailed, step-by-step instructions for retrieving, viewing, searching and downloading of the files contained in the database.

Executive Summary

The Archival Database provides a historical record of all the data generated by the SHRP Asphalt Research Program contractors. Its primary purpose is to provide researchers with a well-documented record of the results obtained in the SHRP Asphalt Research Program. Two types of files exist in the database: text files and data files. An established format for each type of file has been followed by the contractors to organize these files. Text files describe the purpose, scope, details, and conclusions reached for each experiment. If laboratory testing was conducted for a certain experiment, data file(s) associated with that text file will contain all the data.

The Archival Database User's Manual provides step-by-step instructions to the user for retrieving, viewing, searching and downloading of these files. The search capability of the database allows the user to search for an experiment by its number or by keyword or a material or materials used in an experiment. The user may also wish to view certain portions of selected text files such as data description, objective or scope.

I.
Introduction

The Archival Database has been designed to serve as the historical record of data that are being generated as part of the SHRP Asphalt Research Program. The Archival Database will contain individual test results, data sufficient to describe the individual test results, and the conditions under which the results were obtained.

The primary purpose of the Archival Database is to provide SHRP researchers with an orderly and well-documented record of the results obtained in the SHRP Asphalt Research Program. Additionally, the Archival Database provides researchers with a valuable database that can be used for future studies.

II.
Interacting With The Archival Database

1. Data Organization

The Archival Database is organized as a series of ASCII files which can be divided into two categories: text files and data files. A text file includes a description of the task, its scope, and objective. A data file contains the individual test results from a single experiment. A user-friendly interface is provided so that the user can readily retrieve the desired data or text files and download them.

2. Entering the Database

In order to be able to access The Archival Database, the user must first logon to the UT computer and then type 'shrp' or 'SHRP' (the system does not distinguish between upper and lower case). The first thing that a user of the SHRP Archival Database sees upon entry into the system is shown in Fig. A.1.

Fig. B. 1 shows the first menu that will be displayed upon entry (i.e., the Main Menu).

CHOICE	DISPLAY
"H"	This brings up the Help Screen which provides the user information on the features of the database. The Help menus provide more detailed information about the items on each menu. (The Help Menu provided by an "H" entry from the Main Menu is shown in Fig. B. 2).
"A"	displays a list of all the experiment numbers in the database. Also, the number of text and data files for each experiment are indicated under the column headings 'T' and 'D' respectively. At this level, the user can select an experiment and view it's text file, data file, data description, objective or scope. The user may also choose to view the list of experiments by specific contract and specific agency.
"B"	on the Main Menu can be used for: (a) searching for experiments in the Database containing a combination of any 6 selected keywords or viewing an approved list of keyword abbreviations. (b) for searching for experiments containing a combination of a selected asphalt, aggregate and modifier, or anyone of the three. (c) for viewing the properties of a selected asphalt or aggregate.
"C"	may be used to view the text files associated with each experiment.
"D"	may be used to view all the data files (if any) associated with the experiment.
"E"	displays the Data Description of the selected experiment or the data descriptions of all experiments sequentially.
"F"	displays the Objectives of the selected experiment or the objectives of all the experiments sequentially.
"G"	displays the Scope of the selected experiment or the scopes of all the experiments sequentially.
"DL"	displays the Download Menu.

"L"   displays the Statisticians' List of Experiments.

"Q"   causes an exit from the database.

Information cannot be entered into the database, nor can it be modified by the user. All text and data files in the database are those that have been approved by the SHRP Project personnel in the Austin Office and are in complete agreement with the specifications set forth for these files.

The remainder of this section is devoted to the steps involved in examining the database entries. Note that the choice for each menu is to be typed at the command prompt ('COMMAND ===>') provided for each menu screen. When the user types an invalid entry, an error message is displayed at the bottom of the screen. Each of the above mentioned choices is discussed separately. It should be noted that all the figures in this report are actual screen dumps and they have not been reproduced in a software program.

3.   Experiment Numbers

This section describes the screen menus obtained upon entering choice 'A' on the Main Menu. An example of the first screen that appears is shown in Fig. C. 1. This is a list of all the experiment numbers in the database along with the contract number, Research Agency and Experiment Title. It is possible to view a particular experiment by entering the choice number or the experiment number. Alternatively, all the experiment numbers for a specific contract may be viewed by entering "S". The user can scroll forward through the experiments by pressing the <ENTER> key or scroll backward by entering "P".

At this point, the user has the option of marking any text and data files from the displayed list of experiments for downloading. Option "D" takes the cursor to the "Choice Number" field. The user can move the cursor to the desired experiment with the help of the arrow keys and press PF1 to select a file. A '*' appears beside the selected file. This asterisk will persist throughout the current session permitting the user to download the selected file(s) prior to termination of the session. This is illustrated in Fig. C.1.1. The user can unselect a file by pressing PF3 and the '*' disappears indicating that the file is no longer selected for downloading. If the experiment has any associated data files, a new screen listing those files will appear. Here, the user has the option of selecting all the data Files on that screen by pressing "A" or the text file and all the data files on that screen by pressing 'B' or selecting particular ones with the "S" option. PF1 may be used to select a particular Data file and PF3 to cancel the selection. The "T" option selects the text file only. The screen for downloading data files is illustrated in Fig. C.1.2. The user can go back to the list of experiments by pressing "P". On both screens, PF2 is used to quit the selection process. Note that at this point the user has only marked the files for downloading. The actual downloading is done by selecting option "DL" from the Main Menu.

Upon entering a valid choice number or experiment number on the screen showing the list of experiments, a screen such as that shown in Fig. C. 2. is displayed. This is the Experiment Number Menu for the specified experiment.

CHOICE	DISPLAY
"A"	displays the text files associated with the specified experiment. (Fig. C.2.1).
"B"	displays the list of data files (if any) associated with the experiment (Fig. C.2.2(a)). Here the user can type a choice number or the data file extension to view a particular experiment or scroll through all the data files sequentially (Fig. C.2.2(b)).
"C"	displays the Data Description for the selected experiment (Fig. C.2.3).
"D"	displays the Objective of the experiment (Fig. C.2.4).
"E"	displays the Scope of the experiment (Fig. C.2.5).

Once a selection of one of the above choices has been made, the user can go back to the Experiment Number Menu by pressing 'E'.

It is possible to scroll forward or backward through these sections by entering "F" or "B", respectively. When viewing the data files, the user can also move to the right, left, far right or far left by pressing 'R', 'L', 'RR' or 'LL' respectively.

A HELP Screen for the Experiment Menu is also available by pressing choice "H" (see Fig. C.3.).

The user can go back to the Main Menu from the Experiment Menu by pressing 'MM' or back to the List of Experiments by pressing "P".

When the user types "S" on the List of Experiments Screen, the screen in Fig. C.4 is displayed. This is a list of Contracts for the experiments in this database. This enables the user to view all the agencies under a contract and the experiments that have been performed at those agencies. For instance, by typing "2" or "A-002A" on the Contract List Menu (see Fig. C.4.) the screen shown in Fig. C.5. is displayed. The user can now select any agency to list the experiments performed at that agency. The screen that is displayed in response to the menu of Fig. C.5. is similar to that produced by The List of Experiments Menu except that it displays the experiments for a particular Agency and under a particular contract. For example, Fig. C.6 is the result of entering a "1" or "WRI" from the display shown in Fig. C.5.

4.   Keywords/ Materials/ Properties Menu

Choice "B" on the Main Menu takes the user to the Keyword/Materials/Properties Menu (Fig. D.1).

Keyword Search

Choice "K" on the keyword/Materials/Properties menu takes the user to the Keyword Menu (Fig. D.2).

Choice "A" on the keyword menu displays a list of all the keyword abbreviations and equivalents (Fig. D.3.). The user can scroll through the keyword abbreviation list by pressing <ENTER> to advance forward through the list or 'P' to examine the previous or earlier portion of the list.

The user can also start a search for a string of keywords by entering "S". Choice "S" on the Keyword Menu enables the user to start a search for a string of keywords. The first screen that appears contains the instructions for keyword search (Fig. D.4.1a). The user is prompted to enter the keywords (up to 6 words) separated by blanks (Fig. D.4.1b). The next screen that appears (Fig. D.4.2) asks the user for confirmation. An "N" response on this screen takes the user back to the keyword search screen (Fig. D.4.1a). A "Y" response on this screen confirms the selection of keywords to be used in the search. The list of files containing all the entered keywords is then displayed. (Fig. D.4.3). If no file containing the selected keyword(s) exists the screen in Fig. D.4.4 is displayed wherein the user can go back to the Keyword Menu or start a new search (Fig. D.4.1). Once the list of files is displayed, the user may enter a valid choice number or the experiment number which then displays the Experiment Number Menu for the specified experiment (Fig. C.2.).

As explained in section 3 above, the user may then proceed to view the text file, data file(s), data description, objective or scope of the selected experiment.

After viewing one file, if the user wishes to view the other files on the list, he must press "E" to go to the Experiment Number Menu followed by a "P" to return to the list of experiments.

The user can mark files for downloading in a similar manner as explained in section 3.

Note that the keywords may be entered in uppercase or lowercase. The list of valid characters for the keyword search is the same as those given in the Archival Database specifications. Pressing "H" on the Keyword Menu displays the HELP screen which contains instructions for the choices in the Keyword Menu (Fig. D.5).

Materials/ Properties Search

Choice 'S' on The Keyword/Materials/Properties Menu takes the user to the Materials/Properties Menu. (Fig. D.6).

Choice 'A' takes the user to a menu (Fig. D. 7) giving the user the option of searching for experiments containing an asphalt (choice 1), aggregate (choice 2), or a modifier (choice 3).

Choices 4, 5 and 6 list the experiments containing a selected combination of asphalt, aggregate and modifier in the same mixture. For example, if the user wishes to search for experiments containing asphalt 'AAA-1' option 1 must be selected. This is illustrated in Fig. D.8. In case the asphalt to be searched is less than 5 characters long, the user will have to press the space bar twice to fill the entire 5-character field. The results of the search are seen in Fig. D.9. Once a List of experiments is obtained, one may proceed to view the text file, data files, data description, objective or scope of the experiment or mark them for downloading, as explained before.

Choice 'B' on The Materials/Properties Menu takes the user to the Properties Menu which gives the user the option of viewing the properties of an asphalt (choice 'A' on the menu) or the properties of an aggregate (choice 'B' on the menu). See Fig. D.10. The Asphalt Selection Menu (Fig. D.11) allows the user to select the asphalt whose properties are to be displayed. When the user enters the choice number of the asphalt, a list of properties of that asphalt is displayed (Fig. D.12). The user can scroll forward or backward through the list by pressing <ENTER> or 'P' respectively. The Aggregate Selection Menu (Fig. D.13) allows the user to select an aggregate whose properties are to be displayed. When the user enters the choice number of the aggregate, a list of properties of that aggregate is displayed (Fig. D.14). The user can scroll forward or backward through the list by pressing <ENTER> or 'P' respectively.

Option 'H' on all the menu screens display the HELP Screens (Figs. D.15 - D.18). Option 'MM' goes back to the Main Menu. Option 'P' causes the previous screen to be displayed.

5. Text Files

Choice "C" on the Main Menu takes the user to the Text File Menu (Fig. E.1).

CHOICE	DISPLAY
"A"	displays all the text files sequentially (Fig. E.2). The user can scroll through the text of each file one by one by pressing "N" on this menu or scroll back by pressing "P". The user can also scroll forward and backward through the text of the same file by pressing "F" or "B", respectively.
"L"	lists all experiment numbers in the database (Fig. C.1). Choice "S" lists all experiment numbers for a specific contract and agency (Fig. C.4). The user can then proceed to view the text file, data file, data description, objective or scope of the selected experiment in a manner similar to that explained in Section 3.
"H"	displays the HELP screen available for this menu. (Fig. E.3).

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6.   Data Files

Choice "D" on the Data File Menu takes the user to the Data File Menu (Fig. F.1).

CHOICE	DISPLAY
"L"	displays the list of all the experiment numbers in the database (Fig. C.1). Once an experiment has been selected, the menu shown in Fig. F.2(a) is displayed. Choice "A" on this menu displays sequentially all the data files for the selected experiment (Fig. F.2(b)).
"S"	on this menu displays a list of all the experiment numbers for a specific contract and agency. (Fig. C.4).
"H"	displays the HELP screen available for the choices on the Data File Menu (Fig. F.3.).

7.   Data Descriptions

Choice "E" on the Main Menu takes the user to the Data Description Menu (Fig. G.1.).

CHOICE	DISPLAY
"A"	displays all data descriptions sequentially (Fig. G.2.). The user can scroll forward or backward through the data description of a particular experiment by pressing "F" or "B", respectively. The user can also move from one experiment to the next by pressing "N".
"L"	displays all the experiment numbers in the database (Fig. C.1.).
"S"	displays all the experiment numbers for a specific contract and agency (Fig. C.4.).
"H"	displays the HELP screen available for the Data File Menu (Fig. G.3.).

8.   Objectives

Choice "F" on the Main Menu takes the user to the Objective Menu (Fig. H.1).

CHOICE	DISPLAY
"A"	displays all objectives sequentially (Fig. H.2). The user can scroll forward or backward through the objective of a particular experiment by pressing "F" or "B", respectively. The user can also move from one experiment to the next by pressing "N".
"L"	on this menu displays all the experiment numbers in the database (Fig. C.1.).
"S"	displays all the experiment numbers for a specific contract and agency (Fig. C.4.).
"H"	displays the HELP screen available for the choices on the Objective Menu (Fig. H.3.).

9.   Scope

Choice "G" on the Main Menu takes the user to the Scope Menu (Fig. I.1.).

CHOICE	DISPLAY
"A"	displays all the Scopes sequentially (Fig. I.2.). The user can scroll forward or backward through the scope of a particular experiment by pressing "F" or "B", respectively. The user can also move from one scope to the next by pressing "N".
"L"	on this menu displays all the experiment numbers in the database (Fig. C.1.).
"S"	displays all the experiment numbers for a specific contract and agency (Fig. C.4.).
"H"	displays the HELP screen available for the choices on the Scope Menu (Fig. I.3.).

10.   Statisticians List of Experiments

Choice "L" on the Main Menu displays the Statisticians' List of experiments. This is a list of all the valid experiments in the database. This contains the experiment number, the research agency, task manager, researcher, date of submission of experiment, date of start of experiment and title of experiment plan (Fig. J.1).

The user can scroll forward or backward through this list by pressing "F" and "B" respectively. Since the width of this file is more than the width of the screen, the user can also move to the left, right, extreme left and extreme right by pressing "L", "R", "LL", "RR" respectively. "T" goes to the top of the List while "BO" goes to the bottom of the List.

Option 'D' allows the user to mark the Statistician's List of Experiments for downloading.

11. Download all Marked Files

Choice "DL" on the Main Menu allows the user to download all marked files. The download menu is displayed wherein the user is given the option of selecting the mode of file transfer (Fig. K.1.). The user can choose between Kermit, Procomm, FTP, Sendfile and Note. A Help Screen (Fig. K.2) is provided with examples of the address format the user must enter to download the marked files.

Instructions for downloading:
        (a)   KERMIT
Option '1' on the Download Menu is used to select Kermit as the mode of transfer. When the prompt to escape back to the local system appears, the user must press the <CTRL> <RtSqBRACKET> keys. Next the user must press "C" to go to the MSKERMIT prompt. Typing "REC" at this prompt starts the downloading of the files. When the downloading is complete, the user may press "C" to go back to the Downloading Menu.

        (b)   PROCOMM
Option '2' on the Downloading Menu is used to select PROCOMM as the mode of transfer. When the prompt to escape back to the local system appears, the user must press <PgDn> and then select KERMIT from the PROCOMM option menu.

        (c)   FTP
When FTP is selected (Option 3) as the mode of transfer, the user is prompted for the remote address to which the files are to be transferred.

    The format of the remote address is as follows :
        ADDRESS,   USERID and PASSWORD
    e.g.   CSUVM.CSU.EDU   JOHNP   FISH

        (d)   SENDFILE
Option '4' may be used to select Sendfile as the mode of file transfer. When prompted for the remote BITNET address, the format to be used is as follows :
        e.g   FRED AT   OSUVM

        (e)   NOTE
Option '5' may be used to select NOTE as the mode of file transfer. When prompted for the remote e-mail address, the format to be used is as follows :
        e.g   MARK   AT   OSUVAX1.OSU.EDU

From the Download Menu, the user can go back to the database using option '7' or exit completely using option '8'.

12.   Quit

In order to exit the database, the user enters "Q" on the Main Menu. All selected files remain marked until they are either downloaded or cleared from memory by quitting the database.

S H R P   A S P H A L T   P R O G R A M

Welcome to the SHRP Archival Database

DATA FILES WHEN CLOSED SHOULD NOT BE CITED
WITHOUT THE PERMISSION OF THE RESEARCHER

Press <ENTER> tc Continue

Fig. A.1 First Screen

```
SHRP ASPHALT RESEARCH PROGRAM ARCHIVAL DATABASE MAIN MENU


                 A----------EXPERIMENT NUMBERS
                 B----------SEARCH BY KEYWORD OR MATERIALS
                 C----------TEXT FILES
                 D----------DATA FILES
                 E----------DATA DESCRIPTIONS
                 F----------OBJECTIVES
                 G----------SCOPES
                 DL---------DOWNLOAD ALL MARKED FILES
                 H----------HELP
                 L----------STATISTICIANS' LIST OF
                             EXPERIMENTS
                 Q----------QUIT

    NO OF TEXT FILES :        110
    NO OF DATA FILES :        198

    PLEASE TYPE YOUR CHOICE AT THE CURSOR.

COMMAND ===>
```

Fig. B.1 Main Menu Screen

```
HELP FOR MAIN MENU
A - This option displays a list of the experiments in the Database.
    Here you can choose any experiment by Number, Research Agency or
    Contract Number and view the Text, Objective, Scope and Data Des-
    cription or Data Files (if any) associated with the experiment.

B - This option gives the user the choice of two types of searches.
    One is the keyword search which displays a list of experiments
    containing a keyword or group of keywords specified by the user.
    The other displays a list of experiments containing a specified
    material or mixture or specified properties of asphalts/aggregates.

C - This option lists the text files for all the experiments.  You
    can view these files sequentially or select a particular one and
    browse through it.

D - This option displays the data file menu. You can get a list of
    data files associated with any experiment and browse through them

PRESS <ENTER> TO GO TO THE NEXT HELP SCREEN OR MM TO RETURN TO THE
MAIN MENU
            PLEASE TYPE THE COMMAND  IN THE SPACE PROVIDED.
COMMAND ===>
```

Fig. B.2 Help Screen for Main Menu

```
                          LIST OF EXPERIMENTS

CHOICE  CONTR.
NUMBER  NUMBER  AGENCY T D  EXP NO         TITLE OF EXPERIMENT
------  ------  ------ ----  ------  -------------------------------------
     1  A-002A  WRI    1  5  A2A111A1  CHEMICAL CHARACTERIZATION OF CORE ASPHAL
     2  A-002A  WRI    1 17  A2A111B1  SEPARATION OF CORE ASPHALTS INTO COMPONE
     3  A-002A  WRI    1 12  A2A111B2  SEPARATION OF CORE ASPHALTS INTO COMPONE
     4  A-002A  WRI    1  2  A2A111C1  CHEMICAL PROPERTIES OF ASPHALT COMPONENT
     5  A-002A  WRI    1  4  A2A111D1  POTENTIOMETRIC TITRATIONS OF ASPHALTS AN
     6  A-002A  WRI    1  2  A2A112A1  INFLUENCE OF NON-POLAR COMPONENTS OF ASP
     7  A-002A  WRI    1  8  A2A112B1  SEC STUDIES ON ASPHALTS
     8  A-002A  WRI    1  2  A2A112C1  SEC STUDIES ON AGED ASPHALTS
     9  A-002A  WRI    1  0  A2A112D1  DEUTERATION STUDIES
    10  A-002A  SRI    1  4  A2A113A1  MECHANISMS OF ASPHALT OXIDATION


------------------------------------------------------------------------
    To choose a specific experiment number, type either the choice number
    OR the experiment number.  To view a list of experiment numbers for
    a specific contract and agency, type S and hit enter.
  P--Previous Screen; ENTER--Next Screen; S--Specific Contract; MM--Main Menu
  COMMAND ===>           D--Mark File (PF1--select, PF2--quit, PF3--unselect)
```

Fig. C.1   Screen showing a Partial List of Experiments in Database

```
                         LIST OF EXPERIMENTS

   CHOICE   CONTR.
   NUMBER   NUMBER   AGENCY  T D   EXP NO        TITLE OF EXPERIMENT
   ------   ------   ------  ----  ------   ------------------------------------
       1    A-002A    WRI    1  5  A2A111A1  CHEMICAL CHARACTERIZATION OF CORE ASPHAL
*      2    A-002A    WRI    1 17  A2A111B1  SEPARATION OF CORE ASPHALTS INTO COMPONE
       3    A-002A    WRI    1 12  A2A111B2  SEPARATION OF CORE ASPHALTS INTO COMPONE
       4    A-002A    WRI    1  2  A2A111C1  CHEMICAL PROPERTIES OF ASPHALT COMPONENT
       5    A-002A    WRI    1  4  A2A111D1  POTENTIOMETRIC TITRATIONS OF ASPHALTS AN
       6    A-002A    WRI    1  2  A2A112A1  INFLUENCE OF NON-POLAR COMPONENTS OF ASP
       7    A-002A    WRI    1  8  A2A112B1  SEC STUDIES ON ASPHALTS
       8    A-002A    WRI    1  2  A2A112C1  SEC STUDIES ON AGED ASPHALTS
       9    A-002A    WRI    1  0  A2A112D1  DEUTERATION STUDIES
      10    A-002A    SRI    1  4  A2A113A1  MECHANISMS OF ASPHALT OXIDATION


   ---------------------------------------------------------------------------
       To choose a specific experiment number, type either the choice number
       OR the experiment number.  To view a list of experiment numbers for
       a specific contract and agency, type S and hit enter.
     P--Previous Screen; ENTER--Next Screen; S--Specific Contract; MM--Main Menu
     COMMAND ===> D          D--Mark File (PF1--select, PF2--quit, PF3--unselect)
```

Fig. C.1.1 Screen with downloading feature (Note the * for selected file)

```
                          LIST OF DATA FILES

        CHOICE   EXPERIMENT           ENTRY     REVISION
        NUMBER     NUMBER     EXT     DATE        DATE
        ------   ----------   ---    --------   --------
          1      A2A111B1     D01    03/15/92   03/15/92
     *    2      A2A111B1     D02    03/15/92   03/15/92
     *    3      A2A111B1     D03    03/15/92   03/15/92
          4      A2A111B1     D04    03/15/92   03/15/92
          5      A2A111B1     D05    03/15/92   03/15/92
          6      A2A111B1     D06    03/15/92   03/15/92
          7      A2A111B1     D07    03/15/92   03/15/92
          8      A2A111B1     D08    03/15/92   03/15/92
          9      A2A111B1     D09    03/15/92   03/15/92
         10      A2A111B1     D10    03/15/92   03/15/92


--------------------------------------------------------------------
To Download all the files press A. To select only specific data files
press S and use the arrow keys to move to the particular file.Use PF1
key to select, PF2 key to end the selection, PF3 to unselect a file.
T--Text File;  A--All Data Files;  S--Select/Unselect  ENTER--Next Screen
COMMAND ===> S           B--Text & Data;  P--Previous Screen
```

Fig. C.1.2 Screen showing the downloading of data files for 'A2A111B1'

```
                    EXPERIMENT NUMBER MENU


              Experiment Number: A2A122A1


              A----------TEXT FILE
              B----------DATA FILES
              C----------DATA DESCRIPTION
              D----------OBJECTIVE
              E----------SCOPE


              H----------HELP
              MM---------MAIN MENU
              P----------PREVIOUS SCREEN


        PLEASE TYPE THE COMMAND KEYWORD IN THE SPACE PROVIDED.


    COMMAND ===>
```

Fig. C.2 Experiment Number Menu

TEXT FOR EXPERIMENT A2A122A1

File Number: A2A122A1.TXT

Performing Agency: Pennsylvania State University

Project: A-002A Binder Characterization and Evaluation

Task 1.2: Physical Properties of Asphalts

   Subtask 1.2.2: Characterization of Rheological and Other Physical
        Properties
   Experiment Name: Non-Linear DMA: Core Asphalts

Date First Entered into Database: 17 May 1991
Date Last Revision Entered into Database: 17 May 1991
    Task Manager: David A. Anderson
    Researchers: D. W. Christensen
    Experiment Statistician: Charles E. Antle

 F -- FORWARD, B -- BACKWARD, E -- EXPERIMENT MENU, MM -- MAIN MENU
COMMAND ===>

    Fig. C.2.1 Text Screen for Specified Experiment

```
                    LIST OF DATA FILES

        CHOICE   EXPERIMENT           ENTRY    REVISION
        NUMBER     NUMBER     EXT     DATE       DATE
        ------   ----------   ---   --------   --------
           1      A2A136B1    D01   01/09/92   01/09/92
           2      A2A136B1    D02   01/09/92   01/09/92
           3      A2A136B1    D03   01/09/92   01/09/92
           4      A2A136B1    D04   01/09/92   01/09/92
           5      A2A136B1    D05   01/09/92   01/09/92
           6      A2A136B1    D06   01/09/92   01/09/92



-------------------------------------------------------------------------
    To view a specific data file, type either the choice number OR the
    extension and hit enter.  To scroll through ALL of the data files for
    this experiment in order, type A and hit enter.
            A--All Data Files;  P--Previous Screen;  MM--Main Menu.
COMMAND ===>
```

Fig. C.2.2(a) List of Data files for specified experiment

DATA FILE A3BA1101.D01

A3BA1101.D01

Date First Entered into Database: 26 Feb 1992
Date Last Revision Entered into Database: 26 Feb 1992
James P. Henley Jr.
Status: Open -- Data may be used and published by anyone with access to


```
1-----------------------------------------------------------------------
2 1               2        3           4              5      6
3 Asph            Agg      Monolayer   Monolayer      Equil  G, Gibbs
4 Model           ID       Amount      Amount         Const  Free Ener
5 ID              No.      (E-6mol/g)  (E-6mol/m**2)  (K)E5  (KJ/mol)
6-----------------------------------------------------------------------
7 Benzoic Acid    RA       0.74        3.89           *      *
8 Phenylsulfoxide RA       0.22        1.16           +3.44  -31.6
9 1-Naphthol      RA       0.06        0.32           *      *
10 Phenanthridine RA       0.02        0.11           *      *
```

F--Forward; B--Backward; R--Right; L--Left; RR--Far Right; LL--Far Left; T--Top
COMMAND ===>   N--Next File; P--Prev. File; E--Exp. Menu; MM--Main Menu.

Fig. C.2.2(b) Data Screen for specified experiment

DATA DESCRIPTION FOR EXPERIMENT A2A132A1

8. Data Description

001.D01 Asphalt number 132a
002.D01 Sample identification number
003.D01 Replication number
004.D01 Date of oxidation
005.D01 Oxidation method
006.D01 Oxidation temperature, C
007.D01 Oxidation duration, hr
008.D01 Date specimen prepared
009.D01 Portion high molecular weight material, wt%
010.D01 Portion low molecular weight material, wt%
011.D01 Time 1 since preparation, 25 C sample, hr
012.D01 Viscosity at time 1, 25 C sample, poises
013.D01 G' at time 1, 25 C sample, dynes/cm**2
***The above data are contained in data file with extension .D01
014.D02 G" at time 1, 25 C sample, dynes/cm**2
015.D02 Time 2 since preparation, 25 C sample, hr

 F -- FORWARD, B -- BACKWARD, E -- EXPERIMENT MENU, MM -- MAIN MENU
COMMAND ===>

        Fig. C.2.3 Data Description for specified experiment

OBJECTIVE FOR EXPERIMENT A2A122A1

1. Objective

    Task: The objective of this task is to develop techniques for the characterization of fundamental physical properties of asphalts and correlate these properties to chemical composition.

    Subtask: The objective of this subtask is to evaluate the rheological properties of asphalt cements using the rheometrics mechanical spectrometer and determine the effect of temperature on these properties.

    Experiment: The objective of this experiment is to characterize the rheological properties of asphalt cements in the nonlinear range using the rheometric apparatus. The nonlinear properties are needed to correlate the physical properties to the chemical composition and also in predictive models of field performance. The relaxation properties in the nonlinear range will be obtained by subjecting a thin film of asphalt sandwiched between two parallel plates to various magnitudes of step deformations and the decay of torque and the axial trust with time will be measured with time. The data
----
    F -- FORWARD, B -- BACKWARD, E -- EXPMANU, MM -- MAINMENU.
COMMAND ===>

            Fig. C.2.4 Objective Screen for specified experiment

SCOPE FOR EXPERIMENT A2A132A1

2. Scope

     The hypotheses to be tested are that migrations of polar molecular
entities within asphalts over extended time periods cause embrittlement of
asphalt cements and that the embrittlement is thermally reversible. Emphasis
will be placed on the expected enhancement of this effect by asphalt
oxidation. To verify these hypotheses, selected core study materials will be
placed into specially designed test fixtures and will be held at selected
temperatures for varying times. A stringent protocol will be followed for
sample loading and measurement. Kinetic curves will be developed for the
study materials which measure reversible hardening over time. These results
coupled with studies involving the chemistry of asphalt components will
provide a better understanding of asphalt embrittlement and possibly suggest
ways to reduce the rate of asphalt hardening and extend the life span of
asphaltic pavements. Relationships between rate of steric hardening and
complex flow properties will be sought in an attempt to find a rapid surrogate
measurement to predict steric hardening and also as model verification of the
----

             Fig. C.2.5 Scope Screen for specified experiment

```
******************************
HELP FOR EXPERIMENT FILE MENU
******************************


A - This option displays the text file  for the specific experiment.

B - This option displays the experimental data for the experiment.

C - This option displays the data description for the experiment

D - This option displays the objective for the experiment.

E - This option displays the scope for the experiment.


   ** NOTE **  When viewing a file, a blank screen indicates the end of
               data



          PLEASE TYPE EX TO GO BACK TO THE EXPERIMENT FILE MENU
COMMAND ===>
```

Fig. C.3 Help Screen for Experiment Menu

```
                           LIST OF CONTRACTS
                                                         Screen 1 of 2
    CHOICE   CONTRACT
    NUMBER   NUMBER                          PROJECT TITLE
    ------   --------   -----------------------------------------------------
       1     A-001      TECHNICAL ASSISTANCE AND COORDINATION
       2     A-002A     BINDER CHARACTERIZATION AND EVALUATION
       3     A-002B     DEVEL. OF ASPHALT CORE TOMOGRAPHER, AGE HARDDENING
       4     A-002C     NMR SPECTROSCOPY OF BINDERS
       5     A-003A     TESTING AND MEASURING OF MIXTURES
       6     A-003B     ASPHALT-AGGREGATE INTERACTIONS
       7     A-004      ASPHALT MODIFICATION
       8     A-005      PERFORMANCE MODELS AND VALIDATION
       9     A-006      SPECIFICATIONS FOR MIXTURES
      10     AIIR-04    FLUROMETRIC CHARACTERIZATION OF AC
      11     AIIR-05    COLLOIDAL BEHAVIOUR OF AC
      12     AIIR-06    THERMAL CHARACTERIZATION OF AC
    ---------------------------------------------------------------------------
    To choose a specific contract, type either the choice number OR the contract
    number and hit enter.  After choosing a contract, a list of agencies for that
    contract will be displayed.
              P--Previous Screen; ENTER--Next Screen; MM--Main Menu.
    COMMAND ===>
```

Fig. C.4 Screen showing the List of Contracts

29

```
                        LIST OF AGENCIES FOR A-002A

   CHOICE    AGENCY
   NUMBER    ABBREV                         RESEARCH AGENCY
   -------   --------   --------------------------------------------------------
      1      WRI        WESTERN RESEARCH INSTITUTE, LARAMIE, WY
      2      PTI        PENN STATE UNIVERSITY, UNIVERSITY PARK
      3      TTI        TEXAS TRANS. INST. (TEXAS A&M UNIV.), COLLEGE STATION
      4      SRI        SRI INTERNATIONAL, STANFORD, CA




   -----------------------------------------------------------------------------
           To choose a specific agency, type either the choice number OR
                     the agency abbreviation and hit enter.
                      P--Previous Screen;   MM--Main Menu.
      COMMAND ===>
```

Fig. C.5 List of Agencies for specified contract

LIST OF EX: IMENTS FOR WRI UNDER CONTRACT A-002A

CHOICE NUMBER	CONTRACT NUMBER	: NCY	EXP NO	TITLE OF EXPERIMENT
1	A-002A	ˉ	A2A111A1	CHEMICAL CHARACTERIZATION OF CORE ASPHAL
2	A-002A	·	A2A111B1	SEPARATION OF CORE ASPHALTS INTO COMPONE
3	A-002A	:	A2A111B2	SEPARATION OF CORE ASPHALTS INTO COMPONE
4	A-002A	ˉ	A2A111C1	CHEMICAL PROPERTIES OF ASPHALT COMPONENT
5	A-002A	:	A2A111D1	POTENTIOMETRIC TITRATIONS OF ASPHALTS AN
6	A-002A	·	A2A112A1	INFLUENCE OF NON-POLAR COMPONENTS OF ASP
7	A-002A		A2A112B1	SEC STUDIES ON ASPHALTS
8	A-002A	ˉ	A2A112C1	SEC STUDIES ON AGED ASPHALTS
9	A-002A	ˉ	A2A112D1	DEUTERATION STUDIES
10	A-002A	·	A2A113B1	METAL COMPLEX CATALYSIS OF ASPHALT OXIDA

To choose a   ;cific experiment, type either the choice number
          OR the experiment number.
     P--F _ous Screen; ENTER--Next Screen; MM--Main Menu.
     D--M Files (PF1--Select File, PF2--Quit, PF3--Unselect)
COMMAND ===>

Fig. C.6 List of   >eriments for specified Agency under specific Contract

```
                        SEARCH MENU




        K----------KEYWORD SEARCH MENU
        S----------MATERIALS / PROPERTIES SEARCH MENU


        H----------HELP
        MM---------MAIN MENU
        P----------PREVIOUS MENU




    PLEASE TYPE THE COMMAND KEYWORD IN THE SPACE PROVIDED.


COMMAND ===>
```

Fig. D.1 Keyword/Materials/Properties Search

KEYWORD MENU

A----------LIST OF KEYWORD ABBREVIATIONS
                 AND EQUIVALENTS
S----------SEARCH BY KEYWORDS

H----------HELP
MM---------MAIN MENU
P----------PREVIOUS MENU

PLEASE TYPE THE COMMAND KEYWORD IN THE SPACE PROVIDED.

COMMAND ===>

Fig. D.2 Keyword Menu Screen

LIST OF KEYWORD ABBREVIATIONS AND EQUIVALENTS

```
ANOVA      ANALYSIS OF VARIANCE
CRREL      U. S. ARMY COLD REGIONS RESEARCH AND ENGINEERING LABORATORIE
DMA        DYNAMIC MECHANICAL ANALYSIS
ESR        ELECTRON SPIN RESONANCE
EVT        EQUIVICOUS TEMPERATURE
FEAP       FINITE ELEMENT ANALYSIS PROCEDURE
FTIR       FOURIER TRANSFORM INFRARED SPECTROSCOPY
GPC        GEL PERMEATION CHROMATOGRAPHY
HPLC       HIGH PRESSURE LIQUID CHROMATOGRAPHY
ICP        INDUCTIVITY COUPLED PLASMA
IR         INFRARED
LV         LINEAR VISCOELASTIC
NCHRP      NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
NMR        NUCLEAR MAGNETIC RESONANCE
PAV        PRESSURE AIR VESSEL
```

P--Previous Screen; ENTER--Next Screen; K--Keyword Menu; MM--Main Menu.

COMMAND ===>

Fig. D.3 Keyword Abbreviations and their equivalents

```
                    KEYWORD  SEARCH  SCREEN
                    **********************


PLEASE ENTER THE KEYWORDS SEPARATED BY BLANKS. YOU CAN ENTER UP TO
6 KEYWORDS.   ENTER Q TO QUIT AND RETURN TO THE KEYWORD MENU



KEYWORDS ==>
```

Fig. D.4.1(a)   First Screen in Keyword Search

```
                    KEYWORD SEARCH SCREEN
                    *********************


PLEASE ENTER THE KEYWORDS SEPARATED BY BLANKS. YOU CAN ENTER UP TO
6 KEYWORDS.  ENTER Q TO QUIT AND RETURN TO THE KEYWORD MENU



KEYWORDS ==> ASPHALT
```

Fig. D.4.1(b) First Screen in Keyword Search (with keyword entered)

```
HERE IS THE KEYWORD FOR WHICH YOU HAVE REQUESTED A SEARCH :
************************************************************

KEYWORD ==>   ASPHALT






IS THIS THE KEYWORD TO BE SEARCHED ?
********************************************

PRESS Y or y TO START THE SEARCH OR N or n TO REVISE THE KEYWORD
***************************************************************************
COMMAND ==>
```

Fig. D.4.2 Third Screen in Keyword Search asking for confirmation.

```
                        LIST OF EXPERIMENTS

        KEYWORD(S): ASPHALT

        CHOICE
        NUMBER    EXP NO        TITLE OF EXPERMIENT
        ------    --------    --------    ---------------------------------------------
            1     A2A111B1 SEPARATION OF CORE ASPHALTS INTO COMPONE
            2     A2A111B2 SEPARATION OF CORE ASPHALTS INTO COMPONE
            3     A2A111C1 CHEMICAL PROPERTIES OF ASPHALT COMPONENT
            4     A2A112A1 INFLUENCE OF NON-POLAR COMPONENTS OF ASP
            5     A2A112B1 SEC STUDIES ON ASPHALTS
            6     A2A112C1 SEC STUDIES ON AGED ASPHALTS
            7     A2A112D1 DEUTERATION STUDIES
            8     A2A113A1 MECHANISMS OF ASPHALT OXIDATION
            9     A2A113B1 METAL COMPLEX CATALYSIS OF ASPHALT OXIDA
           10     A2A115B1 COMPOSITIONAL FACTORS THAT INFLUENCE ASP
        -------------------------------------------------------------------------
            To choose a specific experiment number, type either the choice number
            OR the experiment number.
         P--Previous Screen; ENTER--Next Screen; MM--Main Menu; K--KEYWORD MENU
                    D--Mark Files (PF1 -- Select, PF2 -- Quit, PF3 -- Unselect)
         COMMAND ===>
```

    Fig. D.4.3 Screen displaying the results of Keyword Search

```
        THERE ARE NO FILES WITH THE FOLLOWING KEYWORD(S):
        ****************************************************

KEYWORD ==>          AIRRE
```

```
        Press S to start a new search or Press K to go to the Keyword menu
```

```
COMMAND ==>
```

Fig. D.4.4 Screen displaying failure of Keyword Search

```
**********************
HELP FOR KEYWORD MENU
**********************


A - This option displays a list of Abbreviations for the keywords
    currently in the database

S - This option allows you to search for a single keyword or up to
    6 keywords.  The user is prompted for the keywords and a list of
    files containing all the keywords is displayed.




        PLEASE TYPE KK TO GO BACK TO KEYWORD MENU

COMMAND ===>



    Fig. D.5  Help Screen for keyword Menu
```

MATERIALS / PROPERTIES SEARCH MENU

A--List of Experiments for a selected asphalt,
   aggregate or modifier or selected mixture
B--Properties for a selected Asphalt or Aggregate

H----------HELP
MM---------MAIN MENU
P----------PREVIOUS MENU

PLEASE TYPE THE COMMAND KEYWORD IN THE SPACE PROVIDED.

COMMAND ===>

Fig. D.6 Materials/Properties Menu

```
            SELECTION OF ASPHALT/AGGREGATE/MODIFIER:

            1.  ASPHALT
            2.  AGGREGATE
            3.  MODIFIER

    MIXTURES:
            4.  ASPHALT, AGGREGATE  and MODIFIER
            5.  ASPHALT  and  AGGREGATE
            6.  ASPHALT  and  MODIFIER



            H----------HELP
            MM---------MAIN MENU

            P----------PREVIOUS MENU

      PLEASE TYPE THE CHOICE NUMBER IN THE SPACE PROVIDED.


COMMAND ===>


      Fig.  D.7   Materials/Mixtures selection Menu
```

ENTER THE ASPHALT TO BE SEARCHED FOR OR "Q" TO QUIT. IF THE ASPHALT
IS LESS THAN 5 CHARACTERS LONG, ENTER SPACES TO FILL THE ENTIRE FIELD.

ASPHALT   ===>   AAA-1

PLEASE TYPE "Y" TO PROCEED WITH SEARCH, "N" TO REVISE SEARCH AND
"Q" TO QUIT SEARCH

COMMAND ===>

Fig. D.8 Screen showing asphalt AAA-1 selected for the search

```
LIST OF EXPERIMENTS CONTAINING THE SELECTED ASP/AGG/MOD OR MIXTURE
NUMBER OF EXPERIMENTS FOUND:   31
          CHOICE
          NUMBER    EXP NO    CONTRACT   AGENCY
          -------   ---------- ---------- -------
             1      A2A111A1   A-002A     WRI
             2      A2A111B1   A-002A     WRI
             3      A2A111B2   A-002A     WRI
             4      A2A111C1   A-002A     WRI
             5      A2A111D1   A-002A     WRI
             6      A2A112A1   A-002A     WRI
             7      A2A112B1   A-002A     WRI
             8      A2A112C1   A-002A     WRI
             9      A2A113A1   A-002A     WRI
            10      A2A113B1   A-002A     WRI

---------------------------------------------------------------------------
    To choose a specific experiment number, type either the choice number
    OR the experiment number.
P--Previous Screen; ENTER--Next Screen; MM--Main Menu; K--Search Menu
          D--Mark Files (PF1 -- Select, PF2 -- Quit, PF3 -- Unselect)
COMMAND ===>
```

Fig. D.9 Result of search for the asphalt 'AAA-1'

SELECTION OF ASPHALT/AGGREGATE PROPERTIES

A. Asphalt Properties. The following screen will allow you to select the Asphalt whose properties are to be displayed.

B. Aggregate Properties. The following screen will allow you to select the Aggregate whose properties are to be displayed.

```
                 MM---------MAIN MENU
                 P----------PREVIOUS MENU


        PLEASE TYPE THE CHOICE NUMBER IN THE SPACE PROVIDED.


COMMAND ===>
```

Fig. D.10 Asphalt/Aggregate Properties Selection Menu

SELECTION OF ASPHALT PROPERTIES

PLEASE ENTER THE CHOICE NUMBER OF THE ASPHALT WHOSE PROPERTIES ARE
TO BE DISPLAYED

1. AAA-1	10. AAF-1	19. AAM-1	28. AAS-3	37. ABC	46. ABM-1
2. AAA-2	11. AAF-2	20. AAM-2	29. AAT	38. ABD	47. ABM-2
3. AAB-1	12. AAG-1	21. AAN	30. AAU	39. ABF	
4. AAB-2	13. AAG-2	22. AAO	31. AAV	40. ABG	
5. AAC-1	14. AAH	23. AAP	32. AAW	41. ABH	
6. AAC-2	15. AAJ	24. AAQ	33. AAX	42. ABK	
7. AAD-1	16. AAK-1	25. AAR	34. AAY	43. ABL-1	
8. AAD-2	17. AAK-2	26. AAS-1	35. AAZ	44. ABL-2	
9. AAE	18. AAL	27. AAS-2	36. ABA	45. ABL-3	

```
H----------HELP
MM---------MAIN MENU
P----------PREVIOUS MENU
```

PLEASE TYPE THE CHOICE NUMBER IN THE SPACE PROVIDED.

COMMAND ===>

Fig. D.11 Asphalt Properties Selection Menu

```
                  PROPERTIES OF ASPHALT:    AAB-1

NUMBER              PROPERTY                    VALUE
----------------------------------------------------------
    1   Asphalt Grade                         AC-10
    2   MRL Code                              AAB-1
    3   Crude                                 WY Sour
    4
    5   Original Asphalt
    6   Viscosity
    7   140 F, poise                           1029
    8   275 F, cSt                              289
    9
   10   Penetration, 0.1 mm
   11   (77 F, 100 g, 5 s)                       98
   12   (39.2 F, 100 g, 5 s)                      6
   13
   14   Ductility, cm
   15   (39.2 F, 1 cm/min)                     40.1
----------------------------------------------------------
P--Previous Screen; ENTER--Next Screen; MM--Main Menu; A--Asphalt
          Selection Menu
COMMAND ===>
```

Fig. D.12 Partial List of Properties of asphalt 'AAB-1'

SELECTION OF AGGREGATE PROPERTIES

PLEASE ENTER THE CHOICE NUMBER OF THE AGGREGATE WHOSE PROPERTIES ARE
TO BE DISPLAYED

1. RA	7. RG
2. RB	8. RH
3. RC	9. RJ
4. RD	10. RK
5. RE	11. RL
6. RF	

H----------HELP
MM---------MAIN MENU

P----------PREVIOUS MENU

PLEASE TYPE THE CHOICE NUMBER IN THE SPACE PROVIDED.

COMMAND ===>

Fig. D.13 Aggregate Properties Selection Menu

PROPERTIES OF AGGREGATE: RA

NUMBER	PROPERTY	VALUE (TAI/SWL)
31		
32	Acid Insolubles, ASTM D-3042	
33	Insoluble Residue, %	94.6
34		
35	Water Insolubles	
36	Water solubles, %	11.7
37	pH	9.5
38		
39	Zeta Potential	
40	Zeta Potential, mv	-28.1
41		
42	Major Oxides, %	
43	Silicon Dioxide	70.5
44	Aluminium Oxide	15.77
45	Ferric Oxide	2.13

P--Previous Screen; ENTER--Next Screen; MM--Main Menu; A--Aggregate
        Selection Menu

COMMAND ===>

Fig. D.14 Partial List of Properties of aggregate 'RA'

```
**********************************************
      HELP FOR MATERIALS/PROPERTIES SEARCH MENU
**********************************************


A - This option displays a list of files containing a specified
    material or a specified mixture.

B - This option allows the user to select an asphalt or aggregate.
    A list of properties for that asphalt or aggregate is then
    displayed.  The user can scroll backward or forward through the
    list to view the desired property




        PLEASE TYPE "P" TO GO BACK TO MATERIALS/PROPERTIES SEARCH MENU

COMMAND ===>


        Fig. D.15  Help Screen for Materials/Properties Menu
```

```
*******************************************
HELP FOR MATERIALS/MIXTURES SEARCH MENU
*******************************************
```

Options 1,2 and 3 may be used to search for experiments containing a
specified asphalt, aggregate or modifier respectively.

Option 4 displays a list of experiments with a specified asphalt,
aggregate and modifier in a mixture. Option 5 displays a list of
of experiments with a specified asphalt and aggregate in a mixture.
Option 6 displays a list of experiments with a specified asphalt and
modifier in a mixture.

              PLEASE TYPE "P" TO GO BACK TO MATERIALS/MIXTURES SEARCH MENU

COMMAND ===>

        Fig. D.16 Help Screen for Material/Mixtures Menu

```
********************************
HELP FOR ASPHALT PROPERTIES MENU
********************************


Enter the choice number of the Asphalt whose properties are to be
displayed, and a list of all properties of the selected asphalt will
appear on the screen.  You can scroll through the list backward
and forward to see the desired property.




            PLEASE TYPE "P" TO GO BACK TO ASPHALT PROPERTIES SEARCH MENU

COMMAND ===>
```

Fig. D.17 Help Screen for Asphalt Properties Menu

```
**********************************
HELP FOR AGGREGATE PROPERTIES MENU
**********************************
```

Enter the choice number of the Aggregate whose properties are to be
displayed, and a list of all properties of the selected aggregate will
appear on the screen. You can scroll through the list backward
and forward to see the desired property.

PLEASE TYPE "P" TO GO BACK TO AGGREGATE PROPERTIES SEARCH MENU

COMMAND ===>

Fig. D.18 Help Screen for Aggregate Properties Menu

```
                      TEXT FILE MENU


         A----------DISPLAY ALL TEXT FILES (SEQUENTIALLY)
         L----------LIST ALL EXPERIMENT NUMBERS IN THE DATABASE
         S----------LIST ALL EXPERIMENT NUMBERS FOR A SPECIFIC
                              CONTRACT AND AGENCY
         H----------HELP
         MM---------RETURN TO MAIN MENU


    OR

         Enter an experiment number in the space given below.



COMMAND ===>
```

Fig. E.1 Text File Menu Screen

TEXT FOR EXPERIMENT A2A111A1

FILE NUMBER: A2A111A1.TXT

Performing Agency: University of Texas, Austin, TX

Project: A-001 Technical Assistance Contractor

Task Y.Y   Use of Metal Fibers in Hot-Mix Asphalt

    Subtask Y.Y.1: Evaluation of Titanium Fibers

    Experiment Name: Sample Experiment

    Date Entered into Database: June 31, 1989
    Date Last Revision Entered into Database: January 04, 1992
    Task Manager: J. Fiber
    Researchers: S. Bitumen
    Experiment Statistician: H. Variance

F--FORWARD; B--BACKWARD; P--PREVIOUS FILE; N--NEXT FILE; T--TEXT FILE;
COMMAND ===>   MM--MAIN MENU.

    Fig. E.2 Screen Displaying all text files sequentially

```
*************************
HELP FOR TEXT FILE MENU
*************************


A - This option displays the text files for all the experiments in the
    database sequentially. Type N/n to go to the next experiment.

L - This gives a list of all the experiment numbers in the database so
    that the text file for any experiment can be viewed by specifying the
    experiment number.

S - This option allows the user to view the text file for an experiment
    according to a specified contract number and agency.


  ** NOTE ** When viewing a file, a blank screen indicates the end of
             data.



       PLEASE TYPE TT TO GO BACK TO THE TEXT FILE MENU
COMMAND ===>
```

Fig. E.3 Help Screen for Text File

```
                        DATA FILE MENU



        L----------LIST ALL EXPERIMENT NUMBERS IN THE DATABASE
        S----------LIST ALL EXPERIMENT NUMBERS FOR A SPECIFIC
                             CONTRACT AND AGENCY
        H----------HELP
        MM---------RETURN TO MAIN MENU


    OR


        Enter an experiment number in the space given below.

To select a data file, you must first select an experiment number.
Associated data file(s), if any, will then be displayed  on the screen.

    COMMAND ===>
```

Fig. F.1 Data File Menu Screen

```
                    LIST OF DATA FILES

       CHOICE  EXPERIMENT           ENTRY     REVISION
       NUMBER    NUMBER     EXT      DATE       DATE
       ------  ----------   ---   --------   --------
          1     A2A136B1    D01   01/09/92   01/09/92
          2     A2A136B1    D02   01/09/92   01/09/92
          3     A2A136B1    D03   01/09/92   01/09/92
          4     A2A136B1    D04   01/09/92   01/09/92
          5     A2A136B1    D05   01/09/92   01/09/92
          6     A2A136B1    D06   01/09/92   01/09/92
```

To view a specific data file, type either the choice number OR the
extension and hit enter. To scroll through ALL of the data files for
this experiment in order, type A and hit enter.
        A--All Data Files; P--Previous Screen; MM--Main Menu.
COMMAND ===>

Fig. F.2(a) List of Data Files Screen

DATA FILE A2A122A2.DO1

A2A122A2.DO1

D. Christensen
Closed


```
1----------------------------------------------------------------
2         1         2         3         4         5         6
3
4      Asphalt    Treat.    Repno.    Strain    Temp.     Log_at
5                                       %          C
6----------------------------------------------------------------
7       AAA-1      TANK        1       .019     -35.1      9.518
8       AAA-1      TANK        1       .049     -25.2      7.191
9       AAA-1      TANK        1       .099     -15.3      5.309
10      AAA-1      TANK        1       .198      -4.8      3.623
-------------------------------------------------------------------
```

F--Forward; B--Backward; R--Right; L--Left; RR--Far Right; LL--Far Left; T--Top
COMMAND ===>   N--NEXT FILE; P--PREV. FILE; E--EXP. MENU; MM--MAIN MENU.

Fig. F.2(b)   Screen displaying one Data file in a sequential display

```
*************************
HELP FOR DATA FILE MENU
*************************
```

L - This gives a list of all the experiment numbers in the database so
    that the data files of any experiment can be viewed by specifying
    the experiment number.

S - This option allows the user to view the data file for an experiment
    according to a specified contract number and agency.

** NOTE **   When viewing a file, a blank screen indicates the end of
             data

          PLEASE TYPE DA TO GO BACK TO THE DATA FILE MENU
COMMAND ===>

Fig. F.3 Help Screen for Data File Menu

```
                    DATA DESCRIPTION MENU


        A----------DISPLAY ALL DATA DESCRIPTIONS (SEQUENTIALLY)
        L----------LIST ALL EXPERIMENT NUMBERS IN THE DATABASE
        S----------LIST ALL EXPERIMENT NUMBERS FOR A SPECIFIC
                            CONTRACT AND AGENCY
        H----------HELP
        MM---------RETURN TO MAIN MENU

    OR

        Enter an experiment number in the space given below.


COMMAND ===>
```

Fig. G.1 Data Description Menu Screen

DATA DESCRIPTION FOR EXPERIMENT A2A111A1

8. Data Description

001.D01 Asphalt number
002.D01 Aggregate number
003.D01 Laboratory sample identification number
004.D01 Replicate specimen number
005.D01 Length of fiber, cm
006.D01 Diameter of fiber, mm
007.D01 Percent of fiber added to mix based on weight of total mix
008.D01 Date when mix was made
009.D01 Mixing temperature, F
010.D01 Bulk specific gravity, ASTM D 2726
011.D01 Maximum theoretical specific gravity, Rice Method, ASTM D
2041
012.D01 Percent air voids in compacted mixture, [100]*[(11)-
(10)]/(10)
013.D01 Peak to peak stress in Resilient Modulus Test, psi, MARK
IV Schmidt apparatus, ASTM D 3497

              F--Forward; B--Backward; P--Previous File; N--Next File;
COMMAND ===>   D--Data Desc. Menu; MM--Main Menu.

Fig. G.2 Screen displaying one Data Description in a sequential display

```
*******************************
HELP FOR DATA DESCRIPTION MENU
*******************************
```

A - This option displays the Data Descriptions of all the experi-
    ments sequentially. Type N/n for the next experiment.

L - This gives a list of all the experiment numbers in the database
    so that the Data Description of any particular experiment may
    be viewed by specifying the experiment number.

S - This option allows the user to view the Data Description of an
    experiment according to a specified contract number and agency.

  ** NOTE ** When viewing a file, a blank screen indicates the end of
              data

          PLEASE TYPE DD TO GO BACK TO THE DATA DESCRIPTION MENU
COMMAND ===>

     Fig. G.3 Help Screen for Data Description Menu

```
                          OBJECTIVE MENU


            A----------DISPLAY ALL OBJECTIVES (SEQUENTIALLY)
            L----------LIST ALL EXPERIMENT NUMBERS IN THE DATABASE
            S----------LIST ALL EXPERIMENT NUMBERS FOR A SPECIFIC
                                  CONTRACT AND AGENCY
            H----------HELP
            MM---------RETURN TO MAIN MENU

        OR

        Enter an experiment number in the space given below.


   COMMAND ===>
```
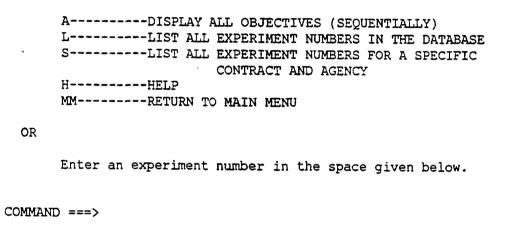
Fig. H.1 Objective Menu Screen

OBJECTIVE FOR EXPERIMENT A2A111A1

1. Objective

     Task: The object of this task is to determine the effect of
the addition of metal fibers on the physical properties of hot-mix
asphalt concrete.

     Subtask: The objective of this subtask is to study the
effect of titanium fibers on the physical properties of hot-mix
asphalt concrete.

     Experiment: The objective of this experiment is to
establish whether or not titanium fibers sufficiently enhance the
properties of hot-mix asphalt to warrant further study. This
experiment will also be used to determine the experimental error
variance for the response variables. (Note: One cannot assume
that the experimental error variance will be the same for the
control (no fibers) and modified mixes.) If the results from this
experiment are positive, a second experiment will be designed to
----
          F--FORWARD; B--BACKWARD; P--PREVIOUS OBJECTIVE; N--NEXT OBJECTIVE;
COMMAND ===>   O--OBJECTIVE MENU; MM--MAIN MENU.

Fig. H.2 Screen displaying one objective in a sequential display

```
*************************
HELP FOR OBJECTIVE MENU
*************************
```

A - This option displays the Objectives of all the experiments in
    the database sequentially. Type N/n for the next experiment.

L - This gives a list of all the experiment numbers in the database
    so that the Objective for any particular one may be viewed by
    specifying the experiment number.

S - This option allows the user to view the Objective for an experiment
    according to a specified contract number and agency.

   ** NOTE ** When viewing a file, a blank screen indicates the end of
               data

          PLEASE TYPE OO TO GO BACK TO THE OBJECTIVE MENU
COMMAND ===>

              Fig. H.3 Help Screen for Objective Menu

```
                        SCOPE MENU


        A----------DISPLAY ALL SCOPES (SEQUENTIALLY)
        L----------LIST ALL EXPERIMENT NUMBERS IN THE DATABASE
        S----------LIST ALL EXPERIMENT NUMBERS FOR A SPECIFIC
                           CONTRACT AND AGENCY
        H----------HELP
        MM---------RETURN TO MAIN MENU

   OR

        Enter an experiment number in the space given below.


COMMAND ===>
```

Fig. I.1 Scope Menu Screen

SCOPE FOR EXPERIMENT A2A111A1

2. Scope

      In this experiment, a single mix (aggregate and gradation)
and asphalt cement will be used to quantify the effect of adding
titanium fibers to hot-mix asphalt concrete. Diametral resilient
modulus and diametral tensile strength will be measured at one
temperature to characterize the physical properties of the mixes.
Two different fiber lengths and diameters will be studied at two
levels of fiber addition.~   Exhibit 2. Example of experiment plan (con

----
              F--FORWARD; B--BACKWARD; P--PREVIOUS SCOPE; N--NEXT SCOPE;
COMMAND ===>   SC--SCOPE MENU; MM--MAIN MENU.

      Fig. I.2 Screen displaying one scope in a sequential display.

```
********************
HELP FOR SCOPE MENU
********************
```

A - This option displays the Scopes of all the experiments in the database sequentially. Type N/n for the next experiment.

L - This gives a list of all the experiment numbers in the database so that the Scope for any particular one may be viewed by speci-fying the experiment number.

S - This option allows the user to view the Scope for a particular experiment according to a specified contract number and agency.

  ** NOTE ** When viewing a file, a blank screen indicates the end of data

                    PLEASE TYPE SS TO GO BACK TO THE SCOPE MENU
COMMAND ===>

                  Fig. I.3 Help Screen for Scope Menu

```
                Statisticians' List of Experiments
------------------------------------------------------------------------
                                 Submis.  Start
Exp.       Res.  Task            of Exp.  of Exp.  Title of
Number     Agncy Manager  Researcher Plan    Plan     Experiment Plan

A2A111A1 WRI    Brant'hvr Duvall     08/01/88 09/05/88  Chemical Characterizati
A2A111B1 WRI    Brant'hvr Branthaver 08/01/88 09/05/88  Separation of Core Asph
A2A111B2 WRI    Brant'hvr Branthaver 08/01/88 09/05/88  Chamical Properties of
A2A111C1 WRI    Brant'hvr Branthaver 08/01/88 09/05/88  Chemical Properties of
A2A111D1 WRI    Brant'hvr Robertson                     Potentiometric Titratio
A2A112A1 WRI    Brant'hvr Barbour    08/01/88 09/05/88  Influence of Non-Polar
A2A112B1 WRI    Brant'hvr Duvall     08/01/88 09/05/88  SEC Studies on Asphalts
A2A112C1 WRI    Brant'hvr Duval      08/01/88 09/05/88  SEC studies on Aged Asp
A2A113A1 WRI    Brant'hvr Mill       04/10/90 07/01/90  Mechanisms of Asphalt O
A2A113B1 WRI    Brant'hvr Branthaver 04/10/90 07/01/90  Metal Complex Catalysis
A2A115B1 WRI    Brant'hvr Branthaver 04/10/90 07/01/90  Compositional Factors T
A2A117A1 WRI    Brant'hvr Harnsberge 04/10/89 09/05/89  An Aging Test Using Inc
A2A122A1 PTI    Anderson  Christ'sen 03/19/90 01/01/91  Non-Linear DMA: Core As
A2A122A2 PTI    Anderson  Christ'sen 03/06/90 01/01/90  Linear DMA: Core Asphal
------------------------------------------------------------------------
     F--Forward; B--Backward; R--Right; L--Left; RR--Far Right; LL-Far Left;
COMMAND ===>    U--Up; D--Down; T--Top; BO--Bottom; DL--Download; MM--Main Menu
```

Fig. J.1 Statistician's List of Experiments

```
              Select Method of File Transfer


                         1) Kermit
                         2) Procomm
                         3) FTP
                         4) Sendfile
                         5) Note
                         6) Help
                         7) Return to Database
                         8) Quit




Enter the choice number of the transfer mode:


    Fig. K.1  Screen showing the options for file transfer
```

```
        F I L E   T R A N S F E R   H E L P   S C R E E N

KERMIT:    Press <CTRL> <RtSqBRACKET>" keys when promped to escape.
           Type "C" to toggle to the MSKERMIT prompt.
           Type "REC" to begin downloading the files.
           Type "C" to toggle back to CMS when transfer completes.

PROCOMM:   Press the <PgDn> key when promped to escape.
           Select KERMIT from the PROCOMM option menu.

FTP:       Enter the remote ADDRESS, USERID, and PASSWORD.
           Example :  CSUVM.CSU.EDU JOHNP FISH

SENDFILE:  Enter the remote BITNET ADDRESS.
           Example :  FRED AT OSUVM

NOTE:      Enter the remote E-MAIL ADDRESS.
           Example :  MARK AT OSUVAX1.OSU.EDU

              Press <ENTER> to return to the File Transfer Menu.
```

Fig. K.2 Help Screen for Downloading Menu