READ ME FIRST

All computer software is subject to change, correction, or improvement as the manufacturer receives customer comments and experiences. Radio Shack has established a system to keep you immediately informed of any reported problems with this software, and the solutions. We have a customer service network including representatives in many Radio Shack Computer Centers, and a large group in Fort Worth, Texas, to help with any specific errors you may find in your use of the programs. We will also furnish information on any improvements or changes that are "cut in" on later production versions.

To take advantage of these services, you must do three things:

(1) Send in the postage-paid software registration card included in this manual immediately. (Postage must be affixed in Canada.)

(2) If you change your address, you must send us a change of address card (enclosed), listing your old address exactly as it is currently on file with us.

(3) As we furnish updates or "patches", and you update your software, you must keep an accurate record of the current version numbers on the logs below. (The version number will be furnished with each update.)

Keep this card in your manual at all times, and refer to the current version numbers when requesting information or help from us. Thank you.

APPLICATIONS SOFTWARE VERSION LOG			OP. SYSTEM VERSION LOG
01.00.00			

Software Registration Card

Cat. No. 26-4528

Version 01.00.00

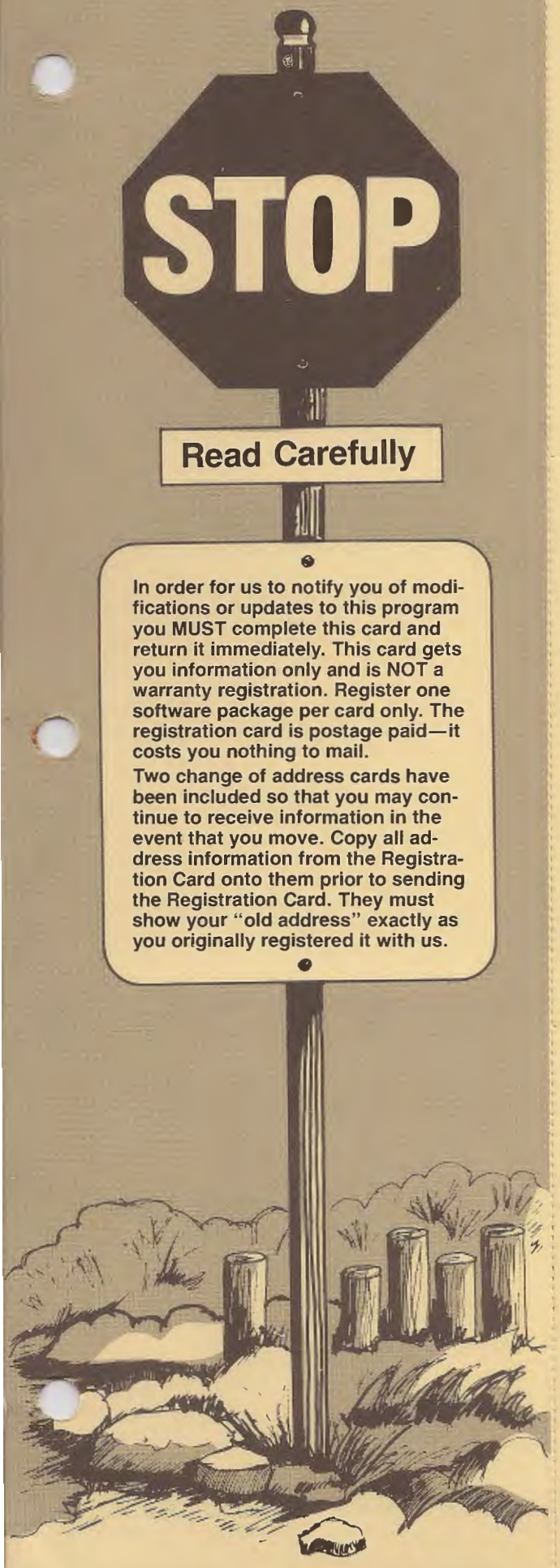
Name _____

Company _____

Address _____

City _____ Phone (___) ___ - ____

State _____ Zip _____



In order for us to notify you of modifications or updates to this program you MUST complete this card and return it immediately. This card gets you information only and is NOT a warranty registration. Register one software package per card only. The registration card is postage paid—it costs you nothing to mail.

Two change of address cards have been included so that you may continue to receive information in the event that you move. Copy all address information from the Registration Card onto them prior to sending the Registration Card. They must show your "old address" exactly as you originally registered it with us.

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Name _____

Company _____

Address _____

City _____ Phone (___) ___ - ____

State _____ Zip _____

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Name _____

Company _____

Address _____

City _____ Phone (___) ___ - ____

State _____ Zip _____

Change of address

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Company _____

Address _____

City _____

State _____ Zip _____

OLD ADDRESS

Name _____

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Formation™

Forms Management System

Radio Shack®
A DIVISION OF TANDY CORPORATION
One Tandy Center
Fort Worth, Texas 76102

CATALOG NO. 26-4528

Formation™

Forms Management System

Radio Shack®
A DIVISION OF TANDY CORPORATION
FORT WORTH, TEXAS 76102

10 9 8 7 6 5 4 3 2 1

PREFACE

This Manual describes the features and operations of the *Formation* Forms Management System for the TRS-80 Model 12 or Model II. The Manual explains the *Formation* program in easy work-related steps, and some sections end with exercises that will help you to apply the features you are learning. (For some of these exercises, you will need to use the forms at the end of the Manual.)

After you have learned how to use *Formation*, you can refer to the Ready Reference section (beginning on page 203) when you just need to refresh your memory about a particular feature or operation. For a more detailed explanation in the text, you can look up one feature or operation in the Index. It gives you the page(s) on which the explanation appears.

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I. Getting Started

II. Filling Out Forms

III. Maintaining Answer Files

IV. Creating a Form

V. Revising a Form

VI. Maintaining Form Files

VII. Error Messages

VIII. Ready Reference

Index and Practice Forms

I. GETTING STARTED

1. INSTALLATION AND START-UP

The system (TRS-80 Model 12 or Model II) must be installed ("up and running") before you can load and use the *Formation* program. For information about installing the system, see the *TRS-80 Owner's Manual* that came with your computer.

Next, make sure that you know how to start up the system and that you are familiar with each of its components: keyboard and screen, disk drive(s), and printer. For information about starting up the system, see the *TRS-80 Owner's Manual* that came with your computer.

Disk Drives

You can use the *Formation* program with only the *Formation* program diskette and one disk drive. However, the program diskette has a limited storage capacity because of the space taken up by the program. Therefore, the program works more efficiently with at least one extra disk drive (Drive 1).

If you have two disk drives, you should store your "forms" and "answer files" on a *data* diskette in Drive 1. On a floppy-based system, you can use the program with as many as four drives, but you should always insert the program diskette into Drive Ø. (You should work with a backup copy of the *Formation* program diskette at all times. Never use the original except to make backup copies. For information about making a backup, see the *TRS-80 Owner's Manual* that came with your computer.)

If you have one or more hard disk drives, you will naturally have a greater storage capacity and may not need to use data diskettes for storage. But you can, however, use the program with as many as eight drives (four hard disks and four floppy diskettes).

Please note that throughout this manual the term *diskette* describes either a floppy diskette *or* a hard disk.

Printers

You can use the *Formation* program with any of the following Radio Shack printers: Daisy Wheel II, DWP 410, or DMP 2100. The program offers many print capabilities. For example, you can use fractional spacing, or you can print answers bold or underlined. The three printers offer all the features you need for working with the program's print capabilities.

If you are using a Daisy Wheel printer, note that the examples in the manual assume a 10-pitch print wheel. The examples were created for a Daisy Wheel II. If you have a different printer, the exercises that require you to print the answers on sample forms will not line up correctly. You will need to change the printer parameter on the sample forms to coincide with your printer and then begin the exercises. (For parameters, see page 101.)

Two Versions of the Program

This package includes two versions of the program, each on a separate diskette. With one exception, both versions are identical in every way.

If you are using a Model 12, operating with or without a hard disk drive or a Model II that has been converted for use with a hard disk drive, you should use the TRSDOS 4.2 version. You can install the program on your primary hard disk drive (if the hard disk is formatted for TRSDOS 4.2) or load it directly onto a floppy-based Model 12. (See *TRSDOS 4.2 Version* on page 5.)

If you have a Model II that has not been converted for use with a hard disk drive, you should use the TRSDOS 2.0a version of the program. (See *TRSDOS 2.0a Version* on page 8.)

2. TRSDOS 4.2 VERSION

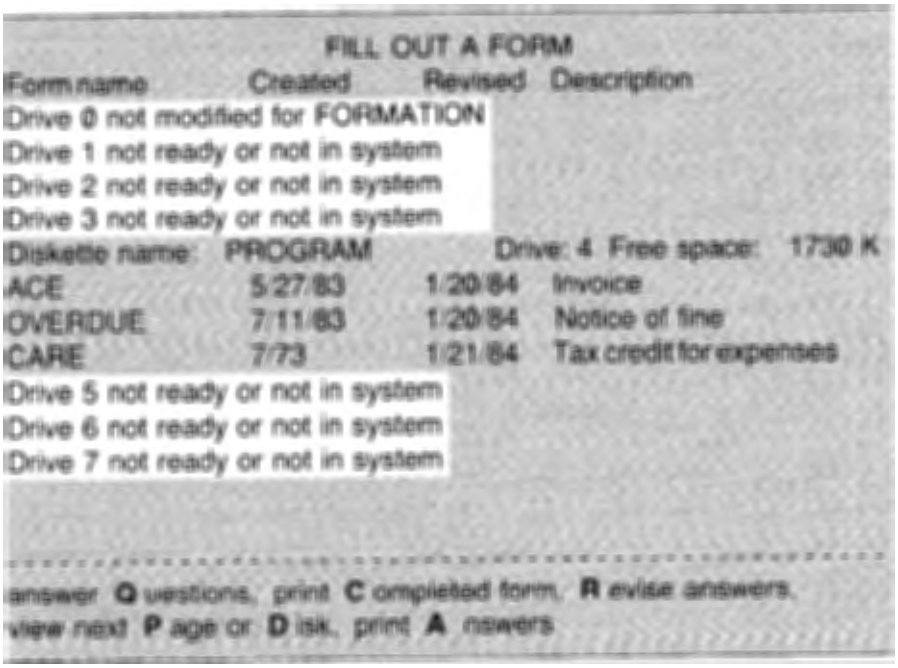
You can use the TRSDOS 4.2 version of *Formation* on a Model 12, operating with or without a hard disk drive, or on a Model II that has been converted for use with a hard disk drive. You can install the program on your primary hard disk drive if the hard disk is formatted for TRSDOS 4.2.

If you do not have a hard disk drive, you can load the program on a floppy-based Model 12. (If you have a Model II that has not been converted for use with a hard disk drive, you should use the TRSDOS 2.Øa version of the program. See next section.)

The TRSDOS 4.2 version enables you to use up to eight disk drives (floppy diskette drives Ø, 1, 2, 3 and hard disk drives 4, 5, 6, 7) with the program. For each drive that is not connected or that is empty, the Directory will display the message Drive (Ø-7) not ready or not in system. If you insert into a drive a diskette that has not been modified (or if you have an unmodified hard disk attached), the Directory will display the message Drive (Ø-7) not modified for FORMATION.

The program will read all the disk drives even if it encounters an empty drive. You can, for example, have diskettes in Drives Ø, 1, and 3 and leave Drive 2 empty.

In the following example of the Directory of Forms, Drive Ø contains an unmodified data diskette. Drives 1, 2, and 3 are not connected or are empty. Drive 4 contains the *Formation* program, and Drives 5, 6, and 7 are not connected.



Installing the Program on a Hard Disk Drive

If you have a hard disk drive system formatted for TRSDOS 4.2, you can install the program on the primary hard disk drive (Drive 4). If you have installed Scripsit™ on hard disk and you are using a DMP2100 printer, you should change the name of the DMP2100 patch file (DMP2100) before installing *Formation*. Refer to the *TRS-80 Owner's Manual* that came with your computer, for information about changing the file name.

1. **At the** TRSDOS-II Ready **level, type** (M)(O)(V)(E)( )(0)( )(T)(O)( )(4)( )(:)(A)(L)(L)(:) **and press** (ENTER).

   The system will display this message:

   Insert SOURCE Diskette – Press ANY Key to Continue

2. **Insert the *Formation* diskette into Drive 0 and press any key (except** (BREAK)**).**

   The system will begin transferring the *Formation* program from Drive 0 to the hard disk drive. When the installation is complete,

the system returns to the TRSDOS-II Ready level. The *Formation* program is then installed on the hard disk drive (Drive 4).

After the installation, be sure to store the original floppy diskette in a safe place.

To load the program

At the TRSDOS-II Ready level, type (F)(O)(R)(M) and press (ENTER). You will see the *Formation* version number and date. When the Main Menu appears on the screen, the program is loaded and ready.

Loading *Formation* on a Floppy-Based Model 12

If you do not have a hard disk drive, you can load the program directly from the program diskette (or a backup copy).

1. **Insert the program diskette into Drive 0 and start up the system.**

2. **Enter responses to the date and time prompts.**

3. **At the** TRSDOS-II Ready **level, type (F)(O)(R)(M) and press (ENTER).**

   You see the *Formation* version number and date. When the Main Menu appears on the screen, the *Formation* program is loaded and ready.

You should make a backup copy of the *Formation* diskette to protect the original from damage. For information about making a backup, refer to the *TRS-80 Owner's Manual* that came with your computer. If you are using a Model 12, you can copy the program onto a double-sided floppy diskette in order to acquire additional space for forms and answer files.

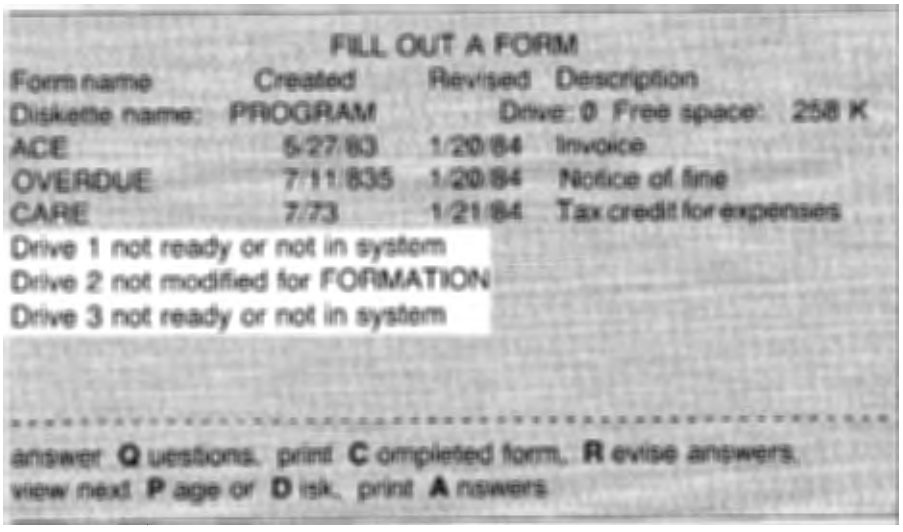
3. TRSDOS 2.0a VERSION

You should use the TRSDOS 2.0a version of the *Formation* program if you are using a Model II that has *not* been converted for use with a hard disk drive. With one exception, this version is identical in every way to the TRSDOS 4.2 version.

Instead of eight disk drives, the TRSDOS 2.0a version enables you to use up to four floppy diskette drives (Drives 0, 1, 2, and 3) with the program. For each drive that is not connected to the system or that is empty, the Directory will display the message Drive (1-3) not ready or not in system. If you insert into a drive a formatted diskette that has not been modified, the Directory will display the message Drive (1-3) not modified for FORMATION.

The program will read all the disk drives even if it encounters an empty drive. You can, for example, have diskettes in Drives 0, 1, and 3 and leave Drive 2 empty.

In the following example of the Directory of Forms, Drive 0 contains the program diskette. Drive 2 contains an unmodified diskette. Drives 1 and 3 are not connected or are empty.



Loading *Formation* on a Floppy-Based Model II

1. **Insert the program diskette (or a backup copy) into Drive 0 and start up the system.**

2. **Enter responses to the date and time prompts.**

3. **At the** TRSDOS Ready **level, type** (F)(O)(R)(M) **and press** (ENTER).

   You see the *Formation* version number and date. When the Main Menu appears on the screen, the *Formation* program is loaded and ready.

You should make a backup copy of the *Formation* diskette to protect the original from damage. For information about making a backup, refer to your *TRS-80 Model II Owner's Manual.*

FCOPY

You should use the TRSDOS 4.2 version of *Formation* to install the program on a hard disk. However, you can also use the FCOPY command to install the TRSDOS 2.0a version onto your TRSDOS 4.2 hard disk. For information about FCOPY, refer to the Reference Manual that came with your hard disk drive.

4. WORKING WITH FORMATION

Even on a word processor, filling out preprinted forms (such as insurance claims, loan applications, tax reports) is usually an awkward and time-consuming task. For example, preprinted forms often require you to type repetitive information, to use arithmetic, or to adjust line spacing. Preprinted forms may also require you to answer questions in an illogical sequence (such as street address, followed by Social Security number, then city). What's more, positioning each answer in the correct space is often difficult.

The *Formation* program enables you to fill out preprinted forms quickly and easily. You process a form in two separate stages: first you create the form and then you fill out the form. (Each stage is an option on the program's Main Menu.)

Stage 1. Create the Form

Before you can fill out a form, you must "create" it. Of course the person who fills out the form is not necessarily the person who creates the form. You may be creating forms for others to fill out, or you may be using the program only to fill out forms someone else has created. In this Manual, we will assume that you will be both creating forms *and* filling them out.

You create a form by writing into the program the questions that the preprinted form asks. Then you set the print positions for the answers that you will enter when you fill out the form on the screen. For example, if the form asks "Items sold?" you can write the question, "How many items were sold?" You then set the print position so that the answer (in this case a number) always prints at the correct place on the preprinted form. After you have created a form, the program lists it in a Directory of Forms.

Stage 2. Fill Out the Form

Filling out forms in an exercise in "questions and answers." The form, now in the program, "asks" the questions. You answer the

questions by typing the answers. The program divides Stage 2 into two steps:

1. **Answer the questions (on the screen).**

   You select the form you want from the Directory of Forms and then the program displays the questions from the form one at a time on the screen. You answer the questions by typing the answers. After you answer all the questions, the program stores the answers in an answer file on the diskette.

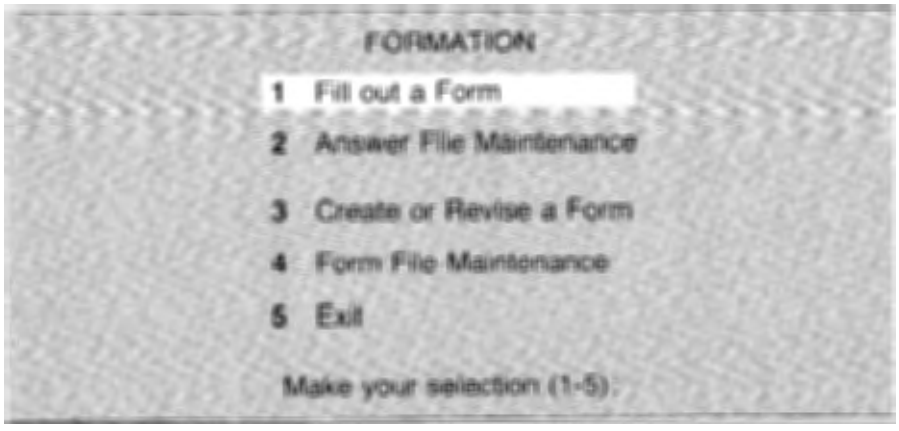
2. **Print the answers (on a copy of the original preprinted form).**

   After you have answered the questions and the program has stored the answers, you can print them on the form. You insert a copy of the preprinted form into the printer and print the answers from the answer file. The program positions each answer in the correct place on the form.

Stage 2 Screens

Main Menu

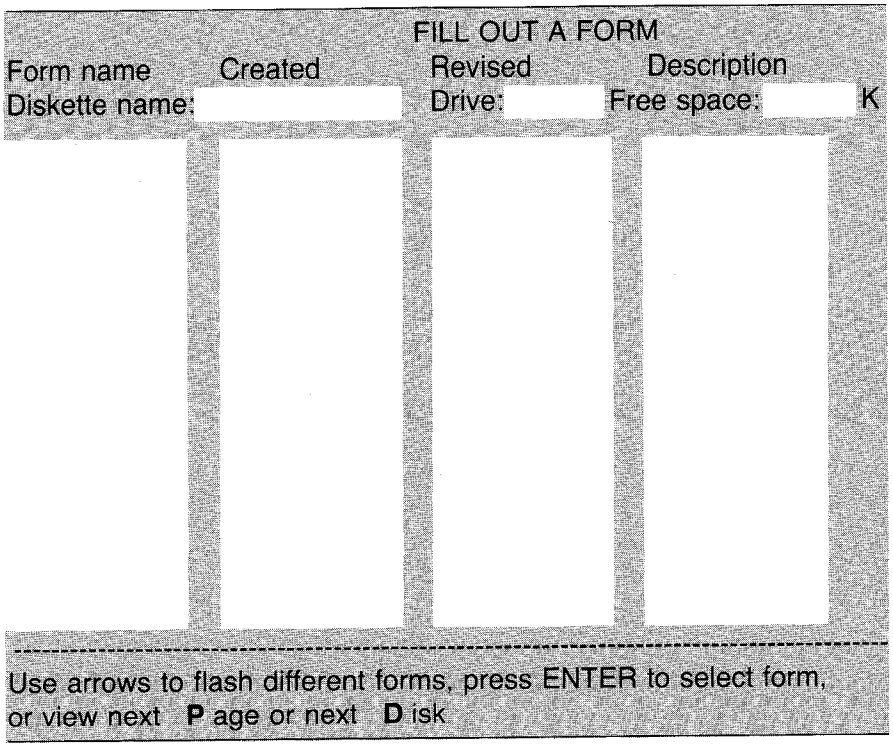
After you have loaded the *Formation* program, you select Fill out a Form from the Main Menu.



Directory of Forms

After you have selected Fill out a Form, the program displays the Directory of Forms (with the heading FILL OUT A FORM) so that you can select the form you want to fill out. You select the form by "flashing" the name on the screen and then pressing (ENTER). The heading at the top of the Directory relates to the options that are available on the menu at the bottom of the screen. Although the directory does not change, the program will display different menus as you work with the forms (or answer files).

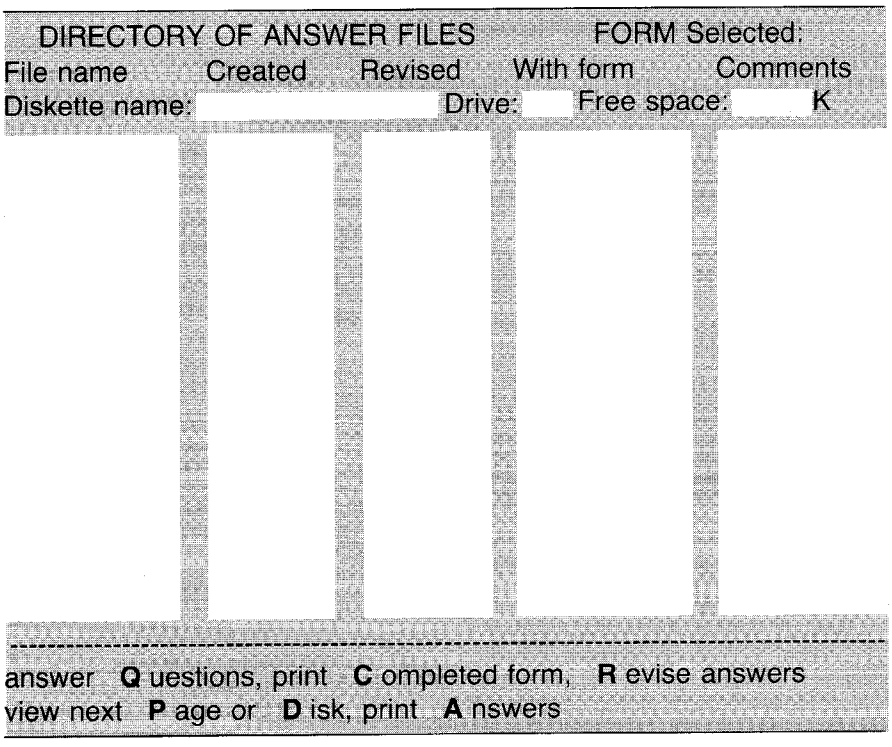
In the Directory, you see a column heading for form name, the date the form was created, the date the form was last revised, and a description of the form. Under the column headings, you see a row for diskette information, including the diskette name, the drive number, and the amount of free space available on the diskette.



Directory of Answer Files

After you have selected a form from the Directory of Forms, the program displays the Directory of Answer Files. To the right of the screen heading, you see the name of the form you have selected.

The Directory lists each diskette and the answer files stored on it. In the Directory, you see a column heading for file name, the date the file was created, the date the file was last revised, the form that the file is stored with, and a comment about the file. Under the column headings, you see a row for diskette information, including the diskette name, the drive number, and the amount of free space available on the diskette.



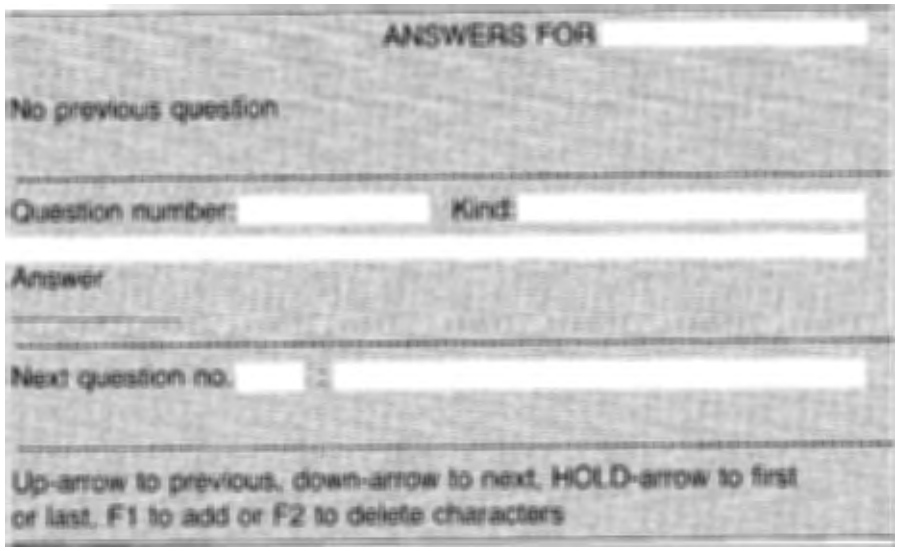
Now, if you want to enter a new set of answers, you type (Q) to select the answer Questions option from the menu at the bottom of the Directory. The program then prompts you to name and describe the new answer file.

Name of answer file? _____
Description of answer file? _____

Answer Questions Screen

After you have named and described the new answer file, the program displays each question from the form. To the right of the screen heading you see the name of the form.

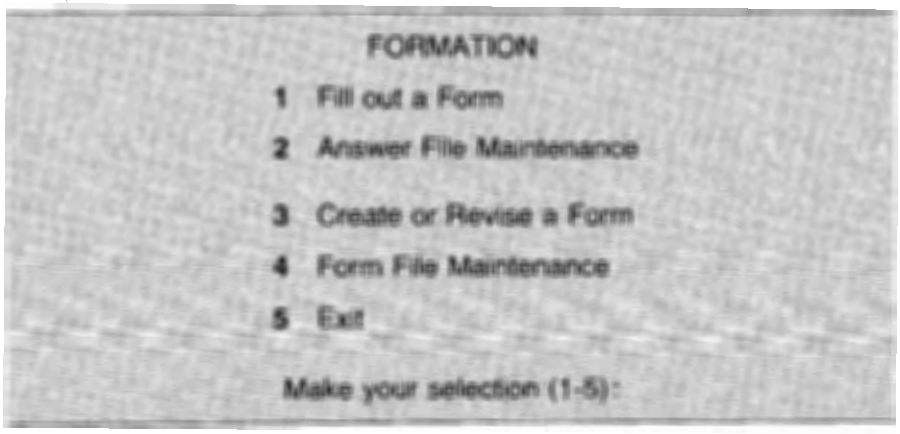
The program positions the cursor in the current-question area (in the middle of the screen). When you have answered the current question, the program scrolls up the next question.



After you have answered all the questions, the program stores the answers in the answer file you have named and returns you to the Directory of Answer Files. The Directory now lists the new answer file. You can print it or enter another set of answers.

5. THE MAIN MENU

After you load *Formation,* the program displays the Main Menu. The Main Menu is the "gateway" to the program. It lists five options.



The Options

Because you process a form in two stages, the Main Menu is divided into two parts: options 1 and 2 and options 3 and 4. Because you fill out forms more often than you create them, the Menu lists the options for that stage first. You use option 1 to *fill out* forms and option 2 to perform maintenance operations on your answer files. You use option 3 to *create* forms and option 4 to perform maintenance operations on your forms. (You use option 5 to exit the *Formation* program.)

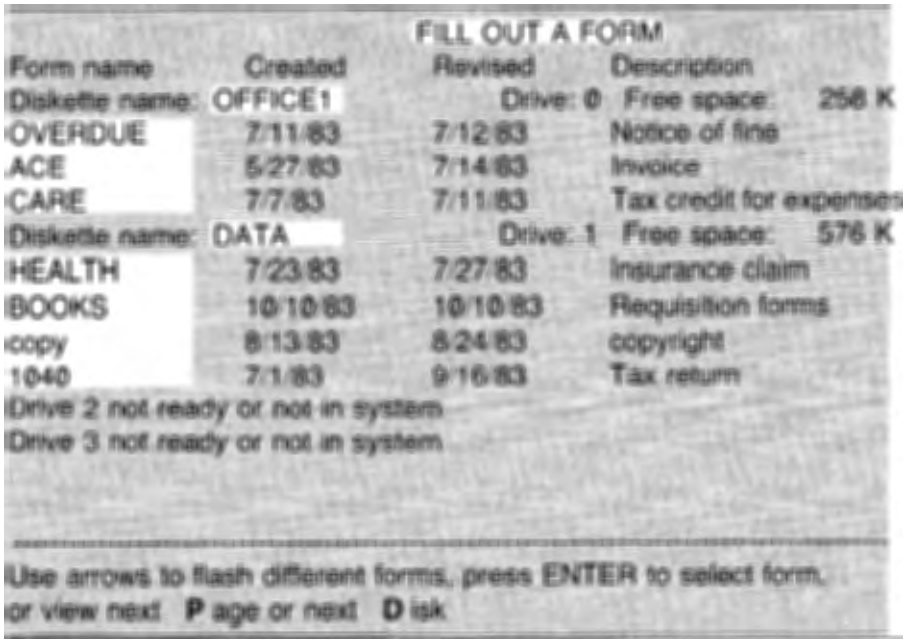
Making a Selection

To make a selection from the Main Menu, you simply type the number of the option you want. For example, to select Fill out a Form, type (1). To select Create a Form, type (3).

6. DIRECTORY OF FORMS

The program has two directories: the Directory of Forms, which lists and describes all the forms stored on the diskettes you are working with, and the Directory of Answer Files, which lists and describes all the answer files stored on the diskettes. Both directories provide you with information about the diskettes.

When you select Fill out a Form from the Main Menu, the program displays the Directory of Forms. The screen heading is FILL OUT A FORM. The following Directory shows that the diskette named OFFICE1 contains three forms (OVERDUE, ACE, and CARE) and the diskette named DATA contains four forms (HEALTH, BOOKS, copy, and 1040).



Diskette Information

Within the limits of the screen space, the Directory of Forms lists each diskette that you are working with and, under that, the forms that it contains. You can work with up to four diskettes (and four hard disk drives) at one time.

In the preceding Directory, diskette OFFICE1 in drive Ø has 258K available and contains three forms. Diskette DATA in drive 1 has 576K available and contains four forms. Thus for each diskette, the Directory of Forms displays the following information:

Diskette Name. The name of the diskette.

Drive. The number of the drive that contains the diskette.

Free space. The amount of diskette space available for use (to store more forms, for example). If the diskette space is full (ØK), you cannot create new forms or revise existing forms.

Form Information

The Directory displays four column headings: Form name, Created, Revised, and Description. Under each heading (after the diskette information), the Directory lists information about each form.

Form name. The name of the form. (In the example, you have seen three names for drive Ø (OVERDUE, ACE, and CARE) and four names for drive 1 (HEALTH, BOOKS, copy, and 1Ø4Ø).

Created. The date the form was created.

Revised. The date the form was last revised. (If this date is the same as the created date, then the form has not been revised since the day it was created.)

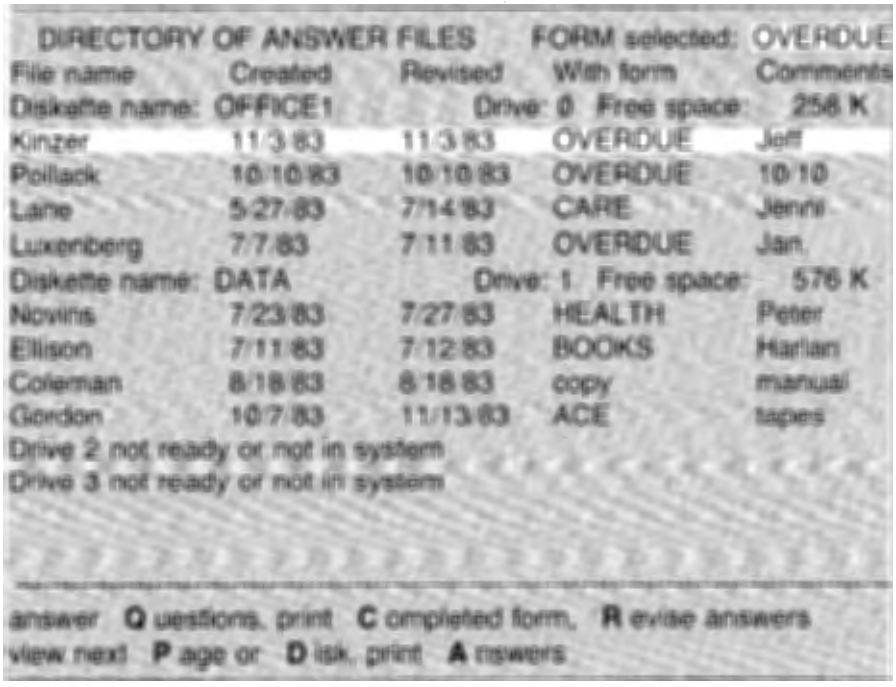
Description. A brief description of the form. (For example, the description for the OVERDUE form is Notice of fine.)

Directory Options

At the bottom of the Directory, you see a menu of options that tell you how to select a form. We will discuss these options a little later.

7. DIRECTORY OF ANSWER FILES

Each time you fill out a form, the program stores the answers in a separate answer file. For example, let's say you are filling out the OVERDUE form for Jeff Kinzer. You have named the answer file "Kinzer" and answered the questions for that form. The program stores the answers in a Kinzer Answer File and lists Kinzer in the Directory of Answer Files. As in the Directory of Forms, the Directory of Answer Files lists each diskette that you are working with and, under that, the answer files that it contains. To the right of the screen title, you see the name of the form that you have selected. For example, here you see OVERDUE.



Diskette Information

Within the limits of the screen space, the Directory of Answer Files lists each diskette that you are working with. For each diskette, the Directory displays the following information:

Diskette name. The name of the diskette (or hard disk).

Drive. The number of the drive that contains the diskette.

Free space. The amount of diskette space available (to store more answer files, for example). If the diskette space is full (0K), you cannot create a new form or revise existing answer files.

Answer File Information

The directory displays five column headings: File name, Created, Revised, With form, and Comments. Under each heading, the Directory lists information about each answer file.

File name. The name of the answer file. (In the example, you have seen eight answer files: Kinzer, Pollack, Lane, Luxenberg, Novins, Ellison, Coleman, and Gordon.

Created. The date the answer file was created.

Revised. The date the answer file was last revised. (If the date is the same as the created date, then the answer file has not been revised since the day it was created.)

With form. The name of the form that goes with the answer file. For example, if you answer the questions for the form OVERDUE and name the answer file Kinzer, then the Kinzer Answer File is listed With form OVERDUE.

Comments. A brief description of the answer file. (For the Kinzer Answer File, the description lists the first name, Jeff.)

Directory Options

At the bottom of the Directory, you see a menu of options available to you while the Directory is displayed. We will discuss these options a little later.

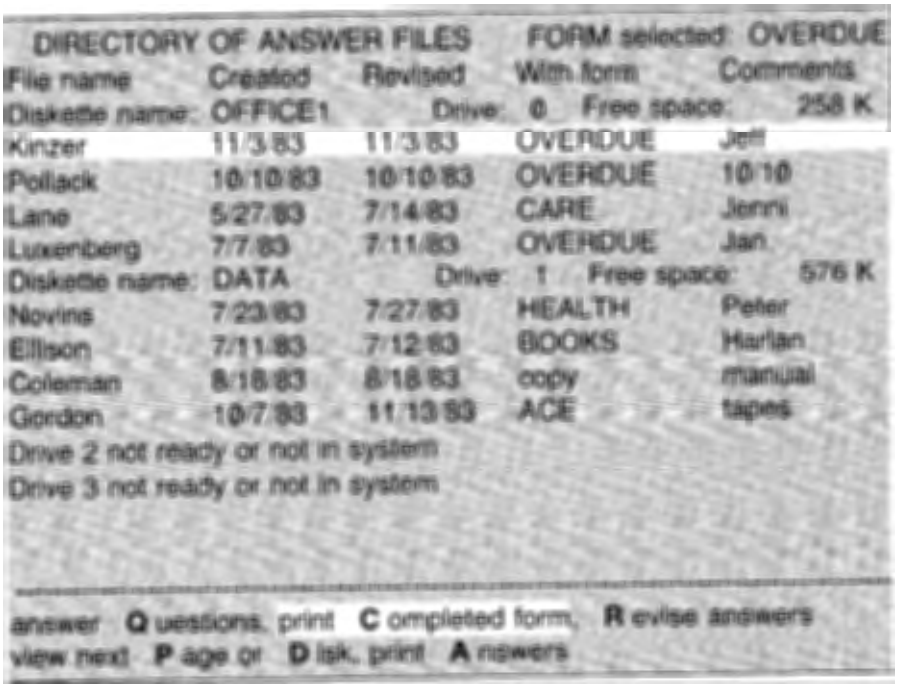
8. WORKING WITH THE DIRECTORIES

When the program displays either the Directory of Forms or the Directory of Answer Files, you make two selections:

1. You select the *entry* (form or answer file) that you want to work with.

2. You select the *action* (from the menu options at the bottom of the directory) that you want to perform on the entry.

For example, to print answers from the Kinzer Answer File, you select the *entry* Kinzer from the Directory. Then you select the *action* print Completed form from the options at the bottom of the Directory.

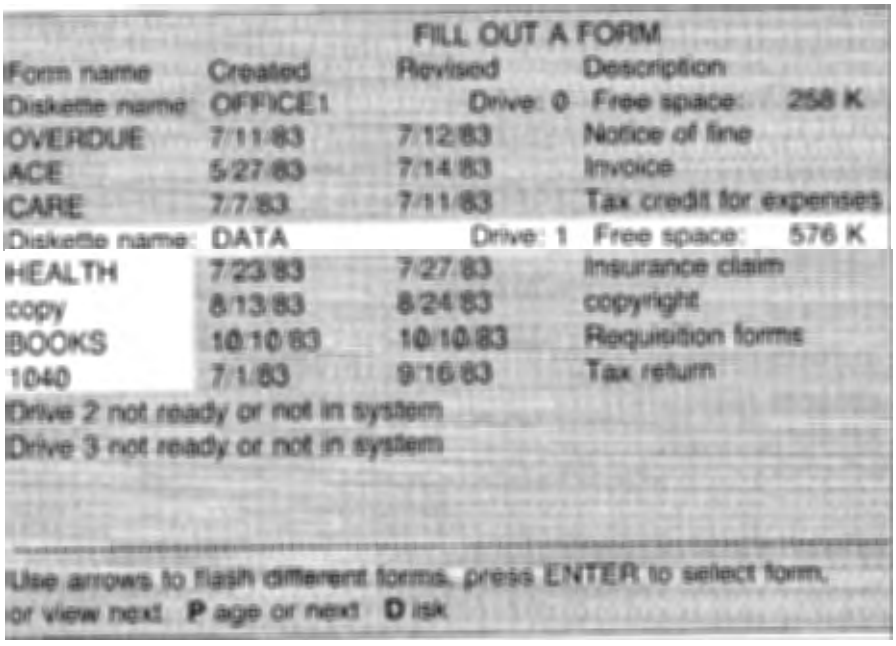


Displaying and Selecting Entries

The Directory of Forms can display up to 19 forms at a time. The Directory of Answer Files can display up to 19 answer files at a time. (In either directory, the name of each diskette displayed counts as one

entry.) When you display either directory, the program "flashes" (blinks on and off) the first entry. To select an entry other than the first, you must display the entry and then use ↓ or ↑ to move the flashing to that entry. Since the entry must be displayed on the screen before you can flash it, we will discuss displaying entries first.

On the directories, the program lists the entries from each diskette in order of use: it lists first the most recent entry you have worked with. For example, if you have worked with HEALTH today, copy yesterday, and BOOKS the day before that, then the program lists them in that order for drive 1.



Displaying Entries

The program enables you to work with up to four disk drives (eight drives if you are using a hard disk system). When you display a directory, the program starts the list of entries (forms or answer files) with the most recently used entry on the program diskette in drive 0.

If you are using a hard disk drive, the first time you display the Directory of Forms, Drive 4 will appear at the top of the Directory. If you want to use one or more of the floppy diskette drives, press ↑

until the drive you want appears at the top of the Directory. Until you exit the *Formation* program, the Directory will now display at the top the last drive that you worked with.

The directory has room on the screen for 19 entries at at time. The name of each diskette counts as one entry. Thus, you may have one diskette name and 18 forms or answer files, or two diskette names and 17 forms or answer files, and so on. Since a directory can display only 19 entries at a time, the form or answer file you want may not appear on the list because it is not among the first 19 entries. Rather than using an arrow key to move entry by entry, you can use the options at the bottom of the directory to display entries from the next *page* (19 entries) or *disk*.

To Display the Next Page

If the diskette you are working with contains more than 19 entries, request the next "page" to display the next 19 entries.

Type (P) for *page*.

For example, assume that you are working with three diskettes and you display the Directory of Answer Files. The diskette in drive 0 contains 4 answer files, the diskette in drive 1 contains 22 answer files, and the diskette in drive 2 contains 16 answer files, for a total of 42 answer files. When you display the Directory, you see the 4 answer files from drive 0 and the first 13 answer files from drive 1. (The names of the two diskettes are considered two entries.) Type (P) to display the next 19 entries. Now you see the last 9 answer files from drive 1, the name of the diskette in drive 2 and the first 9 answer files from that diskette. Type (P) again to display the last 7 answer files from drive 2.

Here is how you display this "three-page" Directory:

1. **Type (1) from the Main Menu. Then choose a form in order to display the Directory of Answer Files.**

   The Directory displays the name of the diskette in drive 0 with the 4 answer files from that diskette and the name of the diskette in drive 1 with the first 13 entries from that diskette (for a total of 19).

   1—Name of the diskette in drive 0
   2
   3 — Answer files 1-4
   4
   5

6 —Name of the diskette in drive 1
7–19 —Answer files 5-17

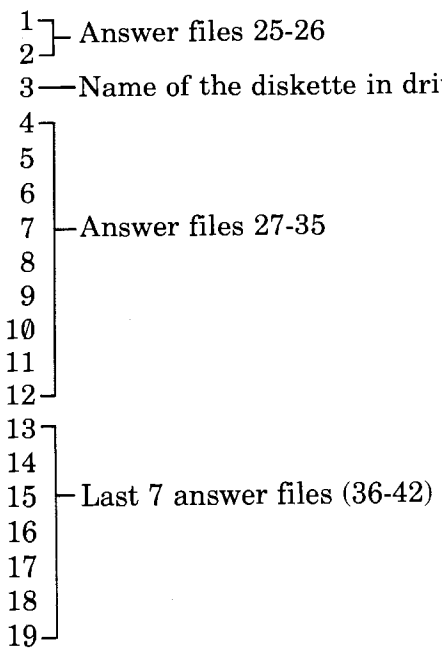
2. Type (P) to display the next "page" (19 entries).

The Directory displays the last 9 answer files from the diskette in drive 1 and then the name of the diskette in drive 2 with the first 9 answer files on that diskette (for a total of 19 entries).

1–9 —Answer files 18-26
10 —Name of the diskette in drive 2
11–19 —Answer files 27-35

3. Type (P) to display the next "page" (19 entries).

The Directory scrolls up to display the last 19 entries. It displays the last 2 entries on diskette 1 and all 16 entries on diskette 2 (answer files 25-42).



To Display Entries From the Next Diskette

Type (D) for *diskette.*

For example, if the directory is displaying the entries from the program diskette in drive 0, you can type (D) to display the first 19 entries from the diskette in drive 1. You type (D) again to display the first 19 entries from drive 2, and so on. To return to the entries from drive 0, press (HOLD) and then press (↑).

The program will continue to check the remaining drives, even if it encounters an empty or unmodified drive.

To Display the First 19 Entries

Press (HOLD) and then press (↑).

When you press (HOLD), the program displays the prompt ARROW in the lower right-hand corner of the screen. Complete the command

by pressing (↑). The program lists 19 entries, beginning with the first entry from the program diskette in drive 0.

To Display the Last 19 Entries

Press (HOLD) and then press (↓).

When you press (HOLD), the program displays the prompt ARROW in the lower right-hand corner of the screen. Complete the command by pressing (↓). The program lists the last 19 entries, ending with the last entry from the diskette in the highest-numbered drive. For example, if you are working with diskettes in drives 0, 1, and 2, you can use (HOLD) (↓) to list the last 19 entries on the diskette in drive 2.

Selecting an Entry

1. **In the directory, display the entry you want.**

2. **Flash it.**

   (↑) Moves the flashing *up* one line at a time.
   (↓) Moves the flashing *down* one line at a time.

After you have selected a form or answer file by flashing it, you make a selection from the menu options at the bottom of the directory.

Exiting a Directory

To exit a directory and to return to the Main Menu:

Press (BREAK).

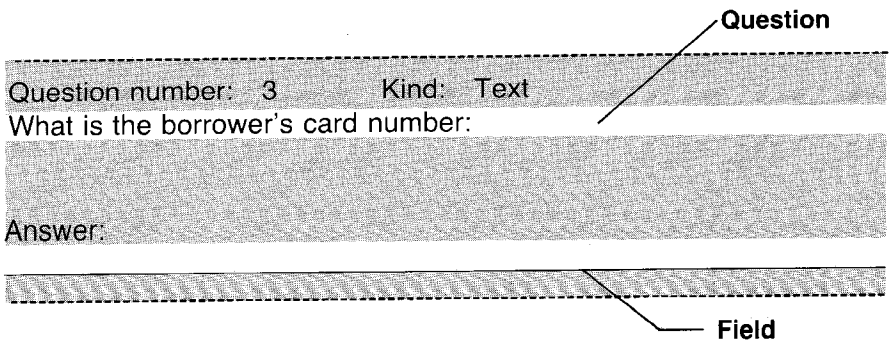
For example, when you select the Main Menu option Fill out a Form, the program displays the Directory of Forms. If you change your mind, press (BREAK) to return to the Main Menu.

Clearing an Error Message

The program will display an "error message" if you press a wrong key or enter incorrect information. To clear the message, press (BREAK).

9. TYPING IN FIELDS

A *field* is like a blank on a form. It is an area where you type information. For example, as you answer questions to fill out a form, the program usually displays the question and then a field for your answer.



You type the answer (for example, the borrower's card number) in the field.

Entering Answers

When the program asks a question and displays a field, it positions the cursor on the first space in the field. You simply type your answer and press (ENTER). Pressing (ENTER) locks in your answer. You can type any combination of keyboard characters (in upper or lower case). In addition to the usual typing keys, you can use (CAPS) to type all letters in upper case. (See *Using Caps Mode,* 27.)

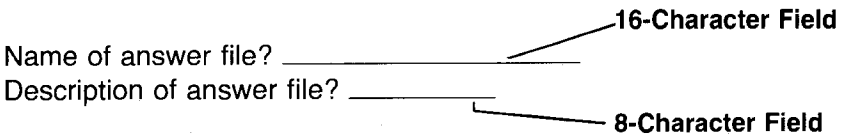
For example, before you fill out a form, the program asks you to name an answer file. It provides a field after the prompt.

Name of answer file? _____

You type a name into the field and then press (ENTER) to lock in your response.

Field Length

Fields have different lengths. Some fields, for example, are as wide as the screen. You can type up to 80 characters in these fields. In the following example, the name field is 16 characters long. The description field is 8 characters long.



If you type the maximum number of characters that the field allows, then the program will enter your response automatically. For example, if a field is 16 characters long, the program automatically enters your response after you type the sixteenth character.

Using Caps Mode

If you want to type letters in all upper case, you can turn on the Caps Mode. In Caps Mode, you must still use (SHIFT) to type the special characters that appear in the upper half of the numeral and punctuation keys.

To turn *on* Caps Mode, press (CAPS). The red light on the key will go on.

To turn *off* Caps Mode, press (CAPS) again. The red light on the key will go off.

10. EDITING IN FIELDS

To edit an answer you have typed into a field, you first move the cursor to the point of the change. Then you use one of the program's five field-editing commands. These are overstrike, insert, delete, clear, and "chop."

Moving the Cursor Through a Field

Move the cursor to the point of the change.

One Character at a Time

Press (→) to move the cursor one character at a time to the right.

Press (←) to move the cursor one character at a time to the left.

If you hold down (REPEAT) and press either (→) or (←), the cursor continues to move in the direction of the arrow until you release either (REPEAT) or the arrow key (or until the cursor reaches the beginning of the field or the last typed character).

To Beginning or End of an Answer

Press (HOLD) and then press (→) to move the cursor to the last typed character in the field. (You cannot use (→) to move the cursor through an underscored section of a field.)

Press (HOLD) and then press (←) to move the cursor to the beginning of the field.

Five Field-Editing Commands

As noted, the program provides five field-editing commands: overstrike, insert, delete, clear, and "chop."

Overstrike

Simply type one character on top of another. For example, if you have typed SMOTH for the name of an answer file, but you want the name SMITH instead, you can overstrike the O with I.

1. Move the cursor to the character that you want to overstrike:

SMOTH

2. Type the correct character.

SMITH

Insert

You can use the F1 key (or CTRL A) to insert one character at a time. For example, if you have typed SMTH for the name of an answer file, but you want the name SMITH instead, you can insert the I.

1. Move the cursor to the character that should come after the inserted character:

SMTH

2. Press F1 (or hold down CTRL and type A for *add*).

The program opens up a space at the cursor position. (Starting at the cursor position, all the characters move one character position to the right.)

SM__TH

3. Type the character you want to insert.

SMITH

Delete

You can use the F2 key (or CTRL D) to delete one character at a time. For example, if you have typed SMIITH for the name of an answer file, but you want the name SMITH instead, you can delete the extra I.

1. **Move the cursor to the character you want to delete:**

   SMIITH

2. **Press (F2) (or hold down (CTRL) and type (D) for *delete*).**

   The program deletes the character.

   SMITH

Clear

You can press (TAB) to clear characters from the cursor position to the end of the field. If you position the cursor on the *first* character of the field, you clear the entire field. For example, if you have typed SMITH PAINT SHOP AND BODY WORKS into a field and you want to change it to SMITH PAINT SHOP AND BRAKE REPAIR, you can clear the unwanted characters (BODY WORKS) and then type the change (BRAKE REPAIR).

1. **Move the cursor to the first character you want to clear.**

   SMITH PAINT SHOP AND BODY WORKS

2. **Press (TAB).**

   The program clears the field from the cursor position to the end of the field.

   SMITH PAINT SHOP AND

3. **You can now type the new text.**

   SMITH PAINT SHOP AND BRAKE REPAIR

Chop

You can use (ENTER) to "chop off" characters to the right of the cursor. For example, if you have typed SMITH PAINT SHOP AND BODY WORKS into a field and want to change it to SMITH PAINT SHOP, you can chop off the unwanted characters.

1. **Move the cursor to the first character (in this example, a space) where you want to begin the chop.**

   SMITH PAINT SHOP AND BODY WORKS

2. Press (ENTER).

The program enters the characters up to the cursor position and chops off the remaining characters.

SMITH PAINT SHOP

II. FILLING OUT FORMS

11. SELECTING A FORM AND NAMING AN ANSWER FILE

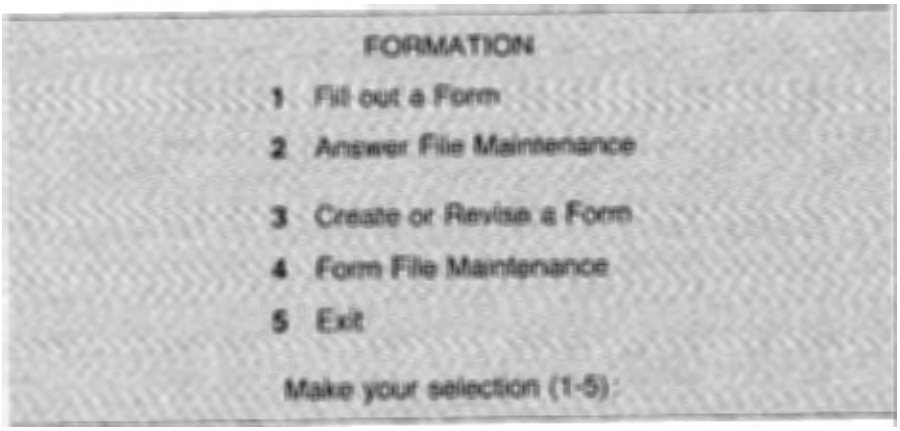
To begin filling out a form, you select from the Main Menu the first option, Fill out a Form. The program then displays the Directory of Forms so that you can select the form you want to work with.

After you have selected the form, the program displays the Directory of Answer Files. Now you create a new answer file. (You can also at this point revise or print an existing answer file.)

To create the new answer file, you select the option answer Questions from the bottom of the Directory, and then you name and describe the new answer file. Let's follow the procedure.

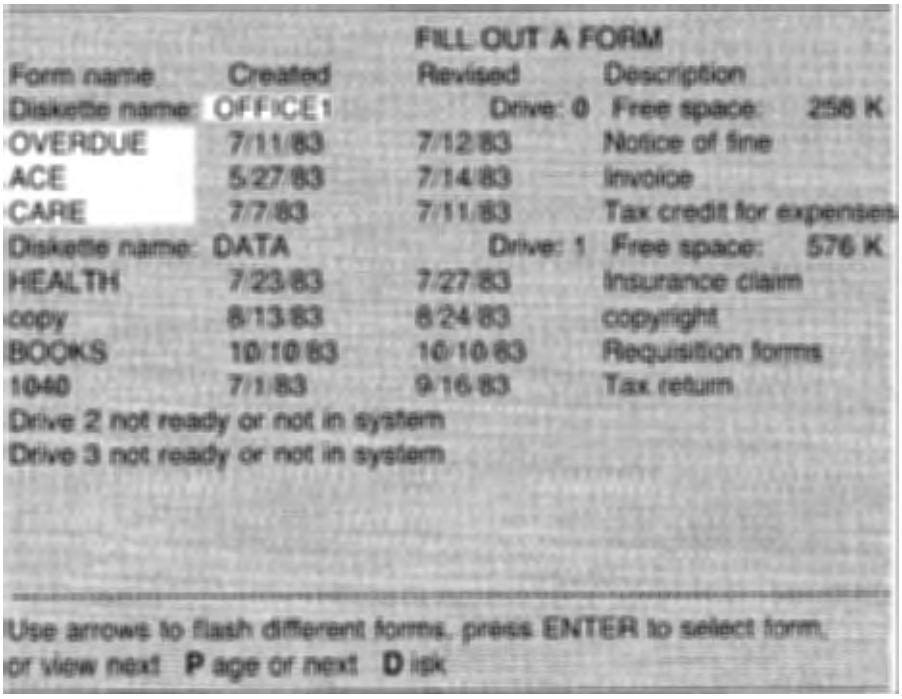
1. Display the Main Menu.

If you have not done so, turn on your system and load the program.



2. Type (1).

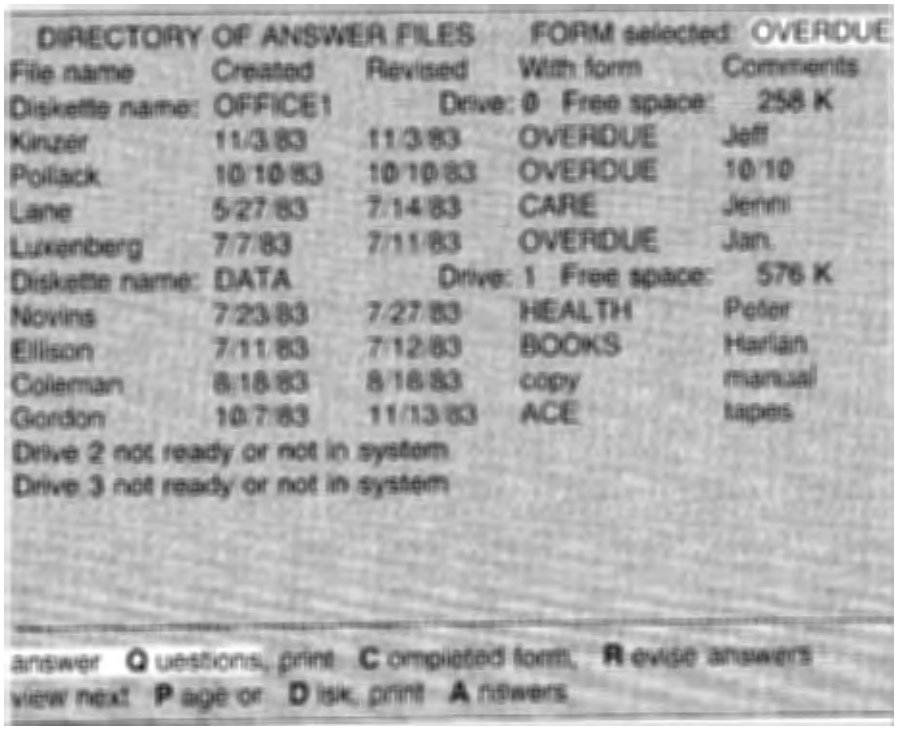
The program displays the Directory of Forms. In the following example, the diskette named OFFICE1 contains the forms OVERDUE, ACE, and CARE. The diskette named DATA contains the forms HEALTH, copy, BOOKS, and 1040.



3. Display the name of the form you want to fill out, flash it and press (ENTER).

- If the name of the form you want is displayed on the screen, use (↓) to move the flashing down to that name. Then press (ENTER).
- If the name of the form does not appear on the screen but appears later in the Directory, type (P) to display the next 19 entries or type (D) to display the first 19 entries on the next diskette. Then use (↓) or (↑) to move the flashing to the name and press (ENTER).

The program displays the Directory of Answer Files. (In the following example, the OVERDUE form has been selected.)



4. Type (Q) to select answer Questions.

The program replaces the options at the bottom of the Directory with this prompt and field:

Name of answer file? _____

5. Type into the field a name for the answer file and then press (ENTER).

You can type up to 16 characters (in upper or lower case) and spaces into the field. Give the file a name that will help to identify the nature, purpose, or contents of the file. For example, if you are filling out an insurance claim, use the name of the insured or a policy number.

Now, under the name prompt, the program displays the description prompt and field:

Name of answer file? _____
Description of answer file? _____

6. Type into the field a description of the answer file and then press (ENTER).

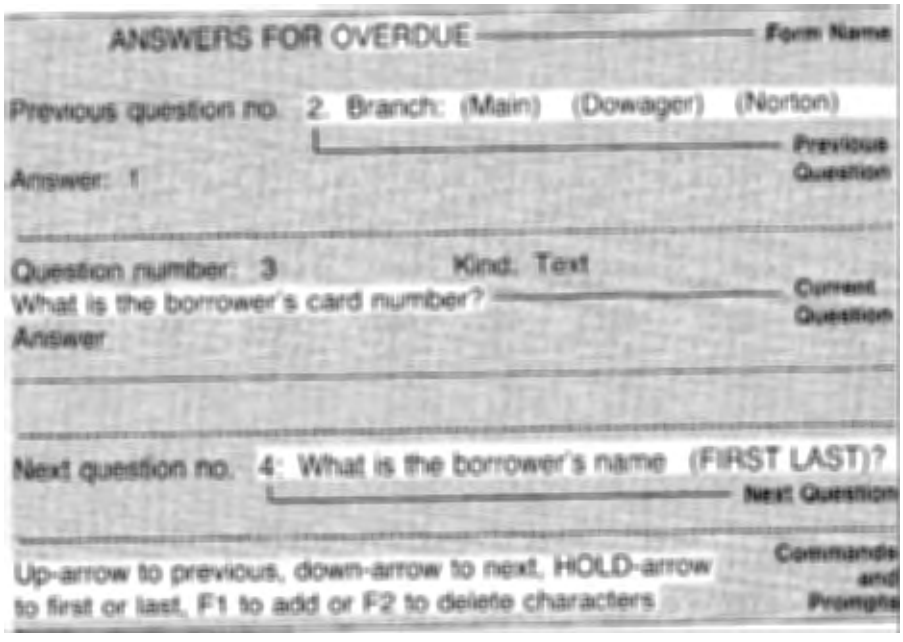
You can type up to 8 characters (in upper or lower case) and spaces into the field. Give the file a description that will help you to further identify the nature, purpose, or contents of the file. If you do not want a description, just press (ENTER) to leave the field blank.

Now the program displays the Answer Questions Screen so that you can fill out the form you have selected.

12. WORKING WITH THE ANSWER QUESTIONS SCREEN

After you have selected a form and then named and described the answer file, you are ready to answer the questions from the form. The program displays the questions on the Answer Questions Screen. At the top of the Screen, you see the name of the form (for example: ANSWERS FOR OVERDUE).

Let's assume that you want to fill out the library overdue notice for book borrower Robert Armin. You select the form OVERDUE and name the answer file Armin. The program displays the questions from the OVERDUE form on the Answer Questions Screen, and you answer them in turn. When you have answered all the questions, the program stores the answers in the Armin Answer File. If you fill out the OVERDUE form again, but this time for Peter Novins, you select the OVERDUE form and then name the answer file Novins. The program again asks the questions from the OVERDUE form, but it stores this set of answers in the Novins Answer File.



Depending on how the form was created, the questions on the Screen may not appear in the same order as the questions on the original preprinted form, and because the program may calculate some answers, the questions for those may not appear at all in the current-question area.

The Answer Questions Screen has four parts:

1. Previous question (at the top of the screen).
2. Current question.
3. Next question.
4. The commands and prompts (at the bottom).

Previous Question

At the top, the Screen displays the previous question: the number, the question text, and the answer you have typed. In the example Screen, the previous question is 2. Branch: (Main) (Dowager) (Norton). (If you are answering the first question, the Screen displays the message No previous question in the previous-question area.)

Current Question

In the middle, the Screen displays the current question: the number, the kind of question, and then the question itself. Beneath the question, there is an answer field where you type the answer. The program positions the cursor at the beginning of the field. In the example Screen, the current question is number 3, the Kind is Text, and the question is What is the borrower's card number?

There are four kinds of questions. (See page 42.) These are

1. Text
2. Number
3. Date
4. Multiple choice

The answer you type must match the kind of question described in the current-question area. (The kinds will be described in detail later.)

Next Question

Under the current question, the Screen displays the next question: the number, the question, and the answer (if there is one). In the example Screen, the next question is 4. What is the borrower's name (FIRST then LAST)? (If the current question is the *last* question, then the Screen displays the message No next question in the next-question area.)

Commands and Prompts

At the bottom, the Screen lists the commands you can use to display different questions and to edit answers. The program also uses this area to display other prompts or messages. For example, when you answer the last question, the program clears the commands and displays this prompt:

No more questions — press BREAK to exit, R to revise:

13. ANSWERING FORM QUESTIONS

Answering form questions is easy. You use two basic steps.

1. Answer each question.

The program positions the cursor at the beginning of the current-question answer field. Type the answer into the field and press (ENTER). The program displays the next question.

2. Check the answers and end the session.

When you have answered all the questions, go back and check your answers. Revise them if necessary and then exit the Answer Questions Screen and store the answers in the answer file.

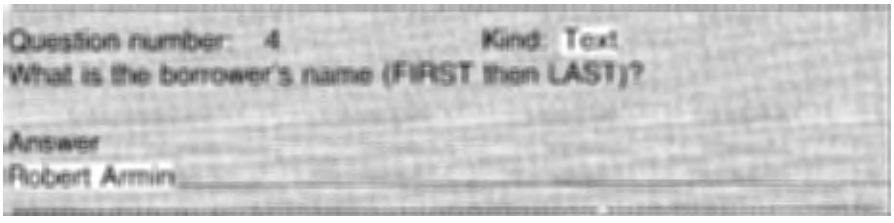
There are four kinds of questions:

Text
Number
Date
Multiple choice.

You must type an answer that matches the kind of question.

Text Questions

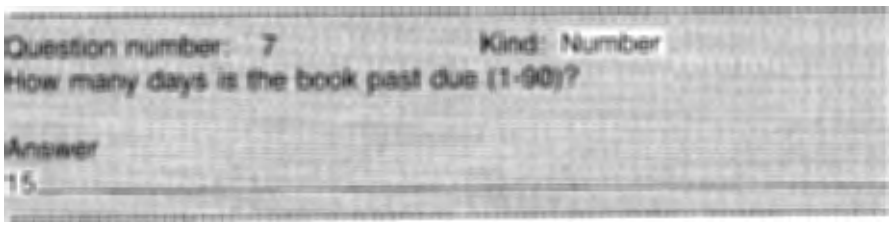
Type any combination of up to 80 characters (letters, numbers, spaces, and symbols) and press (ENTER).



If the answer is 80 characters long (the length of the field), you do not have to press (ENTER). The program enters your answer automatically when you type the eightieth character.

Number Questions

Type only numerals and, if needed, a decimal and press (ENTER). You can type *only* a combination of the numerals 0-9 and (.). You may also type a negative sign (−) if needed. Because the answer must be in numeric form, do not type ($) (¢) or (,) (comma). Later, when you print the answer file on the preprinted form, the program will print these symbols if the answers require them.



The program may use your answer to a number question to calculate the answer to another question. For example, for the OVERDUE form, the program calculates the total fine: it multiplies the number of days a book is overdue by the daily fine.

Because the program may use the answer to a number question in a formula, you *must* enter a response to every number question. You cannot bypass it by simply pressing (ENTER).

Date Questions

Type the date in the format MM/DD/YY, but do *not* press (ENTER). Type two digits for the month, a slash, two digits for the day, a slash, and two digits for the year. For July 4, 1985, you would type (0) (7) (/) (0) (4) (/) (8) (5).

Because you type 8 characters (the length of the field) to answer a date question, the program automatically enters the date when you type the last character.

You can also answer a date question by typing only one digit for the month and/or day (for example: (7) (/) (4) (/) (8) (5)), but you will have to press (ENTER) to complete the answer.

Because the program may use the answer to a date question in a formula, you *must* enter a response to every date question. You cannot bypass it by simply pressing ENTER.

Multiple-Choice Questions

When a multiple-choice question is positioned in the current-question area, the program does not display a field for you to type your answer. Instead, the program displays each choice either within parentheses

```
Branch: (Main) (Dowager) (Norton)
```

or next to the parentheses

```
Branch: ( )Main ( )Dowager ( )Norton
Branch: Main( ) Dowager( ) Norton( )
```

The Answer Questions Screen displays this prompt at the bottom of the screen:

```
Use left and right arrows to select answer, then press ENTER
```

Use ← and → to position the cursor within the parentheses. You need only press an arrow key once to move the cursor to the next choice. When you have positioned the cursor on the choice you want, press ENTER.

Ending the Session

When you answer the last question, the program displays this prompt:

No more questions — press BREAK to exit, R to revise:

- Press (BREAK) to exit the Answer Questions Screen. The program stores the answers in the answer file and displays the Directory of Answer Files. (The program flashes the name of the answer file you are working with.)
- Type (R) to revise any of the answers you have typed. (For more information about revising answers, see page 57.)

14. VERIFYING ANSWERS

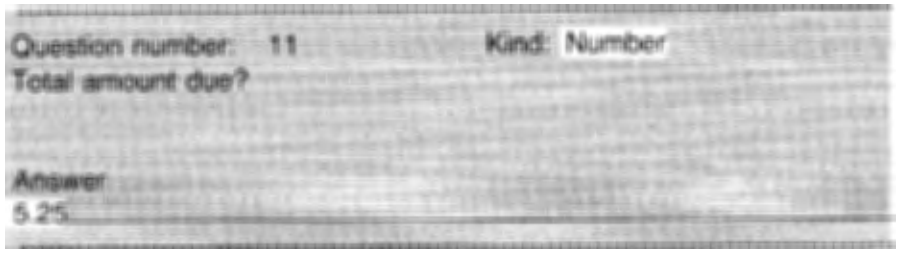
When you create a form, you can specify "verification" for an answer to a number question, date question, or multiple-choice question. Thus, when you answer questions, you may encounter a question that requires verification. There are two kinds of verification.

1. You verify an answer that the *program* has calculated. Sometimes the program calculates an answer and then asks you to verify it.

2. The program verifies the answer *you* have typed.

You Verify the Program's Answer

If the program must calculate an answer, it displays the answer in the answer field when it displays the question. In the following example, the program is asking you to verify that $5.25 is the correct amount due.



1. Press ENTER.

The program displays this prompt at the bottom of the screen:

Is this answer correct (Y/N)?

2. Check the answer and type Y for *yes* if the answer is correct. Type N for *no* if the answer is incorrect.

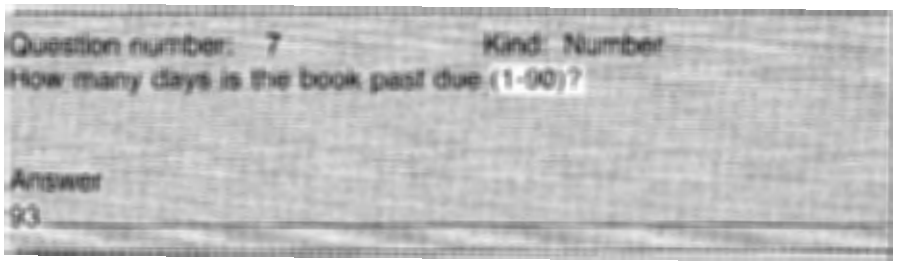
- If you type Y, the program enters the answer and displays the next question.

- If you type (N), the program moves the cursor to the answer field. You type the correct answer over the incorrect answer and press (ENTER). The program again asks you to verify with (Y) or (N).

Whenever you recall this question, or attempt to bypass it, the program will recalculate the answer. You will have to reverify the answer, and if necessary, change it.

The Program Verifies Your Answer

When you create a form, you can request the program to verify certain answers that you type. When the program verifies an answer, it checks the answer and will not accept an incorrect answer. For example, for the OVERDUE form, question 7 asks for the number of days that the book is overdue. Since the library sends these notices only for 90 days, the program will not accept an answer greater than 90.



After you type the answer and press (ENTER), the program checks the answer.

- If your answer is correct, the program accepts the answer and goes on to the next question.
- If your answer is incorrect (as in the preceding example), the program does not accept the answer. It flashes this message at the bottom of the screen:

  ********** Answer does not verify — please try again **********

1. **Press (BREAK)** to cancel the message.

   The program repositions the cursor in the answer field.

2. Type the correct answer and press (ENTER).

The program again tries to verify the answer.

The program will reject your answers until it checks an answer and finds it correct.

15. USING PRINT CODES

When typing answers, you can include codes that instruct the program to print an answer underscored, bold, or "struck through." You can also instruct the program to print special characters.

When to Use Print Codes

For filling out most forms, you won't need to use print codes. The program will probably perform these print actions and print special characters automatically because the codes were entered into the program when the form was created. For example, if a form requires an answer to appear underscored, you probably will not have to request underscoring with your answer. The program will have been set up to automatically underscore the answer when it prints it.

But if you do specify underscore anyway, don't worry. The program will disregard the "extra" print code. However, before you go to the trouble of typing print codes into your answers, you should "test" the form. Simply fill out the form, but don't use print codes. Then print the form. If you see that you need to include a print code for a print action or a special character, go back and revise the answer to include the code.

Print Codes for Print Actions

As noted, you can instruct the program to print the answer underscored, bold, or "struck through." To specify a print action, you type a code. The print action codes are:

Underscore	(ESC) (U)
Bold	(ESC) (B)
Strike-through	(ESC) (S)

The codes are "toggles." A toggle is a switch. The program "switches on" the print action the first time it encounters the code and "switches off" the print action the second time it encounters the code. However, the program automatically switches off *all* toggle codes at

the end of each answer. For example, if the program prints an answer that contains an underscore code, it "switches on" underscoring when it encounters the code. It underscores the answer until it encounters a second underscore code or the end of the answer; then it switches off the underscoring. When listing answers to the printer, underscore appears as u, bold as v, strike-thru as w.

Underscore

You can underscore all or parts of an answer by typing one or more underscore codes into the field for that answer.

To Type an Underscore Code

Press (ESC) and then type (U) for *underscore.*

When you press (ESC), the program displays the prompt SPECIAL in the lower right-hand corner of the screen. When you type (U), U appears in the field. The character neither prints nor adds a space in the printed answer. When you print the form, the printer underscores the answer from the first U to the next U or to the end of the answer.

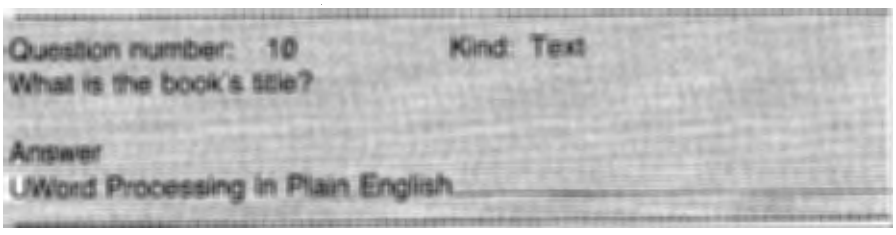
If you need a space in the answer, you must type it either before or after the code. If an underscore code appears before the space, the space will be underscored.

Using Underscore Codes

Here are three ways you can use underscore codes to underscore all or parts of an answer.

1. If you type an underscore code as the first character of an answer and do not type a second underscore code, the program underscores the entire answer when you print it.

On the Screen

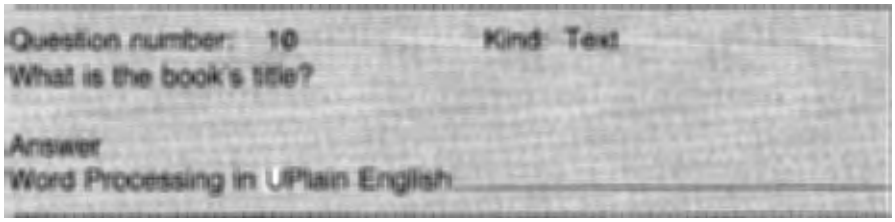


On the Form

Word Processing in Plain English

2. If you type an underscore code within the answer and do not type a second underscore code, the program underscores the answer from the code to the end of the answer.

On the Screen

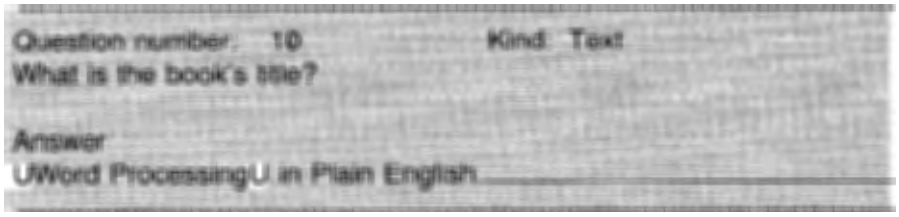


On the Form

Word Processing in Plain English

3. If you type more than one underscore code within an answer, the program underscores the answer from the first code to the next code when it prints the answer.

On the Screen



On the Form

Word Processing in Plain English

Bold

You can print all or parts of an answer in bold by typing one or more bold codes into the field for that answer.

To Type a Bold Code

Press (ESC) and then type (B) for *bold.*

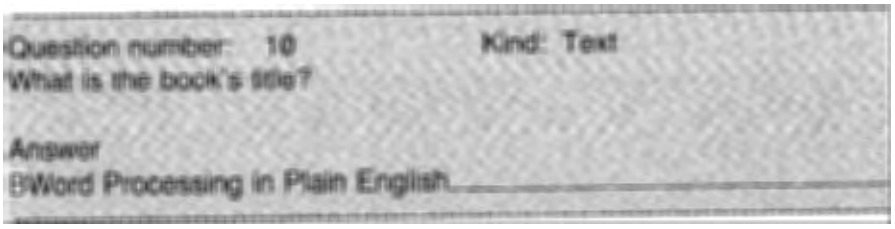
When you press (ESC), the program displays the prompt SPECIAL in the lower right-hand corner of the screen. When you type (B), B appears in the field. The character neither prints nor adds a space in the printed answer. (If you need a space in the answer, you must type it either before or after the code.) When you print the form, the printer prints the answer in bold from the first B to the next B or to the end of the answer.

Using Bold Codes

Here are three ways you can use bold codes to print all or parts of an answer in bold.

1. If you type a bold code as the first character of an answer and do not type a second bold code, the program prints the entire answer bold.

On the Screen

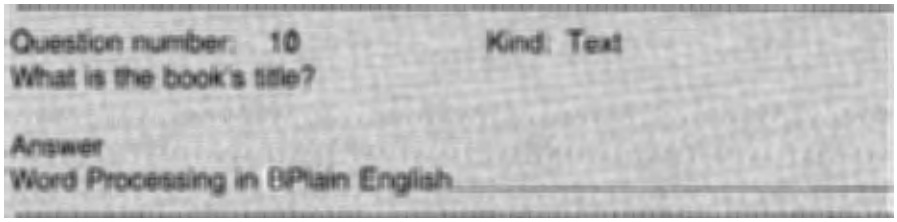


On the Form

Word Processing in Plain English

2. If you type a bold code within the answer and do not type a second bold code, the program prints the answer in bold from the code to the end of the answer.

On the Screen

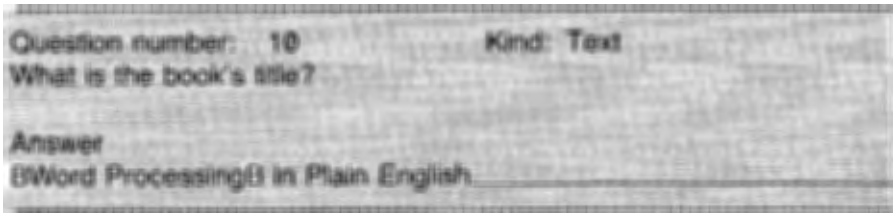


On the Form

Word Processing in **Plain English**

3. If you type more than one bold code within an answer, the program prints bold from the first code to the next code.

On the Screen



On the Form

Word Processing in Plain English

Strike-Through

You can "strike through" all or part of an answer by typing one or more strike-through codes in the field for that answer.

To Type a Strike-Through Code

Press ESC and then type S for *strike-through.*

When you press ESC, the program displays the prompt SPECIAL in the lower right-hand corner of the screen. When you type S, S appears in the field. The character neither prints nor adds a space

in the printed answer. When you print the form, the printer strikes through the answer from the first S to the next S or to the end of the answer.

When you print the form, the printer strikes through the answer from the first S to the next S or to the end of the answer.

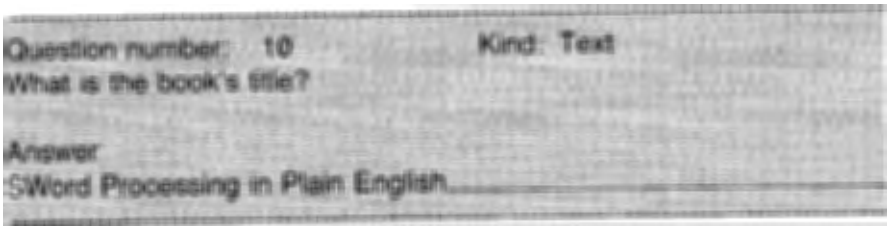
If you need a space in the answer, you must type it either before or after the code. If the strike-through code appears before the space, the space will be struck through.

Using Strike-Through Codes

Here are three ways you can use strike-through codes to strike through all or part of an answer.

1. If you type a strike-through code as the first character of an answer and do not type a second strike-through code, the program strikes through the entire answer.

On the Screen

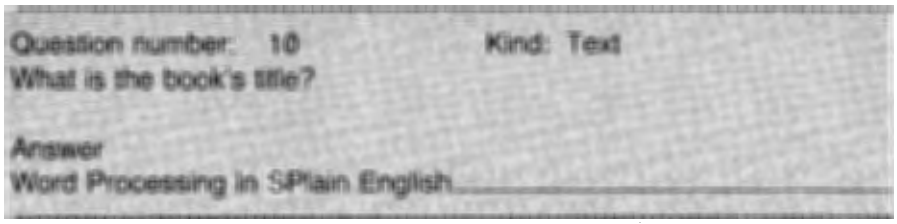


On the Form

~~Word Processing in Plain English~~

2. If you type a strike-through code within the answer and do not type a second strike-through code, the program strikes though the answer from the code to the end of the answer.

On the Screen

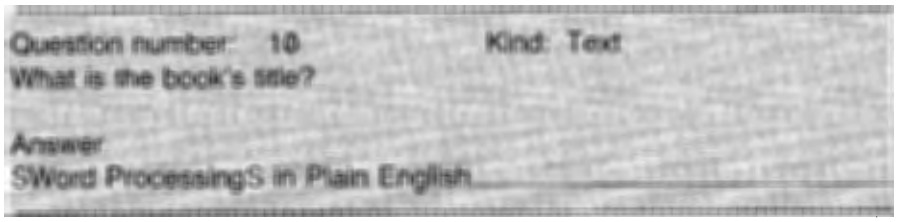


On the Form

Word Processing in ~~Plain~~ ~~English~~

3. If you type more than one strike-through code within an answer, the program strikes through the answer from the first code to the next code.

On the Screen



On the Form

~~Word~~ ~~Processing~~ in Plain English

Print Codes for Special Characters

You can print the following ten special characters:

¢ © ½ ¾ ¼ ® ™ † / °

To type a special character, you press (ESC) and then type a numeral from 0 through 9. Each numeral appears on the screen in reverse video and each represents a special character.

To print on the Form	Press	And type	This code appears on the: screen	printer
¢	ESC	0	0	\
©	ESC	1	1	a
½	ESC	2	2	b
¾	ESC	3	3	c
¼	ESC	4	4	d
®	ESC	5	5	e
™	ESC	6	6	f
†	ESC	7	7	g
/	ESC	8	8	h
°	ESC	9	9	i

These characters may print a little differently than shown, depending on what printer (or print wheel) you are using. Characters in the last column are substituted when listing answers to the printer.

16. REVISING ANSWERS

You can revise answers whenever you display them on the Answer Questions Screen. Basically, you can revise answers:

1. As you answer questions to fill out a form. (See page 42.)

2. After you answer the last question on a form.

   After you answer the last question, the program displays this prompt:

   No more questions — press BREAK to exit, R to revise:

   Type (R) to revise or proofread your answers.

3. By displaying answers from an *existing* answer file and then revising them.

Displaying Answers

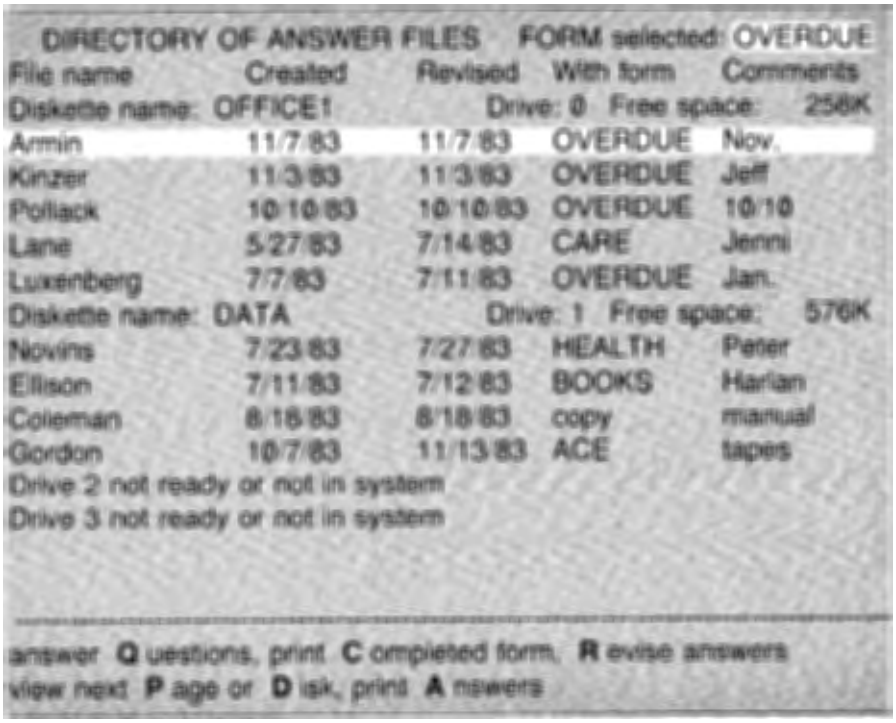
We have already described how you revise answers in the first two situations. The following discussion will concentrate on how to revise answers from an existing answer file.

To Display the Answers

1. Display the Directory of Answer Files.

From the Main Menu, type (1) to display the Directory of Forms. Then flash the form that goes with the answer file you want to revise and press (ENTER).

Let's assume that you want to revise answers that are for the OVERDUE form and stored in the Armin Answer File.



2. Flash the answer file you want to revise and type (R) to select Revise answers **from the options at the bottom of the Directory.**

The program displays the following prompt and field. (In the field is the name of the answer file you have selected.)

Name of answer file? Armin_____

You should make sure that the answer file that you are revising was created with the form you have selected. If you choose an answer file that does not belong with the form selected, the program attempts to merge that answer file with the wrong form questions. To correct this, go back and choose the correct form and then type (R) again. The program then merges the answer file with the correct form.

3. Keep or change the name of the answer file.

- To keep the name, make sure that the cursor is positioned at the beginning of the field and then press (ENTER).

- To change the name, use the field-editing techniques to change the name and then press (ENTER).

The program displays the following prompt and field. (In the field is the description of the answer file you have selected.)

```
Name of answer file? Armin_____________
Description of answer file? Nov._____
```

4. Keep or change the description of the answer file.

- To keep the description, make sure that the cursor is positioned at the beginning of the field and then press (ENTER).
- To change the description, use the field-editing techniques to change the description and then press (ENTER).

The program displays the Answer Questions Screen for the answer file you have selected. Now you can revise an answer by displaying it in the current-question area.

Displaying an Answer in the Current-Question Area

Use (↓) and (↑) either alone or with (HOLD) to display an answer in the current-question area.

Press (↑) to display the previous answer.

For example, if answer 5 is displayed in the current-question area, press (↑) to display answer 4.

Press (↓) to display the next answer.

For example, if answer 5 is displayed in the current-question area, press (↓) to display answer 6.

Press (HOLD) and then press (↑) to display the first answer.

When you press (HOLD), the program displays the prompt ARROW in the lower right-hand corner of the screen. To complete the command, press (↑) or (↓).

For example, if you have answered fifty questions and you want to revise answer 5, use (HOLD) (↑) to display answer 1. Then use (↓) to work your way through answers 2, 3, and 4 to answer 5.

Press (HOLD) and then press (↓) to display the last answer before an unanswered conditional question. (For a discussion of conditional questions, see page 113.)

If you press (HOLD) (↓) and the program does not encounter an unanswered conditional question, it will display the last answer.

Revising an Answer

After you have displayed an answer in the current-question area, use the field-editing techniques to revise it. You can

Overstrike:	Type over the current answer.
Insert:	Press (F1) or hold down (CTRL) and type (A).
Delete:	Press (F2) or hold down (CTRL) and type (D).
Clear:	Press (TAB).
Chop:	Press (ENTER).

Remember to move the cursor back to the beginning of the field (or after the last typed character) and then press (ENTER) to enter each answer after you revise it. (For a more complete review of the field-editing techniques, see page 28.)

Verification

As you know, you can encounter two kinds of verification:

1. You verify answers calculated by the program.

2. The program verifies answers you have typed.

When you display a question that requires verification, you must also verify it when you are revising answers. (For more about verification, see page 46.)

Ending the Session

After you have revised the answers, you must tell the program that you have finished. The program then enables you to save or cancel the revisions.

To End the Session

1. When you have finished revising, press (BREAK).

The program displays this prompt:

S ave changes to disk or **C** ancel?

2. Type either (S) or (C).

- Type (S) to save the revisions. The program revises the answers in the answer file.
- Type (C) to cancel the revisions. The program does **not** revise the answers in the answer file.

If you have changed the name or description of the answer file, the program will change these whether you type (S) or (C). Therefore, if you cancel the revisions, you must change the name and description back to the originals if you have revised either. The program will not change the revision date in the Directory of Answer Files if you cancel the revisions, even if you have changed the name or description.

17. PRINTING ANSWERS

You can print the answers from an answer file in two ways:

1. On the preprinted form. The program prints each answer in the correct location and in the correct format. (Make sure that the form printer parameter is set to the printer you are using. See page 101.)

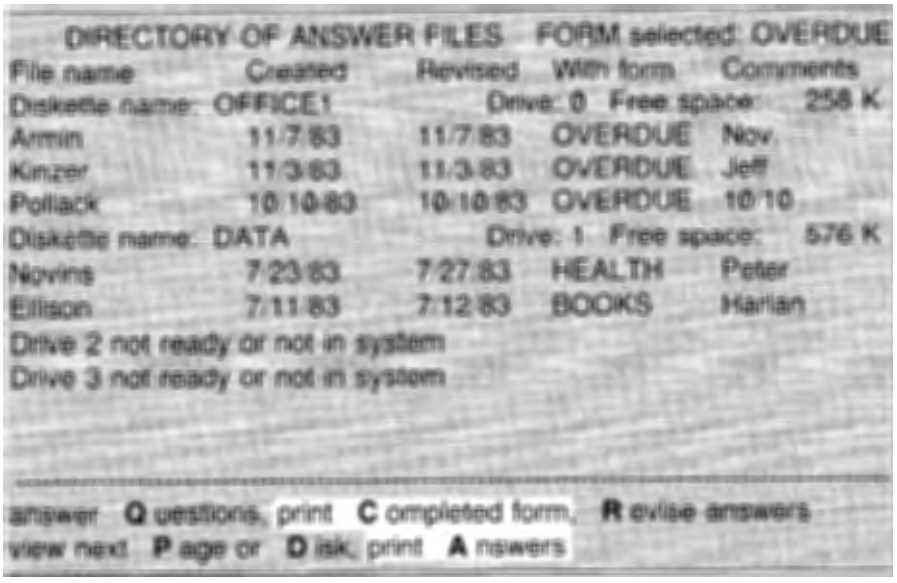
2. As a list. The program prints the answers down the page, one answer to a line. For example, you might print a list of answers in order to check their accuracy before you print them on the form or in order to create a printed record of the answers you have typed.

To Print Answers

1. Make sure the printer is switched on and is "on line."

2. Display the Directory of Answer Files.

- From the Main Menu, type (1) to display the Directory of Forms. Then flash the form that goes with the answer file you want to print and press (ENTER).
- From the Answer Questions Screen, press (BREAK).



3. **Flash the name of the answer file you want to print.**

4. **Type (C) for** print Completed form **to print the answers on the form or type (A) for** print Answers **to print the answers as a list.**

   At the bottom of the Directory, the program displays this prompt:

   Please align paper to top of page 1 — press any key when done

5. **Insert the preprinted form or a blank sheet of paper into the printer.**

   Insert the preprinted form if you have typed (C). Insert a blank sheet of paper if you have typed (A).

   You should align the top edge of the paper with the top edge on the plastic card holder (making sure that the paper will feed smoothly). Align the left edge of the paper with column zero on the pitch scale. (As long as you always position the paper at the same place both when you create a form and when you fill out the form, you can align the paper where it is most convenient for you.)

6. **Press (ENTER).**

   The program prints the answers from the answer file.

   - If you have typed (C), the program prints each answer on the form in the correct position and in the correct format.
   - If you have typed (A), the program prints the answers in a list, one answer to a line.

When the program has printed all the answers, it again displays the options at the bottom of the Directory of Answer Files.

Longer Than One Page

If the form or the list of answers is longer than one page, the program stops printing after the first page, ejects the paper, and displays this prompt:

Please align paper to top of page 2 — press any key when done

Insert the next page of the form (or another sheet of paper) into the

printer and press any key. The program will pause after each page so that, if necessary, you can insert the next page of the preprinted form or sheet of paper into the printer.

If you have typed (A) to print the answers as a list, the program assumes that the sheet of paper you are printing on is 11 inches long (66 lines).

Keyboard Input

You can design a form so that the program will request keyboard input during printing. The program will stop printing and display a prompt and a field for the input. You type the input into the field and press (ENTER). (You can type up to 80 characters into the field.) For example, assume you are printing a credit application form and you must enter a daily authorization code. Since this code may change between the time you fill out the form and the time you print it, you will want to enter the code *as* you print the form. The program stops printing and displays this prompt and field at the bottom of the Directory of Answer Files:

Please type your authorization code:

Type in your authorization code and press (ENTER). When you press (ENTER), the program will print the text you have typed on the form and then continue printing the answers from the answer file.

PRACTICE: FILLING OUT FORMS

Here are three exercises you can use to practice filling out forms. The three forms (OVERDUE, ACE, and CARE) are stored on the *Formation* program diskette. (Make sure you use your Backup of the program diskette.)

Please note that the forms were created for a Daisy Wheel II. If your printer is a Daisy Wheel 410 or a DMP 2100, you need to change the printer parameter of the form. (See page 101.)

Exercise 1

Follow these steps.	**Refer to these pages for help.**
1. Make a photocopy of Form 1 (the OVERDUE form).	
2. Use the information in Worksheet A to answer the questions for the OVERDUE form. Name the answer file "Marston."	39
3. Print the answers on the photocopy of the form.	62

Exercise 2

Follow these steps.	**Refer to these pages for help.**
1. Make at least two photocopies of Form 2 (the ACE form).	
2. Use the information in Worksheet B to answer the questions for the ACE form.	39
3. Print the answers on a photocopy of the form.	62
4. Print the answers as a list.	62

5. Revise the answers as shown in Worksheet C. (Keep the same name and description.) 53

6. Check the revised answers by printing them as a list. 58

7. Print the revised answers on a photocopy of the form. 58

Exercise 3

Follow these steps.	**Refer to these pages for help.**
1. Make at least two photocopies of Form 3 (the IRS form).	
2. Use the answers from Worksheet D to answer the questions for the CARE form.	39
Name the answer file "Novins." Describe it with the name "Michele."	
3. Print the answers on a photocopy of the form. To make sure that your form prints correctly, align the printhead under the first letter in "Internal Revenue Service" at the top left of the form.	62
4. Print the answers as a list.	62

Worksheet A

Daily Overdue Report

Date 7/30/85 Branch Norton

Card # A1742 Name Howard Marston

Ex. Date 9/85 Type Adult Years as Member 2

Due Date 7/15/85

Days Past Due 15

LCC # MM4416-M6

Author William Blake

Title Milton

Worksheet B

Sales Order Form: **Invoice** 1009211

Salesperson Mary Howard

Sold to:

Big Bob Convenience Stores
200 Elysian Fields
New Orleans, Louisiana 09216

Ship to:

Big Bob
Warehouse 862, 25 Westphalia
New Orleans, Louisiana 09100

Merchandise

Quantity	Description	Unit Cost
1,000	Novelty Pacs	$ 2.25
500	Whoopee Cushions	.40
25	Novelty Display Racks	19.95

Sales Tax 4%

Shipping Instructions:

On us

Worksheet C

Sales Order Form: **Invoice** 1009211

Salesperson Mary Howard

Sold to:
Big Bob Convenience Stores
200 Elysian Fields
New Orleans, Louisiana 09016

Ship to:
Big Bob
Warehouse 862 25 Westphalia
New Orleans, Louisiana 09100

Merchandise

Quantity	Description	Unit Cost
1,000	Novelty Packs	$2.15
500	Whoopee Cushions	.40
25	Novelty Display Racks	19.95
200	Mousetrap Chewing Gum	.25

Sales Tax 4%

Shipping Instructions:
$185.00 UPS

Worksheet D

Worksheet for IRS 2441
Credit for Child and Dependent Care Expenses

Name Peter Jay Novins SS# 111-11-1111

Number of dependents claimed 1

1st Dependent: Name Michele Date of Birth 10/10/55
Relationship daughter How long in 81 Months 8 Days 12

2nd Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

3rd Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

4th Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

Number of persons or organizations employed 3

1st Care provider: Name Acme Babysitters SS# —
Relationship —
Care provided FROM 3/1 TO 12/12 Amount paid 3000

2nd Care provider: Name Jane Seymour SS# 222-22-2222
Relationship —
Care provided FROM 1/23 TO 2/28 Amount paid 1200

3rd Care provider: Name New York Bedwetters SS# —
Relationship —
Care provided FROM 4/23 TO 5/30 Amount paid 1123

[X] Married [ ] Unmarried
Filer's income 19,000 Spouse's income 17,000
Amount paid in 1981 5000 Amount paid for 1980 in 1981 400

Answers From Filer's 1040

Tax from Line 37 4,000 Add lines 38, 39, 41, 42, & 43. TOTAL: 2300

Did filer pay $50 or more to an individual during a calendar quarter?
[X] Yes [ ] No
Were the service performed in your home?
[X] Yes [ ] No
Have you filed wage returns for services in your home?
[X] Yes [ ] No
What is filer's employee identification number? 123456789

III. MAINTAINING ANSWER FILES

18. OVERVIEW: FILE MANAGEMENT

In order to manage answer files most effectively, you must know how the program stores them on diskettes.

Storing Answer Files

You store an answer file on the same diskette that contains the form that the file goes with. For example, when you select and work with the HEALTH form stored on the diskette in drive 1, the program stores the new answer file on the diskette in drive 1. When you print an answer file, the program uses the information from the form in order to print the file. For example, if you print the Novins Answer File on the preprinted Health form, the program takes the answers from the Novins Answer File and the print positions from the HEALTH form.

Although the program diskette can hold some forms and answer files, you must use data diskettes to store additional forms and files. You insert a formatted data diskette into drive 1 and "modify" it to work with the *Formation* program. If you have more than two disk drives, you can insert data diskettes into drives 1-3. (Always insert the backup of the program diskette into drive Ø.) If you fill a diskette to its capacity, you can copy a form onto another diskette and create new answer files on the new diskette.

If you are using a hard disk system, you can store forms and answer files on any of four hard disk drives (4-7) or on floppy diskette drives Ø-3.

To Prepare a Data Diskette

1. **Format the diskette using the TRSDOS Format command.** (See the *TRS-80 Owner's Manual* for your computer.)

2. **Modify the formatted diskette.** (See page 75.)

You can copy forms from the program diskette onto the new data diskette to give you more room for creating answer files for those forms. Use the copy option. (See page 185.)

You can also erase answer files you no longer need to make more space available on the diskette. (See page 79.)

In order to perform these functions, you should:

1. **Insert the diskette(s) and load the program, if you have not already done so.**

   Insert into drive 0 the backup of the program diskette or load the program from your primary hard disk (Drive 4). Into drive 1, insert the formatted data diskette you want to modify. (If you have more disk drives, you can insert the diskette into drives 1, 2, or 3 or modify hard disk drives 4-7).

2. **From the Main Menu, type (2) to select Answer File Maintenance.**

   For the diskettes you have inserted, the program displays the Directory of Answer Files (with the heading ANSWER FILE MAINTENANCE). At the bottom of the Directory, the program displays this menu:

C opy or **E** rase answer file, **M** odify diskette,
H ardcopy directory, next **P** age or **D** isk

19. MODIFYING A DISKETTE

If you have more than one disk drive, you should store answer files (and forms) on data diskettes in drive 1. If you have more than two disk drives, you can also store answer files (and forms) on data diskettes in drives 2 and 3. However, before you can store answer files on a data diskette, you must format and modify the diskette for use by your computer and the *Formation* program.

To prepare the formatted diskette for use by the *Formation* program, you use the *Formation* Modify Diskette option. (If you have only one disk drive, you will not need to modify data diskettes, but you can modify drive Ø to erase all the files on the program diskette.)

Formatting a Diskette

Format is a Model 4 TRSDOS command. To read about how to format a diskette, see the *TRS-80 Owner's Manual* that came with your computer.

Modifying a Diskette

Before you can store answer files on a diskette, you must "modify" it. When you modify a diskette, the program creates a "master file" to hold the answer files.

You can also use the Modify command to erase all the forms and answer files from a previously modified diskette, including the program diskette (or primary hard disk drive).

How to Modify a Diskette

1. **Type (M) to select the option** Modify diskette **from the Answer File Maintenance menu.**

   The program displays this prompt:

   Modify which drive (Ø,1,2 . . .)? 1

   1 is the default.

2. If other than drive 1, type the number of the drive that contains the diskette you want to modify.

If you want to modify the diskette in drive 1, just press (ENTER). Unless the diskette has been already modified, the program modifies the diskette. If the diskette has already been modified, the program displays this message:

This disk has been modified before — erase all files (Y/N)?

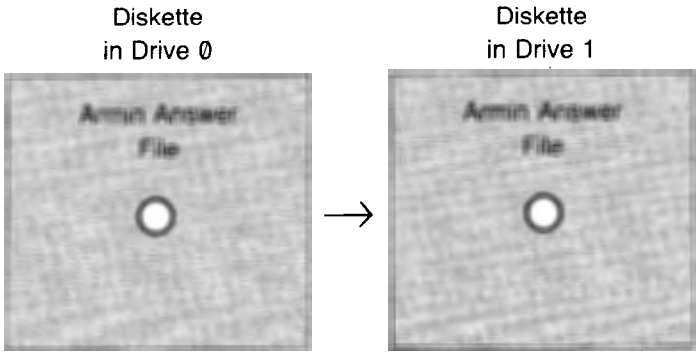
- Type (Y) for *yes* to "re-modify" the diskette and erase all forms and answer files from the diskette.
- Type (N) for *no* to cancel the procedure and to return to the Main Menu.

When the program has finished modifying the diskette, it displays the Main Menu.

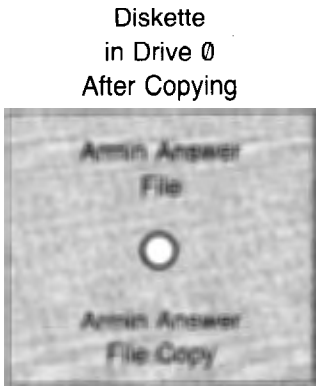
20. COPYING AN ANSWER FILE

You use the Copy option to copy an answer file. You can copy an answer file from one diskette to another or onto the same diskette. If you plan to heavily revise an answer file, you should first make a copy of it (in case you need to refer back to the original). If you want to use one answer file as a "default" answer file, you make a copy of it and revise the answers to create a new answer file. (For a discussion of default answer files, see page 83.)

Copying From One Diskette to Another



Copying on the Same Diskette



To Copy an Answer File

1. **After selecting the Answer File Maintenance option from the Main Menu, flash the name of the answer file you want to copy.**

   Let's use the Armin Answer File as our example.

2. **Type (C) to select** Copy answer file **from the menu.**

   The program displays this prompt and field:

   Name of new file? Armin_____

   In the field, the program displays the name of the answer file you have selected. The program positions the cursor on the first character of the name.

3. **Type a new name for the copy and press (ENTER), or keep the same name by pressing (ENTER).**

   Type the new name over the old name or clear the field and type the new name. You can use any combination of up to 16 characters for the name. The program now displays this prompt:

   Place file on which drive (Ø-3)? Ø

   In the field to the right of the prompt, the program displays the drive number of the diskette containing the answer file you are copying (Ø in the example above). If you are using the TRSDOS 4.2 version, the program will display this prompt:

   Place File on which drive (Ø-7)? 4

4. **Press (ENTER) or type a different drive number.**

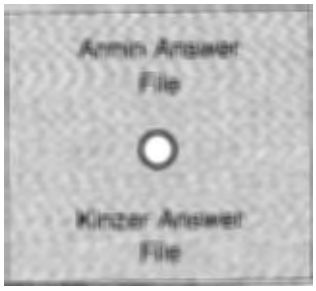
   Press (ENTER) to copy the answer file onto the same diskette. Type a different drive number to copy the answer file onto a different diskette.

The program copies the answer file. When it completes the copy, it displays the Main Menu.

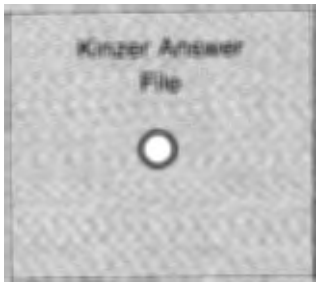
21. ERASING AN ANSWER FILE

If you have answer files that you no longer need, you can erase them to free up space on the diskette. The Erase answer file option enables you to erase an answer file.

Diskette
in Drive Ø
Before Erasing Armin



Diskette
in Drive Ø
After Erasing Armin



To Erase an Answer File

1. **After selecting the Answer File Maintenance option from the Main Menu, flash the name of the answer file you want to erase.**

   Let's assume you want to erase the Armin File.

2. Type (E) to select Erase answer file **from the menu.**

The program asks you to verify the answer file you want to erase:

Do you wish to erase Armin (Y/N)?

3. Type (Y) for *yes* or (N) for *no*.

- Type (Y) to erase the answer file.
- Type (N) to cancel the procedure and to return to the Directory of Answer Files menu.

Unless you typed (N), the program erases the answer file and displays the Directory of Answer Files (with the Answer File Maintenance menu at the bottom) so that you can see that the answer file has been erased. Press (BREAK) to return to the Main Menu.

22. HARDCOPYING THE DIRECTORY OF ANSWER FILES

You can use the Hardcopy directory option to print the Directory of Answer Files. If you have several diskettes full of answer files, you may want to keep a printed copy of the answer files that are stored on each diskette. Then when you want to find a particular answer file, you don't need to display the directory for each diskette. You simply consult the printed copies.

To Hardcopy the Directory of Answer Files

1. **Type (H) to select** Hardcopy directory **from the Answer File Maintenance menu.**

   The program displays this message:

   Please align paper to top of page 1 — press any key when done

2. **Insert a sheet of paper into the printer and press any key.**

   The program prints a copy of the Directory of Answer Files starting with the first diskette displayed in the Directory. For example, let's say you have inserted diskettes in drives 0 and 1 and you have displayed the Directory of Answer Files beginning with the diskette in drive 0. The program prints the Directory for the diskettes in drives 0 and 1.

   If you want to begin printing with the answer files on the diskette in drive 1, press (D) to select the next Disk option from the menu at the bottom of the Directory. The program scrolls the Directory up and displays the answer files beginning with drive 1. Now, when you hardcopy the Directory, the program begins printing with the contents of the diskette in drive 1. The program prints one of the following messages for each drive that does not contain a modified diskette or that is not connected to the system (drives 2 and 3 in this example):

   Drive 2 not modified for FORMATION
   Drive 3 not ready or not in system

   If the program requires more than one sheet of paper to print the Directory, it stops printing after the first page, ejects the paper,

and displays this prompt:

Please align paper to top of page 2 — press any key when done

Insert another sheet of paper into the printer and press any key. The program will pause after each page so that you can insert the next sheet of paper into the printer.

When the program has finished printing, the Directory of Answer Files and the menu remain on the screen. Press (BREAK) to return to the Main Menu.

23. WORKING WITH DEFAULT ANSWER FILES

A default answer is a standard answer that appears automatically. If you often fill out a form with many answers that are the same, you may want to use a default answer file. You can create a default answer file when you fill out a form. Then, each time you need to fill out a form that requires these standard answers, you can copy the default answer file and then revise the copy for the non-standard answers.

For example, let's say that you fill out insurance claims for the Labor and Delivery Department of a hospital. For each form, 20 answers are always the same (answers about the Labor and Delivery Department). The remaining 15 answers are different for each patient. To make your work easier, you can create a default answer file and use it to fill out the insurance forms.

Creating the Default Answer File

Let's continue with our previous example. You select the HEALTH form and name the default answer file. Let's name the answer file LDdef (for "Labor and Delivery default"). Now you answer the 20 questions that always have the same answer. Because number, date, and multiple-choice questions require answers, for the other 15 questions, you must provide "dummy" answers (so that the program will display the next question). You will simply type over these answers when you revise the answers for the new answer file.

Using the Default Answer File to Fill Out Forms

Let's assume that you have created a default answer file for the HEALTH form. Now let's assume that you must fill out a Labor and Delivery claim form for the Gibson baby, Claire. Here are the steps you would follow:

1. **From the Main Menu, type (2) to select** Answer File Maintenance.

2. **Flash the LDdef Answer File and type (C) to select the Copy option.**

3. **Type a name for the copy.**

   Let's name the copy Gibson and place the file on drive 1. The program returns to the Main Menu.

4. **Type (1) to select** Fill out a Form.

5. **Flash the HEALTH form on the Directory of Forms and press (ENTER).**

6. **Flash the Gibson Answer File on the Directory of Answer Files and type (R) to** Revise answers.

   If you have just made the copy, the Gibson Answer File will be flashing when the Directory is displayed.

7. **Press (ENTER) to keep the name Gibson.**

   Change the default description at this time. Let's change it to the name of the Gibson baby, Claire. Then press (ENTER).

8. **Now use the arrow keys to skip over the 20 questions that are to remain the same and revise the 15 "dummy" answers by typing over each with the correct response.**

When you end the session, the program stores the Gibson/Claire Answer File on diskette. Now the Gibson/Claire Answer File contains all 35 answers (the 20 from the LDdef Answer File and the 15 new answers you typed).

Each time you fill out an insurance form for the Labor and Delivery Department, you simply follow the same steps.

PRACTICE: WORKING WITH ANSWER FILES

Here are two exercises you can use to practice working with answer files. You will work with the three forms (OVERDUE, ACE, and CARE) stored on the *Formation* program diskette.

For these exercises, you need a formatted data diskette and your backup of the *Formation* program diskette.

Exercise 1

Follow these steps.	Refer to these pages for help.
1. Modify a diskette for use in drive 1.	75
2. Use the information in Worksheet A to fill out the ACE form. (Name the answer file "Empire.")	39
3. Print a hardcopy of the Directory of Answer Files.	81
4. Copy the Empire Answer File from the program diskette to the data diskette in drive 1.	77
5. Erase the Empire Answer File from the program diskette.	79
6. Print new hardcopies of the directories to confirm the changes.	81

Exercise 2

Follow these steps.	Refer to these pages for help.

Empire News and Novelties is one of ACE Novelties' biggest customers. They place up to four orders a month. In this exercise, you will prepare a default answer file to use for all of

the invoices (Form 2) you send to Empire. Before you begin, make a photocopy of Form 2 (the ACE form).

1. Use the answers from Worksheet B to create the default answer file. (The answers that are always the same.)

   Name the answer file "DefEmp."

   You must type "dummy" answers for some questions. For example, you must answer the "number of items" question by typing zero. You must type an invoice number, and you must type a date. (You will revise these answers for each answer file.)

   If *Formation* calculates some answers, it will display a zero and ask you to verify.

2. Now use the default answers and the answers from Worksheet C to fill out the invoice.

   Make a copy of DefEmp. Call it "1st July." 77

   Revise the answers using the information from Worksheet C. 57

   Print the form. Make sure the correct printer parameter is set for your printer. (See page 101.) 62

Worksheet A

Sales Order Form: **Invoice** 1096031

Salesperson John Mc Duff

Sold to:

Empire News and Novelties
80 Loop Street
Chicago, Illinois 89123

Ship to:

Empire
200 west 81st Street
New York, NY, 10023

Merchandise

Quantity	Description	Unit Cost
2,500	Fly in the Ice Cubes	$ .35
2,500	Itching Powder	.15
2,500	Fake Eyes	.85

Sales Tax —

Shipping Instructions:

Our us

Worksheet B

Sales Order Form: **Invoice** 111111

Salesperson _____

Sold to:

Empire News & Novelty
80 Loop Street
Chicago, Illinois 8/9/23

Ship to:

Empire
200 West 81st St.
New York, N.Y. 10023

Merchandise

Quantity	Description	Unit Cost
		$

Sales Tax _____

Shipping Instructions:

Worksheet C

Sales Order Form: **Invoice** 1092837

Salesperson John McDuff

Sold to:

Empire etc.

Ship to:

Empire etc.

Merchandise

Quantity	Description	Unit Cost
1,000	Novelty Packs	$2.15
2,000	Deluxe Assortment	3.35
800	July 4th Surprise	1.15

Sales Tax 4%

Shipping Instructions: $8.25 UPS

IV. CREATING A FORM

24. OVERVIEW

In order to fill out a form, you must first "create" the form. As you read in *Working With Formation*, in the overall processing of forms, this is Stage 1. (See page 10.) Using the preprinted form as the model, you create a form in two steps:

1. **You write the questions by using the questions on the preprinted form as guidelines.** (These questions will appear on the Answer Questions Screen.)

2. **You set the print positions for the answers.** (Thus, you "program" each answer to print in the correct place on the form.)

Planning

Creating a form is like creating a simple program for a computer. As with any program, you begin by planning. You sit down with the preprinted form and some paper. You then make a complete list of questions from the preprinted form. To those questions, you add questions that will be needed to calculate or verify certain answers. Then you arrange all of the questions in the most logical sequence.

Before you can plan the form, however, you must first learn how to create a form with the *Formation* program. (That's why the discussion on planning is at the *end* of this section.)

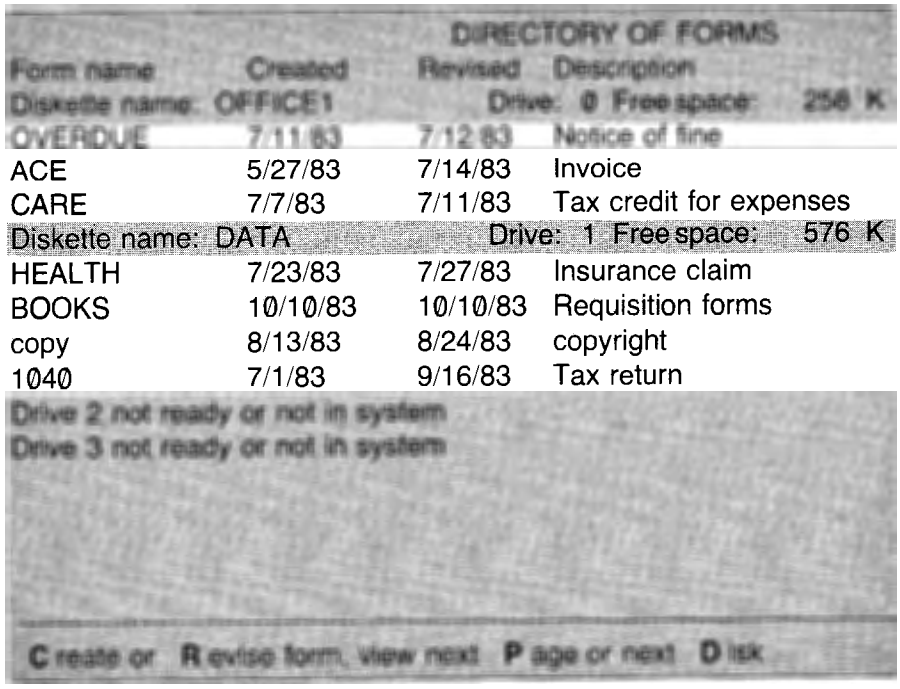
Stage 1 Screens

To give you a general idea of how you create a form, here is the sequence of screens you use.

After you have loaded the program, the program displays the Main Menu. You type 3 to select Create or Revise a Form.

The program displays the Directory of Forms (in case you want to revise an existing form). In this example, the OFFICE1 diskette in

drive 0 contains three forms: OVERDUE, ACE, and CARE. The DATA diskette in drive 1 contains four forms: HEALTH, BOOKS, copy, and 1040.



To create the form on the diskette in drive 1, type (D) to move the flashing to the drive 1 diskette (DATA in the example), and then type (C) to select the option Create form from the menu at the bottom of the Directory. The program replaces the menu at the bottom with the following prompt and field and positions the cursor at the beginning of the field:

Name of form? _____

For this example, we'll call the form NEWFORM.

The program then displays the description prompt and field under the name prompt and positions the cursor at the beginning of the field.

Name of form? NEWFORM_____
Description of form? _____

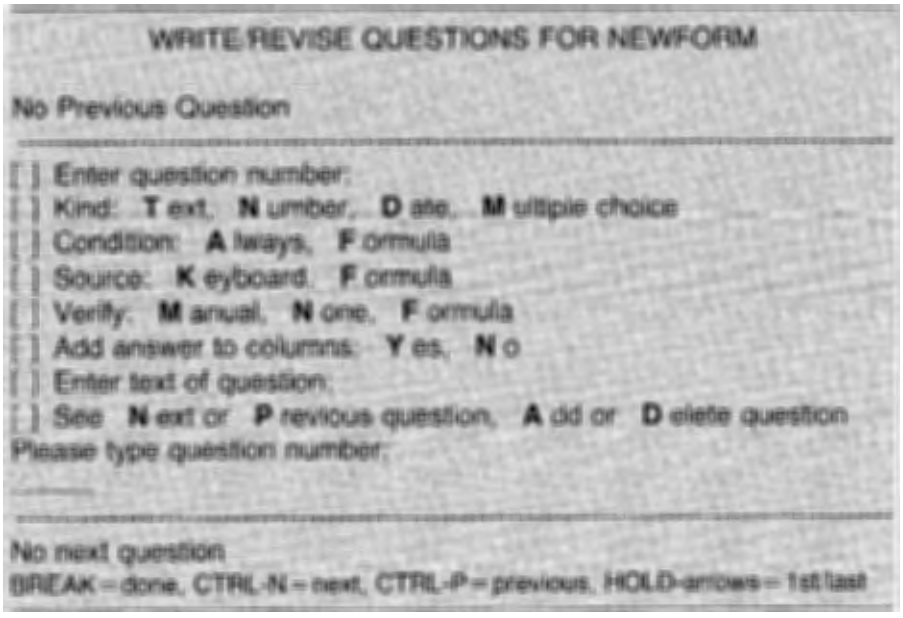
After you have named and described the form, the program displays, one at a time, the following prompts and fields:

```
                    CREATE NEWFORM

Name of printer to be used? DW2_____
How many characters per inch (4-20)? 10
How many lines to the page (4-99)? 66
How wide is the page (4-168 characters)? 80_
```

You type your response to each of these prompts in order to indicate the printer and to set the print parameters (page size) for the form. Press (ENTER) after each response. After you set the print parameters, the program again displays the Directory of Forms in case you want to take the questions from an existing form as the basis for your new form (page 189) or in case you want to print the questions from a different file. Note the NEWFORM entry.

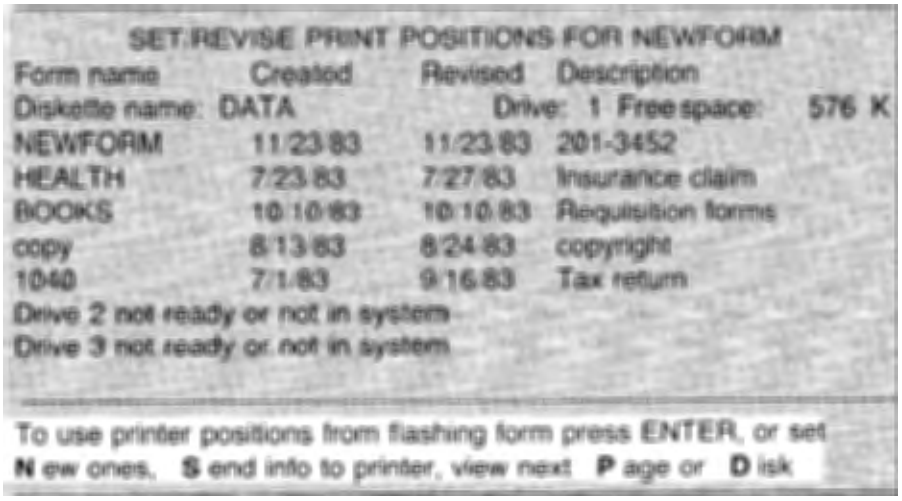
```
        WRITE/REVISE QUESTIONS FOR NEWFORM
Form name      Created    Revised    Description
Diskette name: DATA              Drive: 1 Free space:  576 K
NEWFORM        11/23/83   11/23/83   201-3452
HEALTH         7/23/83    7/27/83    Insurance claim
BOOKS          10/10/83   10/10/83   Requisition forms
copy           8/13/83    8/24/83    copyright
1040           7/1/83     9/16/83    Tax return
Drive 2 not ready or not in system
Drive 3 not ready or not in system

To use questions from flashing form press ENTER, or write New
questions, print Questions, view next Page or next Disk
```

Now you type (N) to select the option write New questions, and the program displays the Write/Revise Questions Screen so that you can write the questions for NEWFORM.



You write the questions. When you have finished, you press (BREAK). Now you are ready to set the print positions.

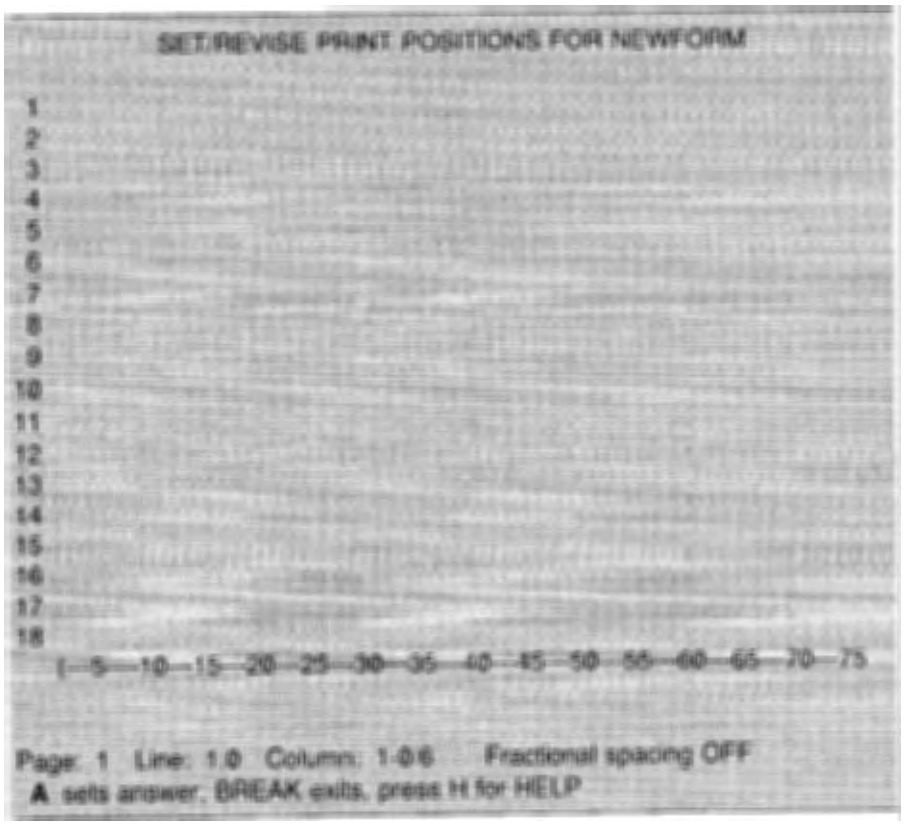
The program again displays the Directory of Forms, with a new menu at the bottom of the screen, in case you want to use the print positions from an existing form as the basis for your new form (page 176) or in case you want to print the printer positions from a different file. (See page 169.)



Now you type (N) to select the option set New printer positions, and the program prompts you to insert the preprinted form into the printer:

```
Please align paper to top of page 1 — press any key when done
```

After you have inserted the form and pressed a key, the program displays the Set/Revise Print Positions Screen.



You use this screen to set the print position for the answer to each question.

After you have set the print positions, you press (BREAK) to end the session. The program returns to the Main Menu.

IV CREATING A FORM

Summary

1. You write the questions for the form on the Write/Revise Questions Screen. When you have finished, the program stores them in a question file on the diskette.

2. You use the printer and Set/Revise Print Positions Screen to set the print positions for the form. When you have finished, the program stores them in a print file on the diskette.

The program stores both the question file and the print file under the form name, which appears in the Directory of Forms.

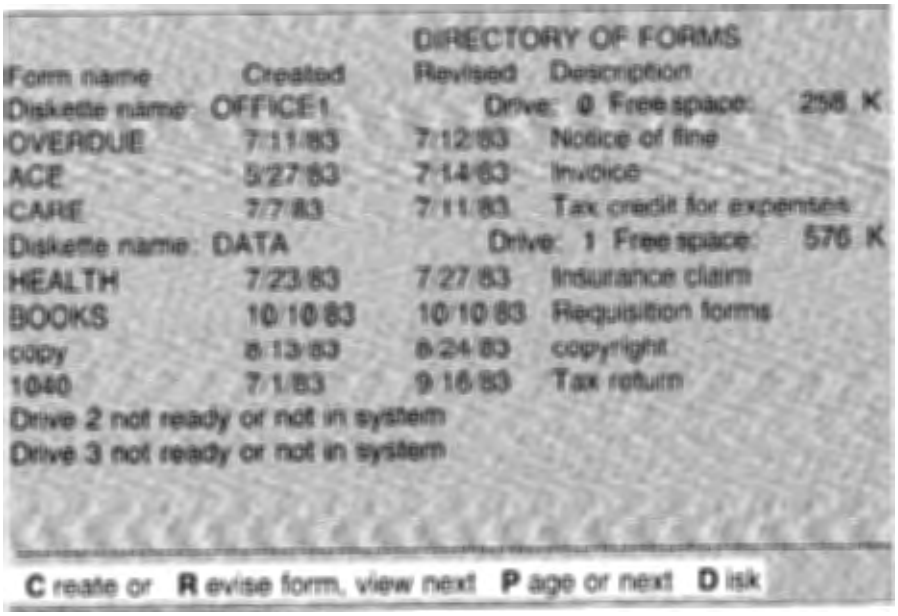
25. NAMING AND DESCRIBING A FORM

To create a form, you name it, describe it, and then set the print parameters. Here are the steps you use to name and describe a form.

To Name and Describe a Form

1. From the Main Menu, type (3) to select Create or Revise a Form.

The program displays the Directory of Forms with a new menu at the bottom:



Let's assume that you work in insurance and you are creating an insurance claim. To create the form on the diskette in drive 1, type (D) to move the flashing down to the drive 1 diskette (DATA in the example).

2. Type (C) to select Create form.

The program replaces the menu at the bottom with the following prompt and field. (The program positions the cursor at the beginning of the field.)

Name of form? _____

3. In the field, type a name for the new form and press (ENTER).

You can type any combination of up to 16 characters for the form name. If you type 16 characters, the program automatically enters your response. (Let's call the form NEWFORM.) Type the name in the field and press (ENTER).

Below the name prompt, the program displays the description prompt and field:

```
Name of form? NEWFORM_____________
Description of form? _____________________________
```

4. In the field, type a description for the new form and press (ENTER).

You can type any combination of up to 26 characters for the description. If you type 26 characters, the program automatically enters your response. (Let's describe it by its document number 201-3452.) You type the description in the field and press (ENTER).

```
Name of form? NEWFORM_____________
Description of form? 201-3452_____________________
```

Now the program displays the first of the four print parameter prompts so that you can set the print parameters.

26. SETTING THE PRINT PARAMETERS

After you have named and described the new form, the program displays four prompts and fields, one at a time. You answer each prompt and press (ENTER) to set the print parameters. Here are the four prompts shown at one time, with the default responses. (If you change one or more of these parameters, the parameter you set becomes the new default.)

```
Name of printer to be used? DW2_____
How many characters per inch (4-20)? 10
How many lines to the page (4-99)? 66
How wide is the page (4-168 characters)? 80_
```

You use the fields to set the overall specifications for the form: printer name (type), characters per inch (pitch), lines to the page (length), and width.

To Set the Print Parameters

When you press (ENTER) after describing the form, the program displays first this prompt and field:

```
Name of printer to be used? DW2_____
```

1. In the field, type the code that describes the printer you are using and press (ENTER).

This prompt enables you to name the printer you will use when you print the answers on the form. You may select one of the following printer codes:

DW2	for the Daisy Wheel II
DWP	for the Daisy Wheel 410
DMP2100	for the DMP 2100

To keep the default, just press (ENTER).

When you press (ENTER), the program displays the second prompt and field:

```
How many characters per inch (4-20)? 10
```

2. **In the field, type a number from 4 to 20 to set the number of characters per inch (pitch) and press ENTER.** (If you type two digits, the program automatically enters your response.)

   This prompt enables you to set the pitch. Pitch is the number of characters that print per inch. 10 characters per inch (often called *pica*) and 12 characters per inch (often called *elite*) are the most common. Here are the pitches available for each printer:

DW2	only 10 and 12
DWP410	only 10 and 12
DMP2100	5, 6, 8, 10, 12, 16

   To keep the default, just press ENTER.

   When you press ENTER, the program displays the third prompt and field:

   How many lines to the page (4-99)? 66

3. **In the field, type a number from 4 to 99 to set the number of lines for each page.** (If you type two digits, the program automatically enters your response.)

   This prompt enables you to set the length of each page of the form in lines. Printers print 6 single-spaced lines per inch. For example, standard 8½ x 11-inch paper is 66 lines long (6 × 11 = 66).

   To keep the default, just press ENTER.

   When you press ENTER, the program displays the fourth prompt and field:

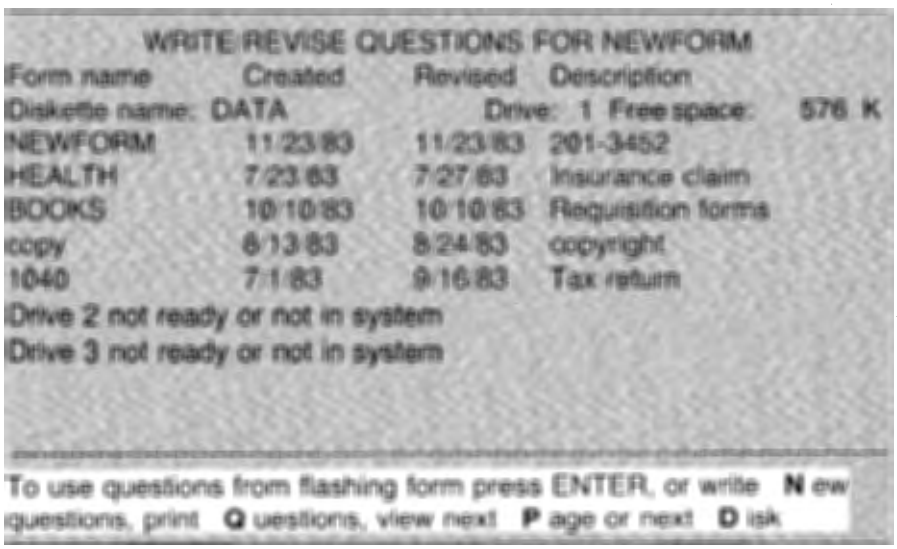
   How wide is the page (4-168 characters)? 80_

4. **In the field, type a number from 4 to 168 to set the width of the form.** (If you type three digits, the program automatically enters your response.)

   This prompt enables you to set, in characters, the width of the form. The number of characters depends on the pitch you have set in response to the characters per inch prompt. You convert inches to characters. For example, for a form on standard 8½ x 11-inch paper, you usually set a width of 8 inches. With 10 characters per inch, the width is then 80 characters (8 × 10). With 12 characters per inch, the width is 96 (8 × 12).

To keep the default, just press (ENTER).

After you have set the last print parameter and pressed (ENTER), the program displays the Directory of Forms (with the heading WRITE/REVISE QUESTIONS FOR --) and lists your new form as the first entry for the diskette you are storing the form on. The program now displays a new menu at the bottom of the Directory.

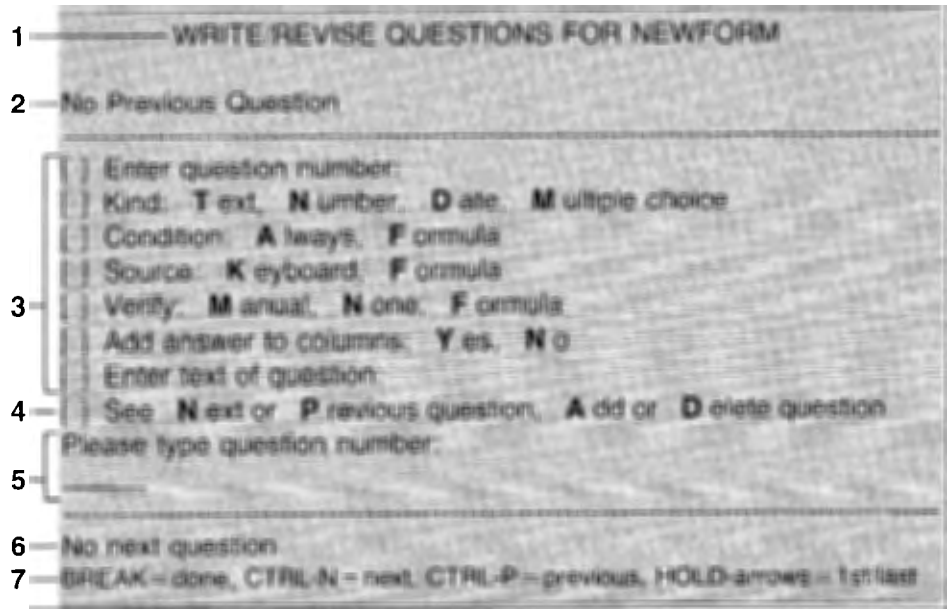


5. Type (N) to select the option write New questions.

Now the program displays the Write/Revise Questions Screen so that you can write the questions from the form.

27. WRITING FORM QUESTIONS

After you have named and described a form, set the print parameters, and typed (N) to select write New questions, the program displays the Write/Revise Questions Screen.



The Write/Revise Questions Screen

The Screen has seven areas: the heading, the previous-question area, the current-question area, the command line, the response area, the next-question area, and the prompt line.

1. Heading

In the heading, the program displays the name of the form you are working with. (NEWFORM in the preceding example.)

2. Previous-Question Area

Here the program displays the previous-question number and text. If there is no previous question, as in the preceding example, the program displays the message No previous question.

3. Current-Question Area

Here you write each question by typing a response for each of the seven "definers." (The definers are described below.)

4. Command Line

The last line, with brackets at the beginning (making it look like the eighth definer), you use to move to the next or previous question and to add or delete questions.

5. Response Area

The program uses the two lines below the command line to list prompts and the fields that you use to write or revise questions. In the example, the prompt is Please type question number: followed by a field where you type your response. The program also displays error messages here.

6. Next-Question Area

Here the program displays the next-question number and text. If there is no next question, as in the example, the program displays the message No next question.

7. Prompt Line

Here the program displays prompts.

The Seven Definers

To "write" a question, you type a response for each of the seven definers. You write questions one at a time. For example, when you first display the Write/Revise Questions Screen, the program moves the cursor within the first set of brackets (Enter question number). You type a number, and the program then moves the cursor down to the next set of brackets. You type a letter.

After you have responded to each of the definers, the program moves to the next question and displays the seven definers again. The

program again positions the cursor within the first set of brackets. Now you answer each definer for this question.

To Write a Question

As we have noted, to write a question, you respond to each of the seven definers. The program positions the cursor within the brackets for the first definer

[ ] Enter question number

and displays in the response area the following prompt:

Please type question number:

1. **In the field, type a number for the question and press (ENTER).**

   You can type any number from 0 to 9999. You can also type decimal numbers. The only limitation on the number is the 4-character length of the field. (For example, you can type 1.99, 10.1, or 9001.) If you type four numerals, or three numerals and a decimal point, the program automatically enters the response and you do not have to press (ENTER).

   Using decimal numbers Generally you use decimal numbers to add a question between two existing questions. (For example, to add questions between questions 3 and 4, you can number the added questions as 3.1, 3.2, and so on.) For more information about question numbers, see page 157.

The program moves the cursor down to the brackets for "Kind."

[ ] Kind: **T** ext, **N** umber, **D** ate, **M** ultiple choice

2. **Type (T), (N), (D), or (M) to define the** Kind **of question you are writing.**

   Text Type (T) to define the question as a text question. Now the program will accept any combination of up to 80 characters (letters, numbers, symbols, spaces) for the answer when you fill out a form on the Answer Questions Screen.

Also, define as "text" those questions that ask for numbers but do not require any calculation. (For example, if you want to ask for a Social Security number, define the question as text since the answer will not require calculation.)

Number Type (N) to define the question as a number question. The program will accept only number answers when you fill out the form on the Answer Questions Screen.

Define as "number" those questions whose answers require calculations. (For example, if your question is "Number of widgets sold?" or "Price of widget?" or "Total amount for widgets?" define the question as "Number.")

Date Type (D) to define the question as a date question. The program will accept only answers typed in the format MM/DD/YY (for month, day, year) when you fill out the form.

Multiple choice Type (M) to define the question as a multiple-choice question. Later, when you type the text of the question, you must type a set of parentheses for each answer alternative. Then, on the Answer Questions Screen, you select the correct answer by moving the cursor within the parentheses and pressing (ENTER). The program numbers each choice beginning with 1. If there are three choices, the answer can be either 1, 2, or 3. (You use these numbers when you create formulas.)

After you have defined the Kind of question, the program moves the cursor down to the brackets for Condition.

[ ] Condition: **A** lways, **F** ormula

3. Press (ENTER) to keep the default (A) for *always* or type (F) for *formula.*

Always The program will always ask the question on the Answer Questions Screen.

Formula The program will ask the question only under a specific condition. (For example, you can tell the program to ask the question only if the answer to question 12 was 3. If the answer was any number other than 3, the program will not ask the question.) When you type (F), the program displays in the response area the following prompt and field:

Enter formula to use as condition:

Type a formula that contains a relational operator. Here, a relational operator is simply a mathematical symbol that describes the relationship between numbers and answers. For example the symbol = between two numbers means that the first number is equal to the second. (Thus, #12=3 means that "the value of answer 12 is equal to three.") As another example, #12<#17 means that "the value of answer twelve is less than the value of answer seventeen."

- If the program evaluates the relationship created by the answers as *true*, it will ask the question on the Answer Questions Screen.
- If the program evaluates the relationship created by the answers as *false*, it will not ask the question on the Answer Questions Screen. (For a detailed discussion of formulas, see page 113.)

After you have defined Condition, the program moves the cursor down to the brackets for Source.

[ ] Source: **K** eyboard, **F** ormula

4. Press (ENTER) to keep the default (K) for *keyboard* or type (F) for *formula*.

Keyboard This requires the operator to type the answer from the keyboard. When the program displays the question on the Answer Questions Screen, it will wait for you to type an answer and to press (ENTER).

Formula This requires the program to calculate the answer. When you type (F), the program displays in the response area the following prompt and field:

Enter formula to use as source:

Type a formula (for example, #2+#11) and press (ENTER). Now, when you fill out the form, the program will use the formula to calculate the answer to this question. In the example given, the program will add the values of the answers to questions two and

eleven together to determine the answer to the current question. Unless you ask for verification (the next definer), the program will not display its answer in the current-question area of the Answer Questions Screen. (For a detailed discussion of formulas, see page 113.)

After you have defined Source, the program moves the cursor down to the brackets for Verify.

[ ] Verify: **M** anual, **N** one, **F** ormula

5. Press (ENTER) to keep the default (N) for *none*, type (M) for *manual*, or type (F) for *formula*.

None This specifies that the answer requires no verification. On the Answer Questions Screen, the program will accept any answer (as long as it meets the "Kind" definition: text, number, date, or multiple choice).

Manual This requests "manual" (operator) verification. Later, when you answer the question and press (ENTER), the Answer Questions Screen will display this prompt:

Is this answer correct (Y/N)?

You must then type (Y) for *yes* or (N) for *no*. (Normally, you select manual verification if you have defined the "source" of the question as a formula.)

Formula This requires the program to verify an answer by applying a formula. When you type (F), the program displays in the response area the following prompt and field:

Enter formula to use as verification:

Type a formula and press (ENTER). The formula must contain a relational operator such as = or <. When you answer the question, the program applies the formula to evaluate the answer.

- If the program evaluates the answer as true, it will accept the answer and go on to the next question.
- If the program evaluates the answer as false, it will flash this prompt at the bottom of the Answer Questions Screen:

********** Answer does not verify — please try again **********

If you receive this prompt while filling out a form, you must press (BREAK) and answer the question again. The program will not allow you to continue until it evaluates the answer as true. Select the formula option only if you want the user to calculate the answer; that is, when you have defined the "source" as "keyboard." (For a detailed discussion of formulas, see page 113.)

After you have defined Verify, the program moves the cursor down to the brackets for Columns.

[ ] Add answer to columns: **Y** es, **N** o

6. Press (ENTER) to keep the default (N) for *No* or type (Y) for *Yes*.

No The program does not add the answer to a column.

Yes If you have defined "kind" as "number," you can type (Y) to add the answer to one or more columns. The program displays this prompt and field:

Type up to 16 column no. (1-16) separated by spaces or commas:

Type one or more column numbers and press (ENTER). If you type more than one column number, separate the numbers with spaces or commas. For example:

1 2 3 4

---

or

1,2,3,4

You can only add numbers to a column. Each number you add to a column is added to the existing total. Therefore, you generally use a column to keep track of "running totals."

To retrieve a number from a column, you write a question and define its "source" as "formula." When you type the formula, you type (C) for *column* and then the number of the column whose total you want. For example, let's say you write two questions. The program adds each answer to column 2 (C2):

Question 13 is "Number of widgets?"
Question 21 is "Number of wackets?"

Now, you write question 40 and define the "source" of its answer as "formula." You type C2 as the formula. Thus, when you fill out the

form, the program adds the answer to question 13 to column 2. It also adds the answer to question 21 to column 2. Thus, column 2 contains the total of answers 13 and 21.

When the program answers question 40, it retrieves the total from column 2 as the answer.

You may not use the question number of an unasked question as an element in a formula. The "Care Form" example on your data disk demonstrates the use of columns to circumvent this limitation. Review questions 27-30 on this form for an illustration of this principle.

After you have defined Columns, the program moves the cursor down to the brackets for Enter text of question.

[ ] Enter text of question:

The program displays in the response area this prompt and field:

Enter question text on next line:

---

7. In the field, type the text of the question and press (ENTER).

You can type any combination of up to 80 characters (letters, numbers, symbols, and spaces). This is the text that the program displays on the Answer Questions Screen.

Typing multiple-choice questions Only one case is special when you type text. If you have typed (M) to define "kind" as multiple choice, then you must provide two or more choices. You type one set of parentheses for each choice (with a maximum of 9).

- You can type each choice within parentheses:

  Branch: (Main) (Dowager) (Norton)

- You can type the parentheses before or after each choice:

  Branch: ( )Main ( )Dowager ( )Norton
  Branch: Main( ) Dowager( ) Norton( )

- You can group the parentheses:

  Branch: ( ) ( ) ( ) Main Dowager Norton

To move to next question Enter text of question is the last definer.

After you type the question text and press (ENTER), the program positions the cursor within the brackets of the command line:

[ ] See **N**ext or **P**revious question, **A**dd or **D**elete question

8. Type (N) to write the Next question.

The program moves the current question up to the previous-question area and clears the current-question area so that you can write the next question.

If you type (P), the program moves back to the previous question and enables you to revise your responses for that question. Pressing (A) or (D) will enable you to add or delete a question at this point. (For more about adding and deleting questions, see page 174.)

Ending the Session

To end the session and to store the questions on the diskette, press (BREAK). The program displays the Directory of Forms with a new menu so that you can set the print positions for the form.

28. WORKING WITH FORMULAS

You can use a formula in one of two ways when writing (or "defining") questions. First, you can use a formula as the "source" of an answer. Here the program applies the formula to *calculate* an answer. Second, you can use a formula as a "condition" for the appearance of a question or to verify the correctness (or appropriateness) of an answer. Here the program applies a formula and *evaluates* an answer as true or false.

Formulas for Calculating Answers

A formula you use as the "source" of an answer requires the program to calculate. Formulas for calculating answers may include "constants," "arithmetic operators," "functions," and "parentheses." These formulas must *not* include "relational operators." (See the following discussion for definitions of these terms.)

Formulas for Evaluating Answers

A formula that you use for "condition" requires the program to control whether or not a particular question appears on the Answer Questions Screen. If the program applies the formula and finds that the answer does not conform to the condition you have set, then it will not ask that question.

When you use a formula to "verify" an answer, the program will check the correctness of the answer.

Formulas for evaluating answers may include constants, arithmetic operators, logical operators, functions, and parentheses. These formulas *must* include a relational operator.

Using Constants

To create a formula, you use constants, operators, and functions. A *constant* stands for a value, such as a number or a date. You use

operators to tell the program to perform an operation with one or more constants. You use a *function* to tell the program to perform a calculation.

Whether you type a formula for calculating or evaluating an answer, you can include these constants: # (for the answer to a question), numbers, C (for column), and D (for date).

for Answer to a Question

To use in a formula the answer to a question, type # and then the question number. The value of that answer is always a constant in the formula. For example, to use the answer to question 11, type:

#11

Numbers

You can use numbers in formulas. For example, in a question that calculates a sales tax of 8% on the amount from question 11, you type * (multiply):

#11*.08

C for Column

For any question, you use the "column" definer to add the answer to one or more of 16 columns. The definer appears on the Write/Revise Questions Screen:

[ ] Add answer to columns: **Y** es, **N** o

To get the current value from a column and to use it in a formula, you type (C) and then the number of the column you want. For example, to use the current value from column 5, type:

C5

D for Date

You can use a date in a formula to perform addition or subtraction using the date as a constant. You type a (D) and then type the date.

Use the format MM/DD/YY. For example, to use the date May 15, 1985, in a formula, type:

D05/15/85

Using Operators

You use *arithmetic* operators to tell the program how to calculate: addition, subtraction, multiplication, division. You use *relational* operators (such as =) to tell the program to evaluate the relationship between two or more constants or expressions. You use *logical* operators (such as AND) to tell the program to perform a logical test on two or more constants or expressions.

Arithmetic Operators

Use the standard arithmetic operators to add, subtract, multiply, and divide. You can use them in formulas for calculating or evaluating.

Type	To Perform	Example
+	Addition	#7+#4
-	Subtraction	#7-#4
*	Multiplication	#7*#4
/	Division	#7/#4

Relational Operators

You use relational operators (such as =) to tell the program to compare two answers. You can use these relational operators:

= > < >= <= <>

For example, in the following formula, the relational operator = compares the value of the answer from question 11 with the total in column 2.

#11 = C2

If the value of the answer from question 11 equals the total in column 2, then the program evaluates the relationship as "true." If the value of the answer from question 11 does *not* equal the total in column 2, then the program evaluates the relationship as "false."

You *must* type a relational operator in formulas you type for the condition or verification definitions.

You *must not* type a relational operator in formulas you type for the source definition.

= (Equals): A = B

If A equals B, the program evaluates the relationship as true. If A does not equal B, the program evaluates the relationship as false.

> (Greater Than): A > B

If A is greater than B, the program evaluates the relationship as true. If A is less than or equal to B, the program evaluates the relationship as false.

< (Less Than): A < B

If A is less than B, the program evaluates the relationship as true. If A is greater than or equal to B, the program evaluates the relationship as false.

>= (Greater Than or Equal To): A >= B

If A is greater than or equal to B, the program evaluates the relationship as true. If A is less than B, the program evaluates the relationship as false.

<= (Less Than or Equal To): A <= B

If A is less than or equal to B, the program evaluates the relationship as true. If A is greater than B, the program evaluates the relationship as false.

< > (Not Equal To): A < > B

If A is not equal to B, the program evaluates the relationship as true. If A is equal to B, the program evaluates the relationship as false.

Logical Operators

In formulas you use to add a condition to a question or to verify an answer, you can use the logical operators AND or OR. The program uses these operators to make a logical test between two or more relationships. For example, let's say you use a formula to create a condition for a question. You want the program to ask question 20 if the answer to question 5 is greater than zero AND if the answer to question 15 is less than 200. You use the logical operator AND to tell the program to make a logical comparison between question 5 and question 15.

(#5>0) AND (#15<200)

You must enclose in parentheses the expressions on either side of a logical operator; otherwise, the program will not evaluate the expressions properly.

AND: (#11=2) AND (#15=1)

If both conditions are true, the program evaluates the relationship as true. If either condition is false, the program evaluates the relationship as false.

OR: (#11=2) OR (#15=1)

If *either* condition is true, the program evaluates the relationship as true. If both conditions are false, the program evaluates the relationship as false.

NOT

You can use the logical function NOT to reverse the logical value of an argument. If a statement is true, NOT makes it false. If a state-

ment is false, NOT makes it true. For example NOT#5 = #7 means that the answer from question 5 should *not* equal the answer from question 7.

(#11 = 2) AND NOT (#15 = 1)

If #11 = 2 and #15 does not equal 1, then the program evaluates the relationship as true.

Using Functions

A function is a "shortcut" you use to perform a calculation. For example, rather than using several steps to convert a number to an integer (whole number), use the function INT.

The program provides three arithmetic functions for standard calculations: INT (convert to integer), RND (round off), and ABS (convert to absolute value).

In the following discussion, the term *argument* (abbreviated as "Arg") refers to a number value in the formula.

INT(Arg)

You use the *integer* function to tell the program to "return" the largest *whole* number that is not greater than the argument. Type the argument in parentheses. For example:

INT (334.1211) returns 334.
INT (334.912) returns 334.

RND(Arg1;Arg2)

Here you are using the *round* function to tell the program to round off argument 1 as specified in argument 2. Use RND to round either the integer (whole number) or the fractional portion of a number.

In parentheses after RND, type argument 1 (the number or constant you want to round), type a semi-colon, type argument 2 (the kind and

degree of rounding). For example, to round 334.54545 to the nearest 100, type 100 as argument 2:

RND(334.54545;100) returns 300.

To round 334.54545 to the nearest hundredth, type .00 as argument 2:

RND(334.54545;.00) returns 334.55.

ABS(Arg)

You use the *absolute* function to tell the program to "return" the absolute value of the argument. (The program returns either a positive or negative value as a positive value.) For example:

ABS(100) returns 100.
ABS(−100) returns 100.

Using Parentheses

In addition to the constants, operators, and functions, you can use parentheses to explain calculations and to clarify expressions. For example, you can "nest" operations by enclosing them within parentheses. In this way, you can separate operations for clarity and also direct the sequence in which the program will perform the operations, since the program works from inner sets of parentheses to outer sets. Here are three examples of expressions that use parentheses:

((#1 + #12 + #22)*.08)*C1

(0<#8) AND (#8<99999)

INT((#8 − #8.1*10000)/1000)

Negative numbers must be enclosed in parentheses.

Order of Operations

For logical and arithmetic expressions, the program works with formulas in the following order (or *priority*).

Logical Expressions

Unless the order is altered by parentheses, the program works with logical expressions from left to right. For example:

(#11 = 1) AND (#15 = 2) OR (#22 = 4)

In this formula, the program evaluates the relationship between the first two conditions (#11 = 1 AND #15 = 2), and then it evaluates *their* relationship to the next condition. Thus, if either condition before or after the OR is true, the relationship is true: as long as #11 = 1 AND #15 = 2 is evaluated as true, OR #22 = 4 is true and the expression is true.

In the following example,

(#11 = 1) OR (#15 = 2) AND (#22 = 4)

the program again evaluates the relationship between the first two conditions (#11 = 1 OR #15 = 2), and then it evaluates *their* relationship to the next condition. Thus, if both conditions before and after the AND are true, the relationship is true: as long as either #11 = 1 OR #15 = 2 is true, AND #22 = 4 is true, then the expression is true.

If you type parentheses within a logical expression, the program works with the statement within parentheses first and then continues from left to right. For example:

(#11 = 1) AND ((#15 = 2) OR (#22 = 4))

The program first works with the statement in parentheses. As long as #11 = 1 is true, AND either #15 = 2 OR #22 = 4 is true, then the relationship is true.

Arithmetic Expressions

The program works with arithmetic expressions in this order:

1. Functions
2. Parentheses
3. Multiplication and division
4. Addition and subtraction

Here is an example. The top numbers show the order.

```
   1        3      2           4
INT(#11)  *  (C2 + #15)  +  #21
```

1. The program first performs the INT function.

2. Then it performs the calculation within parentheses.

3. Next, it multiplies the integer by the sum from the parenthetical calculation.

4. Finally, it adds that product to the answer from question 21.

Here is an example with nested calculations.

```
       2              3          4     6      5       1
((C2 + 1000)     * 100)     / 10   -  #11  *  INT(#15)
```

1. The program first finds the integer value of question 15.

2. Then it performs the parenthetical calculations beginning with the innermost parentheses.

3. Next it works to the outer parentheses by multiplying the sum from the parenthetical calculation by 100.

4. Then it performs the division: it divides the result of the parenthetical calculations by 10.

5. It multiplies the answer to question 11 by the integer value of question 15.

6. Finally, it performs addition and subtraction: it subtracts the results to the right of the minus sign from the results to the left of the minus sign.

Using Dates

You can use dates in formulas for either evaluating or calculating.

As Constants

You can use the number of a question that contains a date.

#11

or you can type a date by typing (D) followed by the date. Use the format MM/DD/YY:

D07/04/85

In Formulas That Evaluate Answers

You can use dates in formulas you apply to condition a question or to verify an answer. Here is a formula used as the condition for question 20. The program will ask question 20 *only* if the answer to question 9 is May 1, 1985:

(#9) = (D05/01/85)

Here is a formula that verifies the answer to question 10. The answer must fall *within* the month of May 1985:

((#10) < (D06/01/85)) AND ((D04/30/85) < (#10))

Thus, the answer to question 10 must be less than June 1, 1985, and greater than April 30, 1985.

In Formulas That Calculate Answers

You can add days *to* a date or subtract days *from* a date. (You cannot add one date to another date or subtract one date from another date. You also cannot multiply or divide a date by a constant.) For example, if the answer to date question 3 is May 1, 1985, you can add 15 days to the date as the source of the answer to question number 14:

#3 + 15

or

D05/01/85 + 15

In either case, the program calculates the answer to question 14 as 05/16/85.

You use the same idea to subtract days from dates:

#3 – 15

or

D05/01/85-15

In either case, the program calculates the answer to question 14 as 04/16/85.

29. WORKING WITH THE SET/REVISE PRINT POSITIONS SCREEN

After you have written the questions for a new form, you press (BREAK). The program displays the Directory of Forms (in case you want to use the print positions from an existing form as the basis of your new form). At the bottom of the Directory, the program displays a new menu:

To use printer positions from flashing form press ENTER, or set
N ew ones, **S** end info to printer, view next **P** age or **D** isk

1. **Make sure that the name of the form you are working with is flashing, then type (N) to** set New **printer positions.**

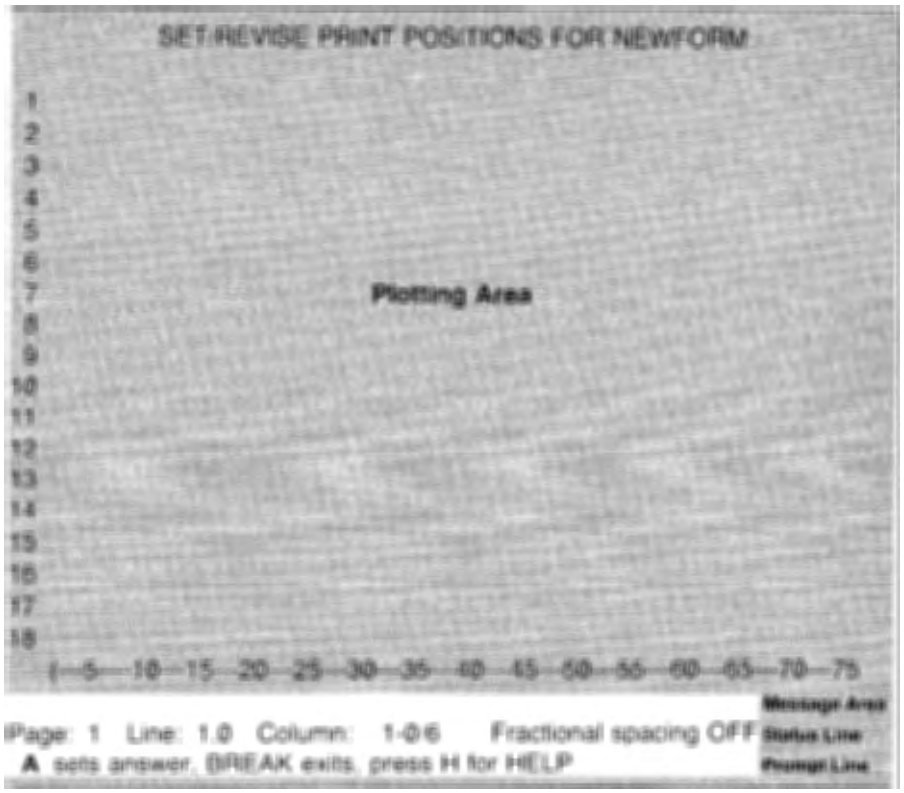
   The program clears the screen and displays this prompt:

   Please align paper to top of page 1 — press any key when done

2. **Insert a copy of the preprinted form into the printer.**

3. **Press any key.**

The program displays the Set/Revise Print Positions Screen. The Screen has four main areas: plotting area, message area, status line, and prompt area.



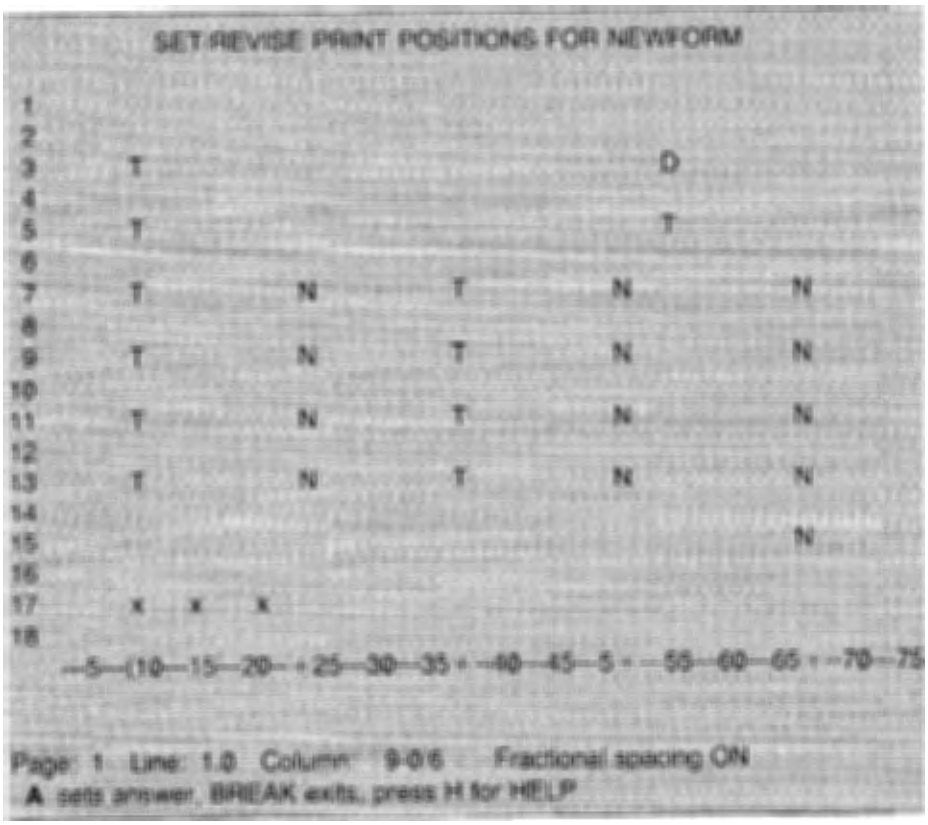
You use the Screen and the printer to set the print position for the answer to each question you have written.

When you display the Set/Revise Print Positions Screen, the program activates the printer. You use keys to position the printhead on the form. The Set/Revise Print Positions Screen becomes a "map" of the form in the printer. As you move the printhead to different positions on the form, the cursor on the screen shows these positions in lines and columns.

Plotting Area

The plotting area is defined by a horizontal axis at the bottom and a vertical axis at the left. As noted, the area is a "map" of the form in the printer. As you move the printhead, the cursor moves correspondingly through the plotting area. The cursor shows print positions in

lines and columns. You set the position for an answer by using the question number. (The program uses the question number to identify the "kind" of question for the position.) The program displays a symbol in the plotting area: T for text, N for number, D for date, and x for each multiple-choice answer. The Screen might look something like this:



The Horizontal Axis

The line of numbers and dashes (0 through 75) across the bottom of the Screen represents columns on the form. Each column is the width of *one* character. Thus in 10 pitch, a column is one tenth of an inch. In 12 pitch, a column is one twelfth of an inch. When you press (SPACE), you move the printhead and the cursor one column to the right (for example, from column 1 to column 2). You determine the width of the horizontal axis when you set the width parameter. You can set a maximum width of 168.

If you set tabs or a left margin, the program displays them in the horizontal axis:

(represents a left margin.
+ represents a tab.

The Vertical Axis

The numbers down the left represent single-spaced lines on the paper. There are six lines per inch. When you press ↓, you move the printhead and the cursor down one line (for example, from line 1 to line 2). You determine the length of the vertical axis when you set the length parameter. You can set a maximum page length of 99 lines.

Message Area

The Screen uses two lines beneath the horizontal axis to prompt you for information and to display fields for your input. When you first display the Screen, the message area is blank. As you set positions for different kinds of answers, the program uses this area to prompt for information. The program also displays error messages in this area.

Status Line

Beneath the message area, the Screen displays the status line:

Page: 1 Line: 1.0 Column: 1-0/6 Fractional spacing OFF

The status line indicators always tell you the current horizontal and vertical position of the printhead in relation to the form in the printer.

Page: Some forms are more than a page (such as a form where you must fill out the front and the back). For these forms, the page indicator tells you which page you are on. You can use a maximum of nine pages.

Line: The line indicator tells you the current vertical position in lines. If you use fractional spacing to move a form up or down in

increments of a half line, the line indicator displays the fractional spacing after the decimal. For example, if you are on line 11 and move down a half line, the line indicator displays 11.5. If you move down another half line, the line indicator displays 12, then 12.5, and so on.

Column: The column indicator tells you the current horizontal position in columns. If you use fractional spacing to move the printhead left or right one sixth of a column, the column indicator displays the fractional spacing after the dash. For example, if you are on column 11 (11-Ø/6) and move the printhead one sixth of a column to the right, the column indicator displays 11-1/6. If you move it another sixth of a column to the right, the column indicator displays 11-2/6, and so on, to 11-5/6. The next column would then be 12-Ø/6.

Prompt Line

Beneath the status line, the program displays prompts. When you first display the Screen, the program displays this prompt:

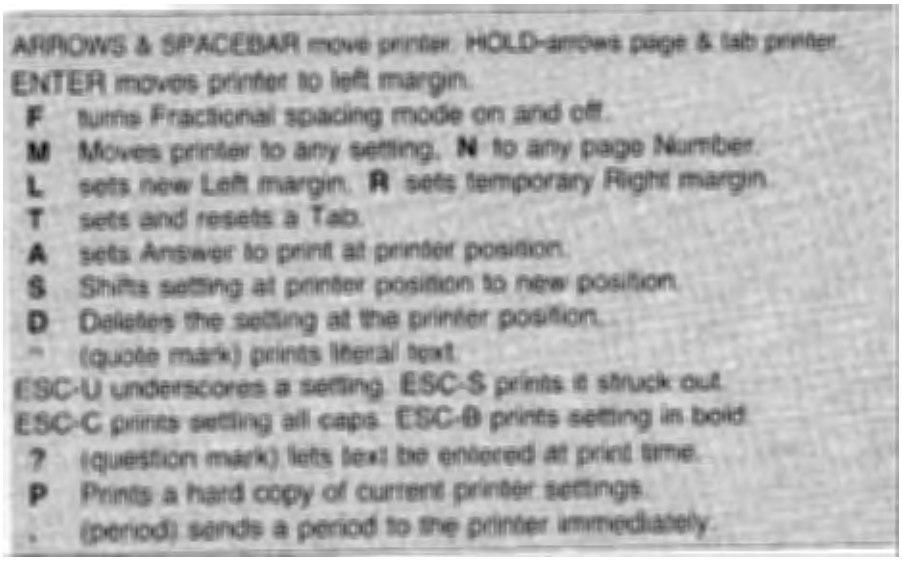
A sets answer, BREAK exits, press H for HELP

We will discuss the first two prompts when we talk about setting print positions (page 135). The last prompt, press H for HELP, will come in handy if you forget a command.

The Help Screen

Many commands are available to you while working on the Set/Revise Print Positions Screen. To look up a command, display the Help Screen.

To display the Help Screen, you type (H). To clear the Help Screen and to return to the Set/Revise Print Positions Screen, press any key.



SET/REVISE PRINT POSITIONS SCREEN

30. MOVING THE PRINTHEAD

To set an answer, margin, or tab, you must first move the printhead to the correct place on the form. (You do not actually move the printhead up or down, but rather the form. However, for the sake of simplicity, we will refer to "moving the printhead" in the following explanations.)

One Character or Line

You use the arrow keys and the spacebar to move the printhead one column or one line at a time. If you hold down (REPEAT) and press an arrow key, the printhead continues to move in the direction of the arrow. If you hold down (REPEAT) and press the spacebar, the printhead continues to move to the right. To summarize:

Press (SPACE) to move the printhead one column to the right.
Press (→) to move the printhead one column to the right.
Press (←) to move the printhead one column to the left.
Press (↑) to move the printhead up one line.
Press (↓) to move the printhead down one line.
Hold down (REPEAT) and press (→), (←), (↑), (↓), or (SPACE) to move the cursor continuously.

Fractional Spacing

On some forms, the questions are printed in unusual pitches and line spacing. To position answers on such forms, turn on fractional spacing to move the printhead vertically in half lines and horizontally in increments of one sixth of a column. The exception to this is when the pitch is set at 12 (for any printer) or at 6 (available only on the DMP 2100). For these two pitches only, the horizontal fractional spacing is in fifths.

To Turn Fractional Spacing On and Off

Type (F).

- If fractional spacing is off, (F) turns it on.
- If fractional spacing is on, (F) turns it off.

If you turn off fractional spacing while the printhead is "between" lines or "between" columns, the program returns the printhead to the previous whole line or column.

To Use Fractional Spacing

1. **Turn on fractional spacing. Type (F).**

2. **Use the following keys to move the printhead on the form:**

   Press (SPACE) to move the printhead 1/6 of a column to the right.
   Press (→) to move the printhead 1/6 of a column to the right.
   Press (←) to move the printhead 1/6 of a column to the left.
   Press (↑) to move the printhead up one half line.
   Press (↓) to move the printhead down one half line.

   If you hold down (REPEAT) and press an arrow key, the printhead continues to move in the direction of the arrow. If you hold down (REPEAT) and press the spacebar, the printhead continues to move to the right.

To set a print position between lines or columns, you must set it while fractional spacing is turned on. Even though the cursor appears to be "over" a print position, you will not be able to move the cursor to an existing print position set between whole spaces unless you are in the fractional spacing mode. Turn on fractional spacing and move the cursor until the print position information appears in the message area.

To Beginning or End of Line, Tab, Margin

- **Press (HOLD) and then press (→) to move the printhead to the next tab or to the end of the line.**

- **Press (HOLD) and then press (←) to move the printhead to the previous tab or to the beginning of the line.**

- **Press (ENTER) to move the printhead to the left margin.**

To Different Pages

If you are setting print positions for a form that is more than a page long, the program enables you to "page through" a form. You use (HOLD) (↓) and (HOLD) (↑) to move to the next or previous page and (N) to move to a particular page. (You can have up to nine pages.)

To Move to Next Page

Let's say that you have finished setting print positions on page 1 and you want to move to page 2.

1. **Press (HOLD) and then (↓).**

   The program ejects page 1 from the printer and displays this message:

   Please align paper to top of page 2 — press any key when done

2. **Insert page 2 into the printer and press any key.**

3. **Repeat the command (HOLD) (↓) to move forward from page to page.**

To Move to Previous Page

Let's say that you have set print positions on page 2 and you want to move back to page 1.

1. **Press (HOLD) and then (↑).**

   The program ejects page 2 from the printer and displays this message:

   Please align paper to top of page 1 — press any key when done

2. **Insert page 1 into the printer and press any key.**

3. **Repeat the command (HOLD) (↑) to move backward from page to page.**

To Move to a Specific Page Number

Let's say that you have set print positions on page 1 and you want to move to page 5.

1. **Type (N).**

   The program displays this prompt in the message area:

   Move printer to which page number (1-9)?

2. **Type the number of the page you want (for example, (5)).**

   The program ejects page 1 from the printer and displays this message:

   Please align paper to top of page 5 — press any key when done

3. **Insert page 5 into the printer and press any key.**

Setting a Left Margin and Tabs

Set a left margin and tabs before you set the positions for your form.

Why Set a Left Margin?

The Screen enables you to use the full width of the form as set in the print parameters. If you are using 10 characters per inch and a width of 80 columns, you can set positions from column 1 to column 80 (8 inches).

Column 1 is the left edge of the paper that the form is printed on. Most forms are printed with a margin, and answer positions usually begin at column 10 or so. Without a left margin, the program returns you to column 1 when you press (ENTER). If you set a left margin at column 10, then the program returns the cursor to column 10 when you press (ENTER). Thus, the left margin saves you the trouble of having to begin each line by moving from column 1 to column 10.

A left margin is only temporary. If you revise the print positions, you must reset the left margin.

Why Set Tabs?

Many forms, such as those in column formats, require answers that print at the same horizontal position on different lines. If you set tabs, you can quickly move the printhead to those positions. Tabs and a left margin make it easier to position the printhead on the form.

To Set a Left Margin

1. Move the printhead to where you want to set the left margin.

2. Type (L).

The program sets the left margin at the position and displays (in the horizontal axis. The program allows one left margin at a time. If you set a new left margin, the program automatically clears the previous one.

```
----5----10-(-15---20---25---30---35---40---45---50---55---60---65---70---75
            ↑—Left Margin
```

To Set and Clear Tabs

1. Move the printhead to where you want to set or clear a tab.

2. Type (T).

The program sets or clears a tab at the printhead position.

- If there is no tab at this position, the program sets a tab and displays + in the horizontal axis.
- If there is a tab at this position, the program clears the tab.

```
(---5----10---15---20---25---30---35-+-40---45-+-50---55---60---65---70---75
                                    ↑—Tabs—↑
```

31. SETTING PRINT POSITIONS

After you have set a left margin and tabs, you are ready to set the print position for the answers to the questions you have written. The steps vary slightly, depending on the kind of question (text, number, date, or multiple choice). However, the *basic* steps are always the same. First, let's review the basic steps, and then we'll review the steps for each kind of answer.

To Set a Print Position

1. **On the form, move the printhead to where you want to print the answer.**

2. **Type (.) to check the position.**

   When you type (.), the program prints a period on the form but does not move the printhead. By printing the period exactly where the answer will later be printed, the program lets you confirm that the printhead position is correct. If the period does not appear in the correct position, move the printhead and type (.) again. When you are satisfied that the printhead is in the correct position, continue with the next step.

   When setting print positions on a DMP 2100 printer, the printhead will not move when you press (→) or (←). When you type (.), the printhead moves to the position indicated by the cursor.

3. **Type (A) for *answer.***

   The program displays this prompt and field in the message area:

   Type number of answer to set in this position:
   _____

4. **Type the number of the question for which you are setting the answer position and press (ENTER).**

   If you type four characters, you do not need to press (ENTER).

   The program uses the message area to request additional information if the kind of question requires it.

When you position the cursor on a print position, the program displays in the message area the question number and the format. In this example, the format information shows you how the date will print:

Question no. 6: Date e.g. "5/1/85"

If you position the cursor on a right margin, the program displays Right margin in the message area.

5. When you have set all the print positions, press (BREAK).

The program returns to the Main Menu if you are setting the positions or to the Directory of Forms if you are revising the positions.

For a Text Answer

1. Move the printhead to where you want to print the answer and check the position by typing (.).

2. Type (A) for *answer.*

3. Respond to the number prompt by typing the question number.

The program displays T on the Set/Revise Print Positions Screen to mark the position of the text answer.

If Necessary, Set a Right Margin

On any line, you can set one or more right margins. You set a right margin to prevent one answer from printing over another answer on the same line. For example, let's say you set two text answers to print on the same line:

```
16                    T               T
17
18
   (---5----10---15---20---25---30---35---40---45---50---55---60---65---70---75
```

Set a right margin to prevent the first answer from printing over the second.

```
16                    T                    ) T
17
18
   (---5----10---15---20---25---30---35---40---45---50---55---60---65---70---75
```

During printout, if the first answer encounters the right margin, the program will wrap the text down to the next line. (This may, however, cause the answer to print over text on the next line.)

To Set a Right Margin

1. **Move the printhead one or two characters before the position for the next answer.**

2. **Type (R).**

   The program displays) in the plotting area.

For a Number Answer

1. **Move the printhead to where you want to print the answer and check the position by typing (.).**

2. **Type (A) for *answer.***

3. **Respond to the number prompt by typing the question number.**

   Because the question kind is "number," the program displays this prompt in the message area:

   Print number **L** eft, **R** ight, **A** ligned, **O** rdinal, **S** pelled?

4. **Type (L), (R), (A), (O), or (S) to select the print style for the answer.**

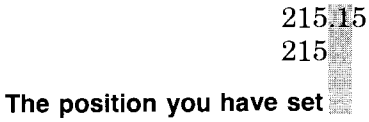
   - If you type (L) for *left*, the program will print the number from left to right.

     215.15

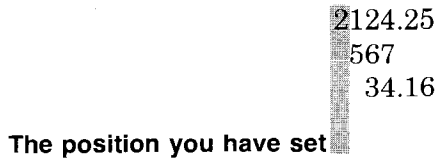
     The position you have set

- If you type (R) for *right*, the program will print the number from right to left. (The number shifts to the left each time you type another character.)

- If you type (A) for *aligned*, the program will align the number at the decimal. If the number does not contain a decimal, it will print the number from right to left.



- For (L)eft, (R)ight, and (A)ligned, the program sets the position according to the format you set (explained in step 6). For example, if the format is ####.## and the style is (L)eft, the numbers would appear as shown here:



- If you type (O) for *ordinal*, the program will print the number as an ordinal by adding the suffix "st," "nd," "rd," or "th:"

21st, 22nd, 23rd, 24th

- If you type (S) for *spelled*, the program will spell numbers:

one
two hundred and twenty one
one thousand two hundred and twenty one
one thousand two hundred and twenty one and fifty hundredths

- The program then displays this prompt in the message area:

Should zero values be printed out (Y/N)?

5. Type (Y) for *yes* or (N) for *no*.

- If you type (Y), and the value of the answer is zero, 0 will appear on the form.
- If you type (N), and the value of the answer is zero, the program prints nothing.

Unless you have selected the "spelled" option, the program displays this prompt in the message area:

Type format of numerical answer (e.g. -$###.##):

6. Type the code for the numerical format you want and press (ENTER).

Use the following codes to indicate the format. (These are the same codes you use in BASIC programming with PRINT USING.)

#	to represent each numeral
.	to specify the position of the decimal
,	to separate thousands in the answer
$	to print a dollar sign as part of the answer
*	to fill blank spaces with asterisks
-	to print a minus for negative numbers
( )	to print a negative answer in parentheses

For example,

To print	In the format	Type
1,254.25	1,254.25	#,###.##
1,254.25	1,254	#,###
1,254.25	$1,254.25	$#,###.##
1,254.25	1254.25	####.##
1,254.25	$**1,254.25	$***,***.**
-1,254.25	-1,254.25	-#,###.##
-1,254.25	(1,254.25)	(#,###.##)
1,254.25	1,254.2500	#,###.####

You must make sure that the format is large enough to print the answer. For example, if you set the format as ##.##, but the answer is 123.95, you will receive an overflow error message: for example, >>.>>.

When setting an ordinal number, you must set the format as an integer format (##), or the number will not print as an ordinal. In other words, do not set a decimal point for an ordinal number.

In the plotting area, the program displays N to indicate the position you set for the numerical answer.

For a Date Answer

You can print all or "part" of a date using ten different formats.

1. **Move the printhead to where you want to print the answer and check the position by typing (.).**

2. **Type (A) for *answer*.**

3. **Respond to the number prompt by typing the question number.**

   If the question kind is "date," the program displays this prompt and field in the message area:

   Type format of date answer (0-9):
   0

   The program lists these formats in the prompt area:

   0 = 5/1/85 1 = 05/01/85 2 = 05 3 = 01 4 = 85 5 = May 1st, 1985
   6 = 1st day 7 = 5th month 8 = Jan. 1, 1985 9 = 1 May 1985

4. **Type (0), (1), (2), (3), (4), (5), (6), (7), (8), or (9) to select the print format for the date.**

To print	In the format	Type
05/01/85	5/1/85	(0)
05/01/85	05/01/85	(1)
05/01/85	05	(2)
05/01/85	01	(3)
05/01/85	85	(4)
05/01/85	May 1st, 1985	(5)
05/01/85	1st day	(6)
05/01/85	5th month	(7)
01/01/85	Jan. 1, 1985	(8)
05/01/85	1 May 1985	(9)

In the plotting area, the program displays D to indicate the position you have set for the date answer.

An example

A lease may require a date in this format:

On this the X_____, of the Y_____, 19Z___.

The question that asks for the date is question 1.

1. Position question 1 to print at X and choose format 6.

2. Position question 1 to print at Y and choose format 7.

3. Position question 1 to print at Z and choose format 4.

The program prints the date:

On this the 1st day, of the 5th month, 19 85 .

For a Multiple-Choice Answer

On most forms, a multiple-choice question requires you to check a box or place an "X" within a set of parentheses. For example,

Type of loan: ( )FHA ( )HUD ( )NCA ( )TAP

In the example, if your answer is choice 1, then you would want the program to print X in the box for FHA. If your answer is choice 2, then you would want the program to print X in the box for HUD, and so on. Thus, when you set the position for an answer to a multiple-choice question, you must set a position for each possible answer (up to a maximum of 9).

1. Move the printhead to where you want to print the first possible answer, and check the position by typing .

2. Type A for *answer*.

3. Respond to the number prompt by typing the question number.

Because this is a multiple-choice question, the program displays this prompt line for each possible answer. (Naturally the number will change each time.)

Position the printer to choice number 1, press **A** when done

4. **For each choice, move the printhead to where you want the answer text (such as X) to print and type (A).**

   The program displays this prompt and field in the message area:

   Type text to be printed at this selection: _____

5. **Type the text you want to print for this choice.**

   The program continues to prompt you until you have positioned text to print for each possible answer to the question.

In the plotting area, the program displays x at each place where you have set text to print. If you set the question number at one position and then move the printhead to print the first choice at a different position, the program prints M where you set the question number. If you set the question number at the first choice, the program overwrites M with x at that point.

An example

A form may ask a multiple-choice question such as this:

Type of loan: ( )FHA ( )HUD ( )NCA ( )TAP

Let's say that you wrote question 5 to ask this question.

1. **Move the printhead to the first choice you wrote: ( )FHA. Type (A) and then type (5) for question 5.**

2. **The program now asks you to position each of the possible answers and to select the text to print for each answer.**

3. **Type (A) and type (X) to print X in ( )FHA when that is the answer.**

   Move the printhead to ( )HUD, type (A), type (X), and press (ENTER) to print X in ( )HUD when that is the answer.

Move the printhead to ( )NCA, type (A), type (X), and press (ENTER) to print X in ( )NCA when that is the answer.

Move the printhead to ( )TAP, type (A), type (X), and press (ENTER) to print X in ( )TAP when that is the answer.

To Set Answers in the Same Position

You can set the answers to each choice at the same position. For example, if the form says M/F □ for male or female, type (A) for the first choice and (M) for the text to be printed. Then, type (A) again in the same position for the second choice and type (F) for the text to be printed.

For Literal Text

You can instruct the program to position and print on a form text other than answers. This text is called *literal text*. For example, let's say you have created a form for the XYZ Company, and you want the text "XYZ Company" to print at the same place on every form. There is no need to write a question to print this text. You use the Literal Text command when you set the print positions.

To Type Literal Text

1. **Move the printhead to the place where you want to print the text.**

2. **Type (").**

   The program displays this prompt and field:

Type text to be printed at this position:

---

3. **In the field, type the text and press (ENTER).**

The program displays " in the plotting area. When you position the cursor over the ", the program displays the literal text in the message area.

Every time the program prints an answer file for that form, it will print the text.

Requesting Keyboard Input

You can instruct the program to pause and request keyboard input from the operator while it is printing an answer file on a form.

To Request Keyboard Input

1. **Move the printhead to where you want the program to pause and to request input.**

2. **Type ?.**

   The program displays this prompt and field:

Type message to be displayed during pause:

---

3. **In the field, type a message and press ENTER.**

   Your message should tell the operator what to type from the keyboard. For example,

   Type your personal ID number and press ENTER.

When the program prints the form, it will pause when it reaches the position where you have entered the ? and display the message on the screen. The operator types into the field. When the operator presses ENTER, the program prints the input and resumes printing.

32. WORKING WITH PRINT POSITIONS

You can print a hard copy of the print positions at any time the Set/Revise Print Positions Screen is displayed. When you print the positions, the program lists the following information for each question.

Page number
Line number
Column number
Question number
Kind of question
Formatting instructions

For example, your list of print settings for the OVERDUE form might look similar to this:

```
Page 1, Line 27, Column 16-0/6, #   1: Date, e.g., "Jan. 1, 1985"
Page 1, Line 30, Column 20-0/6, #   4: Text
Page 1, Line 30, Column 52-0/6, Right margin
Page 1, Line 30, Column 60-0/6, #   3: Text
Page 1, Line 32, Column 18-0/6, #  10: Text
Page 1, Line 34, Column 18-0/6, #   9: Text
Page 1, Line 34, Column 52-0/6, Right margin
Page 1, Line 34, Column 60-0/6, #   8: Text
Page 1, Line 36, Column 20-0/6, #   6: Date, e.g., "5/1/85"
Page 1, Line 38, Column 23-0/6, #   7: Left number, 0 = Y, "##"
Page 1, Line 38, Column 67-0/6, #  11: Aligned number, 0 = Y,
  "####.##"
Page 1, Line 40, Column 20-0/6, #   2: Multiple choice
```

To Print a Hard Copy of the Print Positions

1. **While the Set/Revise Print Positions Screen is displayed, type (P).**

   The program displays this prompt in the prompt area:

   Please align paper to top of page 1 — press any key when done

2. **Insert a blank sheet of paper into the printer and press any key.**

   The program prints the print positions as a list, one on each line. If there is more than one page, the program displays the following prompt:

   Please align paper to top of page 2 — press any key when done

   Insert another sheet of paper and press any key. When the program has finished printing the list of print positions, it clears the screen and displays the following prompt:

   Please align paper to top of page 1 — press any key when done

3. **Re-insert the form into the printer and press any key, or press (BREAK).**

   - If you want to set more print positions or revise the current ones, insert the form into the printer and press any key. The Set/Revise Print Positions Screen is displayed again.
   - To return to the Main Menu at this point, press (BREAK).

Using Print Codes

The program provides four print codes. You can use these to request special print actions in an answer, in literal text, or during keyboard input. You can print text

1. Underscored
2. Bold
3. Struck through
4. All capitals

To Use Print Codes in Answers

To request a special print action, you must have already set the position for the answer.

1. **Move the cursor to the answer position.**

2. Type the code(s) for the print action you want.

Press (ESC) and type (U) to print the answer underscored.
Press (ESC) and type (B) to print the answer bold.
Press (ESC) and type (S) to print the answer struck through.
Press (ESC) and type (C) to print the answer in uppercase.

You can use any number of codes for a single answer.

When you press (ESC), the program displays the prompt SPECIAL in the bottom right-hand corner of the screen. You then type the letter for the code you want. In the message area, the program displays the print action(s) you have selected. For example,

```
Question no   1: Date, e.g. "May 1st, 1985"
Print: Bold
```

To Use Print Codes in Literal Text or Keyboard Input

You use print codes to type text underscored, boldfaced, or struck through when you type literal text (you have set " in the plotting area), or when you have set (?) in order to type keyboard input. You use the print codes as toggles: the first code turns on the special print action and the second code turns it off:

- Press (ESC) and type (U) to turn on underscore. Type the code a second time to turn off the action.
- Press (ESC) and type (B) to turn on bold. Type the code a second time to turn off the action.
- Press (ESC) and type (S) to turn on strike-through. Type the code a second time to turn off the action.

The all-capitals code is not available for typing within literal text or keyboard input unless the position has already been set.

To Use Special Characters in Literal Text or Keyboard Input

When you use (") to type literal text, the Set/Revise Printer Positions Screen displays a field. In the field, you can type codes for ten special characters. You also use these codes when responding to the keyboard input prompt.

To print in literal text	Press	And type	This code appears on the screen.
¢	ESC	0	0
©	ESC	1	1
½	ESC	2	2
¾	ESC	3	3
¼	ESC	4	4
®	ESC	5	5
™	ESC	6	6
†	ESC	7	7
/	ESC	8	8
°	ESC	9	9

Ending the Session

After you have set the print positions for each answer, you exit the screen and return to the Main Menu. The program saves the print positions on the diskette.

Before you end the session, you can doublecheck the settings and revise them. (See *Revising Print Positions,* 176.)

Press BREAK to end the session.

33. PLANNING A FORM

Planning is the most important part of creating a form. When you write the questions for a form, you do more than simply transfer the questions from the preprinted form to the screen. Thinking through the purpose of the form and how it is used before you write the questions helps you to anticipate formulas and to avoid false starts.

Essentially, to plan a form, you make a comprehensive list of answers you will need and then decide on the sequence of questions. This sequence may be substantially different from the sequence on the preprinted form.

Two Criteria

Two criteria govern your planning decisions. These are *user convenience* and the *need for calculation*.

User Convenience

As you plan a form, think about the person who will use your questions to fill it in (even if you are that person). Here are some suggestions to help you achieve user convenience.

1. Sequence the questions to correspond with the sequence of *source materials* that the user must refer to, rather than with the current sequence of appearance on the preprinted form.

2. Group the questions in logical "clusters," such as address questions, financial questions, item questions, etc.

3. Sequence the clusters in a logical way.

4. Write the text of each question in the active voice.

   Avoid: The widgets were purchased by whom?
   Use: Who purchased the widgets?

5. Use simple words.

Avoid:	Was the viability of the electronic device negatively impacted by transport personnel?
Use:	Did the shipper damage the computer?

Need for Calculation

Sequence the questions so that you will have the answers you need for later calculations, verifications, or for testing conditions. For example, make sure that the "Total" comes after "Number of widgets" and "Price per widget?"

Gather the Information

First you must be sure you have all the relevant data. This includes, of course, the form itself. Equally important, however, make sure you have gathered the source materials that the user will need when he or she fills in the form. When you sequence the questions, you will help the user by following the sequence of the source materials (if the sequence is in a logical order).

An Example

In order to clearly demonstrate the planning process, let's use a simple form as an example. Let's use an overdue notice that you might get from a branch of the Altoona Public Library. Let's name this form OVERDUE.

Where does the information that the circulation clerk types onto the OVERDUE form come from? In this case, it comes from a Daily Overdue Report. Each day, the main branch issues this hand-written report:

Daily Overdue Report

Date _____ Branch _____

Card # _____ Name _____

Ex. Date _____ Type _____ Years as Member _____

Due Date _____

Days Past Due _____

LCC # _____

Author _____

Title _____

After you have created the OVERDUE form, the circulation clerk will fill it out by typing the information from the Daily Overdue Report onto the screen. Therefore, to plan the questions for user convenience, you can use the description and sequence of information as it appears on the Daily Overdue Report.

List the Questions

Once you have gathered all the data, make a list of the questions you need for the form. For example, you will need to ask for the date, the name of the borrower, the card number, and so forth. You will use this list to write the questions for the form. On the next page, you see a copy of the preprinted form that you will later fill out using the program.

List the Question for Each Answer

Date
Borrower
Card number
Title
Author
Library of Congress catalog number
Due date
Days past due
Total due
Branch

Altoona Public Library

Overdue Notice

Date _____

Borrower _____ Card # _____

Title _____

Author _____ LCC # _____

Due Date _____

Days Past Due _____ Total Due $_____

Branch ☐ Main Street ☐ Dowager Square ☐ Norton Avenue

Please return to avoid additional fines.

Edward Liberhaus
Circulation Director

Some answers may appear more than once. Remember that you can print the same answer in more than one place. For example, if the form asks for today's date in two different places, you only need one answer. Later, when you set the print positions, you can tell the program to print that answer in each place it is needed.

Group the Questions Into Categories

For user convenience, group related questions, such as name, address, library, borrower. By scanning the list of questions from the Daily Overdue Report and the Overdue Notice (the preprinted form), you can extract these four categories:

1. Borrower questions
2. Book questions
3. Fine questions
4. Library questions

You then group the questions together into these categories:

Borrower Questions

Borrower's name
Card number

Book Questions

Title
Author
Library of Congress catalog number
Due date
Days past due

Fine Questions

Fine rate
Total due

Library Questions

Date
Branch

Sequence the Categories and the Questions

Now sequence the categories in the most logical and convenient order. Then, within each category, sequence the questions in the most logical and convenient order. For example:

Library Questions

Date
Branch

Borrower Questions

Card number
Borrower's name

Book Questions

Due date
Days past due

Library of Congress catalog number
Author
Title

Fine Questions

Fine rate
Total due

Plan the Formulas

Next, work out the formulas you need to calculate, condition, and verify. You may find that you need to add questions to provide constants for your formulas.

Plan Formulas for Calculation

List all the calculations that the program must make and plan the formula for each.

Plan Formulas for Condition

You may have some answers that are required only under certain conditions. Plan the formulas to create the condition for each of those questions.

Plan Formulas for Verification

For numerical answers, you may want to ensure correct input by using a formula for verifying the answer.

Add Questions If Needed

As you plan the formulas, you may find that you need an additional question to provide a constant for calculations, for a condition, or for verification.

Add Questions for Calculations

You may find that an answer you need for a formula is not provided

by a question from the form. Add a question to provide the answer you need. For example, you may need to know the amount of the sales tax for certain states and no question asks for it. Add the question to obtain the constant for later calculations. In our OVERDUE example, in order to know the "daily" fine rate, we need to know whether the borrower is a student or an adult. Students pay $.75 each day and adults pay $1.50. To provide this constant, add another question to the list: "Card type: (Student) or (Adult)?"

Add Questions for Condition

For example, if you are creating an invoice, you may need the answer to "Number of Items Purchased?" to use as a condition for "What is item 1?," "What is item 2?" and so forth. Then, when you fill out the form, if you answer 2 for the number of items purchased, the program will not ask "What is item 3?"

If a group of answers are needed only if the buyer pays the shipping charges, then add a question that asks "Must the buyer pay shipping charges?" Then for each shipping charge question, use that answer as the condition.

Add Questions for Printing

A form may require an answer that you obtain by different calculations under different conditions. You can write several questions for this one answer, each question to be asked under an exclusive condition.

Each of these questions will calculate the answer under different conditions, but you will set only one print position for the answer. You must add another question whose sole purpose is to retrieve the answer and print it in the correct position.

In our OVERDUE example, you use one question to enable the program to calculate the total fine if the borrower is a student. You use another question to enable the program to calculate the total fine if the borrower is an adult.

To retrieve the total from either of these questions in order to print it as "Total Due" on the form, you must add an additional question.

For Example

Returning to our OVERDUE form, we need to calculate the total fine. Since one rate is used for students and one for adults, we must write four questions for this answer:

1. One question that finds out whether the borrower is a student or an adult.

2. One question that computes the answer for students.

3. One question that computes the answer for adults.

4. One question that retrieves either answer for the printout.

We end up with a series of condition and calculation questions.

The Condition Question

To determine which fine rate to charge, you create a condition question:

Kind:	Multiple Choice
Source:	Keyboard
Text of Question:	Type of card: (Student) (Adult)

The Calculation Questions

The calculation questions use the "Type of card" question as the condition. One calculation question calculates the total for students, and the other calculation question calculates the total for adults:

Question number:	
Kind:	Number
Condition:	Formula: If student
Source:	Formula: .75 * answer to days-past-due question.
Add to columns:	Add answer to column 1
Text of question:	Fine if student

Question number:	
Kind:	Number
Condition:	Formula: If adult
Source:	Formula: 1.50 * answer to days-past-due question.

Add to columns:	Add answer to column 1
Text of question:	Fine if adult

The Print Question

This question takes the answer from either one of the calculations in order to print it in one place on the form.

Question number:	
Kind:	Number
Condition:	Always
Source:	Formula: C1
Verify:	Manual
Text of question:	Total Fine

We end up with this list of questions. (The italic questions contain formulas or provide answers that are used in formulas. The answers to the questions in parentheses do not print on the form.)

Date	
Branch	
Card number	
Borrower's name	
(Card type)	Used as a condition for student or adult.
Due date	
Days past due	Provides a constant to calculate the total.
LC number	
Author	
Title	
(Total if student)	.75 * days past due. Put answer in column 1.
(Total if adult)	1.50 * days past due. Put answer in column 1.
Total due	Retrieves answer from column 1.

Number the Questions

The last step is to number the questions. Do not number the questions until you have made a complete list, including the formula questions, and until you have sequenced the questions.

Using Decimal Numbers

When numbering, keep in mind two cases when you can use decimal numbers:

1. When you have sets of questions. For example, if you have an invoice that repeats a set of questions (such as description, number of items, price per item, total cost), number each set with the same whole number and each member of the set as a decimal:

   8.1 Description of item 1
   8.2 Number of items
   8.3 Price per item
   8.4 Total cost
   9.1 Description of item 2
   9.2 Number of items
   9.3 Price per item
   9.4 Total cost

2. When you use a formula as source and request no verification. (The question does not appear in the current-question area in the Answer Questions Screen.) For example, in the OVERDUE form, the questions that calculate the fine for a student and the fine for an adult do not appear in the current-question area in the Answer Questions Screen. In terms of what the user sees, they come "between" two questions. Number them as decimal questions between two whole-number questions.

When you have listed and sequenced the questions and added the formula questions, you would number the OVERDUE questions like this:

1. Date
2. Branch
3. Card number
4. Borrower's name
5. Card type
6. Due date
7. Days past due: Verify, (#7<=90) AND (1<=#7)
8. Library of Congress catalog number
9. Author
10. Title
10.1 Total if #5=1: #7*.75: add to column 1
10.2 Total if #5=2: #7*1.5: add to column 1
11. Total due: source is C1

PRACTICE: CREATING FORMS

Here are three exercises you can use to practice creating forms. You will "re-create" OVERDUE, ACE, and CARE (the three forms stored on the *Formation* program diskette). As you create these forms, use the existing forms for comparison. For example, create the OVERDUE form and print your questions and print positions. Then print the questions and print positions for the original OVERDUE form and compare them to yours.

Review: Planning a Form

1. **Gather the information:** the form and source materials used to fill out the form.

2. **List the questions.** Go through the form and make a list of questions you need to provide the required answers.

3. **Group the questions.** Scan your list and extract major categories. Group the questions in the categories.

4. **Order the questions.** Refer to the source material. Then, for user convenience and calculation, order the categories and order the questions in each category.

5. **Plan the formulas.** Plan the formulas you need for calculation, condition, and verification. If necessary, add questions to provide answers needed by other questions as conditions or to provide constants.

6. **Number the questions.** When you have completed the list, number the questions. Use decimal numbers for sets of questions or for questions that do not appear on the Answer Questions screen.

IV CREATING A FORM

Exercise 1

Follow these steps.

1. Create the Overdue Notice. Name it LIBRARY.

   See Form 1 for the form.
   See Worksheet A for the source material.

2. Test your created form by filling it in. (You can use the information from Worksheet A, on page 67.)

3. If you have difficulty, print your questions and print positions. Then print the questions and print positions from the OVERDUE form and compare them with yours.

Exercise 2

Follow these steps.

1. Create the ACE invoice. Name it NOVELTY.

   See Form 2 for the form.
   See Worksheet B for the source material.

2. Test your created form by filling it out. (You can use the information from Worksheet C, on page 69.)

3. If you have difficulty, print your questions and print positions. Then print the questions and print positions from the ACE form and compare them with yours.

Exercise 3

Follow these steps.

1. Create the 2441 Form. Name it CHILD.

   See Form 3 for the form.
   See Worksheet C for the source material.

2. Test your created form by filling it out. (You can use the information from Worksheet D, on page 70.)

3. If you have difficulty, print your questions and print positions. Then print the questions and print positions from the CARE form and compare them with yours.

Worksheet A

Daily Overdue Report

Date _____ Branch _____

Card # _____ Name _____

Ex. Date _____ Type _____ Years as Member _____

Due Date _____

Days Past Due _____

LCC # _____

Author _____

Title _____

Worksheet B

Sales Order Form: **Invoice**_____

Salesperson _____

Sold to:

_____

_____

_____

_____

Ship to:

_____

_____

_____

_____

Merchandise

Quantity	Description	Unit Cost
		$

Sales Tax _____

Shipping Instructions:

_____

_____

_____

_____

Worksheet C

Worksheet for IRS 2441
Credit for Child and Dependent Care Expenses

Name _____ SS# _____

Number of dependents claimed _____

1st Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

2nd Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

3rd Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

4th Dependent: Name _____ Date of Birth _____
Relationship _____ How long in 81 Months __ Days __

Number of persons or organizations employed _____

1st Care provider: Name _____ SS# _____
Relationship _____
Care provided FROM _____ TO _____ Amount paid _____

2nd Care provider: Name _____ SS# _____
Relationship _____
Care provided FROM _____ TO _____ Amount paid _____

3rd Care provider: Name _____ SS# _____
Relationship _____
Care provided FROM _____ TO _____ Amount paid _____

[ ] Married [ ] Unmarried
Filer's income _____ Spouse's income _____
Amount paid in 1981 _____ Amount paid for 198Ø in 1981 _____

Answers From Filer's 1Ø4Ø

Tax from Line 37 _____ Add lines 38, 39, 41, 42, & 43. TOTAL: _____

Did filer pay $5Ø or more to an individual during a calendar quarter?
[ ] Yes [ ] No
Were the service performed in your home?
[ ] Yes [ ] No
Have you filed wage returns for services in your home?
[ ] Yes [ ] No
What is filer's employee identification number? _____

V. REVISING A FORM

34. OVERVIEW

You use the Revise Screens to revise (or print) questions and print positions. The Revise Screens are similar to the screens you use to create a form; but they offer different menus, and these enable you to perform new tasks. To revise a form, you must first flash the form you want from the Directory of Forms. You will then be able to change the form's name, description, or print parameters.

To Select a Form and Display the Revise Screens

1. **From the Main Menu, type (3) to select** Create or Revise a Form.

   The program displays the Directory of Forms. At the bottom of the directory, you see this menu:

   C reate or **R** evise form, view next **P** age or next **D** isk

2. **Flash the form you want to revise or print and type (R) to select** Revise form.

   The program displays this prompt and gives the name of the form in the field. Let's use the name NEWFORM for this example:

   Name of form NEWFORM_____

3. **Keep the name or revise it.**

   Press (ENTER) to keep the name or edit the field with a new name, and then press (ENTER). Now the program displays this prompt and gives the description of the form in the field. Let's use the code number 201-3452 for this example:

   Description of Form 201-3452_____

4. **Keep the description or revise it.**

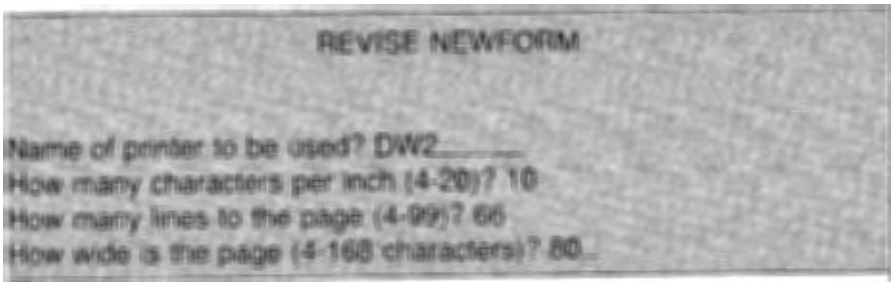
   Press (ENTER) to keep the description or edit the field with a new description, and then press (ENTER).

   Description of Form 201-3452_____

   Now the program displays the first of the four print parameters. The program displays each prompt in turn.

5. Keep the four print parameters or revise them.

For each of the four print parameters, press (ENTER) to keep the existing response or change the response and press (ENTER).



If you change the pitch for a form, the printer positions for the form will no longer be set correctly. Therefore, you should create a new form using the same questions and then set new printer positions. (For a more detailed explanation, see page 176.)

When you press (ENTER) after the last parameter, the program again displays the Directory of Forms and lists at the top the form you are revising. At the bottom the program displays the Revise Menu:

R evise questions, **C** hange printer positions, **S** end position info to printer, print **Q** uestions, view next **P** age or **D** isk

Now you can revise the questions or print a copy of them. You can also revise the print positions or print a copy of them.

35. PRINTING QUESTIONS AND PRINT POSITIONS

After you have selected a form and displayed the Revise Menu, you can print a list of the questions and print positions for the form. You can use these to help in revising the form.

Printing Questions

For each question, the program prints:

1. Question number.
2. Question kind.
3. Question text.
4. Condition and formula, if any.
5. Source and formula, if any.
6. Method of verification and formula, if any.
7. Column number, if any.

This example shows four questions from the OVERDUE form stored on the program diskette:

```
#    5: Multiple choice; "What kind of card: (STUDENT)
       (ADULT)?"; Condition = "A"; Source = "K"; Verify = "N"
#    6: Date; "On what date was the book due?"; Condition = "A";
       Source = "K"; Verify = "N"
#    7: Number; "How many days is the book past due (1-90)?";
       Condition = "A"; Source = "K";
       Verify = "(#7< = 90)AND(1< = #7)"
#    8: Text; "What is the book's Library of Congress number?";
       Condition = "A"; Source = "K"; Verify = "N"
```

To Print Questions

1. **Select the form and display the Revise Menu.**
(See page 167.)

2. **Type (Q) to select** print Questions.

   The program displays this prompt:

   Please align paper to top of page 1 — press any key when done

3. **Insert paper into the printer and press any key.**

   The program prints the questions. If the list requires more than one page, the program displays this prompt at the end of each page. (Naturally, the page number will change.)

   Please align paper to top of page 2 — press any key when done

4. **Continue to insert paper and to press any key until the program has printed all the questions.**

When the program has completed printing the questions, it returns to the Directory of Forms with the Revise Menu.

Printing Print Positions

For each print position, the program prints:

1. Page number.
2. Line number.
3. Column number.
4. Question number.
5. Question kind.
6. Formats, if any.

This example shows four print positions from the OVERDUE form:

Page 1, Line 35, Column 19-0/6, # 6: Date, e.g., "5/1/85"
Page 1, Line 37, Column 22-0/6, # 7: Left number, 0 = Y, "##"
Page 1, Line 39, Column 65-0/6, # 11: Aligned number, 0 = Y, "####.##"
Page 1, Line 40, Column 20-0/6, # 2: Multiple choice

To Print Print Positions

1. **Select the form and display the Revise Menu.**
   (See page 167.)

2. **Type (S) to select** Send position info to printer.

   The program displays this prompt:

   Please align paper to top of page 1 — press any key when done

3. **Insert paper into the printer and press any key.**

   The program prints a list of the print positions. If the list requires more than one page, the program displays this prompt at the end of each page. (Naturally, the page number will change.)

   Please align paper to top of page 2 — press any key when done

4. **Continue to insert paper and to press any key until the program has printed all the print positions.**

When the program has completed printing the positions, it returns to the Directory of Forms with the Revise Menu.

36. REVISING QUESTIONS

You can change all or part of a question. You can also add and delete questions. To revise questions, you display them on the Write/Revise Questions Screen.

1. You can revise questions while you are writing the questions.

2. You can revise questions from an existing form.

Displaying Questions

1. Flash the form you want to revise and display the Revise Menu. (See page 167.)

2. Type (R) to select Revise questions.

The program displays the Write/Revise Questions Screen. In the current-question area, you see the first question.

Displaying a Specific Question

To revise a question, you must display it in the current-question area. Now you can use the command line or the screen commands to display a specific question.

To Use the Command Line

1. Use (↓) to position the cursor in the command line brackets.

[ ] See **N** ext or **P** revious question, **A** dd or **D** elete question:

2. Type (N) or (P).

- Type (N) to display the *next* question.
- Type (P) to display the *previous* question.

To Use the Screen Commands

Hold down CTRL and type N to display the next question in the current-question area.

Hold down CTRL and type P to display the previous question in the current-question area.

Press HOLD and then press ↑ to display the first question in the current-question area.

Press HOLD and then press ↓ to display the last question in the current-question area.

Changing Options and Responses

After you have displayed a question in the current-question area, you can revise it by changing definer options or field responses. If you change the number to a question, you must remember to change the printer position question number as well.

To Change Definer Options

1. **Use ↓ and ↑ to position the cursor in the brackets for the definer option you want to change.**

2. **Type the letter for the new option over the letter for the old option.**

To Change Field Responses

1. **Display the field you want to change.**
   - To display the field for "question number" or "text," move the cursor into the brackets.
   - To display the field for a formula or column number, you must type the letter for the option in the brackets. For example, for

[ ] Condition: **A** lways, **F** ormula	**Type (F).**
[ ] Source: **K** eyboard, **F** ormula	**Type (F).**
[ ] Verify: **M** anual, **N** one, **F** ormula	**Type (F).**
[ ] Add answer to columns: **Y** es, **N** o	**Type (Y).**

Once you have displayed the field for a formula, you must enter a formula and press (ENTER). If you want to change the definer to something other than a formula, you must return to the brackets and type a different letter.

2. Revise the field and press (ENTER).

See page 28.

Adding and Deleting Questions

You can add a question or delete a question.

To Add a Question

1. In the current-question area, display the question you want to come after the added question.

2. Position the cursor in the command-line brackets and type (A) for *add*.

[ ] See **N** ext or **P** revious question, **A** dd or **D** elete question:

The program moves the current question to the next-question area and clears the current-question area.

3. Write the question you want to add.

When you write a question between two questions, you may want to number the added question with a decimal number. For example, to add a question between questions 11 and 12, number the added question 11.5.

To Delete a Question

1. In the current-question area, display the question you want to delete.

2. Position the cursor in the command-line brackets and type (D) for *delete.*

[ ] See **N** ext or **P** revious question, **A** dd or **D** elete question:

The program displays this message in the message area:

You have asked to delete this question. Are you sure (Y/N)?

3. Type (Y) for *yes* or (N) for *no.*

- Type (Y) to delete the question.
- Type (N) to return to the command line and not delete the question.

The program deletes the question and moves the next question into the current-question area. If you renumber questions after deleting a question, remember to revise the print positions or to delete the print position for the question that has just been deleted.

Ending the Session

When you have finished revising questions, you must end the session. The program enables you to cancel the revisions.

1. Press (BREAK) to end the session.

The program displays this prompt:

S ave changes to disk or **C** ancel?

2. Type (S) or (C).

- Type (S) to *save* the revisions on diskette.
- Type (C) to *cancel* the revisions. The program will not save the changes on diskette. However, if you have changed the name, description, or print parameters, it will make those changes without altering the revision date.

The program returns to the Revise Menu in case you want to print or revise questions or print or revise positions.

37. REVISING PRINT POSITIONS

To revise print positions, you first display them on the Set/Revise Print Positions Screen.

1. You can revise print positions as you set them.

2. You can revise print positions from an existing form.

Displaying Print Positions

1. **Flash the form you want to revise and display the Revise Menu.**

   See page 167.

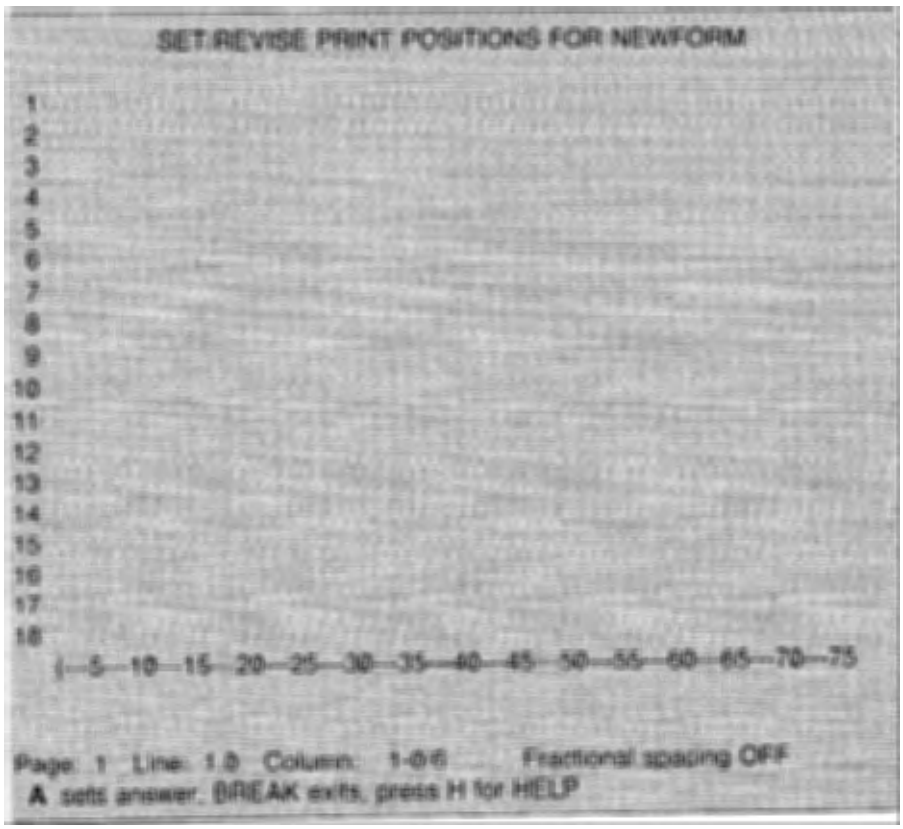
2. **Type (C) to select** Change printer positions.

   The program displays this message:

   Please align paper to top of page 1 — press any key when done

3. **Align the paper and press any key.**

   The program displays the Set/Revise Print Positions Screen.



Moving to a Print Position

To revise a position, you must first move the printhead to it.

To Move to a Print Position

1. Type (M) for *move.*

The program displays this prompt and field:

Type number of answer on which to place cursor:

_____

2. Type the number of the answer you want to move to and press (ENTER).

The program moves the printhead and cursor to the position. Now you can use the cursor keys to move the printhead. (See page 130.)

If more than one print position is set for the same answer, typing (M) will only move the cursor to the first occurrence, even if it is set on another page. For example, assume that you have set question 1 on both pages 1 and 2. If you are working on page 2 and type (M) to move to question 1, the program ejects the page and tells you to insert page 1. It then moves the cursor to question 1.

To Shift a Print Position

1. Move the printhead to the position you want to shift.

You can only shift an answer to a position on the same page.

2. Type (S) for *shift.*

The program displays this prompt in the message area:

Move printer to new position, press **S** when done

3. Move the printhead to the new position.

4. Type (S).

You cannot shift a multiple-choice question. You must delete it first and then set it again. Also, if you shift a question on top of another question, the covered question is automatically deleted.

To Delete a Print Position

You delete a print position for two reasons: to delete it, of course, or to reset the print position with a new format. For example, if the print position for answer number 15 has been set to print aligned and you want to print it left, you must delete position 15 and reset it.

1. Move the printhead to the position you want to delete.

2. Type (D) for *delete.*

The program displays this prompt in the message area:

You have asked to delete this setting — are you sure (Y/N)?

3. Type (Y) for *yes* or (N) for *no.*

- Type (Y) to delete the position.
- Type (N) to cancel the Delete command.

You can now reset the answer with new formats.

To Replace One Position With Another

You can replace one print position with another. For example, if you have positioned answer 13 where you want 14, just replace 13 with 14.

1. Move the printhead to the position you want to replace.

2. Type (A) to position the answer.

The program displays this prompt and field:

Type number of answer to set in this position:
____

3. Type the number of the new answer you want to position and press (ENTER).

The program displays this prompt in the message area:

Do you wish to replace the setting at this position (Y/N)?

4. Type (Y) for *yes* or (N) for *no.*

- Type (Y) to delete the original position and then set the new position.
- Type (N) to cancel the procedure.

You can type a right margin over a print position without replacing the original print position.

Ending the Session

When you have finished revising the print positions, you must end the session. The program enables you to cancel the revisions.

1. Press (BREAK) to end the session.

The program displays this prompt:

S ave changes to disk or **C** ancel?

2. Type (S) or (C).

- Type (S) to *save* the revisions.
- Type (C) to *cancel* the revisions. The program will not save the changes. However, if you have changed the name, description, or print parameters, the program will make those changes without altering the revision date.

The program returns to the Revise Menu in case you want to print or revise questions or print or revise positions.

VI. MAINTAINING FORM FILES

38. OVERVIEW

As with answer files, you can store forms on the program diskette in drive Ø, but if you have more than one disk drive you should make a practice of storing forms on a data diskette in drive 1 (or 2 or 3, if present). However, before you can store forms on a data diskette, you must format and modify the diskette for use by the *Formation* program. (This procedure is almost identical to the one described on page 73, but you use the Form File Maintenance options instead of the Answer File Maintenance options.)

To prepare the diskette for use by your computer, you use the TRSDOS Format command. To read about how to format, see the *TRS-80 Owner's Manual* that came with your computer.

If you are using one or more hard disk drives, you can store forms and answer files on any of four hard disks (drives 4-7) or on floppy diskette drives Ø-3.

To Display the Form File Maintenance Menu

1. **Insert the diskettes and load the program.**

   Insert into drive Ø the backup of the program diskette (or load the program from your primary hard disk). Into drive 1, insert the formatted data diskette you want to modify. (If you have more disk drives, you can insert the diskette into drives 1, 2, or 3 or modify hard disk drives 4-7.)

2. **From the Main Menu, type (4) to select** Form File Maintenance.

   The program displays the Directory of Forms for the diskettes you have inserted. At the bottom of the Directory, the program displays this menu:

C opy or **E** rase form, **M** odify diskette, **H** ard-
copy directory, next **P** age or **D** isk

39. MODIFYING A DISKETTE

When you modify a diskette, the program creates a Master File on that diskette to hold your forms.

To prepare the formatted diskette for use by the *Formation* program, you use the *Formation* Modify Diskette option.

You can also use the Modify command to erase all the forms and answer files from a previously modified diskette, including the files on the program diskette in drive 0.

How to Modify a Diskette

1. **Type (M) to select the option** Modify diskette **from the Form File Maintenance menu.**

   The program displays this prompt:

   Modify which drive (0,1,2...)? 1

   1 is the default.

2. **If other than drive 1, type the number of the drive that contains the diskette you want to modify.**

   If you want to modify the diskette in drive 1, just press (ENTER). Unless the diskette has been modified before, the program modifies the diskette. If the diskette has been modified before, the program displays this message:

   This disk has been modified before — erase all files (Y/N)?

   - Type (Y) for *yes* to "re-modify" the diskette and erase all forms and answer files from the diskette.
   - Type (N) for *no* to cancel the procedure and to return to the Main Menu.

When the program has finished modifying the diskette, it displays the Main Menu.

40. COPYING A FORM

You use the Copy option to copy a form. You can copy a form from one diskette to another or onto the same diskette. If you plan to heavily revise a form, you should first make a copy of it (in case you need to refer back to the original).

To Copy a Form

1. **With the Form File Maintenance menu on the screen, flash the form you want to copy.**

   Let's use the OVERDUE form as our example.

2. **Type (C) to select** Copy form.

   The program displays the following prompt and in the field the name of the form you have selected. The program positions the cursor on the first character of the name.

   ```
   Name of new file? OVERDUE_____
   ```

3. **Type a new name for the copy and press (ENTER), or use the same name by pressing (ENTER).**

   Type the new name over the old name or clear the field and type the new name. You can use any combination of up to 16 characters for the name. The program now displays this prompt:

   ```
   Place file on which drive (0-3)? 1
   ```

   In the field to the right of the prompt, the program displays the drive number of the diskette containing the form you are copying (1 in the example).

   If you are using the TRSDOS 4.2 version, the program will display this prompt:

   ```
   Place file on which drive (0-7)? 4
   ```

4. **Press (ENTER) or type a different drive number.**

   Press (ENTER) to copy the form onto the same diskette. Type a different drive number to copy the form onto a different diskette.

The program copies the form. When it completes the copy, it displays the Main Menu.

41. ERASING A FORM

If you have forms that you no longer need, you can erase them to free up space on the diskette. You use the Erase Form option.

To Erase a Form

1. **With the Form File Maintenance menu on the screen, flash the name of the form you want to erase.**

   Let's assume you want to erase the OVERDUE form.

2. **Type (E) to select** Erase form.

   The program asks you to verify the form you want to erase:

   Do you wish to erase OVERDUE (Y/N)?

3. **Type (Y) for *yes* or (N) for *no*.**

   - Type (Y) to erase the form.
   - Type (N) to cancel the procedure and to return to the Directory of Forms.

   Unless you have typed (N), the program erases the form and displays the Directory of Forms (with the Form File Maintenance menu) so that you can see that the form has been erased. Press (BREAK) to return to the Main Menu.

42. HARDCOPYING THE DIRECTORY OF FORMS

You use the Hardcopy Directory option to print the Directory of Forms. If you have several diskettes full of forms, you may want to keep a printed copy of the directory for each diskette. Then when you want to find a particular form, you don't need to display the directory for each diskette. You simply consult the printed copies.

To Hardcopy the Directory of Forms

1. **From the Form File Maintenance menu, type (H) to select** Hardcopy directory.

   The program displays this message:

   Please align paper to top of page 1 — press any key when done

2. **Insert a sheet of paper into the printer and press any key.**

   The program prints the Directory of Forms starting with the first diskette displayed in the Directory. For example, let's say you have inserted diskettes into drives Ø and 1, and you have displayed the Directory of Forms beginning with the diskette in drive Ø. The program prints the forms from the diskettes in drives Ø and 1.

   If you want to begin printing with the forms on the diskette in drive 1, press (D) to select the next Disk option from the menu at the bottom of the Directory. The program scrolls the Directory up and displays the forms beginning with drive 1. Now when you hardcopy the Directory, the program prints the forms on the diskette in drive 1. The program prints one of the following messages for each drive that does not contain a modified diskette or that is not connected to the system (drives 2 and 3 in this example):

   Drive 2 not modified for FORMATION
   Drive 3 not ready or not in system

   If the program requires more than one sheet of paper to print the Directory, the program stops printing after the first page, ejects the paper, and displays this prompt:

   Please align paper to top of page 2 — press any key when done

Insert another sheet of paper into the printer and press any key. The program will pause after each page so that you can insert the next sheet of paper into the printer.

When the program has finished printing, the Directory of Forms and the menu remain on the screen. Press (BREAK) to return to the Main Menu.

43. USING ONE FORM TO CREATE ANOTHER

You can use an existing form as the basis for a new form. You can use the questions, print positions, or both. Here are some possible combinations:

1. You can create a new form by using the questions and print positions from an existing form.

2. You can create a new form by using the questions from an existing form but writing new print positions. (This is recommended if you change the pitch.)

3. You can create a new form by using the print positions from an existing form but writing new questions.

4. You can create a new form by using the questions from one form and the print positions from another form.

Using All or Part of Another Form

1. From the Main Menu, type (3) to select Create or Revise a Form.

The program displays the Directory of Forms with this menu in the prompt area:

```
-------------------------------------------------------------------------------
C reate or  R evise form, view next  P age or next  D isk
```

2. Type (C) to select Create form.

The program displays this prompt:

Name of form? _____

3. In the field, type a name for the new form and press (ENTER).

You can type any combination of up to 16 characters as the form name. The program displays this prompt:

Description of form _____

4. In the field, type a description for the new form, and press (ENTER).

You can type any combination of up to 26 characters as the description. The program now displays each of the four print parameters.

5. For each of the four print parameters, press (ENTER) to keep the default setting or change the setting and press (ENTER).

The default settings will be the parameters of the last form you worked with. Here are the system defaults on a new program diskette:

```
Name of printer to be used? DW2_____
How many characters per inch (4-20)? 10
How many lines to the page (4-99)? 66
How wide is the page (4-168 characters)? 80_
```

When you press (ENTER) after the last parameter, the program again displays the Directory of Forms and lists your new form at the top. It displays this menu at the bottom:

```
-------------------------------------------------------------------------------
To use questions from flashing form press ENTER, or write  N ew
questions, print  Q uestions, view next  P age or next  D isk
```

6. Use the questions from an existing form or write new ones.

- To write new questions, flash the new form and type (N). The program displays the Write/Revise Questions Screen so that you can write the new questions.
- To use the questions from an existing form, flash the form and press (ENTER). The program copies the questions to the new form you are creating. It leaves the existing form intact.

When you use questions from an existing form or when you finish writing new questions, the program displays the Directory of Forms and lists your new form at the top. (The program flashes the name of the form whose questions you have used.) At the bottom of the screen, the program displays this menu:

```
-------------------------------------------------------------------------------
To use printer positions from flashing form press ENTER, or set
N ew ones,  S end info to printer, view next  P age or  D isk
```

7. Use the print positions from an existing form or write new ones.

- To write new print positions, flash the new form and type (N). The program displays the Set/Revise Print Positions Screen so that you can set new print positions.
- To use the print positions from an existing form, flash the form and press (ENTER). The program copies the print settings to the new form you are creating. It leaves the existing form intact.

When you have an existing form and you wish to change the pitch, it is a good idea for you to create a new form using the questions from the existing form and set new printer positions.

When you finish setting new positions, or you use existing print positions, the program returns to the Main Menu.

PRACTICE: WORKING WITH FORMS

Here are three exercises you can use to practice working with forms. You will work with the three forms (OVERDUE, ACE, and CARE) stored on the *Formation* program diskette.

For these exercises, you need a formatted data diskette and your backup of the *Formation* program diskette.

Exercise 1

Follow these steps.	Refer to these pages for help.
1. Modify a diskette for use in drive 1.	184
2. Make a hardcopy of the Directory of Forms from the program diskette.	187
3. From your backup of the program diskette, copy the OVERDUE, ACE, and CARE forms to the data diskette in drive 1.	185
4. Erase the OVERDUE, ACE, and CARE forms from the backup of the program diskette.	186
5. Hardcopy the Directory of Forms to confirm the changes.	187

Exercise 2

Follow these steps.	Refer to these pages for help.

You will use the ACE form (Form 2) to create a new form that salespersons can use to fill out the purchase order (Form 4). You will need to make several photocopies of Form 4 to work with.

1. Copy ACE to a new form. Name it PO (for "purchase order"). 185

2. Print the questions from PO. 169

3. Using Form 4 and the printout from PO, plan the questions you need for the purchase order form. (You will delete some questions and write new ones.) 149

4. Revise the questions for PO. 172

5. Revise the print positions for PO. 176

6. Test your new form by printing it on the photocopy.

Exercise 3

This is a difficult exercise.

Revise the ACE form (Form 2) so that it can be used to fill in both the invoice and the purchase order PO (Form 4). In other words, you will have two forms: both with the same questions but each with different print positions.

Either form can be used to answer the questions. To *print* the answer file, you simply select the form for the printout you want.

For example, salesman Howard answers the questions for the PO form and names the answer file Kwik Stop.

- To print the answers on the purchase order, you select PO and print the Kwik Stop Answer File.

- To print the answers on the invoice, you select ACE and print the Kwik Stop Answer File.

Suggestions for Completing the Exercise

1. Make several photocopies of Form 2 and Form 4 to work with.

2. Revise the questions from ACE so that the questions can be used for both the invoice and the purchase order. Call the new questions WORK.

3. Create two new forms:

   NEWACE uses the questions from WORK. You set new print positions for the invoice.

   NEWPO uses the questions from WORK. You set new print positions for the purchase order.

4. Erase the old forms (WORK and ACE), rename NEWACE as ACE, and NEWPO as PO.

VII. ERROR MESSAGES

44. ERROR MESSAGES

Here is a list of error messages that you may encounter as you use the *Formation* program. Press (BREAK) to clear a message.

Answer does not verify — please try again

- The program has checked an answer and found it incorrect. Retype the answer.

Column number must be between 1 and 16 — try again

- You have specified a column not in the specified range.

Formula not solved because answer number not found

- A formula contains a reference to a non-existent answer.
- The program cannot solve a formula because the date is out of the range specified in the formula.

Formula not solved because of bad syntax

- The program cannot solve a formula because the operator has typed information that the computer does not recognize. This is frequently a mistyped character or code.

Formula not solved because of number too large

- A program overflow has been caused by a number larger than 30 digits.

Formula would require too much memory to solve

- You have created a formula that requires more "scratchpad" RAM (a part of the memory reserved for deciphering formulas) than the system can handle.

More than 9 choices defined in multiple choice question

- You cannot use more than nine choices in a multiple-choice question.

Multiple choice answers must be deleted and reset

- You cannot shift or revise a multiple-choice question. You must delete and reset the question.

No choices defined in multiple choice question

- You have not defined any choices for a multiple-choice question in the text of the question on the Write/Revise Questions Screen.

No more room in memory

- The system has had a memory overflow.

No printer position set for this question

- You have attempted to a question that has not been previously set.

No such question

- You have attempted to set a position for a question number that does not exist.

Number too large or too small

- You have input a number that is out of the specified range.

Only 16 columns allowed

- You have specified more than 16 columns.

Place cursor on form entry and try again

- You have attempted to access a form while the cursor was positioned on the name of the diskette. Move the cursor to a form and try again.

Place cursor on valid drive and try again

- You have attempted to access a file on a non-existent drive or a drive that does not contain a modified diskette.

Please position cursor on setting and try again

- You have attempted to shift a print position where none exists. Move the cursor to the print position you want to shift and press (S) again.

Printer file not on disk — please try again

- You have specified a printer other than DW2, DWP, or DMP2100.

Select another form and try again

- You have pressed (ENTER) on the form you just created to use an existing form's questions.

Printer not ready — continue (Y/N)?

- You have attempted to display the Set/Revise Print Positions Screen or to use the printer, but the printer is not turned on and on line. Be sure the printer is ready and then type (Y).

BREAK key recognized: Do you wish to continue (Y/N)?

- You have pressed (BREAK) while the printer was operating. The program is asking if you want to continue printing or to cancel the operation. Type (Y) to continue printing. Type (N) to cancel the printing operation.

No. ____ answer kind has been changed — continue (Y/N)?

- The kind of answer no longer corresponds to the question, and the answer may not print correctly.

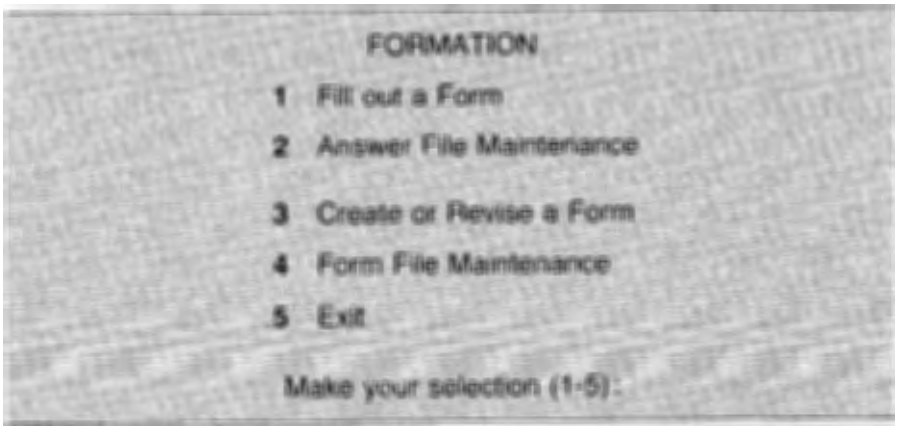
In addition to the preceding messages, the operating system of your computer may display other messages. See your *Model 12 (or II) Owner's Manual* for an explanation of these messages.

VIII. READY REFERENCE

45. READY REFERENCE

You can use the information in this section for quick reference. For more detailed information, refer to the Contents or Index to locate the topic you want.

The Main Menu



Loading *Formation*

1. Insert a backup of the program diskette into Drive 0 and turn on your computer. (If you have a hard disk system, turn on the hard disk(s) and then turn on your computer.)
2. Answer the date and time prompts and press (ENTER).
3. Type (F)(O)(R)(M) and press (ENTER).

Working With the Directories

(↑)	Moves the flashing up one line at a time.
(↓)	Moves the flashing down one line at a time.
(HOLD)(↑)	Flashes the first 11 entries beginning with drive 0.
(HOLD)(↓)	Flashes the last 11 entries from the highest numbered drive.
(P)	Displays the next page.
(D)	Displays the next diskette.
(BREAK)	Displays the previous menu and clears error messages.

Fields

Typing in Fields

(ENTER)	Enters what you have typed.
(CAPS)	Turns Caps Mode on and off.

Moving the Cursor Through a Field

(→)	Moves the cursor one character to the right.
(←)	Moves the cursor one character to the left.
(HOLD) (→)	Moves the cursor to the last typed character.
(HOLD) (←)	Moves the cursor to the beginning of a field.

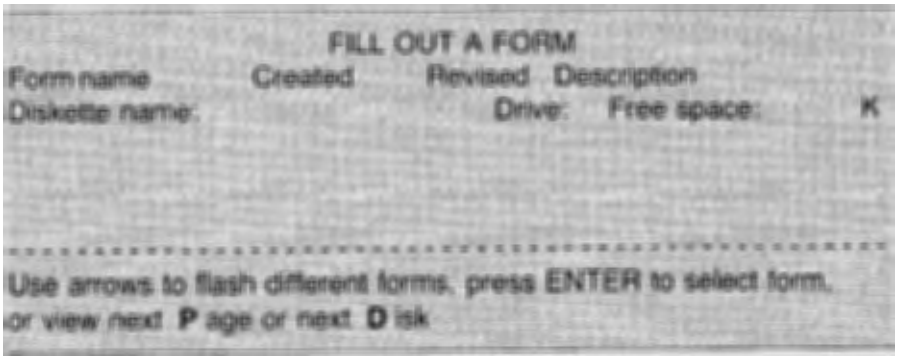
Editing Fields

Overstrike	Types one character on top of another.
(F1) or (CTRL) (A)	Inserts one character at the cursor.
(F2) or (CTRL) (D)	Deletes one character at the cursor.
(TAB)	Clears from the cursor to the end of the field.
(ENTER)	"Chops off" characters from the cursor to the end of the field.

Filling out a Form

1. From the Main Menu, type (1) to select Fill out a Form.
2. In the Directory of Forms, display the form, flash it, and press (ENTER).

The Directory of Forms



The Directory of Answer Files

3. Type (Q) to select answer Questions.
4. Type a response to the name prompt and press (ENTER).
5. Type a response to the description prompt and press (ENTER).

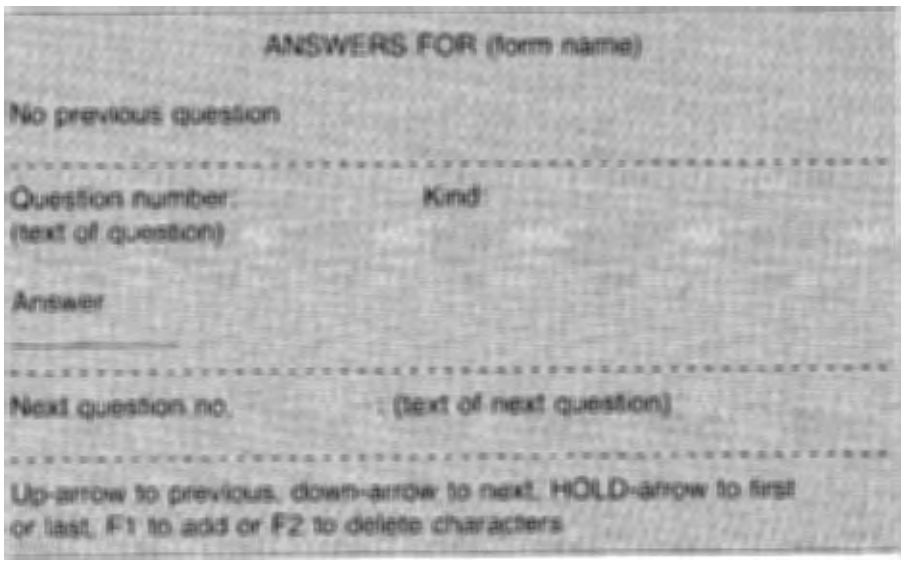
Name of answer file?_____
Description of answer file?_____

Naming the Answer File

Type up to 16 characters for the name and press (ENTER). Type up to 8 characters for the description and press (ENTER).

If you type the maximum number of characters for either the name or the description, you do not need to press (ENTER).

The Answer Questions Screen



Answering Questions

Text question	Type up to 64 characters and press (ENTER).
Number question	Type numbers, decimal, or minus sign only and press (ENTER).
Date question	Type the date in the format MM/DD/YY. (Or type M/D/YY and press (ENTER).)
Multiple-choice	Move the cursor to the parentheses ( ) for the correct answer and press (ENTER).

Displaying Answers

(↑)	Displays the *previous* answer.
(↓)	Displays the *next* answer.
(HOLD) (↑)	Displays the *first* answer.
(HOLD) (↓)	Displays the *last* answer.

Verifying Answers

(ENTER)	To accept the answer.
(Y)	To verify the answer.
(N)	To indicate that the answer is wrong. Type the correct answer and press (ENTER).
	Answer does not verify — please try again
(BREAK)	To cancel the message. Retype the answer and press (ENTER).

Revising Answers

1. Display the Directory of Answer Files.
2. Flash the answer file and type (R).

Print Codes

When answering questions, you can use these codes. (When you press (ESC), the prompt SPECIAL appears in the lower right-hand corner of the screen.)

(ESC)(U)	Underscore
(ESC)(B)	Bold
(ESC)(S)	Strike through

Special Characters

To print on the form	Press	And type	This code appears on the screen.
¢	ESC	0	0
©	ESC	1	1
½	ESC	2	2
¾	ESC	3	3
¼	ESC	4	4
®	ESC	5	5
™	ESC	6	6
†	ESC	7	7
/	ESC	8	8
°	ESC	9	9

Printing Answers

1. Display the Directory of Answer Files.
2. Flash the answer file.
3. Type C to print the answers on the preprinted form. Type A to print the answers as a list.

Answer File Maintenance

1. Insert the diskette(s) and load the *Formation* program.
2. From the Main Menu, type 2 to select Answer File Maintenance.

To Modify a Diskette

1. Type (M) to select Modify diskette.
2. Type the drive number of the diskette you want to modify.
3. If the diskette has been modified before, type (Y) or (N).

To Copy an Answer File

1. Flash the answer file you want to copy.
2. Type (C) to select Copy answer file.
3. In the field, type a name for the copy and press (ENTER).
4. Type the drive number of the diskette to which you want to copy the answer file.

To Erase an Answer File

1. Flash the answer file you want to erase.
2. Type (E) to select Erase answer file.
3. Type (Y) or (N).

To Hardcopy the Directory

1. Type (H) to select Hardcopy directory.
2. Insert a sheet of paper into the printer and press any key.

Creating Forms

1. From the Main Menu, type (3) to select Create or Revise a Form.
2. Move the flashing to the diskette you want to store the form on and type (C).
3. Type responses to the name and description prompts and set the print parameters.

Naming the form

Type up to 16 characters for the name and press (ENTER). Type up to 26 characters for the description and press (ENTER).

If you type the maximum number of characters for either the name or the description, you do not need to press (ENTER).

Setting the Print Parameters

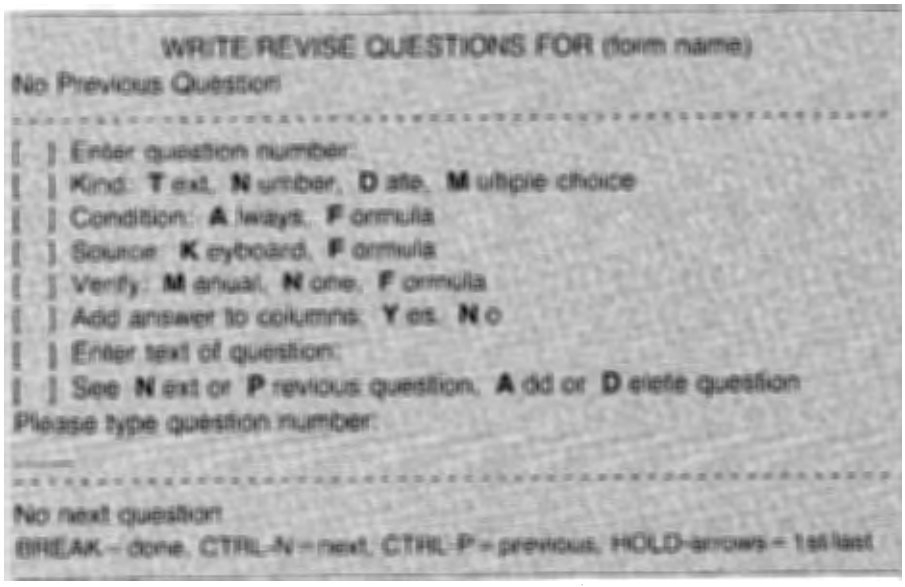
Name of printer to be used? DW2_____
How many characters per inch (4-20)? 10
How many lines to the page (4-99)? 66
How wide is the page (4-168 characters)? 80__

Change the responses and press (ENTER) or press (ENTER) to keep the response.

To Write New Questions

Type (N) to write New questions.

The Write/Revise Questions Screen



Write/Revise Questions Screen Conventions

(↓)	Moves the cursor down to the next brackets.
(↑)	Moves the cursor up to the previous brackets.
(CTRL) (N)	Displays the next question.
(CTRL) (P)	Displays the previous question.
(HOLD) (↑)	Displays the first question.
(HOLD) (↓)	Displays the last question.

The Command Line

[ ] See **N**ext or **P**revious question, **A**dd or **D**elete question

Position the cursor in the brackets:

(N) Displays the next question.
(P) Displays the previous question.
(A) Adds a question before the one displayed.
(D) Deletes the question displayed.

Formulas

Constants

Symbol	Purpose	Example
#	To use an answer	#4
C	To use a column total	C5
D	To use a date	D05/18/85

Arithmetic Operators

Symbol	Purpose	Example
+	Addition	(#7 + #4)
–	Subtraction	(#7 – #4)
*	Multiplication	(#7*#4)
/	Division	(#7/#4)

Relational Operators

Symbol	Purpose	Example
=	Equals	#3 = 215
>	Greater than	#3 > 215
<	Less than	#3 < 215
>=	Greater than or equal to	#3 >= 215
<=	Less than or equal to	#3 <= 215
<>	Not equal to	#3 <> 215

Logical Operators

Symbol	Purpose	Example
AND	Both must be true.	(#11 = 2) AND (#15 = 1)
OR	Either may be true.	(#11 = 2) OR (#15 = 1)
NOT	Reverses logical value.	NOT (0) = 1 NOT (1) = 0

Functions

Symbol	Returns	Example
INT(arg)	Integer not larger than arg	INT(334.99) = 334
RND(Arg1; Arg2)	Arg1 rounded by Arg2	RND(334.54545;100) = 300 RND(334.54545;.00) = 334.55
ABS(arg)	Absolute value of arg	ABS(100) = 100 ABS(− 100) = 100

Parentheses

Nest logical and arithmetic operations by enclosing them in parentheses.

Enclose negative numbers in parentheses.

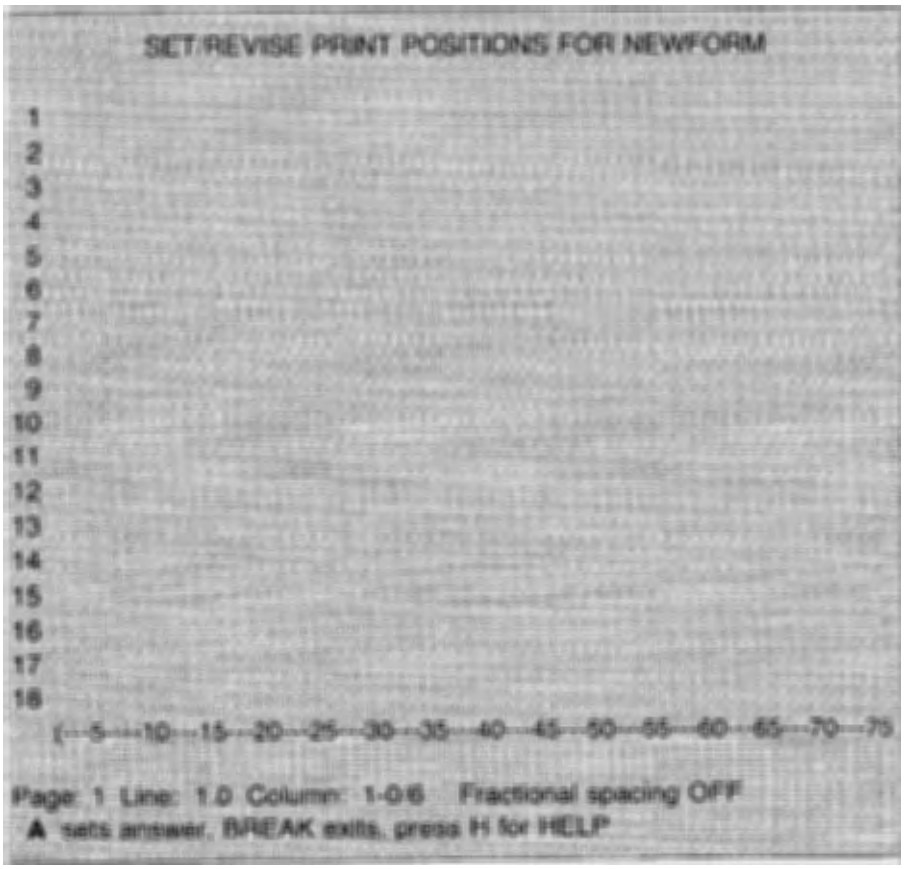
Order of Logical Expressions

Left to right.

Order of Operations for Arithmetic Expressions

1. Functions
2. Nested parentheses
3. Multiplication and division
4. Addition and subtraction

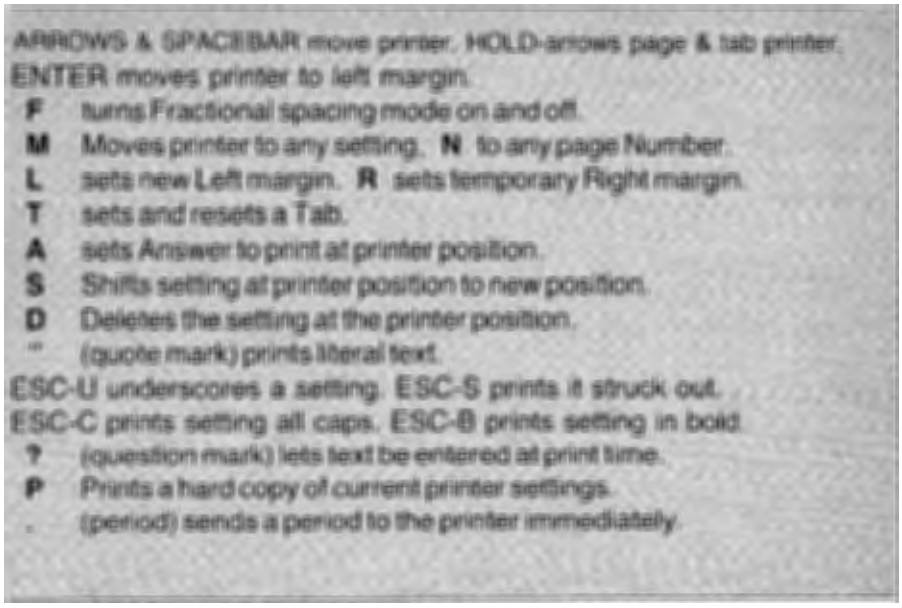
The Set/Revise Print Positions Screen



The Help Screen

To display the Help Screen, type (H).

To return to the Set/Revise Print Positions Screen, press any key.



Moving the Cursor and Printhead

Position the Cursor

SPACE	Moves the cursor one column to the right.
→	Moves the cursor one column to the right.
←	Moves the cursor one column to the left.
↑	Moves the cursor up one line.
↓	Moves the cursor down one line.
HOLD →	Moves to tab or end of the line.
HOLD ←	Moves to previous tab or start of the line.
ENTER	Moves to left margin.

Turn Fractional Spacing On and Off

Type F.

SPACE	Moves the printhead 1/6 of a column to the right.
→	Moves the printhead 1/6 of a column to the right.
←	Moves the printhead 1/6 of a column to the left.
↑	Moves the printhead up one half line.
↓	Moves the printhead down one half line.

When the pitch is set to 6 or 12, fractional spacing is 1/5 of a column.

To Move to a Specific Answer

1. Type (M).
2. Type the answer number and press (ENTER).

To Move to Next Page

1. Press (HOLD) (↓).
2. Insert the next page into the printer and press any key.

To Move to Previous Page

1. Press (HOLD) (↑).
2. Insert the previous page into the printer and press any key.

To Move to a Page Number

1. Type (N).
2. Type the page number.
3. Insert the specified page into the printer and press any key.

Setting Margins and Tabs

To Set and Clear Tabs

1. Move the cursor to the position.
2. Type (T).

To Set a Left Margin

1. Move the cursor to the position.
2. Type (L).

To Set a Right Margin for an Answer

1. Move the cursor to the position.
2. Type (R).

Setting Answer Positions

To Send Period to Printer (To Test a Position)

Type (.).

To Set an Answer Position

1. Position the cursor.
2. Type (A) for *answer*.
3. Type the number of the answer and press (ENTER).
4. Type additional information as prompted.

Print Current Settings

To Print

1. Type (P).
2. Insert paper into the printer.
3. Press any key.

Changing Answer Positions

To Shift an Answer Position

1. Position the cursor on the answer.
2. Type (S).
3. Move the cursor to the new position.
4. Type (S).

To Delete an Answer Position

1. Position the cursor on the answer.
2. Type (D).
3. Type (Y) or (N).

Additional Information for Number, Date, and Multiple-Choice Questions

Number Questions

After you have typed (A) and the question number, select the style, zeros, and format.

Style

Left: 215.50
Right: 215.50
Aligned: 215.50
The position you have set
Ordinal: 21st, 22nd, 23rd, 24th
Spelled: two hundred and fifteen

Zeros

Yes Prints answers with the value of 0.
No Does not print answers with a value of 0.

Format

\# To represent each numeral.
. To specify the position of the decimal.
, To separate thousands in the answer.
$ To print a dollar sign as part of the answer.
* To fill blank spaces with asterisks.
– To print a minus for negative numbers.
( ) To print a negative answer in parentheses.

To print	In the format	Type
1,254.25	1,254.25	#,###.##
1,254.25	1,254	#,###
1,254.25	$1,254.25	$#,###.##
1,254.25	1254.25	####.##
1,254.25	$**1,254.25	$***,***.**
-1,254.25	-1,254.25	-#,###.##
-1,254.25	(1,254.25)	(#,###.##)
1,254.25	1,254.2500	#,###.####

Date Question

After you have typed (A) and the question number, select the format:

To print	In the format	Type
05/01/85	5/1/85	(0)
05/01/85	05/01/85	(1)
05/01/85	05	(2)
05/01/85	01	(3)
05/01/85	85	(4)
05/01/85	May 1st, 1985	(5)
05/01/85	1st day	(6)
05/01/85	5th month	(7)
01/01/85	Jan. 1, 1985	(8)
05/01/85	1 May 1985	(9)

Multiple-Choice Questions

1. Type (A) and the question number.
2. For each choice, position the cursor and type (A).
3. Type the text to print for this choice and press (ENTER).

Literal Text

1. Position the cursor.
2. Type (").
3. Type the text and press (ENTER).

Keyboard Input

1. Position the cursor.
2. Type (?).
3. Type a message and press (ENTER).

To Set Print Codes in Answers

Position the cursor on the print positions and

Press (ESC) and type (U) for underscore.
Press (ESC) and type (B) for bold.
Press (ESC) and type (S) for struck through.
Press (ESC) and type (C) for uppercase.

To Use Special Characters in Literal Text

When you use (") to type literal text, the Set Printer Positions Screen displays a field. In the field, you can type codes for ten special characters. (You can also use these codes when typing in response to the keyboard input prompt.)

To print in literal text	Press	And type	This code appears on the screen.
¢	(ESC)	(0)	0
©	(ESC)	(1)	1
½	(ESC)	(2)	2
¾	(ESC)	(3)	3
¼	(ESC)	(4)	4
®	(ESC)	(5)	5
™	(ESC)	(6)	6
†	(ESC)	(7)	7
/	(ESC)	(8)	8
°	(ESC)	(9)	9

Form File Maintenance

1. Insert the diskette(s) and load the *Formation* program.
2. From the Main Menu, type (4) to select Form File Maintenance.

To Modify a Diskette

1. Type (M) to select Modify diskette.
2. Type the drive number of the diskette you want to modify.
3. If the diskette has been modified before, type (Y) or (N).

To Copy a Form

1. Flash the form you want to copy.
2. Type (C) to select Copy form.
3. In the field, type a name for the copy and press (ENTER).
4. Type the drive number of the diskette to which you want to copy the form.

To Erase a Form

1. Flash the form you want to erase.
2. Type (E) to select Erase form.
3. Type (Y) or (N).

To Hardcopy the Directory

1. Type (H) to select Hardcopy directory.
2. Insert a sheet of paper into the printer and press any key.

The Revise Menu

To Revise or Print Form Questions or Print Positions

1. From the Main Menu, select Create or Revise Form.
2. Flash the form you want to print or revise and type (R).
3. Keep the same name or revise it.

4. Keep the same description or revise it.
5. Keep the four print parameters or revise them.

R evise questions, **C** hange printer positions, **S** end position info to printer, print **Q** uestions, view next **P** age or **D** isk

Type (R) to revise questions.
Type (C) to change print positions.
Type (S) to print a list of the print positions.
Type (Q) to print the questions.

Planning a Form

1. Gather the information.
2. List the questions needed.
3. Group the questions.
4. Order the questions.
5. Plan the formulas.
6. Number the questions.

How to Change the Main Menu

The program enables you to display two different versions of the Main Menu. On the Model 4 version, there is less blank space between each of the options, and the numbers are not displayed in reverse video.

To Display the Old (Model 4) Menu

If you prefer to work with the Model 4 version of the Main Menu, display the TRSDOS Ready (or TRSDOS-II Ready) prompt and type:

(D)(O)( )(O)(L)(D)(M)(E)(N)(U)

The program displays this message:

PAUSE These patches restore the FORMATION Main Menu to the Model 4 type
Press any Key to Continue

Press any key to begin the operation. (Press (BREAK) to cancel the operation.) When the program has completed the necessary patches, load the program by typing (F)(O)(R)(M) and pressing (ENTER). After the program is loaded, it will display the old (Model 4) version of the Menu.

To Restore the Improved Menu

Display the TRSDOS Ready (or TRSDOS-II Ready) prompt and type:

(D)(O)( )(N)(E)(W)(M)(E)(N)(U)

The program displays this message:

```
PAUSE These patches change the FORMATION Main Menu to the improved display
Press any Key to Continue
```

Press any key to begin the operation. (Press (BREAK) to cancel the operation.) When the program has completed the necessary patches, load the program by typing (F)(O)(R)(M) and pressing (ENTER). After the program is loaded, it will display the Menu as it was when you received the diskette.

INDEX AND PRACTICE FORMS

INDEX

USING THE FORMS

Here are the four forms you will need to complete the exercises that appear at the ends of Sections II, III, IV and VI. You can copy these forms as many times as you need them.

When you photocopy a form, try to reproduce the original as closely as possible. Otherwise, the program will not print the answers correctly. Insert your copy into the printer so that the indicated mark is aligned with the printhead.

Align here.

Altoona Public Library

Overdue Notice

Date _____

Borrower _____ Card # _____

Title _____

Author _____ LCC # _____

Due Date _____

Days Past Due _____ Total Due $_____

Branch ☐ Main Street ☐ Dowager Square ☐ Norton Avenue

Please return to avoid additional fines.

Edward Liberhaus
Circulation Director

Form 1

Align here.

ACE Novelty Company

"If it puts a smile on your face,
you bought it from ACE."

INVOICE

Date _____ Invoice No. _____

Bill to

Ship to

For Materials Shipped

Quantity	Description	Unit Cost	Amount
		$	$
		Subtotal	
		Sales Tax (%)	
		Shipping	
		TOTAL	**$**

Form **2441**
Department of the Treasury
Internal Revenue Service (3)

Credit for Child and Dependent Care Expenses

▶ Attach to Form 1040.
▶ See Instructions below.

OMB No. 1545-0068

1981

26

Align here.

Name(s) as shown on Form 1040

YOUR COPY

Your social security number

1 See the definition for "qualifying person" in the instructions. Then read the instructions for line 1.

(a) Name of qualifying person	(b) Date of birth	(c) Relationship	(d) During 1981, the person lived with you for: Months	Days

2 Persons or organizations who cared for those listed on line 1. See the instructions for line 2.

(a) Name and address (If more space is needed, attach schedule)	(b) Social security number, if applicable	(c) Relationship, if any	(d) Period of care From Month—Day	To Month—Day	(e) Amount of 1981 expenses (include those not paid during the year)	

To Figure Your Credit, You MUST Complete ALL Lines That Apply

3	Add the amounts in column 2(e)	3	
4	Enter $2,000 ($4,000 if you listed two or more names in line 1) or amount on line 3, whichever is less	4	
5	Earned income (wages, salaries, tips, etc.). See the instructions for line 5. An entry MUST be made on this line.		
	(a) If unmarried at end of 1981, enter your earned income ▶	5	
	(b) If married at end of 1981, enter:		
	(1) Your earned income . . . $		Enter the lesser
	(2) Your spouse's earned income $		of b(1) or b(2)
6	Enter the amount on line 4 or line 5, whichever is less	6	
7	Amount on line 6 paid during 1981. An entry MUST be made on this line ▶	7	
8	Child and dependent child care expenses for 1980 paid in 1981. See instructions for line 8	8	
9	Add amounts on lines 7 and 8	9	
10	Multiply line 9 by 20 percent	10	
11	Limitation:		
	a Enter tax from Form 1040, line 37 — 11a		
	b Enter total of lines 38, 39, and 41 through 43 of Form 1040 — 11b		
	c Subtract line 11b from line 11a (if line 11b is more than line 11a, enter zero)	11c	
12	Credit for child and dependent care expenses. Enter the smaller of line 10 or line 11c here and on Form 1040, line 40	12	

		Yes	No
13	If payments listed on line 2 were made to an individual, complete the following:		
	(a) If you paid $50 or more in a calendar quarter to an individual, were the services performed in your home?		
	(b) If "Yes," have you filed appropriate wage tax returns on wages for services in your home (see instructions for line 13)?		
	(c) If answer to (b) is "Yes," enter your employer identification number ▶		

Align here.

Sales Order Form: **Invoice** _____

Salesperson _____

Sold to:

_____

_____

_____

_____

Ship to:

_____

_____

_____

_____

Merchandise

Quantity	Description	Unit Cost
		$

Sales Tax _____

Shipping Instructions:

_____

_____

_____

_____

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