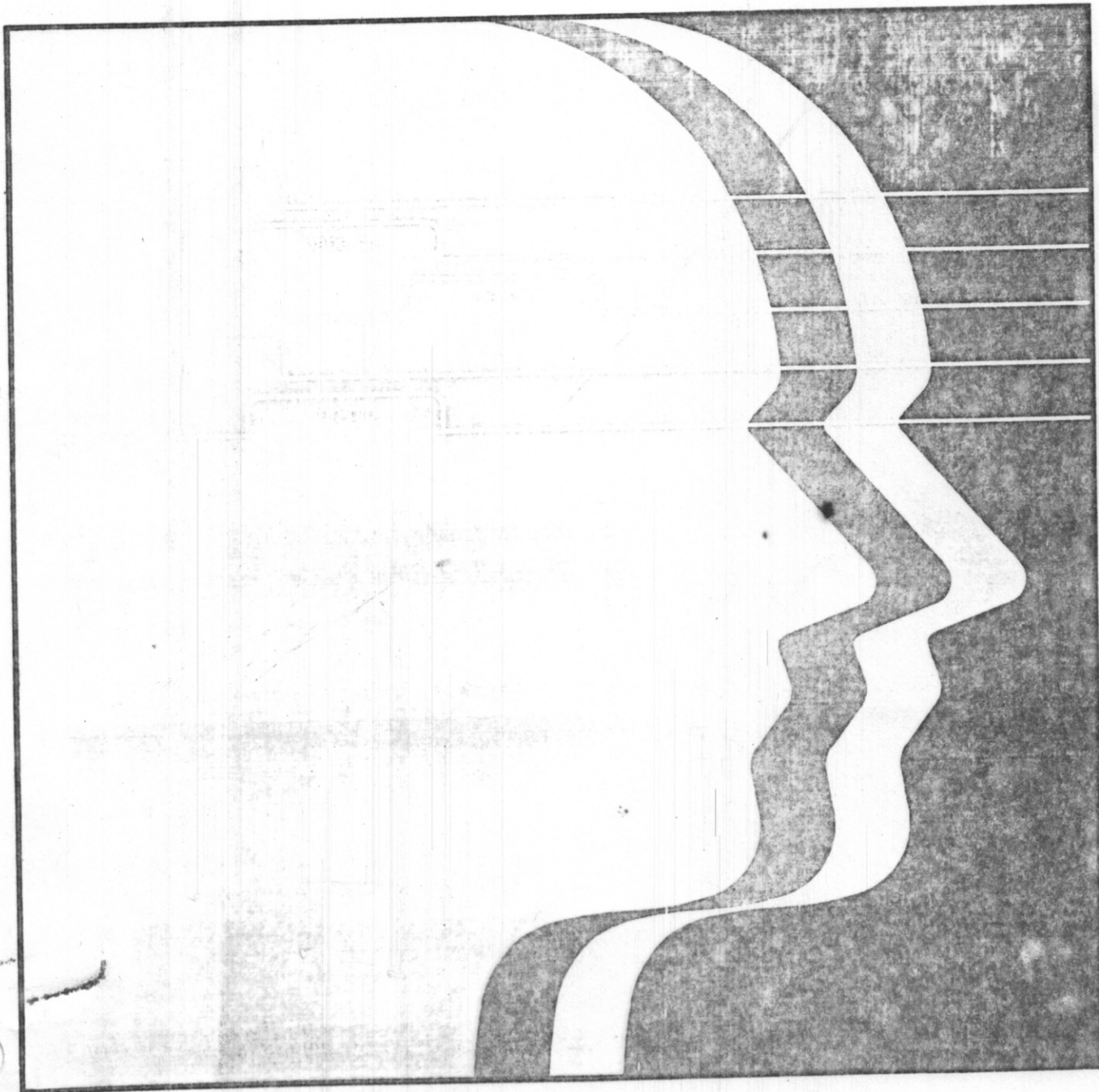


COLOR PROFILE™



CAT. NO. 26-3253



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Color Profile

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Radio Shack
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Introduction

Color Profile® is your key to managing information with your TRS-80® Color Computer. You can store nearly any type of data and retrieve it easily with just a few quick keystrokes. You can design the way the screen displays your data and create reports that show you any information you choose. Color Profile offers almost limitless possibilities in data management as well as many versatile features:

- Up to 26 user-defined formats available for displaying data on the screen
- Up to 26 user-defined indexes per file available
- Up to 26 user-defined formats available for printing or displaying reports
- Any subset of records may be sorted in any sequence
- Up to ten levels of sequences available for record sorting
- Reports may either be printed on paper, displayed on the screen, or saved on diskette as spool files
- Reports may be printed while you perform other tasks
- Ability to create subrecords
- Ability to perform mathematical calculations and to display results

Equipment Requirements

To use Color Profile, you need the following equipment:

- A TRS-80 Color Computer with 16K memory
- One TRS-80 Color Computer Disk Drive
- Disk Interface

Optional equipment includes:

- Radio Shack DMP100 or DMP200 (or compatible serial printer) with connecting cable
- Extra disk drive(s)
- 16K extra memory (for program versatility)

System Capacities

The number of records you can store with Color Profile depends upon the size of your records. To help you determine the size of your records and whether there is a need for extra memory and/or extra disk drives, turn to Appendix F. It describes a program included on the Color Profile diskette, ESTIMATE. This program lets you enter projected information about the type of file you wish to create and tells you the approximate number of records you may create with the system you are using.

Backing Up Diskettes

Before you use Color Profile, you should make a backup (or copy) of the diskette supplied in this package. **Never** use the original diskette to run the program — only use a working copy, and store the original diskette in its protective sleeve in a safe place. By using backups, you can avoid losing data due to accident or mishap.

If you are using more than one disk drive, you might want to format a few diskettes to use for storing data you enter in Color Profile. Follow the instructions in Appendix A to format and back up diskettes.

Before You Get Started

Before you create your first file, you should become familiar with some of the terms and conventions used in this manual. The basic unit of information used by Color Profile is called an **item**. An item is a single piece of information. Phone numbers, ages, street addresses, and birthdates are items.

A **record** is the unit in which a set of related items is stored. A record could contain one person's name, address, city, state, zip code, and phone number. Another record would contain these items for a different person. A collection of several related records is a **file**.

Throughout the manual, you'll notice that you give commands to the computer by pressing certain keys. Some keys work with others to activate commands. For instance, **(SHIFT)** and **(@)** used together make Color Profile print any information displayed on the screen. When you see instructions telling you to use two keys together, hold down the first key and press the second. When you press the second key, your command is executed.

The manual contains a set of practice sessions to help you become comfortable using color Profile. You might want to go through the practice sessions first, or you can read about a function and then turn to the practice session for the function to see how it can be practically applied. The diskette supplied with this package contains the files you need for the practice sessions. Once you're familiar with the way Color Profile works, you can delete the practice files from your working diskette and create your own files. To delete a file, use the **KILL** command when the screen displays **OK**. Refer to your *Color Computer Disk System Owner's Manual and Programming Guide* for detailed instructions on killing files.

The back of the manual contains an appendix listing error messages you might encounter with explanations of their causes as well as possible solutions. Refer to this appendix whenever you need.

If you plan on using Color Profile on a 16K Color Computer, please read Appendix E for explanations on how to get the most from Color Profile with limited memory.

Loading and Exiting Color Profile

Each time you use Color Profile, follow the instructions below to load and exit the program.

Loading the Program

To load Color Profile, turn on any peripheral equipment (such as a printer), the television, the Color Computer, and the disk drive(s). Insert a working copy of the program diskette into Drive 0. Type **RUN "DOS" (ENTER)**. In a few moments, the File Selection Menu is displayed, and you are ready to use Color Profile.

Note: To return to Color Profile after exiting, press **(F1)** at the Color Disk Operating System Menu. Next, press **(ENTER)**, and the File Selection Menu appears in a few moments.

Exiting the Program

To exit Color Profile, press **(BREAK)** at any screen until the following is displayed:

```
COLOR TRSDOS 01.07.00 11/82
BY R.G.KILGUS
COPR. 1982 TANDY CORP.
ALL RIGHTS RESERVED
```

1. EXIT TO BASIC
2. EXEC A PROGRAM
3. START CLOCK DISPLAY
4. DISK ALLOCATION MAP
5. COPY FILES
6. DIRECTORY

To exit the program and return to BASIC, press **(1)**. The DISK EXTENDED COLOR BASIC copyright information appears. To re-execute the program, type **2 (ENTER)**.

When you are finished using Color Profile and have exited the program, remove the diskette(s), and turn off the printer, computer, television, and disk drive(s).

Note: ~~Never turn the Color Computer or disk drives on or off with diskettes in the drives.~~

Setting Up Files

This part of the manual explains in detail how to set up files for storing data. You'll learn how to create files and specify the kinds of information you want to store in the files. You also learn how to design the way your stored information is displayed on the screen.

Creating a File

To create a file, make sure that all your equipment is turned on as explained in the Introduction, and insert a backup of the Color Profile program ~~diskette~~ into **Drive 0**. If you plan to use an extra diskette for storing data, ~~insert a formatted diskette~~ into **Drive 1**. When you see OK on the screen, type ~~RUN "DOS" (ENTER)~~. The File Selection Menu is displayed. The first time you use Color Profile, the menu looks like this:

```
COLOR P R O F I L E  V V . P P . P P
COPYRIGHT 1982 ROBERT G. KILGUS
LICENSED TO TANDY CORPORATION
```

```
FILE TO BE ACCESSED [ _____ ]
EXISTING FILES AVAILABLE:
```

```
TYPE FILENAME, PRESS ENTER
(PRESS BREAK TO EXIT PROGRAM)
```

Notice the copyright information at the top of the screen. `V V . P P . P P` stands for the version number and indicates the number and type of revisions that have been made to the program. Refer to it when you request information or help from Radio Shack.

The line below the copyright information asks you the name of the file you want to use or create. It is followed by a list of all files stored on the diskette. These files are the sample files for use in the Practice Sessions.

The instructions at the bottom of the screen tell you to type the file's name and press **(ENTER)** or to press **(BREAK)** to exit the program. To create a file, type any name you choose. You can use up to eight characters for the filename. ~~Do not use numbers, punctuation marks, or blank spaces in the name.~~ Once you type the filename, press **(ENTER)**. (You do not have to press **(ENTER)** if your filename contains eight characters.)

Setting Up Files (continued)

When you create a new file, this message appears next:

```
CONTROL FILE XXXXXXXXXX/CTL  
NOT FOUND - CREATE IT (Y/N)?  
(PRESS CHOICE KEY)
```

~~XXXXXXXXXX~~ stands for the filename you just entered. Pressing **(N)** at this point tells Color Profile that you have decided against creating a new file.

To continue with the creation of your file, press **(Y)**. A new message is displayed:

```
ENTER DRIVE TO BE USED FOR:  
0 CONTROL FILE          0 [0]  
1 PRIME DATA FILE      1 [0]
```

Control Files vs. Data Files

When you create a file, Color Profile actually creates two files. ~~One is your filename plus /CTL.~~ This file saves all the special information about your file, such as the kinds of data stored in the file or the way you set up the screen to display your data. The other file is ~~your filename plus /DAT~~, the file in which all the actual data in your file is stored.

You can store the /CTL and /DAT files on separate drives if you are using more than one disk drive with your Color Computer system. At the ENTER DRIVE prompt, type the drive number on which you wish to store your /CTL file and the drive number on which you wish to store your /DAT file. Press **(ENTER)**. To store both files on Drive 0, simply press **(ENTER)** at the first prompt.

If you are using more than one disk drive, the first time you use Color Profile you should create a temporary file with both the `filename/CTL` and `filename/DAT` on Drive 0. At the Main Menu, select **(7)** to change the Program Default for the Number of Disk Drives to equal the number of drives you are using. Press **(ENTER)** to record the change. You can now exit Color Profile and kill the temporary file, using the **KILL** command at the OK prompt.

Once you've entered a filename and specified the drives on which files are stored, your file is created, and the Main Menu is displayed. If you store either file on a drive other than Drive 0, you should change the NUMBER OF DRIVES default built into the program. To change this default, see the section of the manual entitled "**Changing Program Defaults**" for specific instructions. Even if you decide to store the /CTL file on Drive 0, we suggest that you set the program defaults to meet your needs before you continue using Color Profile.

To practice creating files, see "Practice Session A — Creating a File." ^{p6}

Defining Record Formats

*PRACTICE
PAGE 67*

The next step in setting up a file is specifying the kind of information you want to keep in the file, such as names, addresses, and phone numbers. Color Profile categorizes each item of data into one of several types: **text**, numeric, date, math, tally, or derived. When you define a file's record format, you specify the items of information you want and the categories into which they fall.

To define a record format, load Color Profile. The File Selection menu is displayed. Type the name of the file for which you want to define the record format, and press **(ENTER)**. The screen shows:

```

      FILE=XXXXXXXXX  REPORT FORMAT[A]
      DISPLAY FMT[A]  ACCESS METHOD [A]

      1. VIEW/UPDATE RECORDS
      2. PRINT A REPORT

      OR DEFINE/ALTER:
      3. RECORD FORMAT
      4. DISPLAY FORMATS
      5. ACCESS METHODS
      6. REPORT FORMATS
      7. PROGRAM DEFAULTS

      ENTER SELECTION [ ]
      BREAK TO EXIT THIS FILE
  
```

This is the Main Menu for your file. Your filename is shown at the top of the screen (represented above by XXXXXXXXXX) along with a report format selection, a display format selection, and an access method selection.

Next you see several options. You can look at records already created or print a report. You can also define or change record formats, display formats, access methods, report formats, or program defaults. To define record formats, press **(3)**. To return to the File Selection Menu, press **(ENTER)**.

Note: You cannot use your file until you define the record format. If you try to use Main Menu selection 1 in a new file, you see an error message telling you that you must **DEFINE RECORD FORMAT FIRST!** Press any key to return to the Main Menu, and select option 3 to define the record format.

When you press **(3)**, the screen displays:

Setting Up Files (continued)

```
XXXXXXXXXX RECORD FORMAT
DISK REC SZ:MASTER 0002 SUB 0000
ITEM SIZE TYPE DESCRIPTION
001 005 7 RECORD NUMBER
```

```
ITEM TO BE SEEN/CHANGED [000]
(SHIFT UP/DOWN TO SCROLL)
```

Your filename is displayed at the top of the screen. The next line shows the amount of disk space used by all defined items. The numbers displayed on this line depend upon the types of items you have defined, so if the numbers on your screen do not match the illustration above, do not be concerned.

Next are headings for the defined items. Listed are each defined item's number, the number of spaces allotted to each item, the item's type, and its description.

Notice that an item is listed that you haven't defined — item 001, RECORD NUMBER. It uses five characters and is a type 7. If this is a new file, item 001 is the only item listed. Color Profile **always** uses item 001 for the RECORD NUMBER, and record numbers always use five characters.

The bottom of the screen asks you the item number you want to see or change. The cursor is at the first 0. Type a number for the data item you want to define or change (such as 2, for FIRST NAME). You are not required to type "leading" zeroes, and you may assign an item any number you wish. Color Profile always stores your items in correct numerical order. Use item numbers 2 through 124 for defining master record items and numbers 131 through 253 for defining subrecord items. For defining subrecord items, see the section of the manual entitled "Subrecords."

When you type an item number, the screen shows:

```
ITEM 002 TYPE [0] LENGTH 000
DESCI ]
DISK SPACE REQUIRED = 000
```

```
TYPES: 0=UNUSED      4=MATH
        1=TEXT       5=TALLY
        2=NUMERIC    6=DERIVED
        3=DATE
(PRESS ENTER AFTER CHANGES)
```

The screen above shows item 002. The TYPE is currently 0, since the item has not yet been defined. LENGTH is also 0, with no description of the item and no required space for storage on a diskette. Look at the bottom of the screen. Seven "types" of data items are listed. (Type 0, UNUSED, is the type of any item before it is defined. Type 7 is a special item type for Color Profile's internal use only.)

Press a number key for the type of item you wish to define, and begin specifying the characteristics of the item. Use the and keys to move the cursor. After you type an entry, press to move to the next prompt. moves the cursor to the previous prompt.

LENGTH is the number of characters needed to input data. The limitations vary according to the data type used. Enter the length, and press .

DESC is for a description of the item. The description is for your information only and does not appear on actual records or reports. You have 26 spaces to type a description. For example, if the item is for first names, you could type **FIRST NAME** or **NAME, FIRST** in the DESC area. Next, enter a validation expression, or press .

All items (except tally and derived) have a prompt for **VALIDATION**. Validation is an advanced function and is discussed later in this section. If you like, you can skip this prompt by pressing without typing an entry.

Press to record an item's format.

Text Items

Text items contain anything you can type — letters, numbers, punctuation marks, special characters, and spaces. A text item is the only type in which you are allowed to use letters. **FIRST NAME** is an example of a text item. ~~Text items~~ can contain up to 254 characters.

Press at the TYPE prompt to define a text item. At the LENGTH prompt, type the number of characters you want to allow for this item. For instance, if the item you are defining is **FIRST NAME**, you might need 10 characters for entering actual first names in records, so you would type 10.

Numeric Items

Numeric items consist of the digits 0-9, spaces, periods, plus or minus signs, and parentheses. Items like phone numbers or social security numbers can be defined as numeric items. You can use up to 254 characters for each numeric item.

Press at the TYPE prompt to define a numeric item. At the LENGTH prompt, enter the number of characters you want to allow for this item. Specify enough length to take care of parentheses or hyphens that you might want to use. To save space, you may omit length considerations for parentheses and hyphens. You may follow the

Setting Up Files (continued)

instructions outlined in "Designing Screens — Special Design Features," later in this section.

Enter a description for the item at the DESC prompt, using 26 or fewer characters. Next, enter a validation expression, or press .

Date Items

Date items consist of the digits 0-9. Although you could define dates as numeric items, there are advantages to using this type of item for dates: you can enter **only** numeric digits; you cannot enter a month greater than 12; and you cannot enter a day greater than 31. This keeps mistakes to a minimum.

Press at the TYPE prompt to define a date item. Notice that you cannot change the length of a date item — it always requires six spaces. Dates are entered in records in MMDDYY sequence. Color Profile automatically stores the dates in YYMMDD sequence, essential for sorting actual dates properly in other Color Profile functions. When you press after defining the type, the cursor moves to DESC.

At the DESC prompt, type a description for the date, using 26 or fewer characters. Next, enter a validation expression, or press .

Math Items

Math items are also numeric and are used for items you might want to use in calculations later. An item should be defined as a math item if you want to use it with other items for addition, subtraction, multiplication, division, or totals on reports. Math items do not accept parentheses and spaces, and numbers are entered "calculator-style." Plus or minus signs are required for math items, and each item may contain up to 16 characters.

Press at the TYPE prompt to define a math item. At the LENGTH prompt, type the number of characters you want to allow for this item. When you define math items, make sure that you specify enough space for a plus or minus sign and for a decimal point if one is to be used. For example, 9999.99 should have a length of eight.

At DESC, type a description of the item, using 26 or fewer characters. After you press , the cursor moves to DECIMAL PLACES [0]. Type the number of decimal places the item needs, or press to leave the number of decimal places at 0. At the VALIDATION prompt, enter a validation expression, or press .

Tally Items

Tally items are used to count the number of times information in records is changed. For example, a tally item could count the number of times you change the address in a record. They are especially useful for "triggering" a report of changed records.

Press **(5)** at the TYPE prompt to define a tally item. Note that you cannot change the length of a tally item — it always requires five spaces.

You are allowed 26 spaces to type a description. When you have typed a description, press **(↓)**. The cursor moves to TALLY CHANGES TO ITEM [000].

At this prompt, you decide which item, when changed, should activate the tally. You can specify any item, but by specifying item 000, the tally number increases **anytime** a change is made to **any** item in the record. Specifying item 128 makes the tally count the number of times a subrecord item is changed. Type an item number, and press **(↓)**.

Derived Items

A derived item is the result of mathematically combining math items in a record. For example, you might have a record containing a math item for NUMBER SOLD and one for COST EACH. By multiplying the two, a result could be figures for a TOTAL SALE item. The TOTAL SALE item would be a derived item.

Derived items use no space on your diskette, making them an efficient and valuable way to keep track of important information. Like math items, derived items can contain no parentheses or spaces and require plus or minus signs. They may contain up to 16 characters.

Press **(6)** to define a derived item. At the LENGTH prompt, type the number of characters you want to allow for this item. Remember to add two spaces for a plus or minus sign and for the decimal point.

Note: Always specify a length long enough to show the largest result you expect to calculate.

Enter a description of the derived item, using 26 or fewer characters. At DECIMAL PLACES [0], type the number of decimal places you want the derived item to contain.

At the DERIVED FROM prompt, you must specify the items to be calculated and the kinds of calculations you want to perform for a derived item result. This involves writing expressions. Expressions can be very simple or complex formulas, depending upon your needs. To determine the type of expression to enter here, read the discussion entitled "Expressions," in this section.

Storing an Item

Check your entries to make sure that they are correct. If you find a mistake, use the **(↑)** key to return to the area with the mistake, and correct it. **(CLEAR)** erases anything to the right of the cursor if your correction is shorter than the original entry.

If you change your mind about including an item in your record format, press **(BREAK)**. The item list appears, and you may define another item or store the record format as it is.

Setting Up Files (continued)

When all areas appear to be correct, press **(ENTER)** to store the item. The cursor may be anywhere on the screen when you press **(ENTER)**, as long as all necessary prompts have been answered. The list of items reappears with the item you just defined added to the list. The DISK REC SZ increases to show the amount of space used to store defined items on diskette. (Remember that derived items use no diskette space.)

To continue adding items, enter another item number. When you finish adding items, press **(ENTER)** at the list of items (without typing an item number). Your screen shows:

```
FILE REFORMAT REQUIRED.  
PROCEED WITH IT? [N]
```

Press **(Y)** to reformat the file. When reformatting is finished, your record format is stored in the /CTL file, and the Main Menu reappears.

Scrolling the List of Items

If you define more than 11 data items, they cannot be displayed on the item list at the same time. Color Profile lets you "scroll" the screen to see other items you have defined. Press **(SHIFT) (↑)** to see each succeeding item on the list. The item appears at the bottom of the list, and the entry at the top of the list scrolls off the screen. Press **(SHIFT) (↓)** to return, one item at a time, to the beginning of the list.

Printing a List of the Record Format

Color Profile lets you print anything displayed on the screen at any time. To print a copy of the record format, make sure that your printer is properly connected and ready to print. The printer should be set to receive at ~~600~~ baud. Refer to your printer owner's manual for instructions on setting baud rates.

When you are ready to print, press **(SHIFT) (@)**. A copy of the screen is printed with a few extra blank lines for spacing purposes. You can print three screens on one sheet of 8½" by 11" paper.

If the record format contains more than 11 items, use the scrolling feature to display more of the item list, and then use **(SHIFT) (@)** again to print the part of the list now displayed.

Press **(BREAK)** at the item list when you finish printing the record format. The Main Menu is displayed.

To practice defining record formats, see "Practice Session B — Defining a Record Format."

Repeat last step

Expressions

Expressions (or formulas) are used by Color Profile in many functions. Among other things, expressions can make sure that data items always contain valid information; calculate interest; determine a total cost from a price and quantity; or even select a subset of records for a report.

Expressions can consist of three things:

values	actual data from your records
literals	stated date whose meaning is used literally by the expression in calculations
operators	information telling how to combine values and literals to give a result

The simplest type of expression consists of only a single numeric literal. Literals are entered calculator-style. A single numeric literal "sets" a derived item to a specific value. Entering a single numeric literal in the DERIVED FROM area of a derived item format always gives the value of the literal as a result. (For example, if you enter 5 in DERIVED FROM, the derived item's result is **always** 5.) Single numeric literals are used most often for special calculations in reports.

Note: When using negative numbers as literals, leave no space between the minus sign and the number.

Incorrect: - 95.2

Correct: -95.2

Numeric Expressions

A numeric expression combines two or more numeric literals with mathematic operators — the symbols for adding (+), subtracting (-), multiplying (*), and dividing (/). For example:

If the expression is:	The result is:
1 + 1	2
2 + -3	-1
3 - 2	1
2 * 4	8
12 / 3	4
11 * 17 / 4 + 2	48.75
2 + 11 * 17 / 4	48.75

If you typed the above expressions in the DERIVED FROM area, you would see the results of the operations displayed on the screen. Remember these hints when you use numeric expressions:

Setting Up Files (continued)

- If the hyphen is followed by a period (.) or a number, Color Profile assumes that it is the **sign** of the number. Otherwise, it is assumed to be an **operator**.
- You may insert space between numbers and operators for clarity on the screen if you wish, although spaces are not necessary except when distinguishing a negative number from a subtraction operator.
- Color Profile performs operations within parentheses before those not enclosed in parentheses. Change the order in which operations are performed by using parentheses. For example, $2 + (11 * 17) / 4$ results in 48.75. However, $(2 + 11) * 17 / 4$ results in 55.25.
- You can "nest" parentheses (place parentheses within parentheses). There is no practical limit on the number of levels you can nest. Operations within the innermost set of parentheses are performed first.
- Color Profile follows this priority when operators appear both before and after a number: multiplication and division are performed first, and addition and subtraction last.

Using Stored Data in Expressions

In the previous examples, numeric literals were used. Remember that numeric literals set derived items to specific results. The results are displayed in records wherever you place derived items.

Most of the expressions you are likely to use require that you substitute data from items for use in calculations. For example, suppose that you want to multiply the PRICE EACH by the NUMBER SOLD to display a derived item, TOTAL SALE, in each record.

To use actual data, substitute ! and the item number you want to use for any literal in an expression. For instance, if PRICE EACH's item number is 006 and NUMBER SOLD's item number is 007, you would type **!006*!007** at the DERIVED FROM prompt when you define the derived item, TOTAL SALE.

When you use item numbers in expressions, you must use the entire three-digit number (leading zeroes included). Do not leave a space between ! and the item number. You can use any type of item to give a result in a derived item if you remember a few rules:

- Data from a text or numeric item can be used **only** if every character is a number, period, or + or - symbol.
- Color Profile stores dates in YYMMDD order, even though you enter them in MMDDYY order. Any date used in an expression is treated as an integer. For example, January 7, 1984, is used in calculations as 840107.
- If you make a typographical error and type anything other than a number for an item number, or if you use a non-existent item number, a formula error is displayed. Refer to Appendix D for a list of formula errors and their meanings.

- You cannot calculate a derived item using its own item number in the calculation (for instance, using item 015 plus item 017 to calculate item 015).

Logical Expressions and Validation

Logical expressions are most often used in validation statements and in access methods to select a subset of records. When you define a text, numeric, date, or math item, you are given the chance at the VALIDATION prompt to specify rules for entering data.

Logical expressions, unlike numerical expressions, use these **relational operators**:

- < less than
- > greater than
- = equal to

Suppose that you want to make sure that data entered in NUMBER SOLD (item 014) is less than that entered in NUMBER ON HAND (item 016). You could specify this rule in the VALIDATION line of item 014 by entering: !014<!016.

When you enter actual data in a record and store it, Color Profile checks (or validates) your entry against the validation expression. If the entry is incorrect, Color Profile does not allow you to store the record. The incorrect, or invalid, entry is highlighted on the screen, and you must enter a number that meets the validation requirements before storing the record.

Alphanumeric Logical Expressions

Any type of item can be used in a logical expression, even a text item. You can specify relationships (equal to, less than, or greater than) between text items and **alphanumeric literals**. An alphanumeric literal is any value (numeric, alphabetic, or special characters) surrounded by quotation marks. It can be one character or a string of characters. Examples of alphanumeric literals are:

```

"BOB"
"4CD87"
" * "
" .7296"

```

When you enter a validation expression comparing an alphanumeric literal to the data in a text item, characters are compared, left to right, until Color Profile finds two characters that do not match. It then compares the two "unequal" characters to see which of the two is "greater." When you use an alphanumeric literal in an expression, it is important to know which characters Color Profile considers greater. Color Profile uses the same sequence as does BASIC. Refer to Appendix C for the sequence.

When items of unequal length are compared and all characters of the shorter item match those of the longer item, they are considered equal if all remaining characters in

Setting Up Files (continued)

the longer item are blanks (or spaces). Otherwise, the longer item is considered greater.

If you want to make sure that only names beginning with M-Z can be entered for item 019, the item's validation expression would be: `!019>"M"`. You would, with this validation expression, be able to enter names like Mathias, Smith, or Thatcher. You would not, however, be allowed to enter names like Brown, Edwards, or Jackson, since those names begin with characters "not greater than" M. Remember that M plus any other character is considered "greater than" M alone.

Validating Dates

Be careful when you use dates in validation expressions. Remember that dates are stored in YYMMDD sequence, so when you compare a date to a **numeric** literal, be sure to enter the year first, month second, and day last in the expression. For example, to make sure that only dates past April 17, 1983, are entered for item 015, the validation expression is: `!015>830417`.

Combining Conditions

Sometimes you must combine several conditions to validate data entered in an item. For example, if a selling price, item 034, must be at least \$10.00 but not more than \$20.00, you could use two conditions and combine them at the VALIDATION prompt for item 034:

`!034>9.99 AND !034<20.01`

The "AND" is a **logical connective**. The two other logical connectives are **OR** and **NOT**. To abbreviate, **AND** may be replaced by *****, **OR** may be replaced by **+**, and **NOT** may be replaced by **&**.

You have seen a combined expression using **AND**. **AND** is used if the data you enter in an item must meet **all** of several criteria. **OR** is used when an item's data must meet **at least one** of several criteria. For example, if a selling price, item 034, must be either \$2.00 or \$4.00, the validation expression could be:

`!034=2 OR !034=4`

Use an ampersand (&) or the word **NOT** to negate a relational operator. To specify that you could only enter numbers 10 and greater for item 034, you could say:

`!034&<10 or !034 NOT <10`

This expression means that item 034 cannot be less than 10. **NOT <** (not less than) is the same as "greater than or equal to," and **NOT >** (not greater than) is the same as "less than or equal to." **NOT** should only be used directly before a relational operator.

Sequences in Logical and Combined Expressions

As in numeric expressions, Color Profile performs certain operations before it performs others when it determines validity of a logical or combined expression. The order in which operations are performed is:

>	compare for greater than
=	compare for equal to
<	compare for less than
& or NOT	negate relational operator
* or AND	multiply
/	divide
+ or OR	add
-	subtract

You can change the sequence of operations by using parentheses, just as you can in numerical expressions. All operations within parentheses are performed, according to the sequence list, before operations not enclosed in parentheses. Nesting of parentheses is allowed.

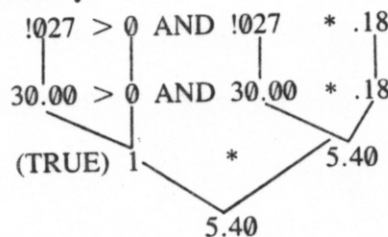
Conditional Derived Items

Derived items may be calculated using a combination of **both** numeric and logical operations. These types of expressions are used in "if-then" situations and require careful study as well as a thorough understanding of Color Profile expressions.

For example, consider a CURRENT BALANCE item, item 027. If there is an outstanding balance, you want item 028 to show an INTEREST charge of 18% of the balance. If the CURRENT BALANCE is 0 or negative, you do not want to apply an interest charge. Item 028, INTEREST, can be derived using this expression:

$$!027 > 0 \text{ AND } !027 * .18$$

When Color Profile checks for a certain condition and finds that it is true, it assigns a value of 1 for the condition. If the condition is found to be false, it assigns a value of 0. This is the heart of using conditional derived items. In the above example, suppose that item 027 contained \$30.00. Remembering that AND is treated exactly as *, the expression would be solved in this way:



Designing Screens

After defining a **record** format, your next step in setting up a file is to **design** a screen (or **display format**) for entering or displaying the information in a file. The screen can display 14 lines, each line containing 32 spaces (448 total spaces). Your record format might contain too many items to fit on one screen, so Color Profile lets you design up to 26 different screens per file. Each screen can display a different set of items or arrange the same items in a different way. You may design screens for entering data in records or screens used only for reviewing and displaying data.

Note: At least one screen must be created for a file before the file can be used.

To design a screen, load Color Profile. When the File Selection Menu is displayed, enter the filename for which you wish to create a display format. The screen displays the Main Menu. Your filename is displayed at the top of the screen along with report format, display format, and access method selections.

If this is the first display format you have created for this file, the display format selection is A. Press **(4)** for DEFINE/ALTER DISPLAY FORMATS. The screen shows:

```

FILE=XXXXXXXX SELECT A FORMAT[A]

A          N
B          O
C          P
D          Q
E          R
F          S
G          T
H          U
I          V
J          W
K          X
L          Y
M          Z

(BREAK TO EXIT)

```

Press a letter key, A-Z, to specify the format you are creating. The screen clears, and a message appears at the top of the screen:

```

FORMAT "x" NAME [  ]

```

In this message, x represents the letter you selected for the display format. Type the name of the format you are creating, using up to 14 characters, and press **(ENTER)**. The cursor moves to the second line. You may now type anything you like, anywhere on the screen. Use the **(↑)**, **(↓)**, **(←)**, and **(→)** keys to position the cursor wherever you want to type.

Note: Do not press **(ENTER)** until the entire format is finished.

Basic Screen Design

Plan carefully so that you have enough space on the screen for the items you wish to display. You may design your layout on the screen itself if you like. If you want to use descriptions or headings, such as **NAME** or **ACCT. #**, they can be typed anywhere on the screen.

To leave enough space for entering an item's data, find the length you assigned the item, and add 2. Type that number of **Xs** wherever you want the item's data to appear. The **Xs** are not required by Color Profile but serve as a useful technique for laying out the design of the screen. The **Xs** you type do not limit or define where your data will appear — they are used for your information only.

A typical screen layout might look like this:

```
NAME XXXXXXXXXXXX XXXXXXXXXXXX
ADDRESS XXXXXXXXXXXXXXXXXXXXXXXX
      XXXXXXXXXXXXXXXXXXXXXXXX
      XXXXX

PHONE XXXXXXXXXXXXX
S.S.# XXXXXXXXXXXX

NUMBER SOLD      XXXXXX
PRICE PER UNIT   XXXXXXXX
TOTAL PRICE      XXXXXXXXXX

DELIVERY DATE XXXXXXXX
```

If you make a mistake in your layout, use the arrow keys to move to the area needing corrections. Type over the mistake, or use the space bar to erase characters.

At this point, you have designed the way you want the screen to look, but you haven't specified to Color Profile the items you want to display or the screen location at which they should appear. ~~Move the cursor to the first X in a group you typed, and press~~ **↵**. The message at the top of the screen says:

```
ENTER ITEM NUMBER [000]
```

Note: If you press **↵** by mistake, press **BREAK** to cancel.

If you printed your item list, refer to it to find the number of the item you wish to position here. Type the item number, and press **ENTER**.

If you did not print the record format and do not know the item number, you can list all items in your record format, one by one. Press **SHIFT** **↓**. The first item defined is displayed at the bottom of the screen with its item number. Use **SHIFT** **↑** or **SHIFT** **↓** to scan the item list until you find the correct item. When it is displayed, press **ENTER**. Color Profile automatically enters the item you chose.

When you press **ENTER** after typing the item number or letting Color Profile enter it for you, the top line of the screen changes to display the length of the item you selected. The bottom of the screen shows the item number and its description.

White Line
X

Notice that the Xs have been replaced by a white box enclosed in brackets equal to the length of the item you selected. The box represents the area in which you can type when you start entering information in records. The brackets mark the limits of the entry area. The two extra Xs you added to the item's length in the layout were for the brackets.

For each item you wish to display, follow the above procedures. If you have specified the location of an item and then decide to change it, position the cursor over the beginning bracket for the item. Press the space bar once, and the brackets and box disappear. You may now use the area for another item.

A sample screen, after its design is complete, might look like this:

```

NAME [           ] [           ]
ADDRESS [           ]
      [           ]
           [           ]
PHONE [           ]
S.S.* [           ]

NUMBER SOLD [           ]
PRICE PER UNIT [           ]
TOTAL PRICE [           ]

DELIVERY DATE [           ]
    
```

A few hints and rules for creating display formats follow.

- Once an entry is defined, you cannot place the cursor in the bracketed area during screen design. The cursor automatically skips over the entry area to the first blank space following it.
- Once an entry area is defined, anytime you place the cursor over the beginning bracket of the item, the number and description of that item appear at the bottom of the screen.
- You cannot overlap items. If you specify an item's position on a line with other items but there is not enough space for all of them, other items are deleted to make room for the latest item you specify. If you specify an item's position at the bottom right of the screen and there is not enough room, it is not accepted, and the computer beeps to let you know that you cannot place the item at that position.
- When you design the placement of items, it's a good idea to leave extra spaces before and after the Xs you use for designing. This leaves enough space between items and for the beginning and ending brackets. Remember that Xs are for your information only.
- If you are designing a screen and decide to make a major revision to the design, you can erase everything from the cursor's position to the bottom of the screen by using **SHIFT CLEAR**.

Special Design Features

You can make your screen appearance more efficient and attractive by displaying only parts of items (saving valuable screen space), inserting special characters among your data, or eliminating leading zeroes from amounts. These special features give you even more freedom to create exactly the screen you want.

Anytime you use special design features, information is only displayed — you cannot enter data in an item using a special design feature. Brackets are eliminated from the display area, and no white box appears on the screen for showing the amount of space available for entering data. Refer to your item list for lengths if they are needed.

Special features make use of “edit pictures.” These are similar to the **Xs** you use to design your display format for entry areas. Edit pictures consist of **!** followed by **Xs**, **9s**, or special characters.

As in basic screen design, it’s a good idea to develop a layout before you tell Color Profile the exact specifications of the screen. However, this explanation discusses how to develop a screen’s specifications without laying it out beforehand.

Displaying an Abbreviated Item

You can shorten the amount of data displayed in a text or numeric item’s area. This does not change the actual length of the item but only the number of characters displayed.

Using the arrow keys to move the cursor, type any headings or descriptions you want displayed. Wherever you want the first character of an item’s data to appear, press **(!)**.

You are asked to enter an item number at the top of the screen. Type the appropriate item number, or use the **(SHIFT)** **(↑)** and **(↓)** method to find the correct item, and press **(ENTER)**.

The top of the screen shows the item’s length, and the bottom of the screen shows the item number and description. To make more than one character appear, press **(X)** or **(9)** for each succeeding character you want to display, up to the entire length of the item. Later, when you use this screen to review data, the first character of the item’s data will appear at the position where you placed the **!**.

Inserting Special Characters

To automatically insert special characters (such as hyphens, slashes, or parentheses) in the midst of a text or numeric item’s data, position the cursor wherever you want the first character of the item to appear. Press **(!)** for the first character, enter an item number at the top of the screen, and draw an edit picture by typing **Xs** or **9s** for any additional characters you want to display. Type the special character wherever you want it to appear in the midst of the edit picture. For instance, you might store a phone number as a 10-digit numeric item. To insert parentheses around the area code

and a hyphen between the exchange and the number, your edit picture could look like this:

(!99)999-9999

If the number is stored as 8003339999, it appears on the display as (800)333-9999.

Note: Do not use spaces, 9s, or Xs as special insertion characters.

Abbreviating Date Items

Dates may be abbreviated to show only the month, day, or year. Press when the cursor is positioned at the point at which you wish to display the date, and enter a date item number at the top of the screen. To show only the month, press . Days and years are specified in the same way (!D or !Y).

Inserting Special Characters in Date Items

To insert hyphens or slashes between the month, day, and year, use and enter the item number at the top of the screen. Follow the ! with a combination of MM, DD, and YY, separated by hyphens or slashes. Notice that ! takes the place of the first character.

You can combine MM, DD, and YY in the edit picture using slashes or hyphens in any way you like, as long as you use **no** spaces in the entry. Combinations include !D/MM, !M-DD, and !M/YY. Just remember to use ! as the first character in the edit picture.

Parts of dates may be separated by spaces or other characters as long as you press and specify the same item number for each part of the date you want to display. For instance, you might decide to display something like:

THE !DTH DAY OF THE !MTH MONTH OF 19!Y

Eliminating Leading Zeroes

You can eliminate leading zeroes and plus or minus signs from math, tally, and derived items. Press wherever you want the first character of the item to be displayed. Enter an item number at the top of the screen, and draw an edit picture, pressing for each succeeding character in the item's data you want displayed. Remember that these items are entered and stored calculator-style, so if you pressed once, only the two numbers directly to the left of a decimal point would be displayed. For instance, !99 would display 345 for a derived item with 12345 as its data.

Displaying the Sign of a Number

To show the sign of a number whether it is positive or negative, press **[!]** wherever you want to display the item, and enter an item number at the top of the screen. After pressing **[9]** for each additional digit you want to display, press **[+]**. To show the sign only if the number is negative, press **[-]** after the ending 9. When you review data later, the sign appears to the right of the displayed number. A few examples of this type of formatting are: **!-** (5-); **!+** (5+); and **!.99+** (5.55+).

Inserting Commas and Decimal Points

To insert commas in math and derived items, press **[!]** for the first character you want to display, and enter an item number at the top of the screen. Draw an edit picture, using **[9]** for each additional digit you want to display, and press **[,]** wherever you want a comma to appear. The comma appears only if a digit is displayed to the left. **!99,999** could display 5,555 or 555 in a record.

Decimal points are inserted in the same way as commas. Press **[.]** wherever you want the decimal point to appear in the number.

Inserting Zeroes After Decimal Points

After drawing an edit picture and pressing **[.]** for decimal point, press **[0]** for every decimal place in which you wish to display a 0. In this way, you can define an item that is always an even dollar amount and display 00 for the cents, leaving you more room in your record format. For example, **!9.00** would display 55.00 for an item with 55 and its data.

Inserting Dollar Signs

To insert a dollar sign in math or derived items, press **[\$]** before you press **[!]** and draw the edit picture of digits to display. This creates a fixed dollar sign that appears exactly at the point at which you place the \$.

To insert a floating dollar sign that appears directly to the left of the most significant digit displayed or just to the left of the decimal point (if the number is less than 1), press **[!]**, enter an item number, and then press **[\$]** before you draw the edit picture with 9s for each digit of the number you wish to display. The \$ cannot be to the right of a decimal point. Examples of floating dollar sign formats include **!\$999** and **!\$.99**.

Storing the Finished Screen

When you have designed the screen exactly the way you want, press **[ENTER]**. Color Profile stores the display format in your /CTL file, and the screen shows the list of

display formats. To create another display format, press a letter key for the format you wish to create. To return to the Main Menu, press **(BREAK)** when the list is displayed.

Remember that you may print the display format by using **(SHIFT) (@)** before pressing **(ENTER)** to store the display format.

Pressing **(BREAK)** before you store the display format restores the original format if you make changes and then decide not to implement them.

Changing Special Design Formats

Changing a display format that contains display only areas is simple. You need only type over any existing edit pictures with new edit pictures. Anytime you replace a ! with another character, the ! is eliminated. **(SHIFT) (CLEAR)** deletes your display format from the cursor's position to the bottom of the screen.

To practice designing a display format, see "Practice Session D — Designing a Screen."

Changing Record Formats

As you develop your file setup, you might find that your record format needs revision. You can add, delete, or change items in the format at any time, although we recommend that changes be made **before** you store actual data in records. Before you change a file's record format, consider the types of changes you need to make and the ways in which they might affect your stored data.

Changes That Do Not Affect Data on Diskettes

You can make the following types of changes without affecting the data stored on your diskette(s).

- Adding, deleting, or changing a derived item
- Changing a validation expression for any item
- Changing an item's description

When you change or delete a derived item used by an access method, be sure to revise the affected access method. If a derived item you wish to delete is used in a report or display format, be sure to revise the affected format.

When validation expressions are changed, check your work carefully to see that the new expression performs the way you want.

Changes That Affect Data on Diskettes

Some types of record format changes affect the way that your data is stored in records on diskette. These changes are:

- Adding or deleting any item other than a derived item
- Changing an item's length
- Changing the number of decimal places in a math item
- Changing an item's type
- Changing an item's number (deleting an item and redefining it with a different item number)
- Changing a previously defined item to a derived item

Caution: Before you make these types of changes, be **sure** to make a backup of your diskette(s). Consider any access methods and display or report formats you might need to revise, and keep these points in mind:

- If you delete an item, you must also delete it from any display for report formats before using the format. Otherwise, an error message is displayed: `FORMAT CONTAINS INVALID ITEM NUMBER.`
- If you shorten an item's length, any data already entered for that item is shortened to fit the new length. The name, "Smithfield," might become "Smithfi." If you add to an item's length, you may have to revise any

screen or report format using that item. Remember that you cannot overlap items, and the added length may delete an item following it on a display or report format.

- Changing the type of an item automatically deletes any data that does not conform to the kind of data accepted by the new item type.

Making the Changes

To make a change to the record format of a file, load Color Profile. At the File Selection Menu, enter the name of the file whose record format you wish to change. The Main Menu for the file is displayed.

Press **(3)** to ALTER RECORD FORMATS. Type the number of the item you wish to change, and press **(ENTER)**. When the item's information appears, use **(↓)** and **(↑)** to move the cursor to each area of the screen, and make any necessary changes.

To delete an item, change the TYPE to **0**, and press **(ENTER)**. The item list is displayed. To add an item, follow the instructions in "Creating Record Formats."

When all changes to an item have been made, press **(ENTER)** to store the changed item. (Pressing **(BREAK)** causes the changes to be ignored.) The item list is displayed. The DISK REC SZ changes to reflect the amount of diskette space used by all items. To continue changing items, enter another item number. When you finish changing items, press **(ENTER)** at the item list. If any of your changes affect the way data is stored, the screen shows:

```
FILE REFORMAT REQUIRED.
PROCEED WITH IT? [N]
```

If you have not backed up your diskette(s), press **(N)**. Your changes are ignored, and the Main Menu is displayed. Make a backup, and repeat the above procedures.

If you have a current backup, press **(Y)**. Your file is reformatted to include the changes you made. This can be a lengthy process, depending upon the number of records in your file, but to help you keep track of the reformatting process, each record number is displayed as it is reformatted. When reformatting is complete, the Main Menu appears.

To practice making changes to the record format, see "Practice Session E — Changing Record Formats."

Entering and Manipulating Data

This section of the manual shows you the various options you have after you define the structure of your file. In it, you learn how to enter data in your records, access records in indexed order, examine subsets of records, and use your data in reports.

Entering Data in Records

The most important aspect of your file is the data you store in it. To enter data in records, first load Color Profile by typing RUN "DOS" (ENTER) when OK is displayed.

The File Selection Menu appears. Type the name of the file in which you want to enter data, pressing (ENTER) if your filename contains less than eight characters.

The Main Menu for the file is displayed with the REPORT FORMAT, DISPLAY FORMAT, and ACCESS METHOD selections. To change the display format to the screen in which you wish to enter data, press (↑) until the cursor is at DISPLAY FORMAT. Type the letter of the format you want to see, and press (↓) until the cursor returns to ENTER SELECTION.

You cannot enter data in records until you have defined a record and display format for the file. If you have not done so, please read the sections entitled "Defining Record Formats" and "Designing Screens" before you continue.

Press (F1) for VIEW/UPDATE RECORDS. The screen you requested appears. The record is blank, with 00000 as the record number. The record number is always 00000 when a blank record is displayed. Anytime that the record number is 00000, you may create a new record by typing the information requested on the screen.

The cursor is at the first area for entering data. Type the data, and press (↓) to move to the next entry area. If you use all the available spaces in an entry area, it is not necessary to press (↓). The cursor automatically moves to the next entry area. If you enter data past the end of the entry area (if your data is longer than the area allows), press (↑) twice to return to the entry area and shorten the data.

If you make a mistake while typing in an area, use (→) and (←) to move the cursor back and forth within the area needing correction. To move the cursor to a preceding area, use the (↑) key. (↓) moves the cursor to the next area.

If you enter data that is invalid due to your validation criteria or data that Color Profile does not accept (such as 13 for a month), the computer beeps when you try to move to another entry area without correcting the invalid data and asks you to make a change. Use (→) or (←) to move the cursor to the invalid data, and correct it.

If you have defined more than one display format for entering data, you may switch between formats anytime you wish; however, do not press (ENTER) until all the information for one record has been entered in all screens. You may enter data in one format, and, if the same item occurs in other formats, Color Profile automatically places the data in the correct item's entry area in all formats.

Entering and Manipulating Data (continued)

To switch between formats, move the cursor to the `DISPLAY FORMAT` prompt at the top of the screen, and type a new letter. You may enter additional data on the new screen.

When you have entered data for the last entry area on the screen and pressed `(↓)`, press `(ENTER)` to store the record. Color Profile assigns a unique number to the record and displays `RECORD xxxxx CREATED`. (xxxxx stands for the record number.) Next, the screen displays another blank record, ready for you to complete.

When you finish entering data in records, press `(BREAK)`. You are returned to the Main Menu.

Revising Data in Records

When you need to revise data in records, press `(1)` at the Main Menu (for `VIEW/UPDATE RECORDS`). A blank record appears. To see a specific record, press `(↑)` until the cursor is at the record number area, or press `(SHIFT) (↑)`, and the cursor moves directly to the record number area. Type the number of the record you want to see, and press `(ENTER)`. (You do not have to type leading zeroes.)

The record you requested is displayed. To change information, use `(↓)` to move the cursor to the area you want to change, and type the change. If necessary, you may switch between several display formats to make more changes on different screens. When your data is updated, press `(ENTER)` to store the changes. No change is stored on diskette until you press `(ENTER)` and see the `MASTER REC REWRITTEN` message. If you decide not to make a change after typing new data in an area, either move the cursor back to the record number area and enter another number, or press `(BREAK)` to return to the Main Menu. The record remains as it was before you changed any data.

To create new records after revising existing ones, simply move the cursor to the record number, and type `0 (ENTER)`. A blank record appears. Once you complete the record, Color Profile assigns it the first available record number.

Reviewing Several Records

It might take quite a while to review records by typing the record number for each record you want to see. Color Profile offers a "shortcut" to finding records. Once a record is displayed, use `(SHIFT) (↑)` to move the cursor to the record number area. Then, press `(SHIFT) (↑)` again, and the record previous to the one displayed appears. `(SHIFT) (↓)` displays the next record. You can use this feature to scan several records in record number order without entering a record number each time.

Deleting Records

When you no longer need the data in a record, you might want to delete the record. Deleting records lets Color Profile reuse the space when you create more records.

To delete a record, press **(1)** at the Main Menu. Display the record you wish to delete. When the correct record appears, press **(SHIFT) (CLEAR)**. RECORD DELETED! appears at the bottom of the screen, and a blank record appears.

The next time you create a record, the number of the record you last deleted is assigned to the new record. This lets you reuse record numbers, saving space on your diskette and ensuring that your file is managed efficiently.

Once you've finished deleting records, you may either create more records, revise or review records, or return to the Main Menu by pressing **(BREAK)**.

To practice adding, changing, and deleting records, see "Practice Session F — Entering Data in Records."

Using Access Methods

As your files grow larger, it becomes less practical to search for records by using **(SHIFT)** **(↑)** and **(↓)** or by entering record numbers. You can define up to 26 ways to "access" your file. Access methods let you display records in sequences other than record number order and examine subsets of a file.

Defining an Access Method

To define an access method, load Color Profile. At the File Selection Menu, type the filename for which you want to define an access method.

The Main Menu for your file appears: Press **(5)** for DEFINE/ALTER ACCESS METHODS. The screen shows:

```
FILE =XXXXXXXX SELECT ACCESS [A]
A BY RECORD NBR N
B O
C P
D Q
E R
F S
G T
H U
I V
J W
K X
L Y
M Z
(BREAK TO EXIT)
```

Your filename is displayed at the top of the screen. If this is the first time you have defined an access method, the SELECT ACCESS prompt shows access method A. Note in the list that access A already has a name — BY RECORD NBR. You cannot change this access method. It always accesses your file by record numbers.

Press **(A)**, and the screen changes to show that access A has a fixed meaning and cannot be changed. You also see the number of records and reusable (deleted) records in your file as well as the number of subrecords and reusable subrecords. (Subrecords are discussed in a later section of the manual.) Press any key to return to the access method list.

Press a letter key other than **(A)** to define an access method. The screen shows:

```

ACCESS "x" CONTAINS 0000 MEMBERS

NAME: [           ]

SEQUENCE ITEMS:
[           ]

SELECTION CRITERIA:
[           ]

]
    
```

x stands for the letter you chose. The cursor is at NAME. Type a description of the access method you want, using 14 or fewer characters, and press **(↓)**. For instance, if you want to display records in alphabetical order by last name, you might choose access **L** and give it a description of **LAST NAME**. The description is for your information only and does not appear in records or reports.

The cursor moves to SEQUENCE ITEMS. This area of the screen is for entering item numbers by which you wish to index your file. If you enter nothing in this area, your records will be sorted in record number sequence. In the preceding paragraph's example, your index is by LAST NAME. Suppose that LAST NAME is item 002 in your record format. At SEQUENCE ITEMS, you would type **002 (↓)**. When you enter item numbers by which you want to index, you must type the entire item number, including leading zeroes. (No ! is necessary.)

You can cause your records to be listed in order of more than one item by specifying several items at the SEQUENCE ITEMS prompt. For example, you might choose to list records in order of last and first names. This is a sort within a sort. Type any item numbers by which you wish to access records. You are not required to leave spaces between item numbers, enabling you to enter up to ten items. For instance, you could sort records in order of last name, then first name, date of birth, and finally address. Just list item numbers in the order in which you want the sort to occur. Press **(↓)** after entering sequence items.

At the SELECTION CRITERIA prompt, you specify exactly which records you want to see. Entering selection criteria requires a knowledge of using expressions. If you have not read the discussion of expressions, please review "Expressions," in the section, "Setting Up Files," before continuing. Leaving this prompt blank includes all existing records.

Entering and Manipulating Data (continued)

At this prompt, type an expression to limit the records displayed. To see, for example, records in alphabetical order by last name (item 002), from C through L only, the selection criteria expression would be: !002 NOT < "C" AND !002 < "M". You may enter more than one condition or combine conditions to limit the displayed records as much as you like. You have 190 spaces for entering selection criteria. Press **(↓)** after entering the criteria.

To store the access method in your /CTL file, press **(ENTER)**. Pressing **(BREAK)** at this point cancels the access method you defined, returning you to the list of access methods. Once you store the access method, Color Profile displays a monitor screen. This screen lets you know that records are being arranged in the order you requested in your newly-defined access method and that an "access set" is being created. It also keeps track of Color Profile's progress as it re-orders your records. Next, the Main Menu for your file is displayed.

Using an Access Method to Find Records

After you define an access method and the Main Menu appears, notice that the new access method is displayed at the top of the screen. When you search for records, the access method at the top of the screen is one used to display records. To change the access method, press **(↑)** until the cursor is at ACCESS METHOD. Type the letter for the access method by which you wish to display records, and press **(↓)** until the cursor returns to ENTER SELECTION.

Press **(1)** to VIEW/UPDATE RECORDS. A blank record appears. Press **(SHIFT) (↑)** to move the cursor to the record number area. When you press **(SHIFT) (↑)** again, the first indexed record is displayed.

Pressing **(SHIFT) (↓)** displays the next record in your indexed sequence. **(SHIFT) (↑)** displays the previous indexed record. You may now search through the file in the order you specified in your access method. If a selection criteria was used, only the records belonging to the subset you selected are displayed. Other records may be reviewed by entering their record numbers at the record number prompt and pressing **(ENTER)**.

Finding Specific Records

To find a specific record without searching through the entire indexed file, first display a blank record by moving the cursor to the record number area and changing the number to 0. Then, move the cursor to the entry area for the item by which the file is indexed (such as LAST NAME). Type the data of the record you want to see. For instance, to find a record for JONES, move the cursor to the LAST NAME area, and type JONES. If your file is indexed by more than one item, type data of the record you want to see in every entry area used as a sequence item.

Press **(SHIFT) (→)**. The record containing the data you typed is displayed. If an exact match cannot be found, the record occurring after the one for which you were

searching is displayed. Using **(SHIFT) (↑)** or **(SHIFT) (↓)** displays the record preceding or following the one you requested.

Note: If you are careful to avoid use of the **(ENTER)** key, you may type data of the record you want to display over data in the currently displayed record before pressing **(SHIFT) (→)**, instead of clearing the record number to 00000.

Updating Access Methods

Anytime you add new records to a file, change the data in an item used by an access method for indexing, or change the data in an item used in your selection criteria, you **must** update the access method. Updating is a simple procedure. At the Main Menu, press **(5)**. When the list of access methods appears, press the letter key for the access method you wish to update. The information for the chosen method is displayed. Press **(ENTER)**, and your access set is rebuilt. All new or changed records are now included in or excluded from the access set.

To practice setting up and using access methods, see "Practice Session G — Access Methods."

Setting Up Reports

Color Profile lets you define up to 26 different ways to report on any data in each of your files. Reports may be printed on paper or simply displayed on the screen. You may store reports in special files that let you print them later with either Color Profile or Color SCRIPSIT® and work with other Color Profile or Color SCRIPSIT options while you are printing. Reports can be used to print mailing labels or form letters, and they can figure and print totals.

Preliminary Report Setup

To set up a report, load Color Profile. At the File Selection Menu, type the name of the file for which you wish to format a report, and press **(ENTER)**. The Main Menu for the file is displayed.

Press **(6)** at the Main Menu for DEFINE/ALTER REPORT FORMATS. The Screen shows:

```
FILE=XXXXXXXXX  SELECT REPORT [A]
A                N
B                O
C                P
D                Q
E                R
F                S
G                T
H                U
I                V
J                W
K                X
L                Y
M                Z
(BREAK TO EXIT)
```

Your filename is at the top of the screen with the SELECT REPORT prompt. Press the letter key by which you wish to identify the report format. The screen displays:


```
REPORT "x"  NAME [          ]
ACCESS METHOD [A]
SORT?  BEFORE [Y]  AFTER [N]

CONTROL BREAK LEVELS [0]

LINE WIDTH[132]  LINES/PAGE[066]
MARGIN:LEFT[000]TOP[003]BOT[003]

NUMBER OF LINES OF:
  HEADINGS [001]
  DETAIL   [001]
  TOTALS   [000]
NUMBER OF CALCULATIONS:
  BEFORE [000]  AFTER [000]
```

The x in the above display is for the identifying letter you chose for this format. When you enter data on this screen, press at any prompt to use its default setting. Any numbers you enter must be from 0-132.

Name

The cursor is at the NAME prompt. Type the name or description of the report, using 13 or fewer characters. The description is for your information only and serves as an identifier on your report format list. Press to move the cursor to ACCESS METHOD.

Access Method

You may list data using any access method you have defined. Type the access method's letter, and press . The cursor moves to the next line.

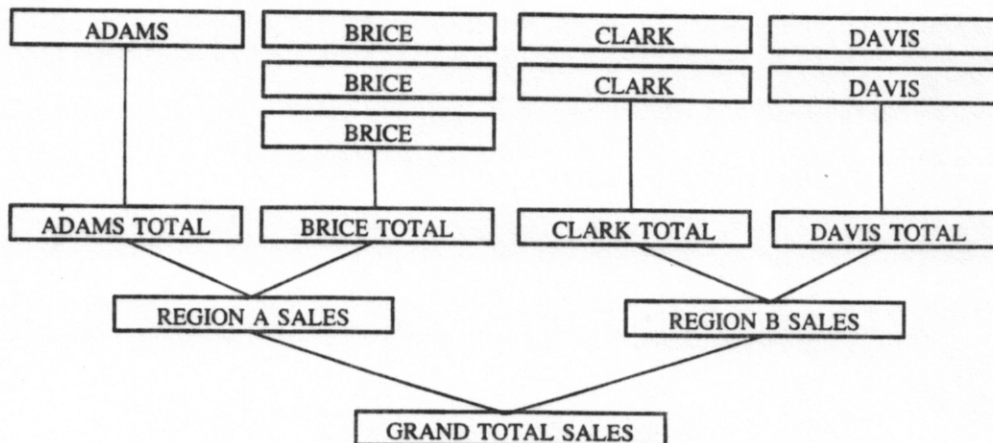
Sorting

The SORT? question should be considered if you are using an access method other than A (record number order). The BEFORE prompt asks if you want to sort your records **before** you print the report. Pressing to keep the Y answer tells Color Profile to automatically sort your records, in case you have added or changed records that should be included in the report's access method. Pressing here tells Color Profile not to sort your records before it prints the report.

The AFTER prompt asks if you want to sort your records **after** completion of report printing. This feature is discussed later in the section. Either press to keep the N answer, or press to make Color Profile sort records after report printing is completed.

Control Breaks

Control breaks are levels, or groups, of data on your report. The following diagram should give you an idea of how control breaks work:



In the diagram, there are three control break levels. Control breaks are always used in conjunction with totals, discussed in a moment. To use control breaks, you must be using an access method other than A. You may use as many control breaks as there are sequence items in the access method you are using for the report, **plus one**. Press a number key for the number of levels of totals that you want.

Suppose that the access method you are using for a report lists records in order of customers' last and first names. You want the report to list the dollar value of each sale to a customer, a subtotal of all sales to a customer, a subtotal of all customer sales within a region, plus a grand total of all sales. By answering the **CONTROL BREAK LEVELS** with **3**, Color Profile would insert subtotals after listing all sales to a particular customer and after listing all sales to customers within a particular region. At the end of the report, a grand total of all sales would appear.

Width and Margin Settings

LINE WIDTH tells Color Profile the maximum number of data characters that you want to use on each line of the report. You should not specify a line width greater than the number of characters your printer can print on one line. Line width does not include a left margin you might want. Type a number for the line width you want, and press **F1**, or press **F2** without typing a line width to leave the setting at 132.

You can use line width to limit the amount of information printed on a report. By specifying a line width of 50, only the first 50 characters of each line are sent to the printer, no matter how many characters you use in your actual report format. Thus, one report format can be used to print either a full or abbreviated report.

The **LEFT** margin setting is the number of blank spaces you want to send to the printer before data begins printing. The **LEFT** margin setting is **in addition to** the

line width you specify. For instance, if you specify 60 characters for LINE WIDTH and 10 for LEFT margin, a maximum of 70 characters would be sent to the printer on one line. The LINE WIDTH plus the LEFT margin should not exceed the number of characters your printer can print on one line; otherwise, the line will wrap around to the next print line to finish printing. Type a number for the left margin, and press .

Note: There is no setting for the right margin — a right margin is automatically forced due to the way Color Profile uses line width. For example, if your printer will print 80 columns, and you want left and right margins of 10 characters each, you should set the LINE WIDTH to 60 and the LEFT margin to 10. This forces Color Profile to skip 10 spaces before printing a maximum of 60 characters on one line. 10 characters are left over, giving you a right margin of 10.

LINES/PAGE tells Color Profile the number of lines **including** top or bottom margins that can be printed on one page of the report. Do not specify more lines per page than your printer can print on one sheet of paper. Type the number of lines you want printed on each page, and press , or press to leave the setting at 66, the number of lines that can be printed on a sheet of 11-inch paper. Press for a continuous listing with no headings or page breaks.

TOP and BOTTOM indicate the number of blank lines you want at the top and bottom of each report page. Type the number of blank lines you want at the top of each page, and press . Do the same for the bottom margin. You may press at each prompt to leave the top and bottom margins at their default settings of 3.

Heading, Detail, and Total Lines

Next is a section to specify the number of heading line, detail line, and total line format descriptions you want on the report. First, type the number of lines you want for HEADINGS, and press . For example, entering 4 at HEADINGS would give you enough room for a report title, a blank line, a line of column headings, and another blank line before report data starts.

The DETAIL prompt asks the number of lines necessary for printing **one** record's data on the report. For instance, you might want to print names, addresses, phone numbers, social security numbers, and birthdates for each record in your file. If all this data will not fit on one printed line of the report but **will** fit on two lines, you could specify 2 as the number of detail lines. After typing a number for DETAIL lines, press .

The number of TOTAL lines is the number of lines you need to describe the way totals should be printed. You should enter the number of lines you need to list **one** group of totals, just as you entered the number of DETAIL lines necessary for listing **one** record's data. If the data being totalled will not fit on one line, specify as many as you need, just as you did for DETAIL lines. When you have entered the number of TOTAL lines needed for the report, press .

Calculations

The cursor is at NUMBER OF CALCULATIONS. The BEFORE and AFTER prompts are used to tell Color Profile how many calculations you will perform with your data before and after report printing.

At BEFORE, type the number of calculations to be performed before printing, and press . At AFTER, type the number of calculations to be performed after printing is complete, and press .

Finishing the Setup

When all prompts are answered correctly, press . The report format screen appears. Pressing at any time during report formatting cancels the entire format.

The Report Format Screen

The screen changes to display a blank "report" for you to design. You can position the data you want to see on the report anywhere on this screen. The report format shows separate sections for heading lines, detail lines, total lines, and calculation lines.

Notice that a scale is shown for each section. The scale lets you know which characters are visible on the screen. The screen displays only 32 spaces, but as you type, it scrolls to the left to let you see more of the format. The entire format screen uses 133 spaces. If you have defined several heading, detail, total, and calculation lines, the screen can also scroll up and down to let you see all the lines. As you decide placement of report information, use the arrow keys to move the cursor around the screen.

As you design the report, you can quickly move the cursor to Column 0 of any line by pressing .

All data is positioned on the screen in the same way as edit pictures are drawn in special screen designing — plus the item number and edit picture (9s or Xs for characters you want displayed plus any special characters). See the section entitled "Special Design Features" for more information. is used in defining totals and printing page numbers.

Headings

This section contains the number of lines you specified for headings in the preliminary screen. Type anything you wish to literally appear in a heading line, such as the title of the report, blank lines, or column headings, but do not use Column 0. This column has special uses. Remember to leave enough space between column headings to take care of the length of the items you'll list in each column.

You can cause the page number to print on the report by positioning the cursor at any point in a heading line at which you want a page number to appear. Press and type 255 at the ENTER ITEM NUMBER prompt. Color Profile sets aside certain item numbers for special uses in report formatting. The message at the top of the screen now tells you that the LAST ITEM LENGTH WAS 005. Page numbers use five characters (such as 00001), but you can limit the number of digits shown. The " takes the place of the leftmost significant character in the page number. Type a 9 after the " for each additional digit to the left that you want to print. For instance, "9 can be used for reports that may use up to 99 pages. Leading zeroes are automatically suppressed from printing, so you may type as many 9s as you like, up to the maximum of five.

You can also cause actual data from the first record on each page to print in the headings section. For instance, if you are formatting a report that lists all accounts with a status of "C," you might not want to list the account status in every line. Position the cursor anywhere in the heading that you want an item's data to appear, and press . At the top of the screen, type the item number whose data you want to show in the heading, and press . (You do not have to type leading zeroes.) When the cursor returns to the report line, type an appropriate edit picture for the data.

When you have finished positioning heading information, press until the cursor moves to the next section of the screen.

Detail Lines

In the DETAIL lines section, you tell Color Profile the data from each record that you want to see on the report. To position data, move the cursor to the point at which you wish to list an item's information, and press . Do not use Column 0. At ENTER ITEM NUMBER, type the item number, and press .

The cursor returns to the report line. Draw an appropriate edit picture for the data on which you are reporting.

You can use the report format to print a form letter by specifying up to 132 detail lines on the preliminary screen. Set your margins to fit the paper you are using. On the format screen, draw edit pictures for such items as names and addresses, and type the letter. Avoid using Column 0, and do not use or anywhere in the body of the letter. This lets you format a form letter of up to two pages.

Note: Form letters using 132 detail lines may only be formatted on a 32K Color Computer.

When you have finished positioning detail information, press until the cursor moves to the next section of the screen.

Totals

You can cause any data from the records being reported to be totalled on the report. Any type of item can be used to produce a total, provided that the item contains numbers. You might want to review the discussion of expressions, in "Setting Up Files," since the rules for using different item types in expressions also apply when you use totals in report formats.

Note: Setting up and coordinating control breaks and levels of totals can be a complex process, as is using BEFORE and AFTER calculations in your report. If this is the first time you have used Color Profile, you may wish to step through the practice session for report formatting before proceeding with this explanation. See "Practice Session H — Reports," for an example of using control breaks, totals, and calculations in reports.

Move the cursor to the point at which you want a total to appear, and press **␣**. Just as **␣** plus 255 indicated an "accumulator" for page numbers, **␣** followed by an item number "accumulates" data from the item you specify. At the top of the screen, type the item number being totalled, and press **ENTER**. When the cursor moves back to the report line, draw an edit picture for the total, as if it were a math item (for instance, "9,9999"). If you are using control breaks, Color Profile adds data and prints a subtotal line after each control break group, using the format you set up in this section of the screen. A grand total of all groups will appear at the end of the report.

Note: You can print totals of data even if the data you are totalling is not otherwise shown on the report. Specify the item number for data you want totalled, and place the edit picture somewhere on the total line.

If you use several control break levels (for example, CITY within STATE within REGION), you can show the "level" number in total lines. Somewhere on the total line (other than in Column 0), type LEVEL ". The cursor moves to ENTER ITEM NUMBER at the top of the screen. Color Profile uses a special item number to keep track of the control break level — 254. Type 254 **ENTER**. The cursor returns to the format line. When your report is printed or displayed, it will show, for example, LEVEL 1 or LEVEL 2 at each set of subtotals or at the grand total line. LEVEL 1 is the lowest control break level. The highest level number is the level for grand totals. Refer to the diagram earlier in this section showing how control break levels are used by Color Profile.

You can customize report formats to show actual descriptions of subtotals and grand totals on the lines at which they appear in the reports, rather than LEVEL 1, LEVEL 2, LEVEL 3, and so on. At the preliminary setup screen, find the number of control break levels you are using. For each control break, you need one total line format per level (including a grand total). Consider that one total line format may use more than a single line on the report if you are totalling several lengthy items.

At the NUMBER OF TOTAL LINES prompt, add the number of lines necessary for printing totals for each control break to the number of lines for the edit picture, and enter that number.

When the format screen is displayed, the **TOTALS** section contains the number of lines you specified. Move the cursor to Column 0 in the first line of the **TOTALS** section. Column 0 is used for giving Color Profile special instructions about printing lines in a report. If Column 0 is left blank, the line is always printed; however, if Column 0 contains a number, the line is only printed if it matches the "current" control break level. (See the chart following this paragraph for a summary of Column 0's uses.) On the first line, type **1** plus a description of your most specific control break level (for example, **CITY TOTALS**). Skip a few spaces, and set up your total format, using **()**, item numbers, and **9**s for the number of characters you want to display. Move the cursor to Column 0 of the line on which the next set of total lines begins.

Character in Column 0	Meaning
space	Always prints the line.
*	Never prints the line.
0 - 9	Prints the line for the specified total. For use only in total lines.
S	Prints the line only when subrecord data is available.
M	Prints the line only once per master record.
Z	Prints the line when no subrecords exist.

At this line, type **2** in Column 0, followed by a description of your next control break level (for instance, **STATE TOTAL**). Set up a total format for this control break level. Continue moving the cursor to Column 0 of each new set of total lines and typing the next number in sequence (**1, 2, 3, 4**, and so on) with a description of the type of total line you want and a format for it, including the grand total set.

When you print the report, each control break group's data is listed, after which the subtotal line(s) for that group prints. The subtotal line(s) consists of the description you entered for the subtotal plus the actual subtotal(s).

The following illustrations show one way of setting up a report format that prints subtotals with descriptions:

Entering and Manipulating Data (continued)

Preliminary Setup Screen:

```
REPORT "A" NAME [SALES      ]
ACCESS METHOD [B]
SORT? BEFORE [N] AFTER [N]

CONTROL BREAK LEVELS [3]

LINE WIDTH[080] LINES/PAGE[066]
MARGIN:LEFT[006]TOP[003]BOT[003]

NUMBER OF LINES OF:
  HEADINGS [001]
  DETAIL    [001]
  TOTALS    [004]
NUMBER OF CALCULATIONS:
  BEFORE [000] AFTER [000]
```

Format Screen (extended to include entire format):

```
HEADINGS
0...5...10...15...20...25...30...35...4
REC. NO. CUSTOMER      STOCK * PRICE
DETAIL
0...5...10...15...20...25...30...35...4
!99999 !XXXXXXXXXXXX !9-9999 !9,999.99
TOTALS
0...5...10...15...20...25...30...35...4
1 CITY TOTAL           "9,999.99
2 STATE TOTAL          "9,999.99
3 REGIONAL TOTAL       "9,999.99
4 GRAND TOTAL          "9,999.99
```

In the above format, five total lines could have been specified. On the first four total lines, only the control break level and description would be necessary. The fifth line would contain **no** number in Column 0, and would show only the edit picture for totals ("9,999.99). The fifth line would be used as the picture for each level of totals in the report. If you use several lines of totals, it is easier to describe the total format only once instead of several times.

Calculations

You can use reports to change stored data — "roll" monthly totals into year-to-date totals, clear items to 0, and accumulate data from subrecords to store in master records. (For details on subrecord features, read the next section of the manual, "Subrecords.") These features involve using BEFORE and AFTER calculations in a report format. Each calculation line may contain an expression and a list of items into which the result of the expression should be placed.

Although calculation lines are displayed on the format, they never print on reports.

Instead, they tell Color Profile to perform calculations upon items either before or after printing the record's data.

Always begin typing in Column 1, and use only **one** expression per line. First, enter the item numbers into which you want a calculation result to be placed by typing ! plus the three-digit item number (leading zeroes included). Separate several items by leaving spaces or inserting commas between each item number.

After typing item numbers, press = . Next, type the expression you want to use, following the rules for writing expressions. If you are using more than one BEFORE or AFTER calculation, use \u2193 to move the cursor to the next line. Continue entering any item numbers and expressions you need.

Remember these hints and rules when you use BEFORE and AFTER calculations:

- Calculations are performed in the sequence in which they are listed. For instance, to roll THIS MONTH's data into a YEAR-TO-DATE item after printing a report, the first AFTER line should set the YEAR-TO-DATE item to itself **plus** the data in THIS MONTH. The next line should set the data in THIS MONTH to 0, so that a new monthly total can be started when you update records.
- Derived items can be changed by BEFORE calculations and printed on a report. However, the change is only temporary. When records are examined after printing a report, the original formula (defined at the DERIVED FROM prompt in item definition) is used to derive the item's data. If data used for deriving the item's data has been changed by a report calculation, the derived item's data may have changed when records are examined after printing the report.
- When you use calculation lines to change items used in the report's access method, make sure that you answer the SORT AFTER prompt in the preliminary setup screen with Y. This rebuilds the access set after the report is printed to include any changes made by the report.
- You may use calculation lines to set text and numeric items to alphanumeric values. For example, if item 002 is PHONE NUMBER, the expression, !002=" " would erase all phone numbers from records listed in the report.
- By specifying 0 for heading, detail, and total lines and using only BEFORE and AFTER calculations, you can perform calculations and change records without taking the time to print a report.

Suppressing Lines

If you like, you can prevent any heading, detail, or total line from printing by placing an asterisk (*) in Column 0 of the line. Calculation lines may also be prevented from functioning by using * in the same way. You may use this feature to insert notes in your report format without printing them on the actual report. * may also be used to allow for future changes in your report format.

You may also use line suppression to format a dual-purpose report. Consider a case in which you want to print two reports: they are identical except that an extra detail line

is needed in one report. You can use one report format to print both reports. Define both detail lines, and when you want to print the shorter report, type * in Column 0 of the detail line you don't need. Remove the * from the format when you want to print the longer version.

Storing the Report Format

When you have finished designing your report, press **ENTER**. The preliminary setup and format are stored in the /CTL file, and the Main Menu reappears.

To practice setting up reports, see "Practice Session H — Reports."

Printing Reports

Once a report format is defined, you can use it to print a report on paper or display it on the screen. You may also send a report to a special file, called a **spool** file, and print it later using either Color Profile or Color SCRIPSIT. To print a report, load Color Profile. When the File Selection Menu is displayed, type the name of the file for which you wish to print a report, and press **(ENTER)**. The Main Menu for the file appears.

Press **(2)** for PRINT A REPORT. The screen shows:

```

OPTION [1]
  1. TO PRINTER
  2. TO SCREEN ONLY
  3. TO DISK
  4. DISK TO PRINTER
  5. DISK TO SCREEN

REPORT [x]
(OPTION 1-3)

DISK FILE NAME [      ]
                DRIVE [0]
(OPTION 3-5)
    
```

The *x* above represents the report format with which you last worked. The cursor is at the **OPTION** prompt. You may choose from several options, each of which is described below.

Printing a Report

To print the report on paper, first make sure that your printer is properly connected and on line. If you are using a Line Printer VII for printing, make sure that you move the switch on the back of the printer to the 8-bit serial position. Set your printer to receive at 600 baud. If your printer cannot receive at 600 baud, see "Changing Program Defaults" for detailed information about getting your printer ready.

Press **(1)** for TO PRINTER. The cursor moves to the **REPORT** prompt. Press the letter key for the report you wish to print. The (OPTION 1-3) message lets you know that you must specify a report for printing only if you are using options 1, 2, or 3.

The cursor moves to **DISK FILE NAME**. Press **(ENTER)** at this prompt. The report begins printing, and at the same time, it scrolls up the screen. Only 32 characters are displayed on the screen, even though your entire report prints on paper.

To stop printing in the midst of a report, press **(BREAK)**. The Main Menu is displayed.

“Printing” a Report on the Screen

You may choose not to print your reports on paper but only display them on the screen. To print a report on the screen, press **(2)** for TO SCREEN ONLY at the OPTION prompt. The cursor moves to the REPORT prompt. Press a letter key for the report you wish to see. The cursor moves to DISK FILE NAME. Press **(ENTER)**.

The report begins scrolling up the screen. Only the first 32 characters of each line can be displayed, so consider this when you decide to send the report to the screen only.

You may change the rate at which the report is scrolled by using the number keys. To freeze the display and stop the report from scrolling, press **(0)**. To resume scrolling, press any other number key. The lower the number key you press, the faster the report is scrolled. For instance, pressing **(9)** scrolls the screen slowly, and pressing **(1)** scrolls it very quickly. The default setting for scrolling speed is 5.

To stop “printing” in the midst of the report, press **(BREAK)**. When you stop printing, or when the report is completed, REPORT END - PRESS ANY KEY is displayed. Return to the Main Menu by pressing any key.

“Printing” a Report on Diskette

Sending a report to disk stores the print lines on your diskette in a “spool” file. Spool files store an image of each print line for later reference — a spool file contains an exact copy of what would normally be sent to the printer. Once a report is stored on diskette in a spool file, you may recall it at a later time and print it while you use another Color Profile feature or while using Color SCRIPSIT. Spool files may also be easily read by BASIC programs.

To send a report to disk, press **(3)** for TO DISK at the OPTION prompt. The cursor moves to REPORT. Press the letter key for the report you want to “print” on the diskette.

The cursor moves to DISK FILE NAME. You have up to eight spaces to type a name by which the report should be identified when it is stored as a spool file. If you use less than eight characters in the name, press **(↓)**. If all eight spaces are used, the cursor automatically moves to the DRIVE prompt.

Note: If you do not remember the name of the file you want to use, leave DISK FILE NAME blank. A list of existing spool files is displayed, and you may choose the file you need.

At DRIVE, press a number key for the disk drive on which you wish to store the file. Make sure that you have a formatted diskette in the drive on which you store the file.

Press **(ENTER)** to begin saving the report as a spool file. If the name you specified is already in use, the screen clears and displays:

```
SPOOL FILE ALREADY EXISTS.  
RE-USE IT (Y/N)?  
(PRESS CHOICE KEY)
```

Press **(Y)** to use the name with the report you chose, or press **(N)** to cancel using the filename. After you cancel the operation, the Main Menu reappears. Otherwise, the report scrolls by on the screen as it is being stored on the diskette. When the report has been saved on disk, the Main Menu automatically reappears.

If you check the directory of the diskette on which the report is stored, you will see the filename you entered plus the extension `/SPL`. This extension lets you know which of your files are spool files.

Printing a Report From a Spool File

To print a report that is saved on disk as a spool file, press **(4)** for `DISK TO PRINTER` at the `OPTION` prompt. When the cursor moves to the `REPORT` prompt, press **(↓)**, since you do not need to identify the report by letter, but only by its spool file name.

At the `DISK FILE NAME` prompt, type the name you used when you saved the report as a spool file, or leave the name blank to see a list of existing spool files. You do not have to type the extension (`/SPL`). If the name uses fewer than eight characters, press **(↓)**.

At the `DRIVE` prompt, press a number key for the drive on which your file is stored, and press **(ENTER)**.

Once your entries are complete, the screen clears and then asks `HOW MANY COPIES? [001]`. Make sure that the printer is properly connected and ready to print. For more than one printed copy of the report, type the number of copies you need, and press **(ENTER)**. For only one copy, press **(ENTER)**.

The report begins printing, and the Main Menu is displayed. While the report is printing, you may choose any selection from the Main Menu and work on any part of Color Profile without disrupting printing. To stop printing at any time, use **(SHIFT)** **(←)**, then **(CLEAR)**. This command cancels printing but does not affect the part of Color Profile with which you are currently working.

You may print a report stored as a spool file using Color SCRIPSIT. For details on printing spool files with Color SCRIPSIT, see the Color SCRIPSIT manual. Likewise, Color SCRIPSIT spool files may be printed using Color Profile. Insert the Color SCRIPSIT diskette containing the spool file you wish to print into one of your disk drives, and answer the printing prompts with the proper disk file name and drive number. The report prints, and you may continue using other Color Profile features simultaneously.

“Printing” a Report on the Screen from a Spool File

This print option may be used to verify the contents of a file before you print the report on paper. To display on the screen a report saved in a spool file, press **(5)** for `DISK TO SCREEN` at the `OPTION` prompt. When the cursor moves to the

Entering and Manipulating Data (continued)

REPORT prompt, press **(↓)**, since you do not need to identify the report by letter but only by its spool filename.

At DISK FILE NAME, type the filename you assigned to the report, and press **(↓)**, or leave the name blank to see a list of existing spool files from which you may choose. Press a number key for the drive on which the spool file is stored, followed by **(ENTER)**. The report scrolls up the screen. You can control scrolling speed in the same way as you did with the TO SCREEN ONLY option. Only the first 32 characters of each line are displayed.

To stop the report before it has finished being displayed, press **(BREAK)**. The Main Menu is displayed. Otherwise, when the report is finished, REPORT END - PRESS ANY KEY is displayed at the bottom of the screen. Press any key to make the Main Menu reappear.

To practice printing reports in different ways, see "Practice Session H — Reports."

Subrecords

This section of the manual explains an advanced feature of Color Profile — the creation and use of subrecords. A **subrecord** is a set of items attached to a record. The following example should give you a general idea of the nature of subrecords.

A file of authors must be created for an extensive home library. You want to create one record per author, containing the author's name, birthdate, and place of birth, plus the following information for **each** of the author's works in the library: title, publishing company, year this edition was published, and year of original publication.

How could you set up the file? You could create a separate record for each of the author's works and duplicate the name, birthdate, and place of birth in each record; or you could set up a record with the author's personal information plus perhaps five items for book titles, five for publishing companies, and so on. However, both of these methods are inconvenient and waste diskette space.

The most efficient way to handle this information is to set up two files that are hooked together. The AUTHOR/DAT file would contain one record per author with personal information. The AUTHOR/SUB file would contain multiple subrecords for each author with book title, publisher, etc. in each subrecord.

You would have two sets of information available to you at the same time. Subrecords help you set up the file so that you can enter all the necessary information without wasting diskette space.

Before you learn about subrecords, we strongly recommend that you be thoroughly familiar with the features discussed so far in the manual and that you be comfortable using simple files.

Setting Up Subrecords

To define subrecords items, load Color Profile when OK is displayed on the screen. At the File Selection Menu, type the name of the file in which you wish to use subrecords, and press **(ENTER)**. The Main Menu for the file is displayed.

Press **(3)** for DEFINE/ALTER RECORD FORMAT. The item list for the file appears. At the ITEM TO BE SEEN/CHANGED prompt, type 131. Any item defined using an item number of 131-253 tells Color Profile that you are defining a subrecord item. Define the item as you normally would, giving it a type, length, description, and any other specification you like.

Press **(ENTER)** to store a subrecord item, the item list reappears. Notice that six items have been added to the list other than the subrecord item you just defined:

Item 125 — SUBRECORD NUMBER: This item indicates which of several possible subrecords is currently being examined, changed, or reported. When this item contains 0, you are in creation mode for subrecords. When the item contains 1, the first subrecord attached to a master record is being examined. Changing it to 2 causes the second subrecord to be examined, and so on. This is a "logical" subrecord number.

Subrecords (continued)

Item 126 — NUMBER OF SUBRECORDS: This item indicates the number of subrecords attached to each master record.

Items 127-130 — BS LINK, SR NBR, UP LINK, and DN LINK: These items are for Color Profile's use in finding and storing subrecords.

Continue defining subrecord items, using numbers greater than 131. To use derived items in subrecords, see the discussion, "Derived Items and Subrecords," later in this section. When you finish defining subrecord items, press **ENTER** at the item list. The screen shows:

```
FILE REFORMAT REQUIRED.  
PROCEED WITH IT? [N]
```

Press **Y** to reformat your file to include any new subrecord items.

If this is the first time you have defined subrecord items for this file, you are also asked for the drive number on which you wish to store the subrecord file. To store subrecord items, Color Profile creates another type of file (your filename plus /SUB), where all the information in subrecords is kept. Type the appropriate drive number, and press **ENTER**. The Main Menu is displayed.

Using Subrecord Items in Display Formats

Subrecord items may be used in display formats along with normal items. You may place subrecord items anywhere on the screen, using the same technique for positioning as you learned in "Designing Screens." You might, for convenience, want to place all subrecord items together in a section of the screen. (Subrecord items and master record items are often placed on the same screen.) Treat all items as if they were part of any normal display format for a record.

Be sure to include an input area (" plus an item number) for item 125 in your display format. This lets you select individual subrecords for display and add more subrecords to a master record already in existence.

Entering Subrecord Data

Adding Records with Subrecords

Once you have defined subrecord items and included them in a display format, you may begin entering records with subrecord information.

Load Color Profile, and at the File Selection Menu, type the name of the file for which you wish to enter record and subrecord information. When the Main Menu for the file appears, press **F1** for VIEW/UPDATE RECORDS.

The screen you requested is displayed, and the record number is 00000. Remember that when the record number is 00000, you are creating a new record.

Enter data for each item. Don't forget to press **F2** after typing data in each item's area. If you have no subrecord information for a particular record, leave the subrecord items blank, pressing **ENTER** when you finish entering data. A record is created, and another blank record is displayed. As long as you do not enter data in subrecord items, you create only master records.

If you have subrecord data to enter in a record, type the data in the appropriate subrecord item areas. When you press **ENTER** to create the record, the screen does not clear. A master record is created, but you must press **ENTER** again to create a subrecord for the master record.

The second time you press **ENTER**, the subrecord is created and stored, and all data in subrecord items is cleared from the screen, leaving only the master record data. You are now in subrecord creation mode. To create another subrecord for a master record, enter more subrecord data, press **ENTER** when you finish. The subrecord number (item 125) is automatically maintained and updated by Color Profile. You may continue creating subrecords as long as you wish.

To stop creating subrecords for a master record, press **SHIFT** **F3** to move the cursor to the top line, and enter 0 for the record number. The entire record clears, and you are in master record creation mode again.

You may create more records and subrecords, or you may press **BREAK** to return to the Main Menu.

Adding Subrecords to Existing Master Records

To add subrecords to a master record already created, display the record you need. To go to the subrecord creation mode, change the subrecord number (item 125) to 0, and press **ENTER**. The master record data remains on the screen, but any subrecord data is cleared. You may now enter data for a new subrecord. To store the new subrecord, press **ENTER**.

To quit adding new subrecords, move the cursor to the top line on the screen, and change the record number to 0. Then, create a new record, add more subrecords to another record, or press **BREAK** to return to the Main Menu.

Examining or Changing Subrecords

Just as you may review or change information in a normal record, you may review and revise subrecord data. Load Color Profile, select a file, and press **(1)** at the Main Menu for VIEW/UPDATE RECORDS.

Type the number of the master record whose subrecords you want to review or change, and press **(ENTER)**. The master record is displayed with its first subrecord.

Examining Subrecords

Pressing **(SHIFT) (↑)** and **(↓)** with the cursor at the record number area displays the previous or next record, according to the access method you are using. However, if the cursor is at any item **other** than the record number, **(SHIFT) (↑)** and **(↓)** cause the previous or next subrecord for that master record to be displayed. When there are no more subrecords to display, the computer beeps and displays NO SUCH SUBRECORD.

To examine specific subrecords, simply move the cursor to the subrecord number area, type a subrecord number, and press **(ENTER)**. The subrecord you requested is displayed.

Note: To keep track of the number of subrecords each master record contains, include item 126 in your display format. Define this item with a ! (instead of ") in your display format, since it is an item whose information is maintained by Color Profile and cannot be changed (a "display only" item).

Changing Subrecords

Once a master record is displayed, move the cursor to the subrecord number area, type the number of the subrecord you need to change, and press **(ENTER)**. When the correct subrecord is displayed, make any changes you wish, and press **(ENTER)**. You may change data in either a master record or a subrecord — Color Profile checks to see which item's data changed. A message at the bottom of the screen tells you that either the record or the subrecord has been changed. Continue changing other records and subrecords, or press **(BREAK)** to return to the Main Menu.

Deleting Records and Subrecords

To delete a master record containing subrecords, you must first delete the subrecords attached to it. Remember that **(SHIFT) (CLEAR)** is used to delete a displayed record. You may delete subrecords in the same way. Simply display the master record and the desired subrecord, and press **(SHIFT) (CLEAR)**. Since master records cannot be deleted if they contain subrecords, only the subrecord you requested is deleted. When all subrecords for a master record are deleted, **(SHIFT) (CLEAR)** then deletes the master record.

When you delete subrecords, keep in mind that new subrecords are always added to the "end" of the subrecord chain. The only way to move a subrecord's position is to delete it and redefine it. It then becomes the last subrecord.

To return to the Main Menu after deleting subrecords and/or master records, press **(BREAK)**.

How Subrecords Affect Access Methods and Reports

Subrecords and Access Methods

Subrecords are not available for use as sequence items in an access method. However, you may use subrecord item numbers in a selection criteria expression. When Color Profile searches a file to find records meeting selection criteria and encounters valid data in a subrecord, it includes that subrecord's master record along with **all** its subrecords in the subset.

Subrecords and Reports

Subrecords and General Formats

Subrecords may be used in reports. The most typical kind of reporting with subrecords is a listing of each master record's data with all its subrecords' data.

To set up a report using master and subrecord data, specify two sets of detail lines in the preliminary screen. On the format screen's first set of detail lines, type **M** in Column 0, and position the master record items you want. On the second set of detail lines, type **S** in Column 0, and position the subrecord items you want.

When the report prints, a master record's data is printed **once**, followed by each of the master's subrecords. Without the **M** in Column 0, the master record data prints before **each** subrecord listed. Remember the following rule when you use subrecords in reports:

- A detail line containing a blank in Column 0 is **always** printed. A detail line containing an **M** in Column 0 prints only **once**, regardless of the number of subrecords.

Subrecords and Totals

Use subrecord item numbers in total lines in the same way as you use master record item numbers. Simply specify the item number in a total line on the format screen. Master and subrecord totals may be placed on the same line, if you wish.

Control breaks may be used with subrecord data as long as you use an access method other than **A**. Keep one point in mind, however: if the number of control break levels exceeds the number of sequence items in the access method you use, **one** subtotal line will print for **each** master record and a grand total after all the records are printed.

Normally, **()** plus an item number is used only in a total line. However, you may type **()** plus a subrecord item number in a **detail** line to generate a running total. Remember that **"** denotes an accumulator. As each subrecord prints, a running total is accumulated and prints on the same line. For example, if item 140 is a derived item

Subrecords (continued)

with a set value of 1, you could use it in a detail line to keep track of the number of works in your library by a particular author, printing something like this:

MILTON, JOHN	
PARADISE LOST	1
SAMSON AGONISTES	2
COMUS	3
MORE, SIR THOMAS	
UTOPIA	1
SHAKESPEARE, WILLIAM	
KING LEAR	1
THE TAMING OF THE SHREW	2
ROMEO AND JULIET	3
COLLECTED SONNETS	4
JULIUS CAESAR	5

This feature makes some control break levels unnecessary, since the last subrecord item listed for each master record contains an accumulated total of all subrecords attached to the master record.

Subrecords and Calculation Lines

You may roll subrecord items' data into a master record item on a report by using calculation lines. Follow the same rules for preparing expressions as you do in normal report formatting, but note the special use of Column 0.

Remember that placing a letter in Column 0 of a detail line causes it to print only once per record. Placing a letter in Column 0 of a calculation line causes the calculation to be performed only once per record. For instance, assume that you want to roll the total of item 140 from all subrecords into their master record's item 004. The calculation lines would be:

```
X!004=0
!004=!004+!140
```

The first calculation line sets item 004 to 0 **once** (because of the X in Column 0). The second calculation line tells Color Profile to add item 140's data to item 004 **each time** a subrecord is listed for any master record.

Subrecords and Derived Items

You can define derived subrecord items, but use these hints to help you in deciding whether to define the item as a master record item or as a subrecord item:

- If the DERIVED FROM expression uses data from the master record only, define it with a master record item number.
- If the DERIVED FROM expression uses data from a subrecord only, define it with a subrecord item number.
- If needed, you may derive an item using both master and subrecord data. Such items should normally be defined with a subrecord item number but might need to be master record items, depending upon their uses in reports.
- You cannot **derive** an item in a master record to be equal to the sum of a certain item from all subrecords when the item is defined. Instead, use the calculation line feature in reports to roll data into a master record item from subrecords.

To practice creating and using subrecords in various ways, see "Practice Session I — Subrecords."

Changing Program Defaults

When you receive Color Profile, it is prepared to handle the needs of an average user. However, some characteristics of the program may be changed either temporarily or permanently, depending upon your needs.

To change program defaults, load Color Profile. At the File Selection Menu, type the name of any of your files, and press **(ENTER)**. When the Main Menu appears, press **(7)** (for DEFINE/ALTER PROGRAM DEFAULTS). The screen shows:

```

P R O G R A M   D E F A U L T S

NUMBER OF DISK DRIVES      [1]
SORT DRIVE                 [0]
FREE SPACE MONITOR         [0]
TIMED STOP BAUD           [0]
PRINT TIMING               [00174]
EXPRESSION MEMORY          [00500]
PRINT BUFFER SIZE         [00040]
KEYBOARD BUFFER SIZE      [00001]
    
```

(PLEASE CHECK MANUAL)

In the above screen, PLEASE CHECK MANUAL refers to the Color Profile manual. Changing program defaults has an immediate effect on the way Color Profile performs, except for the PRINT BUFFER SIZE and KEYBOARD BUFFER SIZE. Any changes to these two defaults take effect the next time you run Color Profile.

To make changes, use **(↓)** to move the cursor from one default to the next, and type the changes. When you finish, pressing **(ENTER)** stores the new defaults permanently on your diskette. Each time you use Color Profile, the changes are in effect. Pressing **(BREAK)** after making changes causes them to remain in effect only until you exit the program.

Changing the Number of Disk Drives

Color Profile is initially limited to using one disk drive, since certain functions can be very inefficient if Profile is allowed to search non-existent drives. If you have more than one disk drive, you should change the default value to the number of drives you are actually using.

Changing the Sort Drive

If you have very large files or you are using a 16K Color Computer, there might not be enough RAM (random access memory) for sorting records when you create an access set. To solve this problem, Color Profile automatically sorts your records in

Changing Program Defaults (continued)

batches, temporarily saves each batch on disk, and finally merges the batches to let you sort an almost unlimited number of records.

The SORT DRIVE default is 0, the drive number on which Color Profile creates the temporary batch files before merging. If you prefer, you can change this number to 1, 2, or 3 to use a different drive (perhaps containing more free space) for storing batches.

Changing the Free Space Monitor Default

The FREE SPACE MONITOR default is set to 0. If you want to display the amount of free space in RAM anytime you are using Color Profile, change this number to 1. The amount of free space is then constantly displayed in the lower right corner of the screen. To eliminate the display, change its value to 0.

When the displayed number drops below 700, you might run out of memory. If the number drops below 700, consider adding more memory or reducing your demands.

Changing the Timed Stop Baud

The TIMED STOP BAUD is set to 0. If you are not using a Radio Shack printer and are having problems with printing, change this number to 1. After changing the setting, Color Profile processes more slowly when you print.

Changing Print Timing

PRINT TIMING is set to 174. This default is used for controlling the speed at which data is sent to the printer. At a setting of 174, Color Profile sends data to the printer at the rate of 600 baud. If your printer is able to use a different speed, enter these values to speed up or slow down printing:

For This Speed	Use This Value
120 baud	916
300 baud	348
600 baud	174
1200 baud	87
2400 baud	41

Changing Expression Memory

Color Profile uses part of RAM when it solves expressions for derived items or validation rules. It also uses RAM to "preload" as many key items used in access methods as possible. If you are using a 16K Color Computer, or if you have a very large file, Color Profile might use so much room to hold key items that there is not enough room left to solve expressions.

This default represents the minimum amount of RAM to be reserved for expression solving. If you have problems while using an access method and are using complex expressions, consider adding a few hundred to this number.

Changing the Print Buffer Size

The print buffer size default is 40. This buffer is a special part of memory that holds characters to be printed until the printer is ready to receive and print them. This lets Color Profile continue processing without constantly waiting for the printer.

If you are using a 16K Color Computer and need more memory for storing records, solving expressions, and so on, consider changing the default to a lower number. Also consider that if you lower the default value, Color Profile will run slower when you print.

If you notice on the free space monitor that you have several thousand bytes of available memory, you might want to increase the size of the print buffer. If you increase the size, consider these points:

- When you print a report, the Main Menu will be displayed before the report printing is completed. You may continue using Color Profile without waiting for the printer to complete the report.
- Pressing **(BREAK)** to stop printing in the midst of a report will not have an immediate effect — the report will continue printing until all characters residing in the print buffer have printed. To overcome this, you may press **(SHIFT) (←)** instead of **(BREAK)** if you need to stop printing only temporarily (to adjust the ribbon or paper, for example). To continue printing exactly at the point at which the printer stopped, press any key other than **(CLEAR)**. If you press **(CLEAR)**, only the line on which you stopped printing will be completed.
- When you print a report from a spool file, you will have fewer interruptions (as characters are read from the diskette and loaded into the print buffer) to other Color Profile options you are using simultaneously.
- There is less space available for sorting records in access methods.
- Finding records via an access method might take a bit longer than normal.

When you change the print buffer default, press **(ENTER)** to record the new default, exit Color Profile, and reload it to put the change into effect.

Changing the Keyboard Buffer Size

Throughout Color Profile, there are times when pressing a key results in some type of delay before you can continue working. For instance, when you type a filename at the File Selection Menu, you must wait until the Main Menu is displayed before you can make a selection from it.

Changing Program Defaults (continued)

If you find yourself anticipating your next keystroke, you might want to change the keyboard buffer default from 1 to a greater number. This lets you "type ahead" without waiting for Color Profile to display a screen or perform a function. The number you enter at this default represents the actual number of keystrokes you may type ahead.

Note: The **SHIFT** **←** option described in the discussion of the print buffer default does not make use of the keyboard buffer. Its effect is immediate, and it does not affect any keystrokes residing in the keyboard buffer.

To put a new keyboard buffer size into effect, press **ENTER** to store the new size. Then, exit Color Profile, and reload it.

Practice Sessions

This section of the manual is designed to help you become familiar with Color Profile by gaining some practical experience in using the program. Try out the practice sessions using a backup of the diskette supplied with this package. This diskette contains all the information you need to complete each practice session.

If you want to experiment further after you finish the sessions, continue using the sample data. When you're ready to start using your own data with Color Profile, make a new backup of the program diskette, and delete the sample files.

The first practice session tells you how to load and exit Color Profile. In all other practice sessions, it is assumed that you have loaded Color Profile and that the File Selection Menu is displayed.

Practice Session A — Creating a File

The most basic task you perform with Color Profile is creating a file. First, make sure that all your equipment is turned on, and insert a backup of the program diskette into Drive 0. When you see OK on the screen, load Color Profile by typing **ENTER**. The File Selection Menu appears:

```
COLOR P R O F I L E  VV.PP.PP
COPYRIGHT 1982 ROBERT G. KILGUS
LICENSED TO TANDY CORPORATION
```

```
FILE TO BE ACCESSED [          ]
EXISTING FILES AVAILABLE:
PROJECTS
SALES
INVOICE
ARTISTS
```

```
TYPE FILENAME, PRESS ENTER
(PRESS BREAK TO EXIT PROGRAM)
```

Notice that several files are available for your access. These files will be used in later practice sessions. The cursor is at the FILE TO BE ACCESSED prompt. You need to create a file. Your first file will be called TEST, so type **TEST**. If you make a typographical error, use **←** to move the cursor to the mistake, and correct it. When the filename is correct, press **ENTER**. The screen clears, and this message appears:

```
CONTROL FILE TEST /CTL
NOT FOUND - CREATE IT (Y/N)
(PRESS CHOICE KEY)
```

Practice Session B — Defining a Record Format ^{1/3}

Once a **file is created**, you must tell Color Profile the kind of information you want to store in the file. To learn how to define a record format, use the TEST file that you created in Practice Session A. At the File Selection Menu, type TEST **(ENTER)**. The Main Menu for the file appears.

You have seven options from which to choose. The selection you want is #3 — RECORD FORMAT. The cursor is at the ENTER SELECTION prompt. Press **(3)**, and the screen displays:

```
TST.      RECORD FORMAT
DISK REC SZ:MASTER 0002 SUB 0000
ITEM SIZE TYPE DESCRIPTION
001 005 7 RECORD NUMBER
```

```
ITEM TO BE SEEN/CHANGED [000]
(SHIFT UP/DOWN TO SCROLL)
```

This screen displays your "item list," a list of all the different information you want to use in the TEST file. Right now, the only information defined is RECORD NUMBER. Every file you create will contain RECORD NUMBER as item 001. Note that its "size" is 5 — the record number uses five characters when it is displayed on the screen. Its "type" is 7, a special number used by Color Profile. None of your information will be a type 7.

Look at the second line on the screen. It shows the amount of disk space needed to store the information you want. So far, only the "master" record requires any space — two bytes, the amount needed to store RECORD NUMBER. This number will increase as you tell Color Profile the different kinds of data you want to use.

The cursor is at ITEM TO BE SEEN/CHANGED. You will create a format for holding ~~names, addresses, telephone numbers~~, and a date of last contact. Start off by typing ~~2~~. The screen changes to show:

When you defined item 007 and 008, ZIP CODE and PHONE NUMBER, you assigned them types of 2. Type 2 is used for items that contain only numbers and a few other special characters. Item 9, LAST CONTACTED, is type 3, a date item. Did you note that Color Profile had already assigned its length as 6? Dates always use six characters: ~~two for the month, two for the day, and two for the year.~~

Define one more item for your record format. It is item ~~010~~ and is type ~~5~~, TALLY. Tally items count the number of times the information entered for any item changes. Tally items also have a length fixed by Color Profile ~~5~~. You cannot change the length. For the description, type ADDRESS CHANGE ~~(F)~~. When you define tally items, the VALIDATION prompt is replaced by a new message: TALLY CHANGES TO ITEM [000]. You'll keep track of each time someone's address changes, so type ~~(F)~~.

When the computer beeps, check the information you have entered before pressing **ENTER** to add the tally item to your record format.

The item list is displayed. If you have a printer, make sure that the printer is turned on and set to receive at ~~300~~ baud. (If you need help in setting the baud, refer to your printer owner's manual.) Align the paper, and press ~~(F)~~. Your item list is printed for you. Use this list for reference anytime you like.

After the list is printed, or if you did not print the item list, press ~~(F)~~. The screen shows:

```
FILE REFORMAT REQUIRED.
PROCEED WITH IT? [N]
```

When you add items to a record format, Color Profile must do some internal work to keep track of any additions, changes, or deletions you make. Press ~~(F)~~, and this work begins. The TEST file's record format is then stored on the diskette in Drive 0, and the Main Menu appears. Press ~~(F)~~ to return to the File Selection Menu.

Practice Session C — Express

Using expressions is a bit more complex than session should help you become more familiar to make your file more efficient. For this practice file and use a file already set up.

Expressions and Derived Items

At the File Selection Menu, type SALES (ENTER) Main Menu for SALES appears, press (3). This involves the use of expressions and calculation

First, type 10 (ENTER) to define item 010. This merchandise sold by Antiques, Ltd. When the specifications for the item, press (4) to define in calculations. For LENGTH, you must specify minus sign. Give this item a length of 7: one for numbers, and one more character for a description.

For the description, type PRICE EACH (ENTER). PLACES, type 2 (ENTER). This tells Color Profile the right of a decimal point. Press (ENTER) at the (ENTER) to add the item to the record format.

Define another item for use in calculations:

Item Number	Type
11	4

At NUMBER OF DECIMAL PLACES, specify record format.

Now you'll define an item that stores the result of multiplied by data stored in NUMBER SOLD. This is the list of items. Define it as a type 6, a derived item mathematically combining math items.

Give this item a length of 9 — one for a plus sign, one for a decimal point. Type TOTAL SALE (ENTER) for OF DECIMAL PLACES, type 2 (ENTER).

Now you must tell Color Profile how to calculate this item. At the DERIVED FROM prompt, you tell Color Profile to multiply PRICE EACH by NUMBER SOLD result. Do this by typing !010*!011.

The ! tells Color Profile to expect an item number for PRICE EACH. Each time you use this item immediately with a three-digit item number. This

multiplication. (Addition is +, subtraction is -, and division is /.) Last is !011, for item 011.

You have told Color Profile that item 012 is DERIVED FROM item 010 times item 011. If one of your records contained 10.50 for PRICE EACH and 6 for NUMBER SOLD, Color Profile would calculate and display 63.00 for the TOTAL SALE. Any derived item can be displayed on the screen or shown on a report, just as if it were a math item.

After you enter the DERIVED FROM expression, press , then press to add the item to the record format.

Expressions and Validation

You may use expressions to tell Color Profile to accept or reject data you try to enter in an item. To see how this works, type 10 at the list of items.

You need to change item 010 to make it impossible to enter a number less than 10.00 or greater than 20.00. When the screen with item 010's specifications appears, press at each prompt until the cursor is at VALIDATION. This is the place at which you specify that only certain data can be entered for the item.

You need two conditions: one that lets you enter only numbers greater than 10.00 and one that lets you enter only numbers less than 20.00. For these conditions, you will use the symbols > (greater than) and < (less than).

The first thing you should type is ! to let Color Profile know that you are using an item number. Follow this with 010 for item 010. Next, type >9.99. This tells Color Profile that any data entered for PRICE EACH must be greater than 9.99. The first part of the validation expression is complete.

Now you must tell Color Profile not to accept data greater than 20.00. Skip a space, type AND, and skip another space. This combines two or more conditions that must be met for data to be accepted. Now, type !010 (for item 010), followed by <20.01. The complete expression should read: !010>9.99 AND !010<20.01. Use to back up and correct any mistakes in the expression. When it looks correct, press , then press to finish changing item 010.

When the item list appears, press . Press at the FILE FORMAT REQUIRED prompt. The new items 010, 011, and 012 are stored as part of the record format, and the Main Menu appears. Press to return to the File Selection Menu.

In later practice sessions, you will work more with expressions.

Practice Session D — Designing a Screen

In this practice session, you learn how to design a screen for entering and displaying data in a file. To start, type **PROJECTS** at the File Selection Menu. When the Main Menu is displayed, press **(4)** for **DISPLAY FORMATS**. The screen shows:

```
FILE=PROJECTS SELECT A FORMAT[A]

A          N
B          O
C          P
D          Q
E          R
F          S
G          T
H          U
I          V
J          W
K          X
L          Y
M          Z
(BREAK TO EXIT)
```

You may create up to 26 different screens for entering or displaying data in your file. For this session, you will create two screens. The first is E (for Entry), so press **(E)**. (You could use any letter you wish.) The screen clears, and a new message appears:

```
FORMAT "E" NAME [          ]
```

Type **ENTRY** **(ENTER)** to name this screen **ENTRY**. Now you may design a screen. The record format has already been defined and includes these items:

Item #	Type	Length	Description
001	Special	5	Record Number
002	Numeric	6	Project Number
003	Text	20	Project Title
004	Text	12	Assigned To
005	Date	6	Due in Q.A.
006	Date	6	Due to Release
007	Text	40	Comments

First, design a layout. Use the **(↑)**, **(↓)**, **(←)**, and **(→)** keys to move the cursor around the screen. Do not use **(ENTER)**.

Copy the screen shown below:

```

PROJECT 99999999
TITLE  XXXXXXXXXXXXXXXXXXXXXXXX
ASSIGNED TO XXXXXXXXXXXXXXXX
DUE IN Q.A. XMMDDYYX
RELEASE ON  XMMDDYYX

COMMENTS XXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXX

```

This is a typical layout for a screen, but it is not a proper display format. You need to tell Color Profile which items to display and the location at which they should be displayed. This is simple. Move the cursor to the first 9 after PROJECT. Press . A message at the top of the screen shows:

```
ENTER ITEM NUMBER [000]
```

Project Number is item 002, and you want space to enter project numbers at the point at which you pressed . Type 2 (ENTER). The 9s are replaced by a white box enclosed in brackets. This is the entry area for project numbers. Color Profile displays the item's length on the top line of the screen and the item's number and description on the bottom line.

Next, move the cursor to the first X after TITLE. Press . At the top of the screen, type 3 (ENTER) (the item number for Project Title). Each time you press and enter an item number, Color Profile finds the length of the item and "draws" an entry area for it.

Continue moving the cursor to the beginning X or 9 in each line, pressing , and entering the appropriate item number. When you finish, your screen should look like this:

```

PROJECT [      ]
TITLE   [                ]
ASSIGNED TO [          ]
DUE IN Q.A. [      ]
RELEASE ON [      ]

COMMENTS [
                ]

```

Now, see how the cursor works when your display format is complete. Move the cursor to the left edge of the screen, and press to position it at the first line. Use

Practice Session D (continued)

→ to move to the first bracket after PROJECT. Notice that the bottom of the screen shows the item number and description for the entry area.

Try to place the cursor somewhere in the PROJECT area. It skips to the first space after the entry area. Once an entry area is defined, you cannot place the cursor inside the area.

Move the cursor to the C in COMMENTS. Press **(SHIFT) (CLEAR)**. Everything from the cursor's position to the bottom of the screen disappears. You can use this to make major revisions to display formats.

Redefine the COMMENTS area by typing COMMENTS, skipping a space, pressing **(")**, and typing 7 **(ENTER)** for the item number.

If you like, you may print the display format by pressing **(SHIFT) (@)** when your printer is ready. To store the display format, press **(ENTER)**, and the list of display formats appears.

Now you'll design another screen to use for displaying data instead of entering it. At the list of display formats, press **(D)** (for Display). At FORMAT "D" NAME, type **DISPLAY ONLY (ENTER)** for the description of the screen.

Although you could use the method of designing a layout before telling Color Profile the particulars of the screen, this time you'll design the screen without laying it out first. On the first line, type SERIES, and skip a space. Next, press **(I)**. The top line of the screen asks you to enter an item number. Type 2 **(ENTER)** for item 002. The cursor returns to the space following the !. This area is for displaying an abbreviated version of the project number. After !, press **(9)**. This will display only the first two characters of the project number. (! takes the place of the first number.)

Skip a line, and move the cursor to the beginning of the next line by using **(←)**. On this line, you'll place the DUE IN Q.A. date. Begin by typing DUE IN Q.A., skipping a space, and pressing **(I)**. The DUE IN Q.A. date was only assigned six spaces, just enough for the month, day, and year. On this screen, slashes will be inserted between the month, day, and year. When the cursor moves to the top of the screen, type 5 **(ENTER)** for the item number. The cursor returns to the space after the !. Type M/DD/YY. This will display the proper date with the month, day, and year separated by slashes.

Skip another line, and at the beginning of the next line, type RELEASE ON !. At the top of the screen, type 6 **(ENTER)** for item 006. Once again, type M/DD/YY for the rest of the date.

Skip one more line, and at the beginning of the next line, type ASSIGNED TO !. For the item number, type 4 **(ENTER)**. Follow the ! with XXXX. This will display the first five letters of the employee assigned to the project. When the screen is finished, it should look like this:

SERIES !9

DUE IN Q.A. !M/DD/YY

RELEASE ON !M/DD/YY

ASSIGNED TO !XXXX

Once again, you may print the display format by pressing **(SHIFT @)** when your printer is ready. Press **(ENTER)** to store this "display only" format. The list of display formats appears. Press **(BREAK)** to return to the Main Menu for this file. Press **(BREAK)** once more to see the File Selection Menu.

Practice Session E — Changing a Record Format

This practice session shows you how to make changes to a record format. You'll change the record format in the SALES file by deleting an item from the format. At the File Selection Menu, type SALES (ENTER). When the Main Menu appears, press (3).

Type (4) (ENTER) to change item 004, SOLD BY. When this item's information appears, type 0 (ENTER) at the TYPE prompt. This is all you need do to delete an item from the record format. The item list reappears. The DISK REC SZ has decreased, since you freed more diskette storage space by deleting an item.

To make the change permanent, press (ENTER) at the item list. This message appears:

```
FILE REFORMAT REQUIRED.  
PROCEED WITH IT [N]
```

Usually at this point, you would make sure that you had a backup of your diskette, but since this is a simple practice session, go ahead and press (Y). The file is reformatted, and soon the Main Menu appears. Press (BREAK) to return to the File Selection Menu.

Practice Session F — Entering Data in Records

Entering data in records is simple. In this session, you'll enter data for a few records in the PROJECTS file. At the File Selection Menu, type PROJECTS. When the Main Menu appears, use **(↑)** to move the cursor until it is at DISPLAY FORMAT. Change the display format by pressing **(E)**. Return to the ENTER SELECTION prompt by using **(↑)**.

Adding Records

At ENTER SELECTION, press **(↑)** for VIEW/UPDATE RECORDS. The screen you designed earlier appears. The record number, 00000, appears at the top of the screen. Anytime the record number is 00000, you may create new records.

The cursor is at the entry area for PROJECT. Type **670001** **(↑)**. The cursor moves to TITLE. At this entry area, give the project a title by typing **PRODUCT A** **(↑)**.

At ASSIGNED TO, type **SMITH** **(↑)**. For the DUE IN Q.A. date, type **080183** (for August 1, 1983). The cursor automatically moves to the RELEASE ON entry area, since you used all the available spaces for DUE IN Q.A.

For RELEASE ON, type **131583**. The computer beeps and does not accept your data. Color Profile rejects invalid dates (such as 13 for the month), so use **(←)** to back up, and change the date to **101583**. The date is now valid, and the cursor automatically moves to the COMMENTS area.

In the COMMENTS area, type **ON SCHEDULE**. This record is now complete, so press **(ENTER)** to store it in the /DAT file. Color Profile lets you know that you have created a record by displaying RECORD 00001 CREATED. Next, a blank record appears, and the record number returns to 00000.

Enter a few more records, using the following information:

Record 2

PROJECT: 690028
 TITLE: PRODUCT H
 ASSIGNED TO: WILLIAMS
 DUE IN Q.A.: 072283
 RELEASE ON: 112083
 COMMENTS: RE-EVALUATING

Record 3

PROJECT: 670022
 TITLE: PRODUCT D-01
 ASSIGNED TO: BARNABY
 DUE IN Q.A.: 020683
 RELEASE ON: 051583
 COMMENTS: RELEASED LATE

Record 4

PROJECT: 690017
 TITLE: PRODUCT P
 ASSIGNED TO: SMITH
 DUE IN Q.A.: 090183
 RELEASE ON: 120383
 COMMENTS: ON SCHEDULE

Record 5

PROJECT: 670137
 TITLE: PRODUCT R-13
 ASSIGNED TO: JONES
 DUE IN Q.A.: 030483
 RELEASE ON: 060183
 COMMENTS: PROJECT ABANDONED

Practice Session F (continued)

Record 6

PROJECT: 670922
TITLE: PRODUCT W
ASSIGNED TO: MARTIN
DUE IN Q.A.: 061583
RELEASE ON: 080183
COMMENTS: REASSIGNED

Record 7

PROJECT: 670003
TITLE: PRODUCT C
ASSIGNED TO: MARTIN
DUE IN Q.A.: 041283
RELEASE ON: 062583
COMMENTS: RELEASED

Record 8

PROJECT: 690400
TITLE: PRODUCT G
ASSIGNED TO: LATHAM
DUE IN Q.A.: 091483
RELEASE ON: 123083
COMMENTS: NO SPECS YET

Record 9

PROJECT: 670039
TITLE: PRODUCT L-42
ASSIGNED TO: BARNABY
DUE IN Q.A.: 051583
RELEASE ON: 071883
COMMENTS: RELEASED EARLY

Record 10

PROJECT: 690012
TITLE: PRODUCT V
ASSIGNED TO: LATHAM
DUE IN Q.A.: 080483
RELEASE ON: 101083
COMMENTS: ON SCHEDULE

Record 11

PROJECT: 670203
TITLE: PRODUCT J-92
ASSIGNED TO: JONES
DUE IN Q.A.: 080183
RELEASE ON: 100183
COMMENTS: ON SCHEDULE

You do not need anymore records right now, so after storing Record 11, press **(BREAK)**. The Main Menu appears.

Changing Existing Information

Suppose that the status of one project changes, and you need to enter the change in the project's record. Press **(1)** at the Main Menu. As usual, a blank record appears. Move the cursor to the record number area, using **(SHIFT) (↑)**. You'll change Record 00005, so type 5 **(ENTER)**.

Record 00005 appears. Use **(↓)** to move the cursor to the DUE IN Q.A. entry area. Change the date to 071083. Change the RELEASE ON date to 091583. In the COMMENTS area, type **REWORK. NO INFO YET.**

Next, press **(ENTER)** to store your changes. **MASTER REC REWRITTEN** is displayed. Next, you'll quickly review the records you entered.

Reviewing Records

Move the cursor to the **DISPLAY FORMAT** area, and press **(D)** to change the format to the one you created for "display only." The screen changes to the new display format. Next, move the cursor to the record number area by pressing **(SHIFT) (↑)**. Press **(SHIFT) (↑)** one more time. Record 00004 appears. To scroll through the records, press **(SHIFT) (↓)** to display the next record or **(SHIFT) (↑)** to display the previous record.

Scroll through all your records until Record 00011 is displayed. Press **BREAK**, and the Main Menu appears. Press **BREAK** again to return to the File Selection Menu.

Practice Session G — Access Methods

This practice session should help you become familiar with access methods. Access methods let you create subsets of records and display your records in an order other than by record number. At the File Selection Menu, type **PROJECTS**. You'll define two access methods for the file and see how they affect your records.

Defining Access Methods

When the Main Menu for the file appears, press **5** (for ACCESS METHODS). The screen shows:

```

FILE=PROJECTS  SELECT ACCESS [A]
A BY RECORD NBR N
B                O
C                P
D                Q
E                R
F                S
G                T
H                U
I                V
J                W
K                X
L                Y
M                Z
(BREAK TO EXIT)

```

Access method A is already defined — BY RECORD NBR. This is the way Color Profile normally displays your records. To create a different access method, press **P**. The screen changes to show:

```

ACCESS "P" CONTAINS 0000 MEMBERS
NAME: [                ]
SEQUENCE ITEMS:
[                ]
SELECTION CRITERIA:
[

```

]

Practice Session G (continued)

The cursor is at NAME. This access method should display records in order of project number, so type **BY PROJECT NO** (↓).

At **SEQUENCE ITEMS**, enter the item numbers by which you want the file accessed. To sort the records and display them in order of project numbers, type **002** (the item number for Project Number).

Press **(ENTER)** to store this simple access method. Color Profile sorts the records, placing them in the order you requested. Next, the Main Menu is displayed.

Press **(5)** at the Main Menu, and define another access method. This one will sort and display projects in order of the employee to which they are assigned. Each employee's projects will be displayed in order of project number.

At the list of access methods, press **(E)**. When the definition screen for Access Method E appears, type **BY EMPLOYEE** (↓) for the NAME.

The cursor moves to **SEQUENCE ITEMS**. Consider that you actually want a sort within a sort: first, by employee name and second, by project number. Type **004002** (↓). This tells Color Profile to sort records in order of item **004** (Assigned To) and then in order of item **002** (Project Number).

You have finished defining the access method, so press **(ENTER)** at the **SELECTION CRITERIA** prompt. Once again, you can see that Color Profile is sorting your records according to your specifications. Next, the Main Menu appears.

Using Access Methods to Scan Records

To see how the access methods you defined have affected the order in which your records are displayed, use (↑) to move the cursor to **DISPLAY FMT**, at the top of the screen. Press **(E)** to select the entry screen format, and move the cursor to **ACCESS METHOD**. Press **(P)** to select Access Method P. Return the cursor to **ENTER SELECTION**, using (↓). Press **(1)** (for **VIEW/UPDATE RECORDS**).

When the blank record appears, press **(SHIFT) (↑)** twice. Record **00001** appears, since its project number is **670001**. Press **(SHIFT) (↓)**, and Record **00007** appears. Its project number is **670003**. Continue pressing **(SHIFT) (↓)** to see all 11 records in order of project number. When you have seen all the records, press **(BREAK)** to return to the Main Menu.

Use (↑) to move to **ACCESS METHOD**, and press **(E)**. Return the cursor to **ENTER SELECTION**, and press **(1)**. When the blank record appears, press **(SHIFT) (↑)** twice. The first record displayed is **00003**, for Barnaby. The project number is **670022**. Press **(SHIFT) (↓)** to scan through all the records in this subset.

You may look at a specific record by moving the cursor to the record number area. Type **0** to display a blank record. Look at the record for Martin by moving the cursor to **ASSIGNED TO** and typing **MARTIN**. Press **(SHIFT) (→)**. Record **00007** appears. You may now use **(SHIFT) (↑)** to display the previous record (**00008**) or **(SHIFT) (↓)** to display the following record (**00006**).

Try finding different records in the access set. When you are finished, press **BREAK** to return to the Main Menu. Press **BREAK** once again to see the File Selection Menu.

Practice Session H — Reports

Note: This practice session assumes that you have a printer available for printing reports. If you do not have a printer, you might not see all the data listed on reports, since the screen shows a maximum of 32 characters.

This session helps you learn how to set up and print reports. The reports you set up make use of the INVOICE file. This file figures invoices for renting different planes based at several airfields. At the File Selection Menu, type INVOICE (ENTER).

When the Main Menu appears, take a look at a few records by pressing (1). When a blank record appears, press (SHIFT) (↑), and type 1 (ENTER) to display Record 00001.

Scroll through a few records. Notice that Color Profile figures the total hours flown, a subtotal amount due, a tax amount due, and a net total for each invoice.

When you finish looking at records, press (BREAK) to return to the Main Menu. You will format and print a report broken down by tail number and base airfield, showing the total hours flown and amounts charged to all aircraft in the file.

Formatting the Report

To start formatting the report, press (6) for REPORT FORMATS. The screen shows:

```

FILE=INVOICE   SELECT REPORT [A]

A              N
B              O
C              P
D              Q
E              R
F              S
G              T
H              U
I              V
J              W
K              X
L              Y
M              Z
(BREAK TO EXIT)
  
```

Practice Session H (continued)

Press **U** to format a report for "Usage." The screen shows:

```
REPORT "U" NAME [           ]
ACCESS METHOD [A]
SORT? BEFORE [Y] AFTER [N]

CONTROL BREAK LEVELS [0]

LINE WIDTH[132] LINES/PAGE[066]
MARGIN:LEFT[000]TOP[003]BOT[003]

NUMBER OF LINES OF:
  HEADINGS [001]
  DETAIL    [001]
  TOTALS    [000]
NUMBER OF CALCULATIONS:
  BEFORE [000] AFTER [000]
```

The cursor is at REPORT "U" NAME. Type USAGE **U**. At ACCESS METHOD, press **B**. Access method B lists records in order of airfield at which aircraft are based. Within each airfield, records are ordered according to the tail number of each aircraft.

At SORT? BEFORE, press **B**. At AFTER, press **U**. You do not want Color Profile to rebuild your access set before or after it prints the report.

At CONTROL BREAK LEVELS, press **3**. This will cause a subtotal of hours flown and amounts due for each aircraft, a subtotal of hours flown and amounts due for each base airfield, and a grand total of hours flown and amounts due for the entire report to be printed.

At LINE WIDTH, type 68 **U**. This tells Color Profile that no more than 68 characters should appear on any line of the report, excluding left or right margins. At LINES/PAGE, type 66 **U** to tell Color Profile that the maximum number of lines possible for printing on a page is 66.

Next, you may set your left, top, and bottom margins. For LEFT, type 6 **U** to specify that six blank spaces should print before any characters on a line. At TOP, type 6 **U** to leave a margin of six lines at the top of each page. At BOT, type 6 **U** again to leave a bottom margin of six blank lines.

The cursor moves to HEADINGS. Type 4 **U** to leave enough room for a format of a report title, a blank line, a line of column titles, and another blank line before report data is listed.

At DETAIL, press **U** to specify the default setting of one line for listing each record's data. At TOTALS, type 3 **U**. This leaves you enough room for the total hours flown and total amount due for each aircraft, each base airfield, and the grand total line.

Press **↓** at the **BEFORE** and **ENTER** at the **AFTER** prompt to specify that you want no calculations done before or after the report prints. As soon as you press **ENTER** at **AFTER**, the screen changes to show a "blank" report. This is the screen that lets you describe the information you want listed on the report. Notice that the leftmost space on the screen is Column 0, according to the scale shown along the top of each section. The rightmost column is Column 31.

Use **→** to position the cursor at Column 24 of the first **HEADING** line. Type **AIRCRAFT USAGE REPORT**. This is the report's title. Notice that as you typed the report's name, the screen scrolled to let you see the succeeding columns. Press **→** until the cursor moves to Column 68. At the column, press **"**. The top of the screen shows **ENTER ITEM NUMBER**. Type **255 ENTER**. This makes the page number print on each page of the report wherever the " appears.

Press **↓** twice to move the cursor down two lines. Then, press **→** until it moves to Column 1. Type **AIRCRAFT**. Skip one space by using either **→** or the space bar. (The cursor should be in Column 10.) Type **PILOT #**, and skip four spaces, until the cursor is at Column 19. Type **HRS. FLOWN** and skip two spaces. Type **TOTAL DUE** at Column 31, and skip another space. Finally, at Column 42, type **BASED AT**. Press **←** and **↓** until the cursor is at Column 1 of the first line in the **DETAIL** section.

Now you will tell Color Profile the data from particular items that you want listed on the report. To specify that you want the tail number of each aircraft listed, press **!**. The top of the screen shows **ENTER ITEM NUMBER**. The tail number is item 003, so type **3 ENTER**. The cursor returns to the space following the **!**. You must specify the number of characters you want to print for this item. Tail numbers use six characters — the **!** takes the place of the first character. Type five **Xs** to tell Color Profile to print all six characters of the tail number.

Move the cursor until it is at Column 10. Press **!**, and type **7 ENTER** at **ENTER ITEM NUMBER** to specify that you want item 007's data to be listed here. Follow the **!** with three **Xs** to list the entire pilot identification number.

Move the cursor to Column 21, and press **!**. Type **6 ENTER** for **ENTER ITEM NUMBER**, and follow the **!** with **9.99**. This will print hours flown, including any decimal places, for each invoice in the file. Move the cursor to Column 32, and press **!**. At **ENTER ITEM NUMBER**, type **12 ENTER**. Follow the **!** with **99.99** to list the total amount due for each invoice.

Move the cursor to Column 43, and press **!**. For **ENTER ITEM NUMBER**, type **14 ENTER**. When the cursor returns to the space following the **!**, type **XX**. This causes only the first three characters of the base airfield to be listed.

Press **CLEAR**. The cursor moves to Column 0. Press **↓** to move the cursor to the first line in the **TOTALS** section. In Column 0, type **1**. This lets Color Profile know that this line is for listing your first level of subtotals. In Column 1, type **TOTAL HRS. THIS AIRCRAFT**. Skip a space, and press **"**. At the **ENTER ITEM NUMBER** prompt at the top of the screen, type **6 ENTER**. When the cursor returns to the space following the " , type **99.99**. This causes the total of all data in item 006 to print.

Practice Session H (continued)

Skip five spaces, and at Column 37, type **TOTAL DUE**. Skip a space, and press **(")**. At **ENTER ITEM NUMBER**, type **12 (ENTER)**. Immediately following the **"**, type **\$99.99**. This causes the total amount due for each aircraft to print.

Move the cursor to Column 0 of the next line, and type **2** (for your second level of subtotals). In Column 1, type **TOTAL HRS. THIS AIRFIELD**. Skip a space, and press **(")**. At **ENTER ITEM NUMBER**, type **6 (ENTER)**. Immediately following the **"**, type **99.99**. This will total and print the hours flown for all aircraft at a base airfield.

Skip five spaces, and at Column 37, type **TOTAL DUE**. Skip a space, and press **(")**. At **ENTER ITEM NUMBER**, type **12 (ENTER)**. Follow the **"** with **\$99.99** to print the total due at an airfield.

Move the cursor to Column 0 of the third total line. Type **3** for the third level — grand totals for the entire report. In Column 1, type **GRAND TOTAL HRS**. Skip a space, and press **(")**. At **ENTER ITEM NUMBER**, type **6 (ENTER)**, and follow the **"** with **99.99**. This prints a grand total of hours flown for all aircraft at all base airfields. Move the cursor to Column 29, and type **GRAND TOTAL DUE**. Skip a space, and press **(")**. At **ENTER ITEM NUMBER**, type **12 (ENTER)**. Follow the **"** with **\$99.99** to print a grand total due from all aircraft rentals at all base airfields.

Press **(CLEAR)** to move the cursor back to Column 0 and **(↑)** to move it to the first heading line. Your screen should look like this:

```
LAST ITEM LENGTH WAS 007
HEADINGS
0....5...10...15...20...25...30.
                                     AIRCRAFT

AIRCRAFT PILOT * HRS. FLOWN T

DETAIL
0....5...10...15...20...25...30.
!XXXXX !XXX           !9.99
TOTALS
0....5...10...15...20...25...30.
1TOTAL HRS. THIS AIRCRAFT "99.99
2TOTAL HRS. THIS AIRFIELD "99.99
3GRAND TOTAL HRS. "99.99      GRA
```

Press **(←)** to scroll across the screen and see the rest of the format. When you are satisfied with the format, press **(ENTER)**. This report format is stored, and the Main Menu appears.

Printing the Report

Now that you have defined the way you want the report to look, you can print it. At the Main Menu, press **2** for PRINT A REPORT. Your screen shows:

```
OPTION [1]
  1. TO PRINTER
  2. TO SCREEN ONLY
  3. TO DISK
  4. DISK TO PRINTER
  5. DISK TO SCREEN
```

```
REPORT [U]
(OPTION 1-3)
```

```
DISK FILE NAME [      ]
                DRIVE [0]
(OPTION 3-5)
```

You can see that there are five options from which to choose. If you do not have a printer, press **2** to "print" the report on the screen. Otherwise, press **1** to print a hardcopy of the report.

The cursor skips to REPORT. Since U is the report with which you last worked, it is displayed. The next section of the screen is for use with options 3-5 only, so you do not need to answer the prompt for DISK FILE NAME.

Make sure that your printer is ready to print and set to receive at 600 baud, then press **ENTER**. The report begins printing and scrolling up the screen. If you do not have a printer, press **9** (when you begin seeing the report) to make it scroll by slowly.

When the report is finished displaying on the screen, a message at the bottom of the screen tells you:

```
REPORT END - PRESS ANY KEY
```

Press any key, and the Main Menu returns to the screen. If you print a hardcopy or print to disk, you are automatically returned to the Main Menu. You can see the way the report should look by referring to Appendix G. Press **BREAK** to return to the File Selection Menu.

Practice Session I — Subrecords

This practice session lets you work with subrecords, seeing how they perform and how they may be used on reports. The file for this work is **ARTISTS**, a file that catalogs recording artists and albums in a record collection.

Adding a Subrecord Item

At the File Selection Menu, type **ARTISTS** **(ENTER)**. When the Main Menu for the file appears, press **(3)** to see the record format for the file. Notice that there are only three master record items — **001**, the record number, **002**, the artist's name, and **003**, the artist's country of origin.

Scroll through the item list to see the remaining items. These items, beginning with item **125**, are subrecord items. Numbers **125** through **130** are for Color Profile's use. Item **131** begins the items for recording subrecord data. This file contains subrecords for listing data such as album titles, catalog numbers, release years, record labels, and locations at which the albums were recorded.

You will add one more subrecord item to the list. At the **ITEM TO BE SEEN/CHANGED** prompt, type **136** **(ENTER)**. Give it a type of **1** (for **TEXT**), a length of **20**, and a description of **MIXED AT**. This item is for entering the location at which the album was mixed. Press **(ENTER)** twice to store the new subrecord item. When the item list is displayed, press **(ENTER)** again. The screen shows:

```
FILE REFORMAT REQUIRED.  
PROCEED WITH IT? [N]
```

Press **(Y)**. Once the new item is added to the record format, the Main Menu is displayed.

Adding the Item to a Display Format

At the Main Menu, press **(4)** to add the new subrecord item to a display format. When the list of display formats appears, press **(A)**. Display format **A** appears with its description, **STANDARD**. Press **(ENTER)** at the **DESCRIPTION** prompt.

Move the cursor to the next to the last line of the screen, and type **MIXED AT:**. Skip a space, and press **(")**. When **ENTER ITEM NUMBER** appears at the top of the screen, type **136** **(ENTER)**. A box appears for entering data in item **136**.

Notice that the master record information is displayed at the top of the screen and that subrecord information is grouped beneath it. This is the usual way of setting up a screen that includes both master and subrecord information.

Press **(ENTER)** to store the revised display format. The list of formats reappears. Press **(BREAK)**, and the Main Menu is displayed.

Entering Subrecord Data

Now you're ready to begin entering data. A few records and subrecords have already been created, but you will enter data for a new artist that has been added to the collection. At the Main Menu, press **1** for VIEW/UPDATE RECORDS.

A blank screen appears. You may start entering information immediately, since the record number is 00000. Enter this data for the record:

ARTIST NAME: **GABRIEL, PETER**
 ORIGIN: **ENGLAND**
 SUB NO.: leave this item blank
 ALBUM TITLE: **SECURITY**
 CAT. NO.: **GHS 2011**
 RELEASED: **1982**
 LABEL: **GEFFEN**
 RECORDED AT: **HOME**
 MIXED AT: **MOBILE ONE**

Don't forget to press **↓** after you type the data required for each item. When you have finished entering all the data for this record, press **ENTER**. A master record is created for the artist, Peter Gabriel. However, you must press **ENTER** once more to store the subrecord data you entered. When you have stored the subrecord, all the data in the subrecord items disappears, but the master record information remains.

Add one more album (subrecord) for Peter Gabriel. Move the cursor to ALBUM TITLE, and begin entering the following information:

SUB NO.: leave this item blank
 ALBUM TITLE: **PETER GABRIEL**
 CAT. NO.: **SD19181**
 RELEASED: **1978**
 LABEL: **ATLANTIC**
 RECORDED AT: **RELIGHT**
 MIXED AT: leave this item blank

Press **ENTER**, and the second subrecord for this master record is stored.

Now, you'll add a subrecord to a master record already in existence. Move the cursor to the record number area, and type **1** **ENTER**. Record 0001 is displayed. Use **↓** to move the cursor to SUB NO., and type **0** **ENTER**. This changes the subrecord number to 00000, putting you into creation mode. Enter the following data for this master record about albums by David Bowie:

ALBUM TITLE: **LET'S DANCE**
 CAT. NO.: **SO-17093**
 RELEASED: **1983**
 LABEL: **EMI**
 RECORDED AT: **FAST FORWARD**
 MIXED AT: **FAST FORWARD**

Practice Session I (continued)

Press **(ENTER)**, and this subrecord is stored and attached to the master record for David Bowie. To quit entering subrecords, move the cursor to the record number area, and type **0 (ENTER)**. You are now in creation mode for master records.

Changing a Subrecord's Data

With the cursor at the record number area, type **2 (ENTER)**. Record 00002 and its first related subrecord is displayed. This master record is for albums by the Talking Heads. Move the cursor to the ARTIST NAME area, and press **(SHIFT) (↓)**. Anytime the cursor is anywhere other than at the record number area, **(SHIFT) (↓)** displays the next subrecord for the master record currently displayed.

Press **(SHIFT) (↓)** until subrecord 003 is displayed (the subrecord for the album, REMAIN IN LIGHT). The catalog number displayed for this album is SRK 6099. Change this to SRK 6095 by moving the cursor to the CAT. NO. area and typing the correct data. When the correct data has been entered, press **(ENTER)**. The revised subrecord is stored. Move the cursor to the record number area by pressing **(SHIFT) (↑)**, and type **0 (ENTER)** to display a blank record.

Deleting a Subrecord

Type **3 (ENTER)** to display master record 003 with its subrecord 001. You will delete this album, COMPUTER WORLD, from Krafwerk's catalog of albums. Simply press **(SHIFT) (CLEAR)**, and the subrecord disappears from the screen, leaving only the master record data. Press **(BREAK)** to return to the Main Menu.

Subrecords and Reports

Now you'll print (or display) a report listing some of the ARTISTS file's information. A report has already been formatted for you. Look at the format by pressing **(6)** at the Main Menu.

The list of report formats appears. Press **(S)** to select Report S, SIMPLE. Its preliminary screen appears. Notice that this report uses Access Method A (a listing in order of record numbers). There are no heading or total lines and only one line of detail. Press **(ENTER)** to see the actual layout of the report.

This is a very simple report, showing only artists' names and album titles. Press **(ENTER)**, and the Main Menu is displayed.

Now, press **(2)** to print the report. Choose either option 1 (if you have a printer) or option 2 (if you have no printer), and press **(ENTER)** to begin printing the report. When it is finished, notice that information from master records (the artist's name) was printed only once, on the first line of the listing for each master record. Color Profile lists master record data only once per record on this type of report, making it easier to see where one master record ends and another begins.

5. Artist Report B, with Total Lines — Practice Session I

ARTIST	ALBUM
BOWIE, DAVID	SCARY MONSTERS BAAL LET'S DANCE
TALKING HEADS	BUILDINGS AND FOOD FEAR OF MUSIC REMAIN IN LIGHT
KRAFTWERK	
GABRIEL, PETER	SECURITY PETER GABRIEL
4 RECORDS	8 SUBRECORDS

Appendix G (continued)

6. Artist Report B, with Control Breaks — Practice Session I

ARTIST	ALBUM
BOWIE, DAVID	SCARY MONSTERS BAAL LET'S DANCE
1 RECORDS GABRIEL, PETER	3 SUBRECORDS SECURITY PETER GABRIEL
1 RECORDS KRAFTWERK	2 SUBRECORDS
1 RECORDS TALKING HEADS	SUBRECORDS BUILDINGS AND FOOD FEAR OF MUSIC REMAIN IN LIGHT
1 RECORDS 4 RECORDS	3 SUBRECORDS 8 SUBRECORDS

7. Artist Report B, with Running Totals — Practice Session I.

ARTIST	ALBUM	
BOWIE, DAVID	1 SCARY MONSTERS	
	2 BAAL	
	3 LET'S DANCE	
		3 SUBRECORDS
1 RECORDS		
GABRIEL, PETER	1 SECURITY	
	2 PETER GABRIEL	
		2 SUBRECORDS
1 RECORDS		
KRAFTWERK		SUBRECORDS
TALKING HEADS	1 BUILDINGS AND FOOD	
	2 FEAR OF MUSIC	
	3 REMAIN IN LIGHT	
		3 SUBRECORDS
1 RECORDS		
4 RECORDS		8 SUBRECORDS

Appendix G (continued)

4. Artist Report B, First Revision — Practice Session I

ARTIST
BOWIE, DAVID

ALBUM

SCARY MONSTERS
BAAL
LET'S DANCE

TALKING HEADS

BUILDINGS AND FOOD
FEAR OF MUSIC
REMAIN IN LIGHT

KRAFTWERK

GABRIEL, PETER

SECURITY
PETER GABRIEL

Press any key to return to the Main Menu if you displayed the report on the screen. Print a different report by pressing (2), choosing either option 1 or 2, and typing B (ENTER) at the REPORT prompt. When this report was formatted, it contained two detail lines instead of one. The first detail line was for showing master record data, and the second was for showing subrecord data.

Examine the report, and you can see what is wrong — Color Profile printed an entire set of lines for each subrecord listed. It would look much better if you could print the master record detail line only once per record. This is where Column 0 can help.

Press any key when the report is finished if it was only displayed. When the Main Menu appears, press (6) to change the report's format. Select B from the report format list, and press (ENTER) at the preliminary screen.

When the format screen appears, move the cursor to Column 0 of the first detail line. Type M, and press (ENTER) to record the revised format. When the Main Menu is displayed, print the report again. It should look much better. Remember when you use subrecord data on reports with more than one detail line that a line with a blank in Column 0 is always printed. However, a line with an M in Column 0 prints only if master record data is somewhere on that line.

Next, you'll learn how to use totals on reports containing subrecord data. Press any key to return to the Main Menu if you only displayed the report. Then, press (3) to change the record format.

At the item list, create a new item, item 020. Make it a derived item by specifying 6 for the TYPE. Specify a length of 5 and no decimal places. For the DERIVED FROM expression, simply type 1. This sets item 020 equal to 1. Press (ENTER), and define another item in exactly the same way. Make it item 140, a subrecord item. Give it exactly the same specifications as you did for item 20.

When the items have been defined and the file reformatted, the Main Menu reappears. You do not have to use items 20 or 140 in any display formats to use them in reports — as long as they exist, they may be used anywhere in your file. Press (6), and select Report B.

At the preliminary screen, move the cursor to CONTROL BREAK LEVELS. Press (1). Continue moving the cursor until it is at TOTALS. At this prompt, type 1 (↓), then press (ENTER) to move to the format screen.

On this screen, move the cursor to the TOTALS section, and beginning in Column 1, press ("). At ENTER ITEM NUMBER, type 20 (ENTER). Follow the " with 99. Skip a space, and type RECORDS. Skip five more spaces, and press (") again. This time, specify 140 at ENTER ITEM NUMBER, and follow the " with 99. Skip a space, and type SUBRECORDS.

Now, press (ENTER) to store the revised format and return to the Main Menu. Print Report B again. As you can see, Color Profile has counted and listed the total number of records and subrecords on the report.

Practice Session I (continued)

Revise the report format one more time. On the preliminary screen, change the ACCESS METHOD to N, and specify 2 for CONTROL BREAK LEVELS. (Access Method B lists records in alphabetical order of artist names.) Leave the format screen as it is.

Print the report again, and notice this time that instead of one grand total of all report data, Color Profile totalled each record and its subrecords after each record was listed.

Running Totals

You can cause "running" totals to appear in detail lines of reports containing subrecords. Even though the quotation mark is usually used in total lines, you can use it in a detail line as well.

Change Report B's format, leaving the preliminary screen as it is. On the format screen, move the cursor to Column 25 on the **second** detail line (the line for listing subrecord data). Press **"**, and specify item **140**. Following the **"**, type **99**.

Store the revised format, and print the report again. Notice that each subrecord line contains a total thus far. The last subrecord listed for each master record should contain the same number shown on the total line for subrecords.

Return to the Main Menu, and press **(BREAK)** to display the File Selection Menu.

You can see the several reports generated in this practice session in Appendix G.

Appendix A — Formatting and Backing Up Diskettes

Making a backup consists of two processes: format (or prepare) the diskette for storing information and back up (or copy) the information from the original diskette to the new, formatted diskette.

To make a backup of your Color Profile program diskette or format a diskette to use for data storage only, follow the instructions below:

1. Turn on the television, computer, and disk drive(s). The following copyright message appears:

```
DISK EXTENDED COLOR BASIC v . r  
COPYRIGHT (C) 198x BY TANDY  
UNDER LICENSE FROM MICROSOFT  
  
OK
```

v . specifies the version and r specifies the release. The "x" in 198x refers to the year that the ROM chip in your disk interface was produced. If you do not see the above message, press the reset button. If the message still does not appear, turn off the computer, check all connections, and power up again.

2. Open the door of Drive 0 by pressing the release switch. Insert a blank diskette in the drive with the notch toward the top. The diskette should click into place. Close the drive door firmly.
3. To format the diskette, type **DSKINI0 (ENTER)**. The format process takes about 40 seconds. After the diskette is formatted, OK reappears on the screen, and the red light on the drive door goes out.

If you are using more than one disk drive with your system and want to use the newly formatted diskette for data storage, remove it from Drive 0, label it as a data diskette, and store it in its protective sleeve. To make a backup of your program diskette, continue with the instructions.

Note: If you want to be absolutely certain that there are no flaws in the information the computer is copying onto the new diskette, type **VERIFY ON (ENTER)** before continuing. Using the **VERIFY** function causes the backup to take more time for completion, but it is the safest way to make sure that your backup contains no errors or flaws.

4.a. Single-Drive Backups

To back up the original Color Profile program diskette, press the release switch on the Drive 0 door, and gently remove the newly formatted diskette. Insert the original Color Profile diskette into Drive 0, and close the drive door. Type **BACKUP 0 (ENTER)**. In a moment, the computer asks you to insert the Destination diskette. Replace the original (or Source) diskette with the new, formatted diskette, and press **(ENTER)**.

The computer asks you to insert the Source or Destination diskettes several times during the backup process. The entire procedure takes approximately five minutes. After the backup is completed, OK is displayed.

b. Multiple-Drive Backups

To back up the original Color Profile program diskette, press the release switch on the Drive 0 door, and gently remove the newly formatted diskette. Insert the original Color Profile diskette into Drive 0 and the formatted diskette into Drive 1. Close the drive doors. Type **BACKUP 0 TO 1 (ENTER)**.

The backup process lasts about two minutes. When the backup is completed, OK reappears on the screen.

5. Use a felt-tip pen to label the new backup with the name, Color Profile. You may now use this diskette as your working copy of Color Profile. Store the original diskette in its protective sleeve in a safe place. Never use the original diskette except to make new working copies.

Note: If you have a blank, formatted diskette and do not want to take the time to do a complete backup, you may copy the necessary files for Color Profile to run by using selection 5 of the Color Disk Operating System Menu, described in Appendix B. For the source and destination file names, use the following:

Source: DOS/BAS

Destination: DOS/BAS

Source: DOS/BIN

Destination: DOS/BIN

Source: PROFILE/BIN

Destination: PROFILE/BIN

Appendix B — The Color Disk Operating System Menu

When you press **BREAK** at the File Selection Menu to exit Color Profile, the screen displays another menu with several choices:

```
COLOR TRSDOS 01.07.00 11/82
BY R.G. KILGUS
COPR. 1982 TANDY CORP.
ALL RIGHTS RESERVED
```

1. EXIT TO BASIC
2. EXEC A PROGRAM
3. START CLOCK DISPLAY
4. DISK ALLOCATION MAP
5. COPY FILES
6. DIRECTORY

Returning to BASIC

To exit the program and return to BASIC, press **1**. The DISK EXTENDED COLOR BASIC copyright message reappears. Remove the diskette(s) from the drive(s), and turn off the printer, computer, television, and disk drives.

Running a Program

Press **2** to return to the Color Profile program or to run another machine language program.

The screen shows:

```
EXECUTE A PROGRAM
ENTER PROGRAM NAME:[PROFILE/BIN]
```

Press **ENTER** to return to Color Profile. The File Selection Menu appears.

To run another program, type its filename (up to eight characters) and press **ENTER**. If the filename contains eight characters, it is not necessary to press **ENTER**.

Starting the Clock Display

Press **3** to start the clock display. Seconds, minutes, and hours are displayed at the upper right corner of the screen. The actual time is not displayed. The display shows only the amount of time elapsed. Press **1** at the Color Disk Operating System Menu to turn off the clock display. Color Profile will not function with the clock display turned on.

Displaying the Free Space Map

Press **(4)** to display the amount of free and allocated space for each disk drive in your system. Always do this before creating a new file to ensure that there is adequate disk space for storing the file or printing it to disk. The following is an example of a Free Space Map.

F R E E S P A C E M A P

FREE SPACE DRIVE ZERO

```
.... 6X66 7665 7665 XXX7 XXXX 981X
43XX XX8X 32XX 923X 6651 112X 1234
XXXX XXXX XXXX XXXX
```

FREE SPACE DRIVE ONE

```
XXXX XXXX XXXX XXXX XXXX XXXX XXXX
XXXX XXXX XXXX XXXX XXXX XXXX XXXX
XXXX XXXX XXXX XXXX
```

(PUSH ANY KEY TO CONTINUE)

Each period (.) represents 2304 free bytes, or 1 granule, of available space. Each X represents 1 granule with no available space left. (In the example above, a disk is not residing in Drive 1, so there is no space available at all.) Each number represents that number multiplied by 256 bytes to obtain the number of allocated bytes.

After you determine how much free space you have, press any key to return to the Color Disk Operating System Menu.

Copying a File

Note: The information in this section is primarily for use with Color SCRIPSIT but can be used to make a duplicate of a Color Profile diskette if the destination diskette is already initialized and formatted, ready to receive information.

The Copy operation on the Menu saves the size information of a text file in the directory entry so that the copy will be a standard file and can be loaded in the regular manner. However, the Copy operation used with Extended Color BASIC does not save the size information, and the copy will be a non-standard file.

Press **5** to copy a file. The screen shows:

```

          COPY A FILE

SOURCE FILE NAME [      ]
          EXTENSION [BIN]
          DRIVE [0]

DESTINATION NAME [      ]
          EXTENSION [BIN]
          DRIVE [0]

IF DRIVES ARE THE SAME
ARE YOU USING DIFFERENT
DISKETTES (Y OR N)? [N]

USE UP/DOWN ARROWS
PRESS <ENTER> WHEN DONE

```

The cursor is on the bracket for SOURCE FILE NAME. Type the name of the file you want to copy, and press **↓**. Next, type the extension (/CTL, /DAT, /SPL, or /SUB), and press **↓**. If the file you are copying is on Drive 0, press **↓** again. To copy the file from another drive, type the number of that drive, and press **↓**. A formatted diskette or other diskette containing the Color Profile program must be in the other drive.

Next, type a name (up to eight characters) for the copy file (DESTINATION NAME). If you are copying to the same disk on the same drive, type a name different than the source file name. Press **↓**, and enter the same extension as you did for the source file. Press **↓**. If you are copying the file to Drive 0, press **↓** again. To copy the file to another drive, type the number of that drive, and press **↓**.

If you are copying a file from one diskette to another but have only one drive, type **Y** (**ENTER**). At the bottom of the screen, you see the message:

```
LOAD SOURCE DISKETTE
```

Insert the Source diskette, close the drive door, and press **ENTER**. After the file has been loaded into memory, you are asked to load the Destination diskette. Insert the diskette onto which you wish to copy the file, and close the drive door.

Press **ENTER**. (If you are copying a large file, you may have to load the Source diskette again and repeat this process.) When the file has been copied, the following message appears:

```
LOAD S Y S T E M DISKETTE
```

Insert the original diskette (which contains an operating system), close the drive door, and press **ENTER**.

If you are copying from and to the same diskette, press **↓**. If you are using two drives, press **↓**. If you make a mistake entering any information in this screen, use

the **↑** or **↓** keys to move to the desired item. When you are finished entering the necessary information, press **ENTER**. After the file has been copied, the Color Disk Operating System Menu reappears.

Displaying the Directory

Press **6** to display the directory of a diskette. When the screen changes, press **BREAK** to list the entire directory of the diskette in Drive 0. To display the directory of a diskette in another drive, press **↓** twice, until the cursor moves to the **DRIVE** prompt. Type the number of the drive whose directory you wish to display, and press **ENTER**. The directory for that drive's diskette appears.

If you want to search for a particular file on a diskette, you may enter a filename and press **↓**, follow it with the extension name (if applicable), and press **↓**, and finally type the drive on which you wish to search. Press **ENTER**, and the Color Disk Operating System will try to find the file you specified. If it cannot, no filename will be displayed on the screen. If the file exists on the diskette you specified, its name appears.

To return to the Color Disk Operating System Menu, press **BREAK**.

Appendix C — Character Priority List

The following list contains all characters in order of the priority Color Profile uses when it determines which character is "greater than" when comparing for validation, selecting for subsets, or sorting.

SPACE (or blank)

!	>
..	?
#	@
\$	A
%	B
&	C
.	D
(E
)	F
*	G
+	H
,	I
-	J
.	K
/	L
0	M
1	N
2	O
3	P
4	Q
5	R
6	S
7	T
8	U
9	V
:	W
;	X
<	Y
=	Z

Appendix D — Screen Messages

Following is a list of messages you may encounter while using Color Profile. Also listed are possible causes of error messages and, where a solution is not easily apparent, suggestions for remedying the problem.

A reference list of messages and the pages on which they are discussed follows.

xxxxxxx/xxx IS WRONG TYPE FILE	105
xxxxxxx/xxx NOT FOUND	105
xxxxxxx/DAT DATA FILE ALREADY EXISTS	106
ACCESS METHOD DOES NOT EXIST	109
CAN'T EXTEND CONTROL FILE	111
CHOICE IS INVALID OR PROTECTED	106
CONTROL FILE xxxxxxxx/CTL NOT FOUND.....	105
CREATING SUB-RECORD FILE	106
DISK ERROR!.....	108
DISK FILE NOT FOUND	110
FAILED VALIDATION TEST	107
FATAL I/O ERR ON CONTROL FILE.....	111
FILE CYCLES DO NOT MATCH.....	105
FILE REFORMAT REQUIRED	106
FORMAT CONTAINS INVALID ITEM #	107
FORMAT NOT CREATED YET.....	107
FORMULA ERROR xxx!.....	104
HOW MANY COPIES	110
INITIAL DISPLAY FORMAT DOES NOT EXIST	109
INVALID DRIVE NUMBER	105
INVALID OPTION	110
INVALID TYPE.....	106
ITEM IS TOO BIG TO GO HERE	110
MASTER FILE READ ERROR	109
MASTER REC REWRITTEN	108
NO DISK SPACE TO ADD THIS RECORD	108
NO RECORDS REFERENCED BY CURRENT ACCESS	109
NO ROOM TO CREATE OR EXTEND SUB-RECORD FILE.....	106
NO ROOM TO EXPAND DATA FILE	106
NO SUCH RECORD	107
NO SUCH SUBRECORD	108
NOT A DEFINED ITEM NUMBER.....	108
NOT A THREE DIGIT NUMBER.....	108
NOT A VALID DATE	107
NOT ALLOWED — ALREADY PRINTING.....	110
NOT ENOUGH MEMORY	109
NOT ENOUGH MEMORY TO SORT.....	109
NOT LONG ENOUGH.....	106
ONLY SPACES & DIGITS ALLOWED.....	108
PLEASE MAKE A CHANGE	111
PRELOADING KEYS.....	110

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Formula Errors

When you see any of the following error messages appear, note the error number, and press any key. The first 32 characters of the formula containing the error are displayed at the bottom of the screen. Once you have noted the error, press any key to continue, or press **(BREAK)** to cancel the operation you are trying to perform. Return to the expression containing the error, and correct it before continuing with Color Profile.

FORMULA ERROR 001 - INVALID CHARACTER — Color Profile was expecting to find the beginning of an operand (for example, !003, 123.45, or "ABC") or an operator (+, -, *, /) but found a character it does not recognize. You might have forgotten to enclose an alphanumeric literal in quotation marks.

FORMULA ERROR 002 - MISSING END QUOTE — You did not place a quotation mark at the beginning or end of an alphanumeric literal.

FORMULA ERROR 003 - MISSING OPERATOR BETWEEN OPERANDS — You forgot an operator (+, -, *, /, AND, OR, NOT). Check for things like a missing space after a hyphen, and so on.

FORMULA ERROR 004 - MISSING DIGITS IN ITEM NUMBER — An item number used in an expression did not contain 3 digits.

FORMULA ERROR 005 - UNDEFINED ITEM — You used an item number not defined in your record format.

FORMULA ERROR 006 - UNPACK ERROR — This error might occur when a derived item is used in an expression and its "derived from" expression contains an error. This message is usually preceded by another formula error message.

FORMULA ERROR 007 - MISSING PARENTHESES — The number of opening parentheses used in an expression does not match the number of closing parentheses used.

FORMULA ERROR 008 - MISSING OPERATOR — It is most likely that an operator is missing immediately before or after a parenthesis.

FORMULA ERROR 009 - MISSING OPERAND — There are not enough literals or item numbers for the number of operators used.

FORMULA ERROR 010 - NON-NUMERIC OPERAND — You are trying to calculate using an alphanumeric literal or item that does not contain a usable number.

File Selection Messages

CONTROL FILE xxxxxxxx/CTL NOT FOUND — You have made a typographical error in entering a filename, or the file does not exist. To create a new file, press **(Y)**. To try again, press **(N)**. Otherwise, exit the program, and make sure that you are using the correct diskettes. If the diskettes are correct, check the program defaults to make sure that the number of drives is correct for the system you are using.

xxxxxxx/DAT or xxxxxxxx/SUB NOT FOUND — Color Profile cannot find the /DAT or /SUB (if used) file. Exit the program, and check to make sure that you are using the correct diskettes. To check a diskette and make sure that it contains the correct /DAT or /SUB file, type **DIR** when the screen displays **OK**. If the diskettes are correct, check the program defaults to make sure that the number of drives is correct for the system you are using.

xxxxxxx/xxx IS WRONG TYPE FILE — Color Profile stores a code at the beginning of every file it creates, making sure that the file is properly formatted. It cannot use files created by other programs. You might have made an error when **RENAMEing** or **COPYing** a file. Exit the program, and check your files and filenames.

FILE CYCLES DO NOT MATCH — Color Profile maintains a counter near the beginning of all its files which is incremented every time you use a file. The /CTL file contains important information about the location of available space in the /DAT and /SUB files. Serious problems could occur if you did not use all three files the same number of times. The non-current file shows the lower number in the message. Exit the program, and make sure that you are using the same "generation" of all files.

File Creation Messages

INVALID DRIVE NUMBER — The disk drive number must be 0, 1, 2, or 3.

xxxxxxx/DAT DATA FILE ALREADY EXISTS — If you are creating a new file with the same name as another, reply with **N**, and then remove the diskette containing the other data file. If Color Profile has detected a copy of the /DAT file because you only **KILLED** the /CTL file, you can reply with **Y**, and Color Profile will kill it for you.

Record Format Definition Messages

CHOICE IS INVALID OR PROTECTED — Use item numbers between 2 and 124 for master record items and between 131 and 253 for subrecord items. Items 1 and 125-130 are used for control purposes by Color Profile and cannot be changed.

INVALID TYPE — Select a type number from the list at the bottom of the screen. The number must be from 0 to 6.

NOT LONG ENOUGH — Text and numeric items must be at least one character in length. Math and derived items must be at least two characters in length if decimal places are not used. Otherwise, they must be at least two characters longer than the number of decimal places specified.

TOO LONG — Text and numeric items may be up to 254 characters in length. Math and derived items can be a maximum of 16 characters, including the sign and possible decimal points.

FILE REFORMAT REQUIRED — The changes you made to the record format require a change in the way data is stored in records on diskette. If this was intended, reply with **Y**. If your file contains a large number of records, be prepared for a delay, since each record in turn is reformatted. If you do not have an up-to-date backup of the file, reply with **N**. The changes you made are then ignored.

NO ROOM TO EXPAND DATA FILE — The changes you made to your record description will cause each record to use more diskette space. If all records were expanded as much as they need to be, you would run out of diskette space. Therefore, none of the records are changed.

CREATING SUB-RECORD FILE - ENTER DRIVE TO BE USED — The changes you made to the record description included subrecord items for the first time. A subrecord file must, therefore, be created. Specify the disk drive you want to use.

INVALID DRIVE NUMBER — Your reply to the previous request must be a number from 0 through 3.

NO ROOM TO CREATE OR EXTEND SUB-RECORD FILE — There is no room on the disk drive you specified for storing the /SUB file.

Examine/Update Records Messages

RECORD xxxxx CREATED — A new record has been created. It has been assigned the number shown. This might have caused the file to be extended, or the number of a previously deleted record might have been re-used.

SUBREC xxxxx CREATED — A new subrecord has been created and linked to the master record you are viewing. The number shown in the message indicates the total number of subrecords now attached to this master record. It may have caused the file to be extended, or it might have re-used the number of a previously deleted subrecord.

NOT A VALID DATE — Either the first two digits of the numbers you just entered in a date item are not in the range of 01-12, or the third and fourth digits are not in the range of 01-31. Type a new date, or press **(BREAK)** to return to the Main Menu. You may use the **(←)** or **(→)** keys to overtype an incorrect digit.

FAILED VALIDATION TEST — After you changed data in a record, Color Profile performed the calculations and tests you described in the item's validation expression. The result was not valid. Type a new value, or press **(BREAK)** and review or change the item's validation expression.

FORMAT NOT CREATED YET — You have never defined a format with the letter shown at the top of the screen. Select a different display format. If you are not sure of the letter you should use, press **(BREAK)** and check your list of display formats.

FORMAT CONTAINS INVALID ITEM # — At some point, you changed your record description and eliminated an item. However, this display format uses the item and has not yet been revised. Press **(BREAK)**, and revise the format. When you revise it, Color Profile will automatically make a preliminary change for you by replacing the bracket or exclamation point for the bad item with a question mark (?). Simply press **(ENTER)** to record it, or make a further change.

THIS FORMAT MUST BE REVISED — Something is making this display format unusable. It could be that there is a problem with a derived item you are trying to display. Select a different display format, or press **(BREAK)**, and correct the problem. You might revise the format to eliminate the item causing the problem, or you might correct the item itself.

NO SUCH RECORD — You typed a record number at the top of the screen that is higher than the highest number used, or the record you requested has been deleted. Try a different record number.

RECORD DELETED! — When you pressed **(SHIFT) (CLEAR)**, the record you were viewing was deleted from your file. The record number assigned to it will be used again when you next create a new record.

WARNING - RECORD WRITE FAILED — A disk I/O error occurred while Color Profile was trying to store information in the /DAT file. Before you do **anything** else, stop using this file. Use a backup copy of the diskette. If you continue to use this diskette, you will probably have trouble printing reports, creating access methods, and so on.

NO DISK SPACE TO ADD THIS RECORD — There is no more room in the /DAT file and no more free space on the diskette to use for expansion. If possible, delete a few existing records to create more space.

DISK ERROR! — This is similar to **WARNING - RECORD WRITE FAILED**, except that the problem occurred while Color Profile was trying to delete a master record. Use a backup copy of the diskette.

SKIPPED OVER DELETED RECORD(S) — To find a valid record for displaying while using Access Method A, Color Profile has to read more than one record. This message simply explains the delay.

NO SUCH SUBRECORD — The number you just entered for the subrecord number is greater than the number of subrecords currently attached to this record. Consider displaying item 126 on the screen so that you will know in advance the number of subrecords attached.

WARNING - SUB REC WRITE ERROR — This occurs when there is a problem in adding a subrecord to a file. The most likely cause is that there is no room to expand the file. Exit Color Profile, and check for free space. If there is free space on the drive containing the /SUB file, use a backup of the diskette in that drive.

SUB REC & MASTER REWRITTEN — All changes made to **both** the master record and the current subrecord are now safely recorded on diskette.

SUB REC REWRITTEN — The changes you just made to the current subrecord are recorded on diskette.

MASTER REC REWRITTEN — The changes you just made to the master record are recorded on diskette.

Access Method Definition Messages

ONLY SPACES & DIGITS ALLOWED — When listing sequence key items, use only three-digit numbers. If you wish, spaces may be placed between items. Do not use exclamation points (!) here.

NOT A THREE DIGIT NUMBER — Sequence items must be typed as three-digit numbers.

NOT A DEFINED ITEM NUMBER — One of the numbers you typed in the sequence key is not defined in your record format. Delete the number, or replace it with a different number.

Sorting Messages

Sorting is done when you define access methods and when you print a report with a Y answer to SORT BEFORE or SORT AFTER using an access method of B-Z.

SORT FAILED-ACCESS SET UNCHANGED — The sort could not be completed. As a result, the access set contains no records. Otherwise, the access method's

definition was not changed. This message was probably preceded by another, more detailed message.

SEQUENCE KEY ITEM NOT FOUND IN RECORD DESCRIPTION — You might have forgotten to revise the access method description after deleting an item from the record format.

NOT ENOUGH MEMORY TO SORT — Change program defaults so that you use less memory for keyboard and print buffers, exit the program, and try again. If you receive the same message, you might consider using a 32K Color Computer for the kind of work you are trying to do.

MASTER FILE READ ERROR — A read error occurred while Color Profile was scanning the file. Use a backup copy of the diskette(s).

Messages After Selecting **1** from the Main Menu

YOU MAY NOT UPDATE RECORDS. DEFINE RECORD FORMAT FIRST! — Select **3** from the Main Menu. Refer to this manual for instructions.

INITIAL DISPLAY FORMAT DOES NOT EXIST — Either change the format letter at the top of the menu to another letter, or select **4**, and define a display format. Refer to this manual for instructions.

ACCESS METHOD DOES NOT EXIST — Either change the access method letter at the top of the menu to another letter, or select **5**, and define an access method. Refer to this manual for instructions.

NO RECORDS REFERENCED BY CURRENT ACCESS — Either change the access method at the top of the menu, or select **5** and rebuild the access set. If you still receive this message, there are no records meeting your selection criteria.

NOT ENOUGH MEMORY — There is not enough RAM space to hold your record format, record work areas, current display format, current access method and set, and still have room for solving expressions. Following are some suggestions you might try:

- Shorten your record format by shortening or eliminating item names and validation and derived expressions or by eliminating items you do not need.
- Use a simpler display format. It requires less memory to use two different display formats, each containing a lot of empty space, than it does to use a single format that is crowded.
- Use Access Method A, or shorten the access method you are trying to use. Fewer items in the key or a shorter expression can help. If you are using a very large file, change the selection criteria so that fewer records are selected. (Try using one access method for the first half of the file and another for the second half.)
- Change the program defaults to use smaller keyboard and/or print buffers.

PRE-LOADING KEYS — Color Profile is loading as many keys as possible so that it can “find” records faster. It will use as much memory as it can on very large files. If you are using a very large file, you can stop the loading process and begin working immediately by pressing any key. It might take longer to find each record if you stop the loading process.

Report/Display Format Definition Messages

TOO SMALL, CHECK TOP,BOT,#HDGS! — Check the number of lines per page. It is not long enough to print all margin lines at the top and bottom of the page, one complete set of heading lines, and at least one line of detail information. Either increase the number of lines per page or reduce the number of heading or margin lines.

ITEM IS TOO BIG TO GO HERE — There is not enough room from the cursor’s position to the end of the display area to show this item as an input area. Place the “ ” further to the left or up one line, or use ! and edit the item to fit in this space.

Report Printing Messages

INVALID OPTION — You must select one of the print options listed on the screen (1-5).

REPORT NOT DEFINED — The report you specified has not yet been defined. Select a different report, or press **(BREAK)**, and define another report format.

REPORT’S ACCESS NOT DEFINED — Press **(BREAK)**, and check the report definition. The access method specified does not exist. Either change the access method specified, or define the access method.

DISK FILE NOT FOUND — Color Profile could not find the file from which you are trying to print. Try again, leaving the filename blank. Color Profile then displays a list of the spool files it finds.

NOT ALLOWED - ALREADY PRINTING — You are trying to print a report on the printer, but you have already started a disk-to-printer operation. You may only print one report at a time on the printer. Either wait until the disk-to-printer operation is finished, or select option **(3)**, and print the new report to diskette. You may then print it from disk later.

HOW MANY COPIES — When you print a report from disk to the printer, you may specify as many as 255 copies. They will all print without requiring any further action on your part.

SPOOL FILE ALREADY IN USE — You are trying to print a report to disk; however, the file you specified is currently being used by a disk-to-printer operation. Write the report to a different file, or wait until the disk-to-printer operation is completed before trying again.

SPOOL FILE ALREADY EXISTS — You are trying to print to a spool file, but a file already exists with the name you specified. If this was intentional, reply with Y. Color Profile then kills the old version of the file before creating the new one. If you intended to use a unique new name, reply with N. Then, try again, leaving the filename blank. Color Profile then lists the names of all existing spool files for your reference.

REPORT END - PRESS ANY KEY — After the last line of the report you are “printing” on the screen has been displayed, this message appears. This lets you make a note of totals before continuing. Press any key, and the Main Menu appears.

Miscellaneous Messages

PLEASE MAKE A CHANGE — The item on which the cursor resides is in error. Type a new value, or press **BREAK** to return to the Main Menu.

CAN'T EXTEND CONTROL FILE — There is no more diskette space on the diskette containing the /CTL file. Therefore, Color Profile has no place to store the last thing you created or revised. Exit the program, and create more free space on the diskette before attempting further operations.

FATAL I/O ERROR ON CONTROL FILE — There has been a disk read or write error on the diskette containing the /CTL file. Your only option is pressing the reset button on the back of the Color Computer. Check the condition of your diskette and/or disk drives. Use backup(s) of your diskette(s).

Appendix E — Using Color Profile on 16K Color Computers

Although Color Profile can be of greater use to you when you use a 32K Color Computer, it can be run on a 16K computer. However, if you plan to use only 16K, you should be aware of a few limitations.

After space is used for Color DOS, the Color Profile program itself, and work space for Color Profile internal operations, approximately 2,000 bytes of memory are left on a 16K Color Computer. Color Profile tries to use the leftover space for:

- your record format
- the current display format
- work space for the current logical record (with all items expanded to the sizes you defined)
- work space for the current disk record (the record packed in the way that it is stored on diskette)
- the keyboard and print buffers
- work space for shuffling information in the /CTL file

A somewhat unpredictable amount of memory is also required if Color Profile must solve expressions. During screen formatting, an extra 500 bytes are also required. Given all the work Color Profile performs, the 2000 leftover bytes are critical.

If you are using a 16K Color Computer, please follow these suggestions to get the most from Color Profile.

- As soon as you create your first file, choose Main Menu selection 7 (CHANGE PROGRAM DEFAULTS). Change the following to contain values of 1: free space monitor, print buffer, keyboard buffer, and expression memory. Then, store the changes and exit Color Profile. This records your changes on the diskette, and they remain in effect as long as you use the same program diskette (or a backup of it).

These changes reduce to a minimum the amount of space used for less critical operations. It also causes the current amount of free space to be constantly displayed. As you set up your files, note the amount of free space, and try not to let it drop below 700. When your file is set up, you may return to the program defaults and turn off the free space monitor. (For detailed instructions on changing program defaults, see the section, "Changing Program Defaults," in this manual.)

- When defining record formats, limit the length of item descriptions as much as possible. Another possibility is to omit the descriptions, keeping track of them on paper.
- Try to limit the overall size of your records to 90 or 100 bytes (60-75 bytes on disk).
- Do **not** use validation expressions.
- Do **not** use derived items.

Appendix E (continued)

- When defining display formats, design several simple formats rather than one complicated format. Use very short descriptions and leave as much blank space as you can.
- If you plan on using access methods for sorting your file, limit the file size to no more than 600 records. Avoid using multiple items in key sequences and do not use expressions to select subsets.
- When defining report formats, use as few lines as possible, and limit the number of items being totalled. Also avoid using subtotals.
- You are not required to limit the number of display formats you use. However, if you use quite a few, try to limit the length of the format names. Likewise, you do not have to limit the number of report formats or access methods you use. Just try to limit the length of their names.

If, after observing the above suggestions, you find that you consistently have more than 800 bytes of free space, you might consider changing the expression memory to the number over 700 that you have available. You may then use validation expressions, define derived items, and select subsets of records, as long as you keep your expressions very simple.

For example, validation should be limited to a simple range test. Derived items should involve no more than two or three operators. Subset selection should be limited to one or two conditions.

If you follow these suggestions and are careful, Color Profile will be able to handle a wide range of household filing, sorting, and reporting with only 16K RAM. If, however, you plan to use Color Profile for business or other serious applications, we suggest that you consider using 32K RAM for maximum efficiency.

Appendix F — Managing Diskette Capacities as Files Grow

If you are using only 16K, Color Profile may be used for a variety of **simple** filing applications. You should limit your files to fewer than 500 records, use relatively small records, and avoid or limit your use of expressions. To get the maximum amount of use from Color Profile, consider increasing your capacity to 32K.

Applications of Color Profile run on a 16K machine will most likely not gain efficiency or space from using more than one disk drive other than the ability to make backups faster. However, if larger files are being maintained on a 32K Color Computer, a second (or even ~~third~~) disk drive can be an advantage.

Capacity

If you have only one disk drive, you have no choice but to store all files on Drive 0. Since DOS and the Color Profile program occupy 18 grans of space, you will have only 50 grans available for your files. Simple files rarely use more than 2 grans for the /CTL file, leaving a maximum of 48 grans for a data file (approximately 110,000 bytes).

A simple name and address file, containing three 32-character items (name and address), an eight-digit numeric item (phone number), and a four-character item for other data, will require 81 bytes of disk space per record. Therefore, a file containing up to 1364 records could be maintained on a single-drive system.

The following chart shows the way that Color Profile stores characters of the item types, with the number of bytes required for a specified number of characters:

Number of Characters	Number of Bytes Required	Item Type
4	3	Text
2	1	Numeric
2	1	Math
2	1	Date
5	2	Tally

Sort Capacity

If you define your own access methods, you should allow for space on diskette for sorting. Generally, space required for sorting can be estimated using this formula: $N * KL$, where N is the number of records selected plus 1, and KL is the key length plus 2 bytes. Key length is determined by adding together the packed length of all items listed in the sequence key and adding 2 bytes to the result.

Appendix F (continued)

If this value is no more than the amount of free memory you usually have available, it can probably be sorted in memory. Otherwise, divide the amount by 1152 to estimate the number of free grans of diskette space that will be required for sort work files.

For example, to sort the file used in the above example into phone number sequence, the key length would be 4 (for the phone number) plus 2, or a total of 6 bytes. If all 1364 records were selected for the sort, 8184 bytes would be required. This could easily be done in memory on a 32K Color Computer. However, it would require at least 8 grans of diskette space if there was not sufficient memory. Providing that much space on a single-drive system would reduce the maximum file capacity to 1136 records.

To sort 1000 records using a 32-character name for the key requires 26,026 bytes of RAM, or approximately 23 grans of diskette space. The largest sort possible could manage nearly 78,000 characters of data (780 records, using 100 bytes of key or 3900 records using 20 bytes of key, for example). This would require an entire free disk drive for the work files.

Spreading Files Onto More Than One Drive

All files created by Color Profile can be copied from one diskette to another using the COPY command described in Appendix B. If you have two disk drives, the program's performance can be improved by arranging your files in this way:

Drive 0	Drive 1
DOS/BAS	YOUR/CTL
DOS/BIN	YOUR/DAT
PROFILE/BIN	YOUR/SUB

With this arrangement, you will only have to make routine backup copies of the diskette in Drive 1. (You should always keep an extra copy of the program diskette, but it need not be backed up regularly.) If your file becomes too large to fit on Drive 1, you need to rearrange files. If possible, keep the /CTL file on a diskette other than the one containing PROFILE/BIN, since these two files are most often accessed. The file most likely to cause growth problems is the /DAT file. To determine its size, list the directory of the diskette on which it resides. The only restrictions in rearranging files is that DOS/BAS and DOS/BIN must reside in Drive 0. All other files may be placed on any available drives.

If you are using three disk drives, you have more options as your files grow. When you first start, consider using this arrangement:

Drive 0	Drive 1	Drive 2
DOS/BAS	YOUR/CTL	use as a
DOS/BIN	YOUR/DAT	sort drive
PROFILE/BIN	YOUR/SUB	

As the data file grows, you might try this arrangement:

Drive 0	Drive 1	Drive 2
DOS/BAS	YOUR/DAT	YOUR/CTL
DOS/BIN		YOUR/SUB
PROFILE/BIN		

Use the drive with the most free space as a sort drive. If your /SUB file also grows too large, move the /CTL file to Drive 0.

If you are not using subrecords and think it may be possible that your /DAT file could require more than 156,672 bytes of storage space, consider the following change to your record format: define half of your record data as subrecord items. Plan on creating a maximum of one subrecord per master. Since subrecords are stored in a file other than /DAT, this can potentially double the amount of data that you can store. You will have to press **ENTER** an extra time when creating records, but the added capacity might be worth the extra effort.

Estimating /CTL File Size

The /CTL file will grow and require a more significant amount of disk space as you use your file. In addition to approximately 300 bytes of minimal control information, it also contains your record format, display formats, access methods, and report definitions. To make a rough estimate of your /CTL file size, you must estimate the sizes of all these.

For each item you define in the record format, allow 16 bytes plus the number of characters you use for the item name. Do not count trailing spaces.

A display format is stored in a somewhat compressed form. Every string of up to 128 duplicate characters requires only 2 bytes. Therefore, its size is 450 bytes minus all duplicate characters after the first two in any such string. For example, a 32-character line that contains:

```
NAME XXXXXXXXXXXXXXXXXXXXXXX
```

requires only 9 bytes: the word, NAME, and the following space require 5 bytes, 2 bytes for the string of Xs, and 2 bytes for the spaces that fill the rest of the line. In addition, add 1 byte for each data item displayed on the screen.

The size of an access method is the length of its name plus one for each item in the key, plus the length of the selection expression, plus 2 bytes for every record included in the access set. When using very large files, this last item accounts for the majority of the space required for the /CTL file. For example, the access method for viewing a file of 1500 records in stock number sequence will require over 3000 bytes. If you maintain several access methods for such a file, this becomes significant.

Report definitions require approximately 16 bytes, plus the length of the report name, plus the combined sizes of all report lines. Each line is 132 characters in length but is compressed in the same way as display formats. (A blank line requires 5 bytes.)

ESTIMATE/BAS and CALC/BAS

Since so many variables affect the size of the /CTL file, and since its size can affect the amount of space available for the data file, a program called ESTIMATE/BAS is provided on the program diskette to help you make estimates. It makes an approximate allowance for the sizes of all the things you might want to include in your file. You can also see the effect that additional disk drives would have on your maximum capacity.

CALC/BAS displays the number of bytes actually used by a file in existence. To run either program, type **RUN "name"** and press **ENTER**, where name is the name of the program you wish to run.

Appendix G — Sample Reports

Following are the reports produced throughout the Practice Sessions. Each printout is labeled with reference to its appropriate practice session.

1. Aircraft Usage Report — Practice Session H

AIRCRAFT USAGE REPORT				
AIRCRAFT	PILOT #	HRS. FLOWN	TOTAL DUE	BASED AT
N26786	1117	4.80	150.98	ARL
N26786	1117	1.00	31.45	ARL
TOTAL HRS. THIS AIRCRAFT		5.80	TOTAL DUE	\$182.41
N63603	1170	2.40	54.48	ARL
TOTAL HRS. THIS AIRCRAFT		2.40	TOTAL DUE	\$54.48
N69103	235	.90	22.31	ARL
TOTAL HRS. THIS AIRCRAFT		.90	TOTAL DUE	\$22.31
TOTAL HRS. THIS AIRFIELD		9.10	TOTAL DUE	\$259.20
N1046E	988	1.10	41.30	MEA
TOTAL HRS. THIS AIRCRAFT		1.10	TOTAL DUE	\$41.30
N93927	0001	1.40	35.21	MEA
N93927	0001	4.60	115.69	MEA
TOTAL HRS. THIS AIRCRAFT		6.00	TOTAL DUE	\$150.90
TOTAL HRS. THIS AIRFIELD		7.10	TOTAL DUE	\$192.20
N9516B	6134	1.20	55.98	OAK
TOTAL HRS. THIS AIRCRAFT		1.20	TOTAL DUE	\$55.98
TOTAL HRS. THIS AIRFIELD		1.20	TOTAL DUE	\$55.98
GRAND TOTAL HRS.		17.40	GRAND TOTAL DUE	\$507.38

2. Artist Report S — Practice Session I

BOWIE, DAVID

SCARY MONSTERS
BAAL

TALKING HEADS

LET'S DANCE
BUILDINGS AND FOOD
FEAR OF MUSIC
REMAIN IN LIGHT

KRAFTWERK
GABRIEL, PETER

SECURITY
PETER GABRIEL